

WHO SHALL SURVIVE?

Foundations of Sociometry, Group Psychotherapy
and Sociodrama

by

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THIRD EDITION 1978

To My Wife

ZERKA TOEMAN MORENO

FIRST SOCIOMETRIC PLAN

6. II. 1916

An das österreichische, ungarische

Ministerium des Inneren

Wien, F. Am Ballhausplatz

Die positiven und negativen Gefühlsströmungen innerhalb jedes Hauses und zwischen den Häusern, innerhalb der Fabrik und zwischen den verschiedenen religiösen, nationalen und politischen Gruppen des Lagers können durch eine soziometrische Analyse der Beziehungen, die zwischen den Bewohnern waltet, aufgedeckt werden.

Eine Neuordnung mit Hilfe soziometrischer Methoden ist hiermit anempfohlen.

FRAGMENT FROM THE ORIGINAL DRAFT OF J. L. MORENO'S LETTER TO THE DEPARTMENT OF THE INTERIOR OF THE AUSTRO-HUNGARIAN MONARCHY URGING THE APPLICATION OF SOCIOMETRY TO THE COMMUNITY OF DISPLACED PERSONS IN MITTERNDORF, FEBRUARY 6, 1916.

FOREWORD TO THE THIRD EDITION

Since this book first appeared in 1934, sociometry has been through many stages in rapid development. It has been identified not only with the rigorous application of research techniques to specific problems in human behavior; it has also grown along the lines of social healing, diagnosis and therapy. Simultaneously, sociometry has come forth with a theory of human behavior—on one hand, as a system of propositions rather solidly grounded in research findings, and on the other hand through its speculative considerations, it has aimed at capturing the imaginative mind.

It is fair to say that the all-important foundations of sociometry have, by now, been built. This basis is one which consists of thousands and thousands of investigations, generally limited to various types of groups and small communities.

The findings from small groups may not be always directly transferable to larger and different types of groupings. This we think to be the next level of inquiry for sociometry. Sociometry, we believe, is now ready to push the search for knowledge onto a new level, using to the utmost benefit all that has, thus far, been established.

In these efforts new hypotheses are called for. New instruments of research will emerge making the testing of such hypotheses possible. The theories will have to be revised in the light of new discoveries.

We strongly believe that this new referent of sociometry is cross-cultural. We also are convinced that sociometry is ready to tackle—step by step—some of the new problems. And above all, ← our move toward international sociometry is motivated by the state of affairs of our world, a situation about which behavioral scientists must help acquire knowledge if they are to discharge their universal responsibility to science, to humanity, to their nations, and to themselves.

This edition is a call for integration of the behavioral and therapeutic sciences. It starts from the premise that it is both desirable and necessary to develop systematic theory which embodies in it the best elements of speculation, research and therapy and which does so in a truly universal manner.

Secondly, we believe that sociometric and sociatric approaches to commonly human and scientific problems hold one of the major

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keys toward such an integration. Among the sociatric approaches, particular attention will be given to group psychotherapy, psychodrama, sociodrama and ethnodrama.

✈ Thirdly, we are dedicated to the internationalism of science—not only in word but also in action. The building of intercultural bridges, in our opinion, presupposes the growth of a body of knowledge which is multi-cultural and inter-cultural in character.

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PRELUDES OF THE SOCIOMETRIC MOVEMENT

I

The closest approximation to an official start of the sociometric movement occurred on April 3-5, 1933, when the Medical Society of the State of New York exhibited a few dozen sociometric charts during its convention at the Waldorf Astoria Hotel. These charts became, by mere chance, the showpiece of the scientific exhibits; a large number of physicians, neurologists, psychiatrists and sociologists stopped in to see them and to read in the criss-cross of red, black and blue lines the unveiling of the social forces which dominate mankind. It may at first appear to be of little academic significance but it was by no means unimportant for the development of the movement that the Director of Public Relations of the Medical Society, in search for an exciting news item for the science reporters of the metropolitan newspapers and press services, focussed upon the sociograms to secure for the medical convention the widest possible attention. The Director of Public Relations was Dwight Anderson and the man to whom he showed the charts was Howard Blakeslee, the late Science Editor of the Associated Press. In the days to follow all the large newspapers, led by the *New York Times*, carried headlines, stories, editorials, pictures of sociograms and sociometric cartoons, throughout the United States. I later discovered to my amusement, that the culprit had to do some explaining to the Executive Committee as to why so many other worthy medical contributions were pushed out of the limelight. He explained convincingly that the publicity was advantageous for the Medical Society; and besides, the good doctors rubbed their eyes, awakened from a deep sleep, gazed through the crystal ball and saw what might become a genuine medical sociology in the future. Since then sociometry and its derivatives and extensions, social microscopy and group dynamics, group psychotherapy, roleplaying and interaction research, psychodrama and sociodrama, have retained their fascination for the general public and have matured to a widely known and respected school of thought.

This event was a crystallization point for two reasons, 1) it brought to a climax a period of latency of ideas which I had originated in Europe but which found a truly fertile soil first in the U. S. A.; 2) I was just then finishing the writing of WHO SHALL SURVIVE? and the sociometric charts exhibited were a substantial part of this work. The book was the foundation stone of the sociometric movement.

II

The year 1933 may have been the official, but the year 1923 was the conceptual origin of sociometry; it was the publication date of my book *Das Stegreiftheater* which contained the seeds of many of the ideas which later brought sociometry to fame. In retrospect the beginnings of my work in Europe are an indispensable part of the story because it is there where it started.

The sociometric movement can be divided into two major periods; the first could be called the *axionormative period*, using rather freely a term coined by Florian Znaniecki; it lasted from 1911 to 1923. The second could be called the *sociometric period*, which has had three distinct phases; the first phase began in 1923, with the appearance of *Das Stegreiftheater* and ended in 1934, with the appearance of WHO SHALL SURVIVE?; the second phase began with the launching of *Sociometry, A Journal of Interpersonal Relations* and ended with the opening of the Sociometric Institute and the New York Theatre of Psychodrama in 1942; the third phase, 1942 to 1952 saw the spreading of group psychotherapy, psychodrama and sociometry throughout the United States, Europe and other parts of the world.

III

The advent of sociometry cannot be understood without appraising my presociometric background and the historic-ideological setting in the Western world, during and after the First World War. Marxism and psychoanalysis, the two opposites, each had spent their theoretic bolt, the one with Nikolai Lenin's "State and Revolution" (1917), the other with Sigmund Freud's "Civilization and Its Discontents" (1929). The two opposites had one thing in common: they both rejected religion, they both disavowed

the idea of a community which is based on spontaneous love, unselfishness and sainthood, on positive goodness and naive cooperativeness. I took a position contradictory to both, the side of *positive* religion. The fact that Christianity, Buddhism, Judaism and other religions of the past have had limited success did not prove that the concept of religion itself had failed. My contention was that religion should be tried again, a religion of a *new* sort, its inspirations modified and its techniques improved by the insights which science has given us—and by no means excluding some of the insights which Marxism and psychoanalysis have brought forth. My position was threefold: first, the hypothesis of spontaneity-creativity as a propelling force in human progress, beyond and independent from libido and socio-economic motives—which does not deny the fact that they are frequently interwoven, but which does deny the contention that they are merely a function and a derivative; second, the hypothesis of having faith in our fellowmen's intentions—outside of obedience resulting from physical and legalistic coercion—the hypothesis of love and mutual sharing as a powerful, indispensable working principle in group life; and third, the hypothesis of a superdynamic community based upon these principles which can be brought to realization through newer techniques. It may be said that *I tried to do through sociometry what "religion without science" has failed to accomplish in the past and what "science without religion" has failed to accomplish in Soviet Russia.* All the cultural and social techniques which I developed in the course of years have been motivated to serve this purpose. This position was expressed first in the creation of a religious group with the friend of my youth, Chaim Kellmer, and was later reported in my *Philosophy of the Here and Now* (1918) and the *Words of the Father (Das Testament des Vaters, 1920)*. The total misunderstanding of my original position which I have never abandoned, and its disregard in many religious as well as scientific circles has not hindered me in continuing to develop the technical innovations which, I hoped, were gradually to establish this new world. It is curious—and it may require some explanation—that it is these techniques which made sociometry famous and which have been universally accepted, whereas its underlying philosophy of life has been relegated to the dark corners of library shelves or entirely pushed aside.

The explanation is simple; it is generally accepted that a scientist may have two compartments, one for his religion and the other for his science, as long as the scientist is, like Copernicus, Newton, Kepler, Mendel and Darwin, a physicist, a chemist or a biologist. But there is a profound bias against social scientists having two compartments. However, they can be kept apart, indeed, one is able to do conscientious screening and not let one activity impede the other—in short, it is an exercise in “role playing”. It must be added that the positive religion which I offered was just as much in contradiction and opposition to the official religions as it was to the agnostic, psychological and political doctrines of our time; indeed, when removed from its metaphoric shell it contains the most revolutionary kernel of my whole work.

I arrived at the conclusion that the “next step” is the realization and concretization of the idea in the flesh rather than its further intellectual extension. Therefore I became a psychodramatist and roleplayer. Systems analyzing the cultures of the past, declarations of what should be done tomorrow, had become anti-climactic. Bookwriting had become a world-wide obsession. From the point of view of a creative revolution the book had become a symbol of a reactionary movement, not as much because of its contents but as *a form of creative behavior*. Would God start the world by writing a book? Did he start the creation of the universe billions of years ago by writing the Genesis? What comes first? How would God behave if he would create the world again?

1910, GENESIS OF PSYCHODRAMA

The genesis of psychodrama was closely related to the genesis of the Godhead. I tried to draw in my mind a picture of what God looked like on the *first* day of creation. He may have been knowing and wise, a being who can penetrate with his eyes the abysses of the universe, very much in the manner of a Buddhist or a psychoanalyst. Then I began growingly to realize that the mind of God could not operate like the mind of a Buddhist or a psychoanalyst. Hovering over the chaos on the first day, he was there to create, not to take apart and to analyze. He may have become more of an analyst as the days of creation went on, or

after it was all over—in moments of reverie or in moments of disillusionment with the result. If he had started with psychoanalysis he would hardly have begun to create anything, the world might have remained uncreated. Therefore, I conclude that God was first a creator, an actor, a psychodramatist. He had to create the world before he had the time, the need and inclination to analyze it. He must have given a lot of good thought to the creation before he began with it and as he was going on with it. *My first concern was the God as he was starting out to create the world, not so much “what” he does but “why” and “how”, the Deus Primus or the Creator in Situ; this is the God of the first day as against the God “after” the world is created. This is the genesis of God, the Creator, rather than the genesis of creation.*

When I found that the God of the first day was neglected in the literature about him, I peppered up this contrast in order to make the picture of *the first moment of the creating God* as strong as possible. He would not stop at anything or leave out anything if it could make the creation more beautiful, more spontaneous and more enduring. He would come forth with everything which would promise the turning out of a masterpiece. He would put every part of the chaos into the melting pot. If blood and dirt are necessary he would get all the blood and dirt there is. If sex, hunger and feces are necessary, he will get them abundantly into it. If birth and death, charity and love, sleep and dreams, forms and colors, nearness and distance are necessary, he would get them all into it. The creative definition of “Godplaying” is the maximum of involvement, the putting of everything unborn from the chaos into the first moment of being. This preoccupation with the *status* and *locus nascendi* of things became the guide of all my future work.

1911, GENESIS OF SPONTANEITY

When God created the world He started off by making every being a machine. He made one machine push the other and the whole universe ran like a machine. That seemed to be comfortable, safe and smooth. But then He thought it over. He smiled and put just an ounce of spontaneity into each of the machines and this has made for endless trouble ever since—and for endless enjoyment.

1911, THE GARDENS OF VIENNA, THE FIRST VEHICLE

I took to anonymity, spontaneity and creativity like wood takes to fire and began with my Godplaying in the streets and gardens of Vienna. When I saw the title of Bergson's book "Evolution Creatrice" I indignantly crossed out the "Creatrice"—which puts the idea of evolution first—and wrote in its stead "Du Createur"—"Evolution of the *Creator*"* which puts the idea of the creator first.

One day I walked through the Augarten, a garden near the archduke's palace, where I saw a group of children loafing. I stopped and began to tell them a story. To my astonishment other children dropped their games and joined in, nurses with their carriages, mothers and fathers and policemen on horseback.

From then on one of my favorite pastimes was to sit at the foot of a large tree in the gardens of Vienna and let the children come and listen to a fairy tale. The most important part of the story was that I was sitting at the foot of a tree, like a being out of a fairy tale and that the children had been drawn to me as if by a magic flute and removed bodily from their drab surroundings into the fairy land. It was not as much what I told them, the tale itself, it was the act, the atmosphere of mystery, the paradox, the unreal become real. I was in the center, often I moved up from the foot of the tree and sat higher, on a branch; the children formed a circle, a second circle behind the first, a third behind the second, many concentric circles, the sky was the limit.

Why I chose the course of the theatre instead of founding a religious sect, joining a monastery or developing a system of theology (although they do not exclude one another), can be understood by taking a view into the setting from which my ideas sprang. I suffered from an *idée fixe*, from what might have been called then an affectation, but of which might be said today, as the harvest is coming in, that it was by "the grace of God." The *idée fixe* became my constant source of productivity; it proclaimed that there is a sort of primordial nature which is immortal and returns afresh with every generation, a first universe which contains all beings and in which all events are sacred. I liked that enchanting realm and did not plan to leave it, ever.

* See "Einladung zu einer Begegnung," p. 4, March, 1914.

But gradually the mood came over me to leave the realm of children and move into the world. It was with the decision that the *idée fixe* should remain my guide. Therefore, whenever I entered a new dimension of life, the forms which I had seen with my own eye in that virginal world stood before me. They were my models whenever I tried to envision a new order of things or to create a new form. I was extremely sure of these visions. They seemed to endow me with a science of life before experience and experiment verified their accuracy. When I entered a family, a school, a church, the house of congress or any other social institution, I revolted against them in each case; I knew they had become distorted and I had a new model ready to replace the old.

Behind the screen of telling fairy tales to children and staging the sociodramas of a new society I was trying to plant the seeds of a diminutive creative revolution. This had a double significance; it was a test of the living God idea *within* the framework of our modern civilization—and not in the comparative safety outside of it, as in the deserts of Africa or the plains of India, a fighting saint, not a recluse. It was also intended as a demonstration against the psychoanalytic theory of heroes and geniuses, then rampant in Vienna, that they are all mental patients, more or less, or at least touched by insanity. Therefore, I wanted to show that here is a man who has all the signs of paranoia and megalomania, exhibitionism and social maladjustment and who can still be fairly well controlled and healthy, and indeed, of apparently greater productivity by acting them out than if he would have tried to constrain and resolve his symptoms—the living antithesis of psychoanalysis, foreboding the protagonist of psychodrama. *The only way to get rid of the "God syndrome" is to act it out.*

1912, GENESIS OF SOCIOMETRY

The genesis of the Godhead fertilized another idea in my mind: God was not just a Godplayer in the literal sense. Would God have been only God, a narcissus in love with himself and with his own expansion, the universe would never have come into existence. It is because he became a "lover" and a "creator" that he could create the world. If God would come into the world again he

would not come into it as an individual, but as a *group*, as a collective. Only in proportion and to the extent that he took the form of a universe had he been a creator—only insofar as the idea, for instance on the human plane, could take the form of a group, of a community, was his existence and his immortality assured. To get an idea as to the form an ideal community, a “universe”, should take I returned to my vision of the Godhead of the first day; what picture of the universe did he have on the first day of creation?

One of his first blueprints might have been a universal axio-normative order of the cosmos and I formulated accordingly two hypotheses.*

1) The spatial-proximity hypothesis postulates that the nearer two individuals are to each other in space, the more do they owe to each other their immediate attention and acceptance, their first love. Do not pay any attention to the individuals farther away from you unless you have already absolved your responsibility to the nearer ones and they to you. By the nearest is meant the one whom you live next to, whom you meet first on the street, whom you find working next to you, who sits next to you or who is introduced to you first. *The sequence of “proximity” in space establishes a precise order of social bonds and acceptance, the sequence of giving love and attention is thus strictly preordained and prearranged, according to a “spatial imperative.”*

2) The temporal-proximity hypothesis postulates that *the sequence of proximity in time establishes a precise order of social attention and veneration according to a “temporal imperative.” The here and now demands help first, the next in time to the here and now backward and forward requires help next.*

Here I had some of the ingredients of “the sociometric system” on hand, the idea of proximity and the metric, the love of the neighbor and the idea of the meeting, in addition to spontaneity(s) and creativity(c). I tried the sociometric system first on the cosmos. God was a super sociometrist. The genesis of sociometry was the metric universe of God’s creation, the science of “theometry”. What I know of sociometry I learned first from my speculations

* See J. L. Moreno, *The Philosophy of the Here and Now*, original editions in German published by Gustav Kiepenheuer Verlag, Berlin, 1918-1923; translated into English by Dr. Gerhard Schauer, to be published by Beacon House Inc., 1953.

and experiments on a religious and axiological plane. To fit the sociometric system into God's world I made God assign to every particle of the universe some of his s and c, thus creating for himself innumerable oppositions, the counter spontaneities of innumerable beings. This made him dependent upon every being and because of the enormous extent of distribution through the endless spaces, *almost helpless*; but it made us and all beings far more dependent upon him than we would have been if we would not share in some of his initiative and responsibilities. This distribution of s and c made him a partner, an equal; he was to serve, not to rule, he was to co-exist, co-create and co-produce, nothing for himself, all for others. It gave to sociometry the model of the objective investigator par excellence, "the objective eye" of God; for him all events are of equal merit, he has no bias; hate and stupidity are just as close to his heart as love and wisdom.

I was fortunate to experience and act out firsthand during my own life the transformation of a sacred into a secular cultural order—a process which ordinarily lasts centuries of development. The sociometric system gained in depth and clarity and was able to combine the two extremes which have pervaded human cultures, the concretely, actively magic-poetic, with the objectively, methodically scientific. Because I had lived through two opposite cultural systems, first a sacred religious existence, then a secular worldly existence, I could pass without difficulty from religious into scientific thinking, in fact, they appeared like two sides of the same coin. It is because the sociometric system had first a religious character that all sociometric and psychodramatic techniques were in their first format religious and axiometric. As I tried the sociometric system first on the universe and on the concept of God, its first manifesto was a revolutionary religion, a change of the idea of the universe and the idea of God. The God of Spinoza was not real and dynamic enough; his God was metric but void of spontaneity and creativity. The God of Jesus was further extended, the son "withered away" until nothing was left except the universal creativity of the Godhead and only one commandment: To each according to what he *is*.*

* The postulates "each according to his needs or according to his work capacity" still indicate a bias against all the potentialities of the individual. The postulate above indicates an all-inclusive acceptance of the individual "as he is."

1913, THE PHILOSOPHY OF THE "HERE AND NOW"

I had two teachers, Jesus and Socrates; Jesus, the improvising saint, and Socrates, in a curious sort of way the closest to being a pioneer of the psychodramatic format. His dialogues impressed me, not because of their content, but because they were presented as "reports" of actual sessions (probably accidentally and unintentionally) and not an imaginary output of a poetic-philosophic mind. (Even though Plato, as an "auxiliary ego" reporter has worked over the actual material and conserved it for posterity, this does not change the concrete-situational relation of Socrates to it.) Socrates was involved with actual people, acting as their midwife and clarifier, very much like a modern psychodramatist would. So far so good, but here is where my quarrel with Socrates began; the frame of reference of his dialogues was limited to the dialectic-logical; he did not, like Jesus, enter into the totality and essence of the situation itself. Perhaps if there would have been, among the disciples of Jesus, besides Matthew, Mark and Luke, a Plato, the psychodramatic technique might have been born in Palestine two thousand years ago. But for other reasons than in Jerusalem, it did not happen in Athens although the naturally playful Socratic dialogue and the dynamic but conserved tragedies of Aeschylus existed there side by side. It did not happen until in our time that the two approaches of Jesus the healer and Socrates the teacher, and the two arts, the Socratic and the Aeschylian-dramatic were brought to a synthesis. My first three psychodramatic protocols "The Godhead as Author" (1918), "The Godhead as Preacher" (1919) and "The Godhead as Actor" (1919)* bear the mark of Socratic influence but it is my conscious insistence upon the "actuality of the event" and upon the "here and now" of production that made the difference. Socrates must have felt this intuitively whenever he was *in situ*, although he never made a point of this most significant fact. Even if Plato could have concocted dialogues far superior in artistic, dialectic and ethical value to anything which Socrates was able to accomplish in the ongoing process of a session, they would have been of secondary value for the simple reason that "they never happened." I was interested in the ethical more than in the intel-

* See *The Philosophy of the Here and Now*, op. cit.

lectual Socrates, in the "changer" more than in the thinker. Socrates, in order to prove a point, chose the form of the dialogue instead of lecturing to the crowd. He picked as his counter-protagonist a representative character, a sophist. Unconsciously using the technique of "role reversal" he elevated the sophist and turned him into the teacher, whereas he himself assumed the role of the ignorant pupil who asked questions. He calculated intuitively what I had to discover after long practice, that by means of role reversal he could more easily find the weak spots in the armor of the sophist than if he would tell him directly what the faults in his logic were. As he carried the sophist through various dilemmas his audience became involved and the dialogue ended with a "dialectic catharsis."

I profoundly suspect that he came closest to the psychodramatic format that one time when he visited a theatre. He would never have gone into it to see a play, a thing which was against his religious beliefs; but when he heard that Aristophanes had written a comedy in which he, Socrates, was made a funny character, he went, in true psychodramatic manner, to show himself in the flesh to the good Athenians in the audience, and to prove that the actor mirroring him on the stage did not do him justice. That is how far he went. This time it was a real life situation in which he himself was the protagonist. It was not only a high-powered dialectic issue, he himself was challenged as a person and as the representative of a value system. He could have turned the theatre upside down and a "sociodrama" might have ensued. He saw clearly his own existential part of it just as he saw it later when he was adjudged a seducer of youth and heroically drank the potion. But he did not see "beyond his own situation"; he did not see that a new method of teaching and clarifying human relations was within his grasp. Socrates had the message but the demon within him did not speak loud enough or became prematurely silent. Socrates was existentially great but the great method inherent in his existentialism escaped his attention. Armed with implements like psycho- and sociodrama and assisted by an army of followers, he might have prevented the breakdown of the Athenian republic. As it was he stood only in protest against an avalanche he could not halt. Two thousand years later Kierkegaard again heard the demon but he was hindered by private remorse, submerged by the imperatives of his private existence, the

fear of losing the "I" in the "Thou" and an obsession with his own monodrama. It remained for me to hear and understand the demon more completely and to bring the idea to a finish.

My reference to Socrates serves not only to emphasize the influence which Socrates had upon my formative years, but also the great importance of the sociodrama as a teaching technique. It should not cloud the fact that the origins of sociodrama go back into the prehistoric period of mankind, before any recorded literature in the modern sense could exist. On the other hand, there are elements in sociodrama, f. i., the theory of spontaneity and creativity, which could not have been brought out to full maturity before the civilization of the machine and the robot made it an indispensable antidote. It may not be an accident that a sociological action method raises its head again in the greatest political democracy which has ever existed, in the United States. It was in the Athenian republic when, with the disbelief in the old gods and the anarchy of moral and social values, the Socratic method made its appearance. But the emancipation from all values, from religious, family, economic and sexual ties has reached an unprecedented climax in the twentieth century. There are good reasons to hope that this time the sociodramatic methods will be integrated into the social and cultural fabric of a new humanity on the march.

1911, THE PSYCHODRAMA OF GOD, THE AXIODRAMA

On an unforgettable day I was moved by a sudden inspiration to accost a preacher who had announced a sermon on "Love", on the way to his church.[†]

I: Say, Sir, do you have servants in your home?

The Preacher: Yes, a few.

I: Do you have father and mother?

Preacher: Certainly, they live with me.

I: Have you children, relatives, friends, acquaintances, do you? Oh, don't get angry with me! Certainly you have them, you have them all and they live with you in the same house, or, at least, nearby. Your sermon—from the moment that you had decided to speak it to the people of your parish, to speak it into the world—did it not act up, did it not begin to cry in your mind, aroused by

[†] The following dialogue is taken from the opus cited above.

a profound sympathy, sympathy for the sad look in the eyes of your servant as he looked at you that morning, or the longing face of your sister; have you already enlightened and saved your own father and mother (have you tried your sermon on them?), on the people closest to you, up to the lowest beggar knocking on your door? No, no I read it in your eyes, you have done nothing (or only vaguely) or at least, you have not entered the situation with the full earnestness required by religious authority. (Oh, man, and the adequate way of behaving was so obvious—if your sermon is to be more than an esthetic concoction.) Say, the “love you have for mankind,” did it not give you any sign?

Preacher: I did not notice anything (perhaps because I was too involved with my goal). But I have always thought this way: keep your sermon to yourself, until you are in the place where it is to be given. I have always thought that the power of a truth grows with the duration of keeping it silent.

I: Oh, you are a confused prophet, Sir. To remain silent in the face of an emergency which requires your help cannot be granted without a special dispensation. Let us better confess, the God of Love (who is, according to you your final authority) did he not come over you, all the days that you passed by your neighbors, did he not pray in your ears, “Hear, hear, why do you still wait with your love which I have given you?” Listen, God is not love, *God is a lover*. The real way of acting is so logical and so obvious!

Preacher: My course was set, I did not notice anything which could stop me.

I: You have not yet started your sermon, all is not yet lost. The love for your fellowmen can still come to your assistance, today. An hour ago you have left your house and you started on the way here. When you went out on the street the porter bowed his head, when you came near the second corner of the block a little boy pleaded to shine your shoes, on your left a lame and tired horse pulled a carriage, on your right there was an old friend who stretched his arm to touch you. But you went on and on, or did your sermon do anything?

Preacher: Nothing.

I: Was there no messenger from Heaven who stepped out from one of the churches which you passed on the way to this place, pleading with you, "Do not run, do not pass, *this is the moment* and the inspiration coming from it and its needs can come to your rescue." Didn't you start out following the man who wanted to teach love? That man, he had the love within him, there is no question, about like one who has the lover of his heart within him, or, still closer, like one who has his failings and sins within him and is unable to get rid of them; and he, the man, he had the love for a very long time until one day he wanted to convince himself whether he really had it. What do you think, would he, in order to put his love to a test, would he have ordered the people into a "distant" place, as far as possible away from him? (Oh, the love of this man loved speed and nearness!) Do you think that in that great and deep urge to help he would have found the time to prepare and write a sermon neatly, or to make long and complicated preparations or even to stammer a short prayer in order to invigorate himself? (Oh, the love of this man loved speed!) Oh, no, Sir, and you know as well as I do, the meaning of the lover and his decision is in the moment of love. It is in the moment, whether he has had before that all the presences which have ever been and all the thousands of years which are going to come—say, if you would know *now* that there is *one* here, outside of the church who would need your sermon very badly—and that one could be *me*—would you still not give it to him—to me—immediately, at once?

Preacher: I would, I would, I would.

The preacher begins the sermon on the street. The encounter is just a warmup. People stop outside instead of going into the church, others come out of the church to listen—and now the real "axio" drama begins.

Axiodrama deals with the activation of religious, ethical and cultural values in spontaneous-dramatic form. The original "content" of psychodrama was axiological. Contrary to the statement in current textbooks, I started with psychodrama from the top down. First it was axiodrama (1918), second came sociodrama (1921); psychodrama and its application to mental disorders was the last stage of the development.

1911-1914, PSYCHIATRIC CLINIC, VIENNA UNIVERSITY, AND
PSYCHOANALYSIS

In my second year of medicine, 1911-1912, I was invited by Professor Wagner von Jauregg, chief of the Psychiatric Clinic of Vienna University, to join his research staff where Dr. Otto Poetzl, later chief of the clinic, engaged me as his "private" assistant. I was little impressed with the routine of the clinic and discontinued my contact with it after more than one year of attendance. It was during that period that I had a personal meeting with Freud, but psychoanalysis, like Kraepelinian psychiatry, left me cold. However, my interest in psychiatry never ceased. I realized later that my quarrel was not with Wagner von Jauregg's malaria therapy, nor with Freud's psychoanalytic doctrine, or at least, only secondarily so, my quarrel was with their behavior as therapeutic "actors". *I did not think that a great healer and therapist would look and act the way Wagner or Freud did.* I visualized the healer as a spontaneous-creative protagonist in the midst of the group. My concept of the physician as a healer, and that of theirs were very far apart. To my mind, persons like Jesus, Buddha, Socrates and Gandhi were doctors and healers; for Freud they were probably patients. It should be remembered that psychoanalysis grew out of the neuropsychiatric world of Charcot and Breuer, whereas the origins of my work go back to the primitive religions and my objectives were the setting up and promoting of a new cultural order. It was the conflict between "analytic" and "operational" methods of therapy. I don't know whether Freud ever got to the study of my work, or whether he took it seriously, as we were worlds apart. I remember that ten years later, in the winter of 1923, when the opening of the *Stegreiftheater* produced quite a sensation in Vienna, Dr. Theodor Reik, at one time secretary of Dr. Freud, told me he would show Dr. Freud my book on this topic. I do not know whether he ever did, nor what Freud's reaction was. One thing is certain: Freud's resistance to "acting out" was a block to the progress of psychotherapy. He did not only fear the acting out of the patient, but if possible, even more the consequences of his *own* acting out. An analysis of Freud might have disclosed that his parting ways with Breuer was not only due to Breuer's dislike of sex, as Freud reports, but

even more to Freud's dislike of acting out in the role of the hypnotist* in the hypnotic trance. It is the same complex which made him hesitant and critical of spontaneity and the play of children; to observe and analyze them, yes; to enter into their play and act with them, no. Freud's psychoanalysis was the natural opponent of play techniques and play psychotherapy, except as they yielded "material" for analysis.

But playing out and acting out are, after all, siblings. At least in the Viennese circle, the public impetus for play techniques and spontaneous play psychotherapy came from my demonstrations in the parks, my Stegreiftheater experiment and my writings. Psychoanalysts took over some of my ideas and absorbed them gradually into their practice and literature. It should be remembered that *they were the greatest barrier to the application of the play principle to therapy in the crucial decade from 1914 to 1924*. Remember also, in connection with this, that Anna Freud and Melanie Klein published their work on play techniques many years later, after I had established a receptive climate for them.

1913, DEFINITION OF PSYCHODRAMA

The most amusing of the early definitions of psychodrama was given to me by a Viennese poet, a chronic alcoholic, as he was walking with me one night up and down the Kärtner Strasse. "Moreno", he exclaimed, "I agree with you, if I have to die I would rather die of *diarrhea* than of *constipation*. As I see it, this is the difference between you and Freud."

1913-1914, GENESIS OF GROUP PSYCHOTHERAPY

Parallel with the idea of acting out, the idea of group psychotherapy developed. It had a different origin. This is how it came about. One afternoon I walked through the Praterstrasse when I encountered a pretty girl, smiling at me. She wore a striking red skirt and white blouse with red ribbons to match it. I had hardly begun to talk to her when a policeman came between us and took her away. I followed and saw them entering a police station. After a while she came out and I asked her what had happened.

* This point came out clearly in a recent discussion with Dr. Wilfred C. Hulse.

"Well," she said, "they told me that we are not permitted to wear such striking clothes as this during the day, as we may attract customers. It is only after sundown that we are allowed to do so."

Vienna had at that time a red light district, a ghetto for prostitutes, in its first borough, located in the famous Am Spittelberg. Here was an entire class of people segregated from the rest of society, not because of their religious or ethnic character, but because of their occupation. They were not acceptable either to the bourgeois or to the Marxist, not even to the criminal. The criminal, after he had stayed his prison sentence is again a free agent; but these women were eternally lost, they had no rights, there were no laws established to protect their interests. This was in 1913 when I began to visit their houses, accompanied by a physician, Dr. Wilhelm Gruen, a specialist in venereal disease and Carl Colbert, the publisher of a Viennese newspaper, *Der Morgen*. These visits were not motivated by the desire to "reform" the girls, nor to "analyze" them. They suspected this at first because the Catholic charities in Vienna had frequently tried to intervene in their lives. Nor was I trying to find among them what one may call the "charismatic prostitute". I had in mind that what La-Salle and Marx had done for the working class, leaving aside the revolutionary aspect of the labor movement, was to make the workers respectable, to give the working man dignity; to organize them into labor unions in order to raise the status of the entire class. Aside from the anticipated economic achievements it was accompanied by ethical achievements. I had in mind that perhaps something similar could be done for the prostitute. I suspected to begin with that the "therapeutic" aspect would be here far more important than the economic, because the prostitutes had been stigmatized as despicable sinners and unworthy people for so long in our civilization that they had come to accept this as an unalterable fact. It was easier to help the working class. Although manual labor had been and still is considered by some people as a sign of vulgarity it was still comparatively easy to give it, with the aid of skillful propaganda, the emblems of service and dignity.

But we were optimistic and started to meet groups of eight to ten girls, two or three times a week in their houses. It was

during the afternoon when the Viennese had what is called "Jauze"; it is the counterpart of the English five o'clock tea. Coffee and cake were served around a table. The conferences at first simply dealt with everyday incidents which the girls encountered, being caught by a policeman because of wearing too provocative a dress, being put into jail because of false accusations of a client, having a venereal disease but being unable to find a hospital to admit her, becoming pregnant and giving birth to a baby but having to hide the child before the world under a different name and hiding her own identity as the mother towards the child. At first they warmed up very slowly, fearful of persecution, but when they saw the purpose and some benefit for them, they began to open up more. They first noticed superficial results, for example, we were able to get a lawyer for them to represent them in court, a doctor to treat them and a hospital to admit them. But gradually they recognized the deeper value of the meetings, that they could help each other. The girls volunteered to pay a few dimes a week towards the expenses of these meetings as well as towards some savings for emergencies like sickness and unemployment or old age. From the outside it looked like a prostitutes' "union." But we began to see then that "one individual could become a therapeutic agent of the other" and the potentialities of a group psychotherapy on the reality level crystallized in our mind (see my autobiographic novel "Der Königsroman", p. 131-138).

Four aspects of group psychotherapy struck me already then; they became later the cornerstones of all forms of group psychotherapy: 1) the autonomy of the group; 2) that there is a group structure and the need for knowing more about it, group diagnosis as a preliminary to group psychotherapy; 3) the problem of collectivity; prostitution represents a collective order with patterns of behavior, roles and mores which colors the situation independent from the private participants and the local group; 4) the problem of the anonymity. When a client is treated within the framework of individual therapy, he is alone with the doctor, his ego is the only focus, he has a name, his psyche is highly valued private property. But in group psychotherapy there is a tendency towards anonymity of membership, the boundaries between the egos weaken, the group as a whole becomes the important thing.

1914, INVITATION TO A MEETING, GENESIS OF THE THEORY OF
INTERPERSONAL RELATIONS

My debut as a writer was, instead of a book, an "Invitation to a Meeting". The face to face meeting with people is naive and direct but the book starts an endless dilemma by separating the person of the writer from the person of the reader. So I found a third alternative, an interpersonal technique of communication, the book as an Invitation to a Meeting, supplanting the book as a conserve. It is then when I coined what is perhaps the simplest definition of interpersonal relations: "Ein Gang zu zwei: Auge vor Auge, Mund vor Mund. Und wenn Du mir nah bist will ich Dir die Augen aus den Höhlen reissen un an Stelle der Meinen setzen. Und Du wirst meine Augen aus der Höhlen reissen und an Stelle der Deinen setzen. Dann werde ich Dich mit den Deinen, und Du wirst mich mit meinen Augen anschauen." "A meeting of two: eye to eye, face to face. And when you are near I will tear your eyes out and place them instead of mine, and you will tear my eyes out and will place them instead of yours, then I will look at you with your eyes and you will look at me with mine."

In some circles the opinion prevails that the theory of interpersonal relations is a product of psychiatric thinking. Actually, psychiatry arrived as a poor third in this race. First came religious and ethical thinking which provided the most rigorous operational definition of interpersonal relations. It can be found, for instance, in my *Dialogues* (1918); its influence was considerable in literary circles, as can be noticed particularly in Martin Buber's *I and Thou* (1924).^{*} Second came sociological thinking, Simmel, von Wiese, Thomas, Znaniecki[†] and others, culminating in sociometry; psychiatry came last.

The theory of interpersonal relations is born of religion.

^{*} Martin Buber was acquainted with my early work; he was a contributor to *Daimon*, a monthly magazine of which I was the editor, 1918-1920. It was published in Vienna by the Anzengruber Verlag.

[†] It might make an interesting Ph.D. thesis to compare "the situational approach" as defined in my *Dialogues* and *Speeches* with the position taken by Thomas and Znaniecki in *The Polish Peasant*.

1915-1917, THE "IDEA" OF MITTERNDORF*

The first sociometric plan of a population was constructed by me between 1915 and 1918. The place of study was an Italian colony with a population of more than ten thousand. It was during World War I when great numbers of peasants, Austrian citizens of Italian extraction, fleeing from their homes in southern Tyrol before the oncoming Italian army, were transplanted by the Austrian government to a place near Mitterndorf in close proximity to Vienna. The community consisted of cottage dwellings each holding several families and at the head of each cottage was a *capo di baracca*, a man who was responsible for the welfare of that group. The cost of minimum maintenance was supplied by the Austrian government and, in addition, a shoe factory was established employing at times one to two thousand workers. The government was concerned with three problems and reflected them into the planning: safety from the enemy, sanitation, and subsistence. However, social and psychological planning was not considered, not even conceived of. A staff of which I was a member was appointed by the government to supervise the problem of sanitation in the new community. In this position and later as superintendent of the children's hospital established within it, I had the opportunity to study this community from its earliest beginning to its final dissolution three years later when at the end of the war the colonists returned to their homes in Tyrol. During this period a whole community life developed. Step by step, hospitals, schools, church, theater, department stores, shops, industry, social clubs, newspaper, came into function. Yet, in the face of an attempt of the government to meet the emergency and notwithstanding the establishment of practically all the outward signs of a community life, there was great unhappiness and friction among the population. Whole villages of wine growers were transplanted into a suburban industrial district, mountaineers from Tyrol into a flat spot of country near Vienna. They were thrown together unselected, unaccustomed to the environment, unadjusted within themselves. I studied the psychological currents they developed around varying criteria—the criterion

* See Frontispiece, letter to the Department of the Interior of the Austro-Hungarian Monarchy.

of nationality, of politics, of sex, of staff versus colonists, and so on—and considered them as the chief contributory sources of the flagrant maladjustments and disturbances. It was through this experience that the idea of a sociometrically planned community began to occupy me.

1918-1920, PSYCHIATRY AND RELIGION

The greatest blunder which Freud made was to mix the idea of the Godhead with the father image of the human family. Instead of following the trail which Spinoza blazed he took the anthropomorphic concept of God at its face value and analyzed it as naively as it was presented to him. He repeated on the analytic level the mistake of infantile religionists, in reverse.

My double effort to broaden the concept of psychiatry beyond its medical and sociological limitations and to broaden the concept of religion beyond its historical and theological limitations found expression in my books of that period. To advance a rapprochement between religion and psychiatry around 1918 was an extravagant idea, repugnant to theologians as well as scientists. I was a lone prophet, formulating my position long before Jung, Jaspers and others, but there are many today following my tune.

The burning problem now, as it was then, is the combination of two variables, the healer and an adequate theory or method. Therapeutic theories and methods without the physician who embodies them, able to grasp and to practice them, are meaningless and dead. A healer without adequate theories and methods is like a painter without arms. Looking at secular psychiatry of 1950 from this vantage point one can predict its evolution, the ascendance of therapeutic doctors influencing the conduct of larger and larger masses. It will take a course for which there are parallels in the history of previous cultures. The Hebrew culture is an example par excellence, with its ascendance of healers, prophets and saviours from generation to generation, warming one another up to greater and greater deeds, from Moses over Joshua, David, with hundreds of in-between performers, up to Jesus of Nazareth, the Christ. The warming up process established a temporal chain reaction, a crescendo of effort and accomplishment. In the development of psychiatry of our time the

less intellectual but more effective Anton Mesmer may get a better ranking than many of the more profound intellectual healers. Mahatma Gandhi may rank among the doctors and in retrospect Freud may lose a great deal of the reputation he has, which was largely built upon his methodical sagacity, but little upon his ability as a therapeutic performer. *Our epoch, too, will reach a climax with a scientific Christ ending the chain.*

1924, PSYCHOANALYSIS, THE DOCTRINE OF MEDIOCRITY

“Es war die Psychoanalyse, welche mit dem Kampf aus dem Hinterhalt gegen das Genie begonnen hat, um ihm seine Komplexe vorzuhalten. Sie ist die Rache des Normalkopfes: nach der Entgötterung der Natur und der Gesellschaft die Entgötterung des Geistes. Da jedermann Komplexe hat und das Schaffen aus Komplexen besteht, ist jeder ein Mann. Es gibt nur Genies. Der Eine gibt sich Mühe es zu sein, der Andere nicht. Nun fallen die Philister offen über Simson her: es ist nur der Komplex, die langen Haare. Jeder kann sich Haare wachsen lassen.” “It was the influence of psychoanalysis which waged a war from the rear against all genius in order to reproach him with his complexes. Psychoanalysis—if one looks at it from a high historical plane—is the vengeance of mediocrity: after the devaluation of nature and the devaluation of society, the devaluation of the spirit. As everyone has complexes and as creativity consists of complexes every man is a genius. There are only geniuses. One tries to be one, the other doesn't. Now the Philistines dare attack Samson openly and kill him. As there are no heroes he is not a hero, what holds him up and what makes him strong is only the complex, the long hair. Everyone can let his hair grow long.”*

1921-1923, THE “IDEA” OF DAS STEGREIFTHEATER

The Stegreiftheater itself had one objective: to let the collective of spontaneous-creative actors emerge in the midst of the group, but, instead of in a religious climate, in the climate of a scientific age.

My Stegreiftheater book had three aims: 1) To define spon-

* See *Rede vor dem Richter*, Gustav Kiepenheuer Verlag, Berlin, 1925, p. 21, to be contained in *The Philosophy of the Here and Now*.

taneity, especially in its relation to creativity, 2) to explore the possibilities of interpersonal measurement, and 3) to experiment with the spontaneous interaction of small groups. As I had no precedent in this I had to introduce many new terms which made the book difficult reading.

Compared with the depth of my religious ideas my scientific discoveries were rather simple and naive. I am usually credited with the introduction of interpersonal measurement and apparently at the time when the Stegreiftheater went to press nobody else had tried his hands at this problem. Sociometric measurement started with things like this: how much "time" does an actor A spend with another actor B? He may spend half as much time with another actor C and three times as much time with another actor D. Or, what is the "spatial distance," near or far, in inches, feet or meters, between actors A, B, C and D in the course of the same situation and what effect have nearness or distance upon behavior and acting? Or, how frequently do two actors appear simultaneously in a scene and how frequently do they exit together? (Points of coordination.) What is the duration of a single act, of a co-act, of a whole scene, of a whole drama? I constructed a time clock and an interaction diagram to record interpersonal time and space frequencies so that I could measure them. When dealing with time and space relations I could use the standardized time and space units and so the counting seemed to be precise and also meaningful. I started with the premise that time and space are the dearest properties within the social universe, for instance, how much time does A spend with B and how near in space is A to B. I began then to count items, things and events for which there was no unit of measurement. I just took a chance on it, thinking that it may find a meaning afterwards, when the sample would be large enough. I began to count the number of words a person A speaks towards a person B and how many words he received from B in return during their mutually allotted time. I began to establish the word volumes of individuals in various situations and interactions with other individuals. I began to count the number of roles in which they act and which individuals they chose as partners. As it turned out after twenty-five years of research, the important thing was that I actually counted them and that I had the notion that there must

be some significance to these figures. It is this which gradually laid the scientific foundation of sociometry and interaction research.

It was by no means an accident which led into this job of counting and measuring interpersonal relations; it was due to the task of running a Theatre of Spontaneity. Its premise was that there should be exclusively productions of a hundred percent spontaneity, that is, there should be no rehearsal whatsoever, that the actors should not be prepared for each other and that their spontaneous actions and productions should be an end in themselves, by no means material for a finished product, later to be memorized or conserved like a written play. The crutches and memno-techniques of the legitimate theatre and the Comedia del Arte drama proved to be barriers rather than aids. It was logical that I should look for some natural principles which are intrinsic in the spontaneous interactions between actors. I organized, therefore, a laboratory of spontaneity research (Stegreif Forschung). As long as a play is written and rehearsed it has little meaning to measure the physical distance between one actor and another, or the number of seconds which they spend together, or the number of words they throw at each other, or the number of roles in which they interact or the choices they make for partners in a scene, simply *because all this is already pre-established and proscribed in advance* by playwright, coach and dramatist. There is no purpose, therefore, in measuring such items meticulously. But in a theater of full, uncensored spontaneity, the spatial and temporal affinity between actors promised to give the director clues as to their adequacy or inadequacy of performance. *It might be fruitful, I thought, to study spontaneous interactions as long as the actors remained spontaneous.* I discovered soon after that the less fictitious these interactions were for the actors, the more personally and privately they were involved in these roles and interactions, the more meaningful also became the counting of seconds, inches, words and choices. The more the Theatre of Spontaneity became a group theatre of the private worlds of actual people, the more rewarding it became for spontaneity research. Interaction researchers who do not start with an account of the spontaneous-creative implications upon their experimental designs are like architects who make one believe that a house can be built without a foundation.

1919, THE DILEMMA OF ANONYMITY AND THE "PATERNITY SYNDROME"

All my books (nine) published between 1919 and 1925, were anonymous. The greatest plague of the twentieth century is its worship of the ego, its "egolatry". Anonymity is the natural reaction against it. The natural state of genius is anonymity. It is clear that the more he wants to keep his babies for himself, the more he declares his ownership of them, the more he gets involved with their fate; the more time and energy he will give to these pursuits the less creative and productive he will become. But the difficulty is that anonymity is a form of creative behavior for which individuals are only rarely equipped. If an individual is not able to maintain it unselfishly and in complete serenity, it is more ethical to give anonymity up, assume a name, claim paternity and fight for his babies to the limit. Here becomes visible the conflict between the "creator" and the "father". The creator is only interested in his creations, not in their possession; anonymity is his natural form of operation. The father is possessive, protective, defending his children against all comers; his natural condition is to suffer from a "paternity syndrome". Genius has little prestige in our culture, it all goes to the promoter of ideas; we are worshippers of energy. My anonymity experiment hardly made an impression upon our "name-ridden" world. A man without a name does not count. *Anonymity has no status*; it is not recognized or appreciated as a positive sign of unconcerned, naive genius, but it is immediately classified as a "withdrawal" from the reality of the common man.

But when I turned from religious to scientific writing the first thing I dropped was anonymity and began to use a name. The change from anonymity of authorship to a name had profound connotations for my conduct. The Words of the Father I wrote with red ink on the walls of an Austrian castle. The publisher had to send two secretaries to decipher and copy the sayings. WHO SHALL SURVIVE? I dictated into a typewriter.

A name is a form of capital and links the inventions and works of an author to proprietary, priority and other legal rights. Anonymity, on the other hand, begins and ends with the assump-

tion that a work created by an individual or a group is not the property of anyone in particular, it belongs to universality. I was literally playing two roles, the role of a religionist and the role of a scientist. I felt like writing a musical theme in two different keys; but it was not what is called a conversion, the two roles ran parallel, one complementing the other. This was in accord with my position that science and religion are like the two ends of a stick. There is no conflict between them. Because of the kind of universe we live in, science is dialectically limited and it may never attain final clarity and encompassing knowledge. The more science advances the larger are the number of mysteries which emerge; they can never catch up with each other. When a child is born from a woman's womb, that is a mystery. When it will be born from a chemical test tube the mystery will not be lesser although we may have created all the mechanics from beginning to end.

This requires an explanation: nature has given us a master model for creativity—the way a woman conceives and carries a baby *alone*, up to delivery; as soon as the infant is born, *other* individuals may step in to help. But nature did not arrange that *several* women should *share* in the conception and pregnancy of an infant, although it is feasible for society to arrange that several women share in its upbringing. This defines only the vehicle and the operation which nature has established for human fertility and reproductivity; it does not change the fact that the whole biological collective of the human race contributes to the conception of every infant. It appears reasonable that this master model would have parallels also in other dimensions of creativity, as in the case of geniuses of the arts and sciences whose behavior resembles, in the acute phases of great productivity, the behavior of pregnant women. In our own civilization efforts have been made to counteract the special position which the physical mother and the “cultural mother”—as a genius could be called—hold in our society. The nun is an illustration of how the physical mother is counteracted, she becomes the mother of all children, sharing them with all physical mothers. This, by the way, may become a grave problem in the future, should ever physical motherhood be the exclusive right of a privileged class. On the cultural level too, many efforts have been made to counteract the special position of genius; one method is well known as the scientific

method, which is the organized revolt of mediocrity against genius "in the name of science". Another method, little understood, is the method of anonymity. Anonymity is the "masochistic" solution of this conflict by genius himself. As the bone of contention is the creative product which endows its creator with a status of superiority and exclusiveness, the creative genius can renounce the finished product as his property and give it away, so to speak, so that it can become the property of all. If there is no name attached to a given product no ownership and no paternity is claimed. The origin of an idea is removed from an individual creator and is returned to universality.

1925, USA AND SOVIET RUSSIA

The German reaction to *The Words of the Father* was unsatisfactory and the Stegreiftheater movement, although it had begun to take root in Bavarian and Prussian cities, moved too slowly for my expectancy. I saw a long and difficult struggle ahead. The question was where to go, east or west? The east of Europe was dominated by Soviet communism which was by 1924 firmly entrenched. It offered little hope for a new idea unless I was willing to accept the given structure of Soviet society and to bore from within. I decided against Soviet Russia and in favor of the United States for the following reasons. All my inspirations for my methods and techniques have come directly or indirectly from my idea of the Godhead and from the principle of his genesis. My God hypothesis has made me enormously productive; all conclusions which I drew from it and translated into scientific terms have been correct. *I had no reason to assume that the original hypothesis itself is false just because it is not popular with scientists.* My God idea, out of which the idea of the sociometric system grew, was therefore ultimately the greatest barrier to my going to Russia, accepting the Soviet doctrine and, so to speak, not letting my left hand know what my right hand does. I was trying for a mankind which is built after the God of the first day. I preferred to be the midwife to an incoherent, confused, democratic way of life, then the commissar of a highly organized world. It is my God book which turned me to the United States.

1925, RELIGION'S HERITAGE TO SCIENCE

The quantitative exactness of sociometry can be equal, if not superior, to the quantitative exactness of the natural sciences.

Looking for a model for a scientifically sound social system man has tried in vain to imitate the physical and biological sciences. Stars and planets, rats and guinea pigs, are not equivalents of man. Man has tried to look for a model among the "automatic" sciences. But cultural conserves, calculating machines and robots are also not equivalents of man. The only approaches which he has neglected to use are the *models derived from religious systems*, perhaps because science owes its own existence and power to their decadence and disappearance; it is fearful of looking back. But it is from religious systems that sociometry has drawn its chief inspiration.

We are rarely conscious that the role of the objective scientist has been modeled after the idea of the impartial Godhead. As God's pronouncements are expected to have superpersonal validity, also the scientist's pronouncements are expected to be impersonal. He must not wish the sun to gravitate around the earth nor the earth around the moon; he must not wish the universe to last for ever or to perish by sundown. He must not wish only such people to be born who will be kind and just, he must not wish only such people to be born who will be ugly and stupid. He must not wish some races to multiply themselves and to live in comfort, and others to live in distress and perish. He is objective, neutral, uninvolved, he is the impartial recorder of events as they emerge.

This all embracing and impartial Godhead, the God of Spinoza, has stood model for the physical scientist and stood well, but he has not been adequate for the needs of the social scientist, at least not entirely. As long as the social scientist was a pedantic actuary and demographer, a vital statistician and naive economist, the model passed. But as soon as he became concerned with the We's and collectivities of actors the model needed an extension. It is significant, it seems to me, that the need for this extension appeared first on the religious level, long before the scientific operators became aware of it. It was in my philosophical *Dialogues of the Here and Now* and later in my *Words of the Father* that I added a new dimension to the Godhead, a dimension which un-

consciously was always there but which has never been properly spelled out, theoretically the dimension of the "I" or God in the "*first*" person (in contrast to the "Thou" God of the Christian, and to the "He" God of the Mosaic tradition), the dimension of subjectivity, the dimension of the actor and creator, of spontaneity and creativity. The dimension of subjectivity does not deprive the Godhead of the objectivity, neutrality and impartiality of the old model but it makes the path free for the exercise of cosmic empathy, love and intimate participation, in other words, for the psychodrama of God.

In the Christian dogma the tendency has been to relegate the subjectivity to the Son and the objectivity to the Father but from the point of view of ontological speculations this division has made endless trouble; ever since it was introduced it has been the cause and excuse for anthropomorphizing the divinity and the masquerading of man as God.

Well, it is this new model of an "operational" Godhead announced in the *Words of the Father* (1920) which was my stairway to the sociometric system, developed for an apparently entirely different objective—the search for a model of scientific objectivity in the social sciences.

The greatest model of "objectivity" man has ever conceived was the idea of the Godhead, a being who knows and feels with the universe because he created it, a being unlimited in his ability to penetrate all facets of the universe and still entirely free of "bias".

IV

1925, THE UNITED STATES

When I arrived in the New York harbor I was asked by a newspaper reporter what I thought of American sociology. I answered: "The only American sociologist I can think of is Walt Whitman."

I brought with me the three vehicles I had invented, which have done more than anything else to inaugurate and spread sociometry, a characteristically American sociology, in the United States: *the psychodrama stage, the interactional sociogram and a magnetic*

sound recording device.* Each led to a revolution of concept—the psychodrama stage by surpassing the psychoanalytic couch led to the acting out techniques, the theory of action and the audience participation of group psychotherapy; the sociogram to systematic small group research; the sound recording device to a method of recording case material and playback, to a new objectivity, accuracy and completeness of data.

I threw myself immediately into feverish activity, trying to gain support, and found many helpers who, unselfishly and deeply enthused, set about to give my ideas a place in the sun. But I had made my lot extremely difficult by the paternity of three offsprings, sociometry, group psychotherapy and psychodrama.

**1928-1929, EXPERIMENTS WITH SPONTANEITY AND ROLEPLAYING
AT MT. SINAI HOSPITAL, NEW YORK AND THE IMPROMPTU
GROUP THEATRE**

Upon the invitation of the pediatrician, Dr. Bela Schick of Mt. Sinai Hospital I demonstrated during May, 1928, in the Department of Pediatrics before a gathering of physicians and nurses the application of impromptu techniques to children's problems. Looking backward, this modest event may well be recorded as the first presentation of roleplaying techniques at a medical institution in America. I continued the work in the Mental Hygiene Clinic of the Hospital, in collaboration with Dr. Ira S. Wile.

Simultaneously, Beatrice Beecher, the granddaughter of Henry Ward Beecher, launched the first application of psychodramatic techniques to the Plymouth Church Sunday School.†

The high point of this period was the opening of the Impromptu Group Theatre in Carnegie Hall, where, between 1929 and 1931 "open" sessions were regularly conducted three times weekly. The outstanding characteristics of these sessions were: 1) they were *open*, that is, problems which the audience members raised were presented on the stage before them, personal and social conflicts which heretofore were hidden in a consultation office were brought out into the open; and 2) spontaneous participation of the audience.‡

* See *The New York Times*, July 3, 1925.

† See *The New York Times*, February, 1929.

‡ See *Impromptu Journal*, 1930-1931.

1926-1935, THE HELPERS

The sociometric movement had, during its pioneering period in the USA, six helpers: William H. Bridge, E. Stagg Whitin, Helen H. Jennings, William Alanson White, Fanny French Morse and Gardner Murphy. Bridge, a professor of speech at Hunter College, was the first to teach psychodrama in his classes and other places. Whitin established the support of the Departments of Correction and Social Welfare; without him the Hudson and Brooklyn experiments would not have come into existence. Jennings assisted me in the completion of the research; without her it might have been delayed indefinitely. Her personality as well as her talents have exercised a decisive influence upon the development of sociometry. Without White psychiatrists would not have given my ideas a respectful hearing. Without Mrs. Morse the ongoing experiment in Hudson might have been nipped in the bud by her Board of Visitors. Without Murphy the acceptance of sociometry by social scientists in the colleges and universities might have been delayed by a decade.

1931, THE PASSING OF THE PSYCHOANALYTIC SYSTEM, I

On June 6, 1931, anyone living in New York,* Washington,* Chicago,* Los Angeles,* Toronto,* Montreal,* London,* or Paris,* reading his newspaper was probably startled by headlines referring to Abraham Lincoln as a schizoid-manic personality, as psychoanalyzed by Dr. A. Brill and further by the following item:

“An American by Adoption Rose to the Defense of a Dead President of the United States at Today’s Session of the American Psychiatric Association’s Convention in the Royal York. Dr. Brill’s critic was Dr. J. L. Moreno, New York Psychiatrist, Formerly of Vienna.”

It was at the Toronto meeting of the American Psychiatric Association that I came to the rescue of the memorable late President of the United States. I had just been elected a member of the American Psychiatric Association and walked proudly through the aisles of the beautiful Royal York Hotel when the

* See *New York Times*, *Washington Post*, *Chicago Daily Tribune*, *Los Angeles Times*, *Toronto Evening Telegram*, *Canadian Star*, *London Times*, *Le-Matin* of that date.

late Dr. Walter M. English, then President of the Association approached me and said something like this: "Dr. Moreno, you may have heard that Dr. Brill is reading a paper on 'Abraham Lincoln as a Humorist'; he asked me to invite you to be its discussant." I was taken aback and muttered, "I feel greatly honored to be asked by Dr. Brill but I never had the pleasure of meeting him and besides, I wonder whether I could meet his expectations. Furthermore, I am not a psychoanalyst (pause)—and I don't know anything to speak of about Lincoln." Dr. English nodded assurance and I walked on, my chest swelling with a narcissistic glow. I was but a few steps away when another distinguished Fellow of the Association, Dr. Samuel Hamilton, Chairman of the Program Committee, interceded. I thought: "What's going on here? Is Brill short of a discussant? Will I get into trouble? Why pick on me? I see so many distinguished psychoanalysts here." Just then Brill walked by and this is how he and I became acquainted. Brill handed me a copy of his manuscript and said: "I have heard fine things about your work. I am glad that you are willing to discuss my paper." Shortly afterwards Dr. English opened the meeting.

The joint session with the American Psychoanalytic Association convened at nine-thirty o'clock, President English presiding. President English: "I have great pleasure in calling for the paper on 'Abraham Lincoln as A Humorist' by A. A. Brill, of New York." Dr. Brill read his paper. President English: "Ladies and gentlemen, this was such an interesting paper that I was loathe to ask Dr. Brill to stop. It is now before you for discussion. From its presentation I see nothing of which we can complain." Dr. Brill's paper was discussed by Dr. Jacob L. Moreno, and by Dr. Brill in closing.*

The auditorium was packed to its farthest corners when Brill began to read. As soon as he and Dr. English ended I stepped upon the platform and said:

"Mr. President, Ladies and Gentlemen: I have listened carefully but I am not sure now whether Dr. Brill's paper was a paper on Lincoln or on psychoanalysis. The title of his paper is 'Abraham Lincoln as a Humorist.' It might just as well have been called

* As reported in the *American Journal of Psychiatry*, Vol. XI (old series: 88), p. 362, July 1931.

'Dr. Brill as a Humorist.' It is not fair to psychoanalyze the personality of a man now dead, as you have to do it without his consent. One must have therefore a *special* reason. Dr. Brill's conclusions are based on the statement of friends and contemporaries who may have had all kinds of motives to relate all kinds of stories about Lincoln. Had a contemporary psychiatrist made a study of Lincoln, Dr. Brill would have been justified to some extent in accepting the findings. But as no scientific study of the great American emancipator has been made during his lifetime there was no justification for any attempt to analyze his personality from what is related about him by laymen.

"It is difficult to understand how the dead Lincoln could have made a 'transference' to the living Brill. It is obvious, however, that Brill has developed an extraordinary transference to Lincoln. The unconscious psychodynamics which become "available in the course of analysis" are those of Brill, only *they* are "here and now."

"Brill has attempted to prove that Lincoln's coarse and vulgar humor was unconsciously determined, a form of libidinal sublimation. My opinions have developed by means of a different method—the psychodrama. They are based on the study of persons placed in improvised situations. Those persons respond spontaneously to a new situation, much as an actor or actress on the stage of life, and cultivate a personality such as is deemed by them to be most suitable for the circumstances and which best will meet the purpose they are endeavoring to serve. In a man of Lincoln's genius an enormous amount of creativity must have gone into the reorganization of the psychic material emerging from his private person. The more unusual the character and the circumstances, the more dangerous it is to apply an "accepted formula."

"The psychoanalytic method has not developed sufficiently to the point where it could attempt an analysis of Lincoln. Not only had no expert in psychiatry first hand knowledge of Lincoln when he was alive but a genius of his type was capable of *playing roles* and saying many things which could be explained in a multitude of ways."*

* The newspaper accounts of the Lincoln incident were of an unusual accuracy. I found most of my speech quoted almost verbatim when comparing them with my notes.

Brill was apparently nonplussed, taken by surprise and replied to my criticism: "In a histrionic manner Dr. Moreno tries to show that we don't know anything about anybody who is dead. We know a lot about Lincoln. If his friends and contemporaries tell us about him we have a right to accept what they say as facts."†

Biographic evaluation of historic personalities, is of course, not new; it is as old as the writing of history. But psychoanalysis claims that it has added the novel element of being able to penetrate the intimate dynamics of a dead hero by using the phenomena of his recorded life as clues. It is obvious that even in a strictly psychoanalytic sense the analysis of a dead person is symbolic rather than actual. According to psychoanalytic tenets an actual analysis is not possible without display of "transference" and "resistance" of the subject. Neither transference nor resistance can be expected from a dead person. A superficial student and particularly a layman may easily be carried away by suggestive writings and might take a symbolic analysis for an actual one. Brill, in his analysis of Lincoln, followed in the footsteps of his master, Freud, who tried something similar with DaVinci and Moses. I believe that in most cases of this type it would be more interesting and more resourceful to analyze the analyst instead of the dead analysand, and this is what I could be doing here with Brill. Similarly, it would have been more interesting to find out why Freud picked on Moses and to analyze Freud as to his own involvements in Moses rather than to follow Freud in his analysis of Moses. It is from the analysis of the psychoanalyst *in situ*, when he is involved in the process of analyzing someone else who is dead that one of the most important contributions of *Psychodramatic* theory developed—the subjectification of the apparently objective investigator. It stands to reason that if Brill, instead of keeping himself, his own private dynamics out of his analysis of Lincoln, would have included himself into it a scientific paper might have evolved which could have been a true milestone in the development of psychoanalysis. But he excluded himself from Lincoln just as Freud excluded himself from Moses. Thus it became my job to return Lincoln into Brill and metaphorically speaking, Moses into Freud. This is one of the basic limitations

† Quoted verbatim from the Toronto *Evening Star*, June 5, 1931.

of Freud's psychoanalytic theory in dealing with personality problems of this type.

After the formal meeting was over I found myself surrounded by a number of members who bombarded me with questions. What did I mean, for instance, by the statement that Brill had developed an "extraordinary transference" to Lincoln?

"Yes," I admitted, "there are four puzzling questions. First, why did he pick on a dead person instead of on a living one? Second, why did he pick on an illustrious, outstanding character and particularly why on an American? Third, why did he pick on Abraham Lincoln? Fourth, why did he choose *me* to discuss his hypothesis?"

The first question is comparatively easy to answer. It is easier to analyze a dead man, that is, easier for the analyst. He is not exposed to any 'counter spontaneity.' And besides, he might never have had a chance to analyze Lincoln would he be alive. But there is another angle. There are millions of people who are dead. If he would have picked on an anonymous, entirely forgotten man offering a similar syndrome, the analytic results might have been equally significant. This brings us to the answer of the second question. It *had* to be an illustrious, outstanding character, because the paper was apparently intended to give psychoanalysis great publicity to document before the world that psychoanalysis has the intellectual power of coping with creative geniuses and the most outstanding individuals of history and put them in their proper places. But why did it have to be an American? There were many other outstanding men in recent history who should have been good schizomaniac material, Nikolai Lenin, Emperor Franz Joseph, King Edward V. Obviously Brill picked on an American because he was personally involved with the American people. Very possibly America was the country he had set out to conquer for psychoanalysis and for himself; he may have wanted to shake them out of the dream of being the greatest nation in the world and their leaders as the best. But why did he not pick on some of the other great Americans: George Washington, Benjamin Franklin, Thomas Jefferson, Theodore Roosevelt? Why exactly did he pick on Lincoln? This brings us to the fourth question. It is more difficult to answer. I may

be able to, if you will permit me to psychoanalyze Dr. Brill himself. I am in a better position towards Brill than he was towards Lincoln. Brill is still living. Like towards Lincoln, he must have had an enormous transference towards me otherwise he would not have chosen me, a total stranger, to discuss his paper. Moreover, I saw him in action (he never saw Lincoln). Particularly significant was the situation in which I placed him after my comments. He was taken by surprise and so he was like a subject in a psychodramatic test. He had to counter spontaneously, he had to improvise his comments without preparation. The first remark he made was about my "histrionic" manner. This is interesting; he had been accused of being histrionic himself because of the publicity which he had given to the paper about Lincoln many months in advance. He was building himself up to appear before the world, the American public, in a great role, the role of the psychoanalytic emancipator and liberator. Seeing him in action, I could not help comparing him with Lincoln, the object of his analysis. He was little more than five feet tall. Lincoln was a giant, way above six feet. Both have a beard and both have the first name, Abe. I imagine that when Brill came to this country as a little boy he soon heard about his namesake, the great American emancipator and he felt very warm towards him. He became his idol. He thought that maybe some day he would be like Lincoln and President of the United States. But sometime after he must have been disillusioned when he heard that this honor is not available to a foreign-born. The seed for a conflict with Lincoln was beginning to take root but it remained dormant. Either he had to accept that there was a greater Abe than himself or he had to find some counter measure to overcome his own weakness. Many years later, when he became a student of medicine a solution offered itself. He came to Vienna, met Freud and became acquainted with psychoanalysis. Now he had found a weapon by means of which he could fight all the prophets and geniuses, all the superior people of history, especially a particular one. He returned to this country, rapidly rose to influence and became the outstanding exponent of psychoanalysis, the Freud of America. Brill had waited patiently for a chance to measure up to that other Abe and today, in this hall, before all of us, he

had this opportunity—The President of the American Psychoanalytic Society versus the President of the United States. Of course, I am giving you this analysis in a preliminary form and with all humility that it may require further investigation and extension.

Last but not least, the question must be answered: Why did he choose me to discuss his paper? It was, to say the least, an irrational choice. Irrational it was, in a psychoanalytic, but not in a sociometric sense. Brill and I were, as we sociometrists call it, in the "networks," although strangers, closely related. We had many emotional acquaintances in common, psychoanalysts, psychiatrists and others, with numerous links between them. These links are channels of influence and communication preparing the individual target for important decisions. These "tele" factors work on an individual although he is hardly conscious of the complex network which it forms around him. Why did he choose as a discussant one of the opponents of psychoanalysis? Why did he choose an immigrant, like himself? Why did he not choose a native American? Why didn't he choose an ignoramus who would make a good figure in the newspapers? Why did he choose me who knows psychoanalytic tactics inside out? For Brill the reading of this paper was a climax of his career. Why did he make a slip at such a critical moment? What are the jokes and tales of Lincoln compared with this joker? I do not recall any such slip which Lincoln made in critical situations of his own, manifesting so little insight as Brill manifested today. I was already in Vienna a blunt critic of psychoanalysis. Brill must have known of my radical theories about the group and the therapeutic theatre. I was dangerous, not as much because I knew its limitations but particularly because I had developed methods which the future will, as I claimed, prove to be superior. My answer as to why Brill slipped is: he was not quite sure that psychoanalysis is able to analyze geniuses of the calibre of Abraham Lincoln; he was not quite sure that he, as an individual—an immigrant—was the one to deliver the blow to American autism and he was also not quite sure that the American people will accept him, Abraham Brill, the deliverer, as an idol instead of Lincoln. He feared that he was playing a losing game. He felt guilty and Freud was not around to help him and in a masochistic mood, with

a brazen gesture he called upon the very man whose ways of production and presentation should have been as mysterious to him as those of Abraham Lincoln. He called upon myself. Like the dying Hamlet he called Fortinbras to take over.

It would be only fair for me to tell you also why I accepted Brill's invitation. I had two reasons. The one was that Brill represented psychoanalysis which I esteemed highly but considered as my natural opponent. The second reason was my profound sympathy for Abraham Lincoln. I felt as if I took his place, like an auxiliary ego in a psychodramatic session. As I spoke, I felt as though, in a way, Lincoln spoke through me. He, the defenseless dead, defended himself. He appealed to me as a psychodramatic character in real life, a producer of ideas and actions. The psychodrama of his own life and the sociodrama of the American continent were merging on that morning of June 5th, at the Hotel Royal York, into one great, indissoluble event. The history of the last twenty years has made the Brill-Lincoln incident symbolic.

I had hardly returned to New York when I got a telephone call; it was from the president of the Pathe News. "I have read what you said about Abraham Lincoln, in the *New York Times* and other newspapers. Your statements have aroused great public interest and I would appreciate if you would permit Pathe News to interview you for its forthcoming newsreel." I answered, "I'm sorry, but my comments were given at a medical meeting. I have nothing further to say." "Well," said the spokesman for Pathe News, "that's too bad, because it was not only a scientific paper. The honor of a great American figure, which you defended so eloquently, was at stake. Besides" he added, "Dr. Brill has accepted to make a newsreel for us." "Well," I said rapidly, "that changes the situation. Whatever Brill does against Lincoln, I will do for him." And so as many people may remember, in the course of the summer of 1931 moving picture audiences could see and hear Brill getting up and trying to prove that Abraham Lincoln was a schizoid-manic personality and I standing up after him and disproving it.

The reader may reproach me for not publishing an account of the Lincoln incident immediately or soon after it occurred, instead of waiting until now, almost twenty years later. The question is appropriate. But Brill himself hesitated. What is still more sur-

prising—as far as my knowledge goes—his paper did not appear, either in a psychiatric or in a psychoanalytic journal. It has remained unpublished.* He was obviously very much displeased. Apparently he was not only displeased with me but also with his paper and with himself. He wanted to bury the incident and my discussion with it. Furthermore, I suspect that the executive officers of the American Psychoanalytic Association got together, took Brill to task for the Lincoln incident and forbade him to publish the paper. I did not give a public account of my own reaction because I did not want to hurt Brill and make him feel that this was a personal matter with me. I did not deal with Brill. I dealt with psychoanalysis and Abraham Lincoln.

1932, THE PASSING OF THE PSYCHOANALYTIC SYSTEM, II

The historian of the year two thousand, looking back at the development of psychiatry and the social sciences during the twentieth century, may count my intervention in Toronto as one of the signals of the passing of the psychoanalytic system and its replacement by more satisfactory systems of universal life assessment. By psychoanalytic system I mean all systems of *analytic* character. I made the Freudian doctrine the particular target of my attack because it was the farthest developed and the most influential.

My critique is not directed against Freud the scientist, but against Freud, the metaphysician, the system builder. Although he again and again assured his contemporaries that “psychoanalysis is not a system,” the fact is that he has built one just the same and that his pupils have turned it into a bulwark of strength and security in order to continue the identity of the movement. Now that Freud is dead the source of productivity of the psychoanalytic movement is gone with him. None of his pupils has been able to match him by far, the only thing left is the system. Unfortunately, the system was never quite adequate, not even at the time when it was freshly constructed and when psychoanalysis was a strong idea.

One of the reasons which makes the battle against psychoanaly-

* Dr. Brill never published his Toronto address in any generally accessible publication; at least such publication is *not* recorded in Dr. Philip Lehrman's Bio-Bibliography (181 items) in his paper “A. A. Brill in American Psychiatry,” *Psychoanalytic Quarterly*, Vol. 17, 1948.

sis difficult is that Freud's scientific discoveries are continuously mixed up with his metapsychological views, as the theory of the libido, the theories of sublimation, projection and frustration, the theory of the unconscious, the trilogy of the id, ego and superego, the theory of the death instinct and many others.

The psychoanalytic system should be strictly differentiated from Freud's observations. *The theoretical framework of a system is often the last thing to go, even if its content has been modified or replaced.* Were it not for the system, the discoveries which Freud has made could be incorporated into a different one, as the socio-metric system, without loss to their cogency. Therefore, as his system contradicts a more imaginative explanation of the universe and the advance of science, it should be rejected.

The psychoanalytic system has in common with other analytic systems which followed its steps, the tendency to associate the origins of life with *calamity*. The key concept of the Freudian system is the libido. *But Freud, instead of associating sex with "spontaneity", associated it with anxiety, insecurity, abreaction, frustration and substitution.* His system shows strong inclinations towards the negative and for negation, a tendency which grew stronger in him with age. Even sexuality, which owes him its permanent elevation to a respectable and powerful agent, he studied in its negative rather than in its positive aspects. It was not the sexual actor and his warm up towards orgasm, it was not sexual intercourse and the interaction of two in its positive unfoldment, but rather the miscarriages of sex, its deviations and displacements, its pathology rather than its normality, to which he gave his attention. Surely, he hoped that by showing up the calamities in the course of analysis, a healthy sexual life, liberated from its shackles, will emerge. But all along he gave priority to the hindrances of sexual life and not to its performance, cultivation and training. Adler's system* started with another calamity, the inferiority of organs and the feelings of inferiority. Rank started with a different calamity again, with the trauma of birth. All therapeutic prescriptions in these three systems were made to overcome the initial calamity which the human actor encounters. We can understand the Freudian approach when we

* Adler developed in his later years a supplementary system but he could never free himself from an analytic position.

consider the scientific climate in which psychoanalysis arose. In the second part of the nineteenth century the biological view of life prevailed in medical circles. It was a fashion to think with Schopenhauer and Darwin that pain and evil dominate the universe. Freud looked at man from below; he saw man "upside down" and from the position from which he looked at man he saw first his sexual organs and his rear. He was profoundly impressed, perhaps oversensitized, and he never turned his attention away from them. But one can evaluate man more advantageously by looking at him from above. Then one sees him erect, standing on his feet, eyes and head first.

The psychoanalytic system suffers from a negative bias which gives a sour taste to all the appetites and aspirations of man. But it would be erroneous to think that it is the biological approach which is at fault. Some of his students who have tried since to supplement the Freudian position by social and cultural analyses have not been able to overcome the original deficiencies, but rather accentuated them.

I do not agree with some empiricists and those who swear by the experimental method that Freud was unscientific, intuitive and mystic, in order to dismiss his findings lightly. Freud was a greater scientist than most of those who criticize him, his hypotheses were based at least on partial evidence and perhaps at times on as little as ten percent probability, but he knew it. He was always willing to change his hypotheses with new evidence and he changed them several times during his life. My critique goes against the psychoanalytic system in its entirety and the unconscious motivations underlying it.

The unconscious motivations underlying it can be read plainly from the model which gave impetus and continued inspiration to the system—the psychoanalytic situation. It was so modelled that it permits analysis and excludes action. The patient was placed on a couch in a passive, reclining position; the analyst placed himself back of the patient so as not to see him and avoid interaction. The situation was hermetically closed; no other person was permitted to enter it and the thoughts which emerged on the couch were to remain the secret of the chamber. It was to omit the positive and the direct in the relationship to the patient. The technique of free association is not natural talk. The patient reports what is

going through his mind. The transference of the patient upon the analyst was not permitted to extend and become a real, two-way encounter. The conclusion is that the unconscious motivation behind the model is fear of the analyst of being put in the position of acting out towards the patient and being acted upon by him. It is a safety device against overt love and overt aggression. The difficulty is, of course, that by this life itself was banned from the chamber, and the treatment process became a form of shadowboxing.

Once the psychoanalytic system has been discarded one can take an objective view of the scientific techniques and discoveries which psychoanalysis has made. Whereas the psychoanalytic system was stillborn to start with the psychoanalytic techniques were vigorous and unsurpassed at the time they were made. What has happened since is that new instruments, sociometry, psychodrama and group psychotherapy have opened up new areas of research, which have made the Freudian method antiquated and the Freudian discoveries part of more inclusive ones. The libido lives on in the sociometric system as a subform of creativity. The unconscious lives on as a by product of the warming up process. The psychoanalytic couch has become a piece of furniture in the sociodynamic field of the psychodramatic stage. Free association is a limited and often artificial adjunct of acting out; spontaneous acting out is a universal function of human behavior, a sequel to the act-hunger of the infant; acting out, which appeared to Freud as a sign of resistance and a phenomenon to be forbidden in the couch situation, has become one of the steeringwheels of therapeutic interaction. Tele has been discovered as the universal factor dominating interpersonal relations and social interaction; transference is a byproduct of tele structure. Regression is a form of compulsive playing, a form of role playing, playing to the tune of role conserves; the acting out of regressive patterns offers certain advantages to the individual acting, they relax the patient because they reduce his involvement with the complicated present situation to a minimum; he can replace the expected response to the current situation by a simple one and so live with a low amount of spontaneity. Resistance is a function of spontaneity, it is due to a decrease or loss of it. Projection is a function of imagination. Sublimation becomes a function of creativity.

Freud's *fear of acting out* has had many consequences. It led to his refusal to have any part in emotional and social upheavals, revolutions of individuals or of masses, to a suspicion of prophets, poets and rebels. Just as he never gave us a picture of sexual intercourse on the level of its mature, interpersonal dynamics he never gave us a positive, direct picture of the creative act as it is experienced in moments of spontaneous inspiration in men of genius. He looked at both as an analyst instead of as an actor and co-actor. Therefore, also in his conceptual system he turned his eyes away from the creator *in situ* treating him similar to the patient on the psychoanalytic couch. It boils down to the reply which Freud gave to the question: "What is creativity?" He answered: "It is sublimated libido." As he was blind to the true meaning of spontaneity and creativity, he did not see that libido occupies but a small part and that the human and non-human universe is filled with ongoing "prelibidinal" and "extralibidinal" creativity. The spontaneous-creative forces are more universal and older than libido. It is a truism that the universe is maintained in part by systems of repetition and organs of reproduction, but they are not always linked to sexual organs.

System building is a challenge to scientific imagination. Freud was a great scientist but a poor poet. System building requires a combination of both gifts.

1932, HOW GROUP PSYCHOTHERAPY STARTED AND THE QUESTION OF PATERNITY

At the meeting of the American Psychiatric Association in Philadelphia in May of 1932 the first conference on Group Methods took place.* I opened my address with the following definition: "Group psychotherapy is a method which protects and stimulates the self-regulating mechanisms of natural groups—through the use of one man as a therapeutic agent of the other, of one group as a therapeutic agent of the other." After the conference I was discouraged because of the lukewarm reception, but Dr. William Alanson White, the moderator of the conference

* It was preceded by a preliminary conference in Toronto, May, 1931. The late Dr. Vernon C. Branham rendered a great service in the organization of the meetings and as a liaison between Dr. White and myself.

said to me: "First you will attract the social psychologists, then the sociologists, then the anthropologists and next the psychologists. Many years will go by before the physicians will listen, but the last of all will be the psychiatrists." And thus it has come about.

Whereas with sociometry and psychodrama my leadership is undisputed, with group psychotherapy the scientific audience may be wondering what the real picture is; there are at least two or three claimants to that honor. It is not only of historical importance to determine who started group psychotherapy. This question has a crucial bearing upon the concepts and operations which are worthy of survival.

\ Pierre Renouvier, in a current survey,[†] summarizes the situation as follows: "In the years 1931 and 1932 Moreno coined the terms group therapy and group psychotherapy in connection with a specific set of operations which he described in a monograph *Application of the Group Method to Classification*. It was published by the National Committee on Prisons and Prison Labor, and distributed by them throughout the country, putting it into the hands of psychiatrists, psychologists, sociologists and social workers; this culminated in the famous Conference on Group Methods in Philadelphia. It was the first organized effort to bring group psychotherapy to the attention of the members of the American Psychiatric Association.

It is my mature judgment that group psychotherapy was precipitated by methods of social measurement, *i.e.*, sociometry; it started as soon as the sociometric system was formulated and sociometric analysis of groups became possible; sociometry understood in its broadest sense, not only the sociometric tests, but all forms of social measurement, group interview and group dynamics related to them. Before the advent of sociometry no one knew what the interpersonal structure of a group "precisely" looked like, in parts and as a whole, and therefore no one knew how to isolate, prevent or predict disturbances in groups. In the pre-sociometric period all interpretations were based on hunches and intuitive speculations in the manner of LeBon, MacDougal and

[†] See "Evaluation and Survey of Group Psychotherapies," *Group Psychotherapy*, Vol. VI, 1953; also his "Group Psychotherapy in the United States," *Sociatry*, Vol. II, No. 1-2, 1948.

Freud. When Moreno drew the first sociograms of groups it struck him instantly that he had found one way, at least, to put the therapy of groups on a scientific basis. It has frequently occurred in the history of ideas that the emergence of a new science coincided with the coinage of adequate terminology. Obviously then, all therapeutic operations with groups before 1931 should not be and have not been called group therapy or group psychotherapy. Indeed, they all had a therapeutic precept but not a scientific one. Anton Mesmer (1790) found that group sessions were fruitful because people influence one another. He called the factor producing these effects "animal magnetism" but he did not know how to examine what took place in his groups.* Joseph Pratt (1908) found that tubercular patients treated in groups recovered faster. He ascribed this to the emotional effect of the group upon the individual and called it "The Class Method"; but Pratt knew as little as Mesmer did about the examination and measurement of the processes in groups and so he knew as little about prevention and prediction. Moreno, in his work with children (1911) and with prostitutes (1913) noticed the powerful effect of autonomous groupings upon the individual members. He saw astonishing results and had various explanations for them but it was by no means anything which could be dignified with the term group psychotherapy. This goes still more for E. W. Lazelle who started in 1921 with a series of lectures to groups of mental patients at St. Elizabeth's Hospital, passing to them some of the current psychiatric and psychoanalytic knowledge. He found this intellectual way of enlightenment of didactic value and called it group treatment. But Lazelle knew in 1921 just as little as Mesmer in 1790 or Pratt in 1908 or Moreno in 1914 what forces operate in the group, why he had didactic effects in one group and not in another, and how to measure these effects. Trigant Burrow in 1927 encouraged free and informal conversation of patients and noticed that the individuals were better able to liberate the emotional pressures and tensions within a group than alone. He called this method "Group Analysis" but also he, without the instruments by means of which he could examine the structure of his group, could not see any sense in group therapy and gave it

* Mesmer's influence upon group psychotherapy has been particularly emphasized by Dr. W. Hulse.

up. Finally Freud, the most advanced theoretician of the period before sociometric theory stepped in, in his *Group Psychology and the Analysis of the Ego* (1922) had nothing to offer except vague assertions that the group is held together by libidinous ties and that the contrast between individual psychology and group psychology is hardly worth stressing; he thought that it is all due to psychodynamics.

WHO SHALL SURVIVE? created the scientific foundations of group psychotherapy, as it was without precedent at the time of its publication.* It embraced the widest range of operations which have later been transacted in behalf of group psychotherapy, 1) the emergence of group action in the here and now, 2) the involvement of the spontaneity of all participants in the group. 3) the warming up, 4) activities, 5) observations, 6) interview, 7) discussion, 8) grouping and regrouping, 9) acting out techniques, 10) interaction analysis and 11) group catharsis. It is the first determined and consistent effort to apply the principles of group psychotherapy to an entire community.

Moreno coined most of the terms which are now universally used by all schools of group psychotherapists, "group therapy," "group psychotherapy," "warming up," "group catharsis," "social catharsis," "action catharsis," "acting out techniques," etc. He has been the actual leader and prime mover of the group psychotherapy movement since 1931. He initiated or guided most of the Group Psychotherapy conferences within the American Psychiatric Association during the last twenty years, which has aided probably more than anything else to raise the medico-psychological status of the new discipline. His journal *Sociometry* (1937) was the first to open its pages to contributions on group psychotherapy, which led ten years later to the establishment of a special journal. In 1942 he opened the Sociometric Institute, organized for the purpose of training, besides sociometrists, group psychotherapists and psychodramatists, and spreading these ideas throughout the world. In 1942 he formed the first scientific society which had the term "group psychotherapy" in its name, the American Society of Group Psychotherapy and Psychodrama,

* See reviews of the First Edition by Gardner Murphy (*Journal of Social Psychology*), Smith Ely Jelliffe (*Journal of Nervous and Mental Disease*), George Stevenson (*Mental Hygiene*), Winifred Richmond (*Psychoanalytic Review*) and George A. Lundberg (*American Journal of Sociology*).

which published a quarterly *Bulletin of Psychodrama and Group Psychotherapy* since May, 1943. In 1947 he started *Sociatry*, Journal of Group and Intergroup Therapy, the title of which was changed to *Group Psychotherapy* two years later (1949). In 1951 his nationwide petition for a Section on Group Psychotherapy within the American Psychiatric Association brought about the support of more than fifteen hundred psychiatrists and, in consequence, the establishment of a Symposium on Group Psychotherapy and a Round Table Conference on Group Psychotherapy and Psychodrama within the American Psychiatric Association, now in their third year. In 1951 he formed an International Committee on Group Psychotherapy in Paris, and State Committees on Group Psychotherapy within the USA in all its forty-eight states. World War Number II created a historical opportunity to practice group psychotherapy on a large scale. But the direct and indirect influence Moreno has exercised upon hundreds of physicians, sociologists and psychologists in the decade preceding the war has mobilized in them the courage to try out group psychotherapy in the armed forces. Through books and journals, and through the liaison of former Brigadier General J. Rees and later through Major Fitzpatrick, who came to the USA as the representative of a group of British medical officers, the avant-garde of that group which later organized the Tavistock Institute, the group methods inaugurated by him exercised considerable influence in Great Britain. Last not least, and in order to give the devil his due, it was his continuous influence upon Slavson's promotional mind to try his hand in the development of parallel organizations. The "two-party system" may have had some value as a mutual catalyzer for the spreading of the group idea.

These are my conclusions: if we think of group psychotherapy in vague, clinical terms instead of in terms of rigorous scientific method, it would be only just to consider Mesmer as the one who used group psychotherapy first. But, if group psychotherapy is correctly defined as a form of therapy which is based on knowledge of group structure and which aims at measurable changes of group dynamics before and after a therapeutic operation is applied to it—regardless what the operation is, lecture, interview, discussion, activity, regrouping, psychodrama, motion picture, or a combination of them—then Moreno's claim to the paternity of

group psychotherapy is justified. It has always been suspected that groups are in constant process of regrouping—people move in and out of groups, people change their position in groups—but we had no handle to guide the regrouping process to the greatest advantage of its members. Group psychotherapy is, therefore, the facilitation and adjustment of a change of structure, either *in situ*, through immediate therapy, or by methods of reorganization.”

THE INFLUENCES

The soil for sociometry was prepared by the thinking of J. Baldwin, C. H. Cooley, G. H. Mead, W. I. Thomas and particularly John Dewey. Sociologists and educators were the first to accept it. Psychiatrists were the slowest. Theories of interpersonal relations have been advanced by sociologists like Georg Simmel and Leopold von Wiese, but I went a step ahead and defined experimentally the interpersonal situation and developed interpersonal measurement.

The question has often been raised as to the merits of Harry Stack Sullivan's work and its relation to my own. I formulated my theory of interpersonal relations several years before Sullivan began to write on the subject. It is often forgotten that it was I who took the lead in testing the theory on a broad research and clinical scale paving the way for “interpersonal therapies” now widely practiced (for instance when I started to treat husband and wife, or any other two co-related persons in separate sessions or simultaneously, this was anathema then; it was a psychoanalytic rule that each should be treated by a different therapist). Sullivan's inventiveness was handicapped. He produced a theoretic skeleton but he could not implement it with clinical operations of his own. He hesitated to go the whole way with the concept of interpersonal relations as a “two-way” relation and followed my lead in this crucial point only haltingly. It is unfortunate that he never embraced interpersonal measurement, group psychotherapy and psychodrama and that he remained an advocate of analytic-interpretative psychiatry almost to the end of his life. However, some of his students are using sociometric instruments today to give interpersonal theory concrete foundations.

“LES ENFANTS TERRIBLES”

I discovered early that the quickest way to spread novel ideas is to “give them away”. Besides the good geniis who surround every pioneer there is also a class of people who want to steal his ideas and make them their own. It would be harsh to call them intellectual thieves. They are usually honestly affected people. First they become friends and followers because an intellectual commodity cannot be stolen, it has to be absorbed. But once they believe that they master the new skill they prefer that the creator be dead. Indeed, they often deny his existence. However unpleasant they may be for the person of the inventor, they are of enormous value for his ideas. Because they make an idea their own they promote it with the same vigor as the originator. They become unwittingly helpers against their will. I have been very lucky in having been visited during my career by numerous men of this type. I learned to appreciate and respect their calling in a sort of objective fashion, and to see in them the working of a general principle, operating in the promotion of all creative effort, sciences and arts. I am thinking here of three particularly good friends of this category. One was a Viennese architect who liked my stage so much that he constructed a copy of my model and displayed it side by side with mine in the International Theatre Exhibit in Vienna in 1924. He became its best promoter, so much so that people thought we had a tacit agreement to advertise each other. When I left for the USA he followed and made publicity for it here. Another was S. R. Slavson, a visitor of my early group theatre at Carnegie Hall and later of Hudson and Beacon, N. Y. He liked my concepts and terms group therapy and group psychotherapy and a few years later began to use them without quotation. He imitated many of my steps since. I started a Society of Group Psychotherapy in 1942, he followed one year later. I started a journal of group psychotherapy in 1947, he followed two years later, using the same title. Many people have been aware of this except he himself. The third is a certain G. Denes. He liked the psychodrama and so he started to give public sessions of the Denes psychodrama in New York. I am fully aware that I owe each of these three gentlemen a royalty for their efforts in behalf of the ideas which they have tried to spread with a fanaticism equal to my own: “C’est la vie, c’est le plagiat.”

SOCIOGRAM OF REJECTION

It is incredible and unfortunate that the people who steal your ideas become, in addition, also your personal enemies. They become rejecting figures in your sociogram as long as you live and frequently long after your death. He who claims priority (which is a form of superiority), however justified, becomes unpopular with the majority. It should not surprise students of sociometry that he who rejects will be rejected. Many people instinctively side with the accused, perhaps because they could be accused of the same crime, only on a smaller scale.

LITERATURE AND THE ADVANCEMENT OF SCIENCE

Repetition and confirmation are inevitable stages in the development of ideas.

In a famous debate on culture in the Austro-Hungarian parliament before World War I a primitive Czech deputy Bielohaveck, countering the great Masaryk and trying to help in the definition of what literature is, said, shockingly, "Literatur ist das was ein Jud vom anderen abschreibt"—"Literature is what one Jew copies from another". I wrote in my notebook in reply: "Hie und da kommt ein Original Jude von dem alle abschreiben"—"From time to time an original Jew appears who is copied by all".

THE COUNTER-HELPERS

There is another way of spreading ideas, that is to challenge people who represent opposite ideologies. This one, however, is often accompanied by filling your sociogram with enemy figures who block your expansion by counter-attacks of their own. There were three movements which I encountered in the USA, psychoanalysis, semantics and Gestalt. I opened with a challenge of psychoanalysis at the Toronto meeting of the American Psychiatric Association in 1931. As described above, Dr. Abraham Brill had tried to psychoanalyze the late President Abraham Lincoln as a schizophrenic. I showed that it is psychoanalysis itself which needed care and treatment, not Lincoln. Since then I have not ceased to reiterate my claim that psychoanalysis is the method

which my methods have surpassed and that it is the Trojan horse which carries my ideas free of charge into the four corners of the globe.

Semantics came next. While visiting Dr. White at St. Elizabeths Hospital one day and expounding to him upon my ideas, he suggested that I meet Korzybski who was also there, attempting to cure mental patients by semantics. White remarked: "Count Korzybski is determined and resourceful in his way, just like yourself. I would like to put the two of you overnight together in one of our strong rooms, lock you up and then see what has happened to you the next morning." I was willing, but Korzybski did not appear. I did not get to know him until the meeting of the American Psychiatric Association in New York at the Waldorf-Astoria in 1934. Korzybski's *Science and Sanity* and my *WHO SHALL SURVIVE?* had just appeared. Introducing himself to me he suggested that we exchange books but I said: "No, let's wait another twenty years." Unfortunately, he could not wait that long and so we have to exchange the books in the hereafter.—The analysis of language, useful as it is in itself, does not lead to any change in behavior. It has to be followed up by methods of action learning which train the pupil to think and act below and beyond the boundaries of language. It is interesting to note that before his death Korzybski became interested in group psychotherapy and action techniques and used roleplaying in his seminars.

In the course of 1935 I received in my New York office another visitor whose interest in sociometry was of help because of his vigorous promotion of its techniques. It was Kurt Lewin, then an exponent of Gestalt theory. The first time he was accompanied by several of his students. The meeting was mutually stimulating and so we met several times in succession. He had read *WHO SHALL SURVIVE?* and the topics of the discussions were sociometry and the dynamics of group structure, spontaneity training, and a roleplaying film which had been made in Hudson and was then being shown in several places. He promised that he would do some sociometric work with small groups and spontaneity playing, a promise which he kept in the years to come. He influenced many of his students to attend my sessions and study my methods and

a number of them are working in the field. It is not for me to judge the originality of his research in individual and Gestalt psychology, but the influence which I exercised upon him at a turning point of his career, marking the transition from individual to group and action research, has been known to a group of students who knew the circumstances of our meetings. A careful survey of the bibliography of Kurt Lewin's writings arranged by one of his students* makes this point clear; it indicates a marked change of interest, beginning with 1935, or, as Pierre Renouvier, in his recent survey† put it: "Lewin had two periods of productivity, *before and after* the reading of WHO SHALL SURVIVE?" It is also interesting to note the dramatic change evidenced in Lewin's writings after 1935. There is a change of focus and attention from individual and Gestalt psychology to the consideration of group and action methods. He made an extraordinary effort to incorporate many of my concepts and techniques into his own system but this effort has been ineffectual. In addition, he gave roleplaying, action and group techniques a taint of artificiality for which I have often been blamed. He had a fine sense for the new trend in the social sciences but he was at the time when he entered the group and action field psychologically too old to jump from the timeworn psychological laboratory into the open spaces of roleplaying, group dynamics and action research. His well conceived schematic constructions cannot deceive the connoisseur. The same artificiality and withdrawal from real encounter can be noted with some of his students, which may explain why so many undynamic people are found among the students of group dynamics.

1932-1936, THE "IDEA" OF HUDSON

The central locus of this period was Hudson. My central effort was to give an example of a sociometrized community, as I was convinced that genuine foundations of group psychotherapy cannot be established otherwise. It is from the Hudson idea that all my efforts radiated, writings as well as actions. My monographs on the *Group Method, Psychological Organization of Groups*, WHO SHALL SURVIVE? and all my writings up to 1937

* *Sociometry*, Vol. 10, No. 1, p. 93-97, 1947.

† *Op. cit.*

belong in a single block. The first large hospital which followed the lead of Hudson was St. Elizabeths Hospital in Washington. Its chief psychologist, Winifred Richmond, started there with a well planned sociometric research in 1934, realizing that it is an essential preliminary to the group psychotherapy of an entire community. Another outcome of the Hudson era was the formation of an Advisory Committee within the Department of Social Welfare of the State of New York with Gardner Murphy as Chairman, designated to spread the good work to other institutions and communities.

Sociometry owes a great deal to the courageous and enlightened support of a few university teachers. The late John Dewey wrote, after reading *WHO SHALL SURVIVE?* that sociometry appeared like "the next stage" and that its techniques were already far developed.

On a visit to Hudson by a group of distinguished social scientists the girls put on a number of roleplaying situations in which they showed their consummate skill in handling some problems of human relations. One of the visitors, impressed with the high intelligence of the performers, asked about their IQ's. Pointing at one girl after another I replied: "55, 59, 64, 69." He was astonished. I explained: "Psychodrama is a cosmetic for the psyche. It makes people look smarter and more attractive than they are." While returning from Hudson after the visit, W. H. Kilpatrick, the distinguished educator, said to Murphy: "If Moreno is as much as half right, then Thorndike is more than half wrong."

PRESIDENT ROOSEVELT DISCOVERS SOCIOLOGY

The nearness of Hudson to Hyde Park and a chain of lucky circumstances brought sociology to the attention of the late President Franklin D. Roosevelt. It was during the period of the New Deal, when Washington was full of ideas for social betterment. Roosevelt had an open mind for **anything which** might help the people of the USA in an age of crisis. The attempt of technocracy to save the country from unemployment had failed. The psychological moment for sociology had

come. It had become a topic of discussion in many government circles.

Dr. Frank Wilson, Minister of the Episcopal Church of Hyde Park, a regular visitor at the New York State Training School for Girls at Hudson, after reading *WHO SHALL SURVIVE?* decided to make sociometry the theme of a Sunday sermon. President Roosevelt, who was in the church that morning, became interested. Dr. Wilson invited me to meet the President next Sunday in his church. The President sat in the first row of pews, I sat in the last and when the religious ceremony was over Mr. Roosevelt had to pass my seat. Suddenly he stopped and said: "Hello, Dr. Moreno," as if he would know me. He invited me into his car; on his lap he had a copy of *WHO SHALL SURVIVE?*. He opened it and pointed at one of the sociograms. "This looks like progressive sociology," he said, and added pensively, "if I would not have taken my present course, this is the kind of thing I would have liked to do." He further stated, "When I am back in Washington I will see where your ideas can be put to use." As a matter of fact, sociological leaders like Drs. Charles P. Loomis and Carl C. Taylor, connected with the Department of Agriculture, had already begun to apply these ideas to subsistence homestead projects. I thought that President Roosevelt might forget our meeting but his interest created a new enthusiasm in Washington which culminated in a large number of sociometric community studies.

THE NEW BIBLE

It was in a small meeting room at Columbia University, where a few of us were sitting, musing about where sociometry will lead us. One of the younger scholars took me aside and said bluntly: "You seem to think that *WHO SHALL SURVIVE?* is a book of books, a new bible." I looked at him and saw the green light of "creator envy" in his eye. Of course I thought so, but I did not say a word. I smiled at him and he smiled back. It is a new bible, the bible for social conduct, for human societies. It has more ideas packed in one book than a whole generation of books. What is wrong with a bible? Some people have an idea that a bible stops everything. On the contrary, in the religious sphere the Old

and New Testaments did not stop religion, they opened new vistas and stimulated religious experience and techniques. The same thing happens in science. *The fear of bibles is the fear of anything which is definite and decisive.*

There are two kinds of bibles, the one kind which become cultural conserves and are barriers to production; they are finishers and finished products. Then there is the other kind which are starters, they set free the spontaneity and creativity of mankind.

Actually, I have written two bibles, an old testament and a new testament, *The Words of the Father* and WHO SHALL SURVIVE?

It is almost twenty years now since that silent exchange of opinion took place. Now the book has become a bible, a bible of human relations. The next hundred years will tell the entire story.

V

1936, THE IDEA OF BEACON

I started three units, a theatre,* a school and a mental hospital. The theatre was a theatre of psychodrama, the first in the USA. It was to explore upon its stage various systems of human relations, to arrive at the most productive cultural order. The school was to carry the principles discovered into teaching and learning, the training of sociometrists, group psychotherapists and psychodramatists who could start similar centers elsewhere. The mental hospital which was built around the theatre was to give the most acutely ill representatives of our culture the benefit of antidotes.

The format of the modern mental hospital tends towards the extroverted type. Elegant landscaping, colorful rooms and shiny walls, authoritarian habits and discipline, orderliness, cleanliness and meticulousness are the order. The benefits of this style of mental care notwithstanding, it has not been able to give adequate expression to the patients' needs. The psychodramatic sanitarium aspires towards the introverted type; it creates for the patients anchorages modeled after their own spontaneous aspirations, however confused.

* Thanks to Gertrude Franchot Tone, the mother of the actor Franchot Tone.

1937, SOCIOMETRY, A JOURNAL OF INTERPERSONAL RELATIONS

The movement needed a journal. It was launched in the summer of 1937, preceded by the *Sociometric Review*.^{*} We decided to call it *Sociometry, A Journal of Interpersonal Relations*. Gardner Murphy was the editor and Eugene L. Hartley its managing editor. I was the publisher and William A. White joined its editorial board. It was the first journal bearing this title and appeared approximately one year ahead of Sullivan's *Psychiatry, A Journal of the Biology and Pathology of Interpersonal Relations*.

J. B. Rhine planned at that time a journal of parapsychology; perhaps because of the central position of the concept of tele in both disciplines, tele psychology in one, telepathy in the other, a serious friend had the idea of combining them into one journal. We could have called it "Parasociometry." But each movement decided to light its own candle.

1935-1942, CONTRIBUTORS AND FOUNDERS OF SOCIOMETRIC THOUGHT

Four sociologists and four psychologists have shaped and definitely entrenched the foundations of sociometry: Helen Jennings, Joan H. Criswell, George A. Lundberg, Charles P. Loomis, Leslie D. Zeleny, Mary L. Northway, Merl E. Bonney and Stuart C. Dodd.

Besides the tangential participation of Emory S. Bogardus, F. M. Newstetter, F. Stuart Chapin and Paul F. Lazarsfeld, the warm support and stimulation of Gardner Murphy was deeply felt throughout this period.

1937-1942, THE SOCIOMETRISTS AS A GROUP

Henry J. Meyer, in a recent analysis,[†] differentiates three types of sociometry: as an orientation towards life, as a theory of society and as a method of research. It is particularly within the third, the methods and techniques, that a high degree of consensus has been reached, the spontaneous collaboration of hundreds of

^{*} February, 1936.

[†] See *Sociometry*, Vol. 15, No. 3-4, 1952.

workers. The total contribution they have made as a "collective" is the more astonishing because it was not planned, it developed like the chain reactions which we frequently notice in the sociometric networks of communication.

The place which sociometry holds in the social sciences can easily be estimated by surveying the sociometric literature since 1934. The most important documentation are the *Sociometric Review*, the fifteen volumes of the journal *Sociometry* and five volumes of *Group Psychotherapy* which demonstrate the areas of research in which it was leading the way for others to follow.

- 1) The unbiased objectivity of the uninvolved, operational analyst. The study of attraction-repulsion patterns and similar sociometric phenomena *in situ* was a relatively new challenge to the social scientist.
- 2) The study of interpersonal relations and interpersonal measurement; it should be pointed out here that other groups so rapidly followed our trail (as, for instance, the Sullivan group) that a reader of 1953 would have a hard time to separate one event from another unless he looks up the printed record.
- 3) The importance of the informal group in formal organization. Sociometrists were the first to demonstrate this phenomenon through empirical evidence; see "Work and Home Groups" in this book, also the work of Charles P. Loomis and George A. Lundberg. The influence which we have exercised upon the Hawthorne group of the Western Electric Company is particularly evident in Roethlisberger and Dickson's *Management and the Worker*; see their chapter "The Bank-wiring Room", and the sociograms they included.
- 4) The atomic theory in social science.
- 5) Sociometric theory of leadership and isolation; see Helen H. Jennings.
- 6) Sociometric theory of ethnic cleavage; see Joan H. Criswell.
- 7) Systematic attention to the small group; see the "Analysis of a Small Group" in this book and painstaking analyses made by other sociometrists.
- 8) The discovery of the informal, invisible, social networks of communication and their repeated, experimental demonstration (study of rumors).
- 9) The deviation from chance as a reference base in the measurement of social configurations has become fundamental in all group research, especially in the study of group cohesion and group dissociation.
- 10) Role

theory; without our discovery of the role-testing methods and the empirical role research which followed it would have remained an academic affair of social philosophers. 11) The psychology of the warming up process and its linkage to action has revolutionized action-oriented research.

These are merely some of the items. We are far from claiming that we have done all the work. But stop and think for a moment what these areas of research would be without the intervention of sociometry.

1937, AMERICAN SOCIOLOGICAL SOCIETY

The first sociometric conference within the annual meeting of the A. S. S. was arranged by Dr. George A. Lundberg in Atlantic City. He was the first sociologist of note to apply sociometric methods to an open village and succeeded Murphy in the editorship of *Sociometry* in 1941.

1937-1938, FIRST UNIVERSITY SEMINARS ON PSYCHODRAMA AND SOCIOMETRY

Under the auspices of the Guidance Laboratory, Teachers College, Columbia University, I gave a course "Introduction to Psychodrama"; upon invitation of Dr. Alvin Johnson I gave a course "Sociometry" at the New School for Social Research.

1937, PSYCHODRAMA AT SAINT ELIZABETHS HOSPITAL

When stricken with a grave illness in 1937, Dr. White spoke with Margaret Hagan, then Director of Red Cross, about the future development of the hospital, and it was one of his last wishes that a Theatre of Psychodrama be created within it. She gave him the assurance that she would see to it. Three years after his death it became a reality, thanks to the efforts of Margaret Hagan and Dr. Winfred Overholser, Dr. White's successor. The establishment of a theatre of psychodrama at the largest federal mental hospital in the USA was of strategic importance.

1937, THE OLDEST VERSION OF THE SOCIOMETRIC TEST

The classic sociometric test was so constructed that it was able to measure the *conflict* between the existing configuration of a group and that configuration which is really wanted by the members of the group.* In the sociometric test given at PS 181, Brooklyn, N. Y. in the winter of 1931 the seating order in the classroom imposed upon the children by extraneous authority was confronted with the seating order which the children expressly preferred. Every sociometric test brought out the *contrast* between an authoritarian and a democratic pattern of grouping.

It is important to differentiate the sociometric "test" from sociometric "questions". The test asks you to *choose*, for instance, "Whom do you want to sit near you in the classroom?" The question asks you to *judge*, for instance, "Who are the most or the least popular individuals in the class?" Test and question differ again from autonomous perception (autotele): "Who do you *think* wants to sit near you?"

When I started the project at PS 181 my initial plan was to commence with spontaneity and role testing first and to apply the sociometric test later. It was perhaps fortunate that the Principal of the school, the late Dr. Nathan Peiser thought that spontaneity playing would be more difficult to introduce than the sociometric test.

1937, THE "CLASSIC" VERSION OF PSYCHODRAMA

In current textbooks a distinction is frequently made between classic psychodrama and abbreviated forms. It may be useful to describe here that form of psychodramatic procedure which I have practiced earliest and which is most suited to my temperament. If you wish you may call this the classic version. First of all, it was entirely spontaneous. The spontaneity of the group was as important as the spontaneity of the director. It was un-

* See the sociometric geography of a community in the rear of the book, which shows the actual positions the individuals have in the houses as well as the positions they want, or more specifically, the individuals in other houses to whom they are attracted. The sociometric test makes explicit the conflict between an existing order and the potential structure of an order to which the group members aspire.

rehearsed and more even than this, it was entirely unplanned and there was, for me, also a fundamental reason for "not" planning it. It was to be here and now and not yesterday or tomorrow. I did not want to see or know anything about the people in advance, so as to keep all my own and their spontaneity free for the moment of meeting. It was to be a meeting at first sight. I wanted to be as free from bias towards them as possible from the start of the session and I wanted the group with which I was going to work to be equally free of bias towards me. When I used to roam freely around the country I used to give sessions wherever I found people, on the road, in their homes and workshops.

From this method of the "here and now and we" three versions of the psychodrama developed, a) the emergent psychodrama *in situ*, b) the group-centered psychodrama and c) the leader-centered psychodrama. The best account of the philosophy of the here and now and the psychodrama *in situ* is reflected in the protocols of my dialogues and speeches.*

When I became a physician the emergent psychodrama was the model to which I stuck closest. It is modelled to meet the aspirations of a medical practitioner who has, instead of individuals, groups as patients. Just like a physician who goes into a house to see a patient for the first time, makes his own examination, arrives at his own diagnosis and lets the interaction between him and his patient determine the form of the treatment, similarly, in such a psychodrama session it is the immediate situation which determines the chain of events.

All other forms of psychodrama which I introduced later are dilutions, modifications, compromises and reductions of this, the classic form. In the *group-centered* form certain principles have remained unchanged. The cornerstone is still the principle of spontaneity; the second principle is the involvement of the entire group in this operation; the third principle is to avoid giving special therapeutic status to any member of the group, including the chief therapist; he is just another member of the group. In such a session no one has a higher status than another, the one who eventually may emerge to conduct the session is first of all a member of the group. The usual therapeutic hierarchy is brought

* Op. cit.

to a zero. In such a "conductorless psychodrama" a leader emerges, rises and falls, as the opportunity and the situation demands. It is a free-for-all type of session. The difficulties which often arise from the introduction of a chief therapist or analyst is herewith eliminated. In this kind of session the fears of the non-directive counselors are quelled, one is a therapist of the other.

In the *leader-centered* version one particular individual is accepted as the one to conduct the session; he may be a therapist in a therapeutic session, an educator in an educational session, an industrialist or working man in an industrial session, etc. It has the advantages of a central agency which itself has no opinions, no biases, it is entirely neutral, working as a catalyzer of the entire group, protecting the weak against the strong, the shy against the aggressive, trying to give all an equal opportunity for expression.

In all forms of extemporaneous psychodrama the chief problem is how to get the group started. The best prescription is to let the warm up come from the group itself. Anything can start the ball rolling. There is no one who begins and there is no favorite topic. It may start with a joke, with an outburst of anger of one member of the group towards another or towards someone not present; the therapist waits patiently until a situation structures itself or pushes gently along the lines of strongest productivity. Some sessions are not only leader-centered but also *problem-centered*. A problem is given or chosen; the central intent of such a session is to let the problem structure itself, assuming that there are certain problems inherent in the group present, certain gripes, resentments or expectations. Experience has shown that what appears to be a planless beginning gradually leads to a significant process of production, as if it would have been carefully planned. In the course of such actions, abreactions, interactions, interabreactions, role playings, dialogues, interviews, discussions, analyses, one or another individual or a clique of individuals comes forth with a special problem. *It comes spontaneously to an acting out unless the atmosphere is purposely restricted and unless there is a silent consensus that actions are taboo.* Otherwise, acting out will take place within the group itself and thus the action portion of a psychodrama session begins. It is due

to the awareness of psychodramatic research that such things take place that the idea arose to give such acting out a special vehicle within the auditorium, a psychodrama stage. The acting out came first, the stage was built to accommodate this dynamic process within the group. Without a special vehicle for their acting out tendencies the group members may be inclined to consider them illegitimate. The use of acting out techniques makes the responsibility of the director greater and requires a special skill of direction, but their inclusion has therapeutic and research advantages.

1938, SPONTANEITY AND THE HERE AND NOW

The spontaneity-counterspontaneity chain between protagonist, director and audience has to be kept in constant flow in the here and now of the production in order to attain the maximum of involvement and unity of all the participants concerned. The spontaneity of one is a function of the spontaneity of the other. A decrease or loss in the spontaneity of one may produce a decrease or loss of spontaneity of the other of the three chief agents of production, protagonist, director and audience. To maintain the balance of spontaneity in the total field depends upon a number of factors, last not least upon the vigilance of the director that the "principle" is not sacrificed to any extraneous objective, for instance, smoothness and flawlessness of production for an observer outside of the total situation who is not involved in the here and now. That observer may be one who hears a recorded production after the session is over, or it may even be one who is present in the session but who has trained himself to the role of the non-participant observer in order to detect flaws, shortcomings or other deficiencies.

The director may start the session with a pre-formed concept of what the protagonist should act out. The suggestion of the director may not evoke an adequate response in the protagonist, either because he is already acutely warmed up to a different situation or because the suggested situation is peripheral to his needs. The conflict between the two battlers on the stage reflects in the audience in such a fashion that some of its members take

sides with the protagonist, the others with the director. Unless such a contrived situation is a deliberate research project it will bring unsatisfactory results.

Another problem arises if the production is pre-formed, not only in the mind of the director but also in the minds of all the protagonists upon the stage, carefully prepared and rehearsed in order to attain a smooth, continuous, well balanced production. The "here and now" has been sacrificed to a "there and before". The warm up between them is of a different nature: to remember as well as possible the agreements made between them and to discard as much as possible extraneous inspirations and intuitions emerging in the here and now. The spontaneity-counterspontaneity is replaced by a prepared-counterprepared or, in the most rigorous forms, by a rehearsed-counterrehearsed approach. It is interesting to watch the effect of such a production upon an audience. The more formal, smooth and perfect a production appears, the more it puts the audience in an awe-abiding, respectful mood. The pressure of the perfection of the production reduces the spontaneity and the informal responsiveness of the audience. The spontaneity of the audience response depends largely upon the spontaneous chain reaction among the members. It is a spontaneous contagion of ideas and feelings which is easily blocked, not only by the awe-inspiring production on the stage, but also by the nearly hypnotized and in his spontaneity paralyzed member of the audience sitting next to him. The more prepared and planned the production is, therefore, the more a psychodramatic session resembles a production in the legitimate theatre. The potential participants of the audience behave more and more like spectators; they are passive and receptive. It is obvious that also the reverse situation can take place. If a strictly extemporaneous production takes place on the stage, but if the audience is composed of members whose attitude is highly perfectionistic, expecting smoothness, regularity and completeness from the production, then their very hostility may affect the productivity of the protagonist on the stage. Dr. Wellman Warner,* a keen observer of psychodrama, has given this phenomenon an excellent

* Chairman, Department of Sociology, Graduate School of Arts and Sciences, New York University.

definition: "The response of an audience grows in inverse proportion to the smoothness of the production."

1937, FROM THE NOTEBOOK OF A PSYCHODRAMATIST

There are psychodramas "conceived in ecstasy" and there are psychodramas which should never have been born. Nothing is so deadening as rehearsed spontaneity.

Do not pay the price of spontaneity for smoothness, regularity, orderliness, continuity and elegance. Do not sell the principle for a mess of pottage.

Remember that the greatest liability of therapeutic psychoanalysis was its *formlessness*. The greatest asset of psychodrama and the psychodramatic arts (spontaneous dance, music and painting) is the rise of *form* and *beauty* from the ashes of spontaneous production.

1938, HITLER'S SPONTANEITY

In the days of the approaching Second World War, I was asked by the Associated Press to predict Hitler's future. "I believe the key is in his oratory. The first style of Hitler's oratory was to come in shouting, a protagonist of the masses, it was all raw spontaneity. His method was to catch the spontaneity of the people and return their reverberations in a form of heightened violence. As long as he was in the here and now he imagined that God was on his side. But recently I heard that his style of oratory has changed, that he has ghost writers, and even that he is his own ghost writer. This indicates a profound change. He is afraid of the moment, he doesn't trust his spontaneity as he used to, he fears that it may fail him and he doesn't trust his empathy of the masses' wants. He has left the principle and the principle is leaving him. He imagines that God is now on the side of the enemy. He will lose the war."

1938, STALIN'S PURGES

The sociometric network theory is able to interpret political phenomena difficult to understand. One illustration is the purges attributed to Stalin. Why were extensive mass purges committed when but relatively few men had actually been found guilty of

treason? It would seem unnecessary to punish more than a few, but the cold politician, Stalin, knew that, besides the few men who had been direct associates of Trotsky, there were literally thousands more, potentially equally dangerous, who could be just as threatening to his regime. He knew that, to each of the, say, twelve guilty men, a number of sympathizers must be linked, and to each of these sympathizers, in turn, others were linked, and to this larger circle many others were inter-linked, either directly or indirectly, who might become infected with the same political ideas. In other words, he visualized a myriad of psychosocial networks spread over all Soviet Russia in which these actual or potential enemies acted in roles which might be dangerous to him. Unfortunately, he had only a rough, instinctive picture of the sociometric networks; he did not know all the men and their actual positions in their respective cliques. So, in order to reach and exterminate his *potential* as well as his *actual* enemies with the highest possible efficiency, he gave orders that not only the friends of Trotsky but also the friends of these friends, and the friends of these friends of the friends of Trotsky be "purged", even if the suspicion of any friendly relationship was very slight or zero. If Stalin would have had a psychological geography of Soviet Russia before him, showing the links and tracks through which the forces of counter-revolution traveled, imagine how many innocent lives could have been saved.

1939-1941, PILGRIMAGES TO BEACON

In the fall of 1939 a group of workers from St. Elizabeths Hospital, Washington, D.C., consisting of its Clinical Director, Dr. Roscoe W. Hall, Miss Margaret W. Hagan, Dr. Alexander Simon, Dr. David Farber, Miss Frances Herriott and others, came to Beacon to see the psychodramatic theater in action, as a similar establishment was being planned at St. Elizabeth's.

The fame of the new idea began to make the rounds and the next visitors were Dr. Karl Menninger and Dr. John Slawson. When Dr. Menninger became consultant to the Winter General Hospital in Topeka, Kansas several years later, a psychodrama stage was built there.

On June 28, 1941, a large gathering of sociologists, psycholo-

gists and psychiatrists met in Beacon for a conference on sociometry, group psychotherapy and psychodrama. Among the participants were Dr. Adolf Meyer, Dr. Leonard S. Cottrell, Dr. George A. Lundberg, Dr. Paul F. Lazarsfeld, Dr. Margaret Mead, Dr. Ralph S. Banay, Dr. George P. Murdock, Dr. Theodore M. Newcomb, Dr. S. Bernard Wortis, Dr. Werner Wolff, Dr. Bruno Solby, to mention but a few. At that conference plans were made for the formation of the American Society of Psychodrama and Group Psychotherapy.

**1941, OPENING OF THE THEATRE OF PSYCHODRAMA AT
ST. ELIZABETH'S HOSPITAL**

On June 8, 1941, the new theatre was officially opened. On this occasion I had the honor to christen it, giving the first session there, assisted by Frances Herriott, its first director.

**1941, SECTION ON SOCIOOMETRY WITHIN THE AMERICAN
SOCIOLOGICAL SOCIETY**

Upon the petition of Howard Becker, F. Stuart Chapin, Leonard S. Cottrell, Joseph K. Folsom, Henrik Infield, William H. Sewell, George A. Lundberg, Willard Waller, J. L. Moreno and Bruno Solby the Executive Committee of the American Sociological Society established a section on sociometry, with William H. Sewell of Oklahoma A. and M. College as Chairman.

VI

1942, ANNOUNCEMENT OF THE SOCIOMETRIC INSTITUTE.

With the opening of the Sociometric Institute and the New York Institute of Psychodrama the third phase of the movement began. It saw the spreading of group psychotherapy, psychodrama and sociometry throughout the United States and many parts of Europe.

J. L. Moreno*

“The Sociometric Institute should be the meeting-point of all the sciences in which it partakes: psychology, sociology, cultural anthropology, biology, psychiatry and economics.” (1)

* The following excerpts are from *Sociometry*, Vol. V, No. 2, May, 1942.

“At the time when sociometry, as a theory, began to be formulated, the European philosophies of interhuman relations were purely academic, and there are valid grounds to believe that the experiments proposed by the sociometric theory of action would never have taken shape abroad.” (2)

“Sociometry is, first of all, a theory and then a method—a method of how to gather the really vital facts about the inter-individual relationships among people living in social groups and how immediately to remedy the frictions among their members with the minimum of effort. Its outstanding characteristic, since it began to make any headway, has always been that it focusses its attention upon actual people, not upon abstractions of any sort, upon actual situations, like specific homes, schools, factories or communities, not upon abstracted and generalized situations, and upon situations in the present tense, not upon conjectures of past or future situations.

Another outstanding characteristic of the sociometric method is that the people who form the subjects of research are not used as guinea-pigs of some sort: it is their initiative, their spontaneity, their judgment and their decision which count higher than anything else in the procedures applied in their behalf. It is obvious that the pertinent data about the human interrelations in a group cannot be found by one participant observer with any degree of certainty. The maximum possible certainty is, however, secured if every member of the group becomes a participant observer of all the others and of himself. This is about what every sociometric procedure—correctly carried out—attempts to accomplish.

There is an enormous virtue in the *direct* attack which distinguishes sociometry. As a matter of principle, it approaches every new situation in a concrete way, re-shaping its tools for each specific situation. What begins as something rigid because of its specificity and concreteness, gradually turns out to be the most flexible and articulated method imaginable. Since sociometry undertakes to comprehend and measure the world as it is, every human dimension is accepted and integrated by it into human society as a whole.

Moreover, since sociometry enters directly into all types of

human situations with the intent to uncover, predict and adjust disturbances and conflicts, it must take into consideration every element connected with the situations—the economic, religious, cultural, biological and psychiatric factors. Thus, it is eager to absorb any information coming from these fields and to coordinate them into its own efforts. The scientific premise upon which sociometry is built makes it unbiased—and therefore neutral—in regard to every type of social movement or social phenomenon. It is not in itself a social movement. It has no plan to offer—at least, no “plan” in the sense in which this word is sometimes used—except to uncover the dynamic conditions of every social situation and to use this knowledge towards bringing about in it a better equilibrium. As a science it does not extend any privileges and it does not indulge in value-judgments. It deals objectively with all social situations.” (3)

“A method which has proved of invaluable usefulness in one hundred specific situations may reasonably be expected to be equally useful—or more so—in one million specific situations of the same kind. Even as large a population as that of the United States consists of nothing but millions of “small groups”, each with a definite atomic structure, and each as open to direct sociometric attack as the hundred situations already profitably studied.” (4)

Gardner Murphy

“Dr. Moreno’s leadership in the development of methods of analyzing and measuring interpersonal relations has led to all sorts of new movements in group work, community study and personal therapy, and has spread far beyond the bounds originally designed for it.”

“Problems of leadership and morale will draw upon another aspect of Dr. Moreno’s fertile thinking, namely the analysis of spontaneity training. Psychodrama on the one hand and the reeducational procedures of group therapy on the other hand will give opportunity to confused or wartorn personalities to rediscover themselves in the democratic process.”

George A. Lundberg

“Sociometry is the scientific study of patterns of social behavior. As such, it is concerned with the common core of all social phe-

nomena, the interpersonal and the intergroup relations that underly all the variety of superstructures which form the subject matter of the various social sciences. We can deal intelligently with these superstructures only if we develop positive knowledge of the atomic social structure common to all of them. This is the central task of sociometry."

Adolf Meyer

"My congratulations on this announcement of a most important progress in sociometry. Psychology, and the science of man in its broad significance, has long been sabotaged by the unwillingness of science to rise to the nature and range of what it has to *meet*, instead of forcing the facts of the special topic into a system devised largely for physics and chemistry. This is partly responsible for the fact that social functioning has often failed to get its fundamentally important share of consideration. To have it in the form of experimental work, incidentally with development of methods of measurement, is a decided progress, not only of good intention but of determined concrete work. Performance under the principle of operational specification may at last remove old habits of exclusiveness and frustration. We do not expect to begin with perfection but trust that scientific method will free us from unnecessary dogma without having to become iconoclasts."

Margaret Mead

"Sociometric techniques and the cultural-anthropological approach are mutually necessary if we are to make valid cross-cultural sociometric abstractions about the optimum composition and structure of social groups and the situations within which individuals' interpersonal functioning will reach its highest potential development. Sociometric techniques can measure and provide a basis for describing the interaction of individuals, in pairs or in other constellations; cultural anthropology can take these descriptions and derive from them descriptions of the cultural factors involved. For example, sociometric techniques can investigate—in a given culture—the optimum size and composition of a group of individuals of specified age, sex and status, who are to perform a given

act. Cultural anthropology can then relate this description to the cultural emphases of the particular culture within which the sociometric measurements were made. Together the two disciplines can develop abstractions by which we will be able to plan a world which will call for structures of social cooperation within which members of different cultures will be able to function effectively."

Howard Becker

"My interest in sociometry issues directly from my interest in the study of small groups."

F. Stuart Chapin

"Since civilian morale is of fundamental importance in a total war, it seems to me that the techniques of sociometric research provide tools with which a democratic people may freely conduct investigations into the bases of morale. . . . Sociometry is probably now only in its rough beginnings. It holds great promise as a device by which a free people may become aware of its means used to approach ends-in-view. The appraisal of means by objective methods contributes to the solution of understanding of the valuation problems which has plagued every culture at all times and in all places."

Raymond F. Sletto

"I am especially interested in the possible applications of sociometric techniques to analyses of leadership and the role of leaders in the formation of public opinion. The recent research of Dr. Paul F. Lazarsfeld in this field may be cited as an example of such applications of sociometric methods. Analyses of interpersonal relationships may contribute much to our knowledge of the dynamics of public opinion."

Paul F. Lazarsfeld

"The role of interpersonal relations as compared with formal media of communications; the role of influences exercised at present in comparison with biographical and cultural factors—all these topics can properly fall in the domain of a sociometric institute.

We have repeatedly studied people's job-hunting experiences, partly with special groups and partly in the setting of a whole community (Millville, New Jersey). It can safely be said that personal contacts are the most important source of jobs. In a community there are real networks along which news about available jobs is passed on. Anyone who is outside such a network has a much smaller chance to get a job. Even in a booming labor market such as we have now, these channels along which the jobs flow are very much worth investigating, because there are still good and bad jobs; it would be very interesting, for instance, to study the important question of how government jobs are given out.

The second great area where we started to study interpersonal relations was in connection with political campaigns. It seems that propaganda comes into a community in two steps: it reaches directly what one might call "opinion leaders" or "diffusion agents," and from them it passes on to the rest of the population by personal contacts. We collected considerable data in 1940, but much more work should be done. The role of personal contacts in opinion formation might be very different in local and in nation-wide elections. During the war we are not so much concerned with elections proper as with the more informal approval and disapproval of Government measures. Obviously, here again the role of rumors, personal influences and so on should be studied in great detail. Specifically, the following question should be kept in mind: If we say that a man's socio-economic position codetermines his opinions, we have to investigate how position is transformed into opinion. The process probably consists in a few people in a group being more aware of the group interests than the rest are; they articulate the group position and transmit it to the others.

The third area where we have been concerned with what might be called sociometric procedures, is the field of merchandising. What makes people buy and how fashions are formed has been studied in many fields. Why does a certain book become a best seller? Why does a movie become a flop? . . . One might, for instance, take a number of people who have bought a best seller and trace their decision from person to person by going back

one step farther each time to those people who have advised the others.”

Eugene L. Hartley

“I consider sociometry an invaluable approach to the understanding of major psychological structures within a group and to the classification of the position of the individual. Together with the spontaneity testing it provides a clue even to the most subtle social and personal ramifications of the individual’s psychological organization.”

Read Bain

“One of the reasons why sociometry has been so productive and why it promises more in the future, is because it is immediately *useful*. Being useful, it avoids the fictitious flavor of most so-called ‘sociological experiments.’ It enables us to solve immediately important and pressing problems regarding the organization and functioning of social groups. From such basic brute-fact data, we may go on to make scientific generalizations about the anatomy and physiology of societal structures.

A second reason for its success and promise is that it deals with concrete observable data, with *small social systems*. . . . Thus, it escapes the vagueness and verbally confused generality which obfuscates so much so-called sociological research. Chemists seldom deal with more than a few variables at a time; genetics is helpless when more than two or three genes are involved; and the problem of Three Bodies is not only unsolved but unsolvable. Since all scientific facts are thus strictly approximations, it is obvious that no science will accumulate many very dependable facts except by keeping its “taken” systems as simple as possible. No chemist can give even a qualitative analysis, to say nothing of quantitative analysis, of a mixture of a dozen common compounds taken at random from the shelf. It would be nice to know all about complicated social systems but it is safe to say that we never shall know very much about them until we have mastered the structure and functioning of simple systems. Then our more inclusive generalizations, which always must be more or less inferential, can be derived, tested, and revised from what we

veritably do know about simple, observable, manipulatable social systems. You get no Periodic Law, no Germ Theory, no Newtonian or Einsteinian generalizations, until millions of observations and experiments on simple systems have provided the raw, hard, crude, brute scientific facts which make possible these creative flights into universal predictive generalization—the golden goal of all natural science. Thus it has been, still is, and ever shall be in the physical and biological sciences; thus must it also be in the social sciences.

Given another fifty years of such development, a body of concrete factual materials will have been accumulated which may make possible the formulation of such inferential universal predictive generalizations as were produced by Newton, Dalton, Darwin, Pasteur, Curie, and Einstein in their fields.

I predict sociometry and psychodrama will have an important place in the history of sociology as it will be written in the year 2000."

1937-1953, Editors of the Journal Sociometry

Gardner Murphy, 1937-1940; George A. Lundberg, 1941-1946; J. L. Moreno, 1947-1948; Helen H. Jennings, 1949; Frederic M. Thrasher and Leona Kerstetter, 1950; Edgar Borgatta, 1951-. Assistants and managing editors: Joseph Sargent, Eugene L. Hartley, J. G. Franz, Zerka Moreno and Joan H. Criswell.

1942-1953, The Society of Psychodrama and Group Psychotherapy, Now American Society of Group Psychotherapy and Psychodrama

First President: J. L. Moreno, M.D.; First Secretary, Bruno Solby, M. D., 1942-1943; succeeded by Frederic Feichtinger, M.D. First annual meeting: May 1943, New York. It published a quarterly Bulletin of Psychodrama and Group Psychotherapy. President Elect: Rudolf Dreikurs, M.D., 1953; Secretary-Treasurer, Edgar Borgatta, 1952-.

1947-1953, Editors of the Journal Sociatry, Now Group Psychotherapy

J. L. Moreno, 1947-1949; James M. Enneis, 1950-52; Edgar Borgatta, 1953-.

1942-1953, Moreno Institute (Formerly Sociometric Institute)

It is due to the initiative and sponsorship of William L. Moreno that the New York Theatre of Psychodrama was built and that the operational facilities for a Sociometric Institute were established.

The original Sociometric Institute was renamed Moreno Institute and Chartered by the Board of Regents of the State of New York in 1951 for postgraduate study. Chairman of the Board of Trustees: Dr. Wellman J. Warner.

1942-1953, Development of Group Psychotherapy

The group psychotherapy movement has been closely linked to the Round Table Conferences within the American Psychiatric Association since the meetings in Toronto in 1931 and Philadelphia in 1932. A strategic meeting took place in Philadelphia in 1944, on May 16, with Dr. Roscoe W. Hall as Moderator of the Round Table. The topic of this meeting was "Group Psychotherapy." It was significant because the experiences with group psychotherapy in the theatres of World War Number Two merged with the work of the pioneers. The results of this meeting were compiled in a symposium *Group Psychotherapy*, edited by J. L. Moreno and published by Beacon House in 1945.

1943, PATERNITY SYNDROME

I am like a fellow who makes daily deposits in the bank but whenever he gets a bank statement his account shows a deficit. He must suspect that the whole system of banking is wrong.

When I was young I had the idea for a stage which is in the center, like the sun, round like the earth, vertical like the skyscraper, but someone imitated it and earned money and fame. Said I to myself: "Moreno, you have to live ten years longer than this fellow, in order to make up. You have so many ideas, you will have more success with the next idea. Keep on working." I invented a recording machine, a new graphic language, I kept on working and ten years later I saw the idea of group psychotherapy wandering off from one fellow to another. I humored myself again and said: "Well Moreno, you just have to live ten years longer than any of them, your time will come, have patience and keep on working." I kept on working and another ten years went

by. And then I saw another idea which I had fathered, psychodrama, being distorted, and another idea, sociometry, being abused and then I said to myself, not without gloom but also not without fortitude: "Well, Moreno, you must live ten years longer, twenty years longer, thirty years longer. You have to survive them all, that is the only thing which is left to you. Some day recognition will turn up suddenly and unexpectedly, just keep on working." I am surviving them and maybe in anticipation I called this book "Who Shall Survive?" But I asked my demon: "Well, how much longer do you want me to live?"

1943, Who Has Written WHO SHALL SURVIVE?

At a meeting of the American Society of Group Psychotherapy and Psychodrama I was rudely asked by a fellow scientist "Why is the first edition of WHO SHALL SURVIVE? so clumsily written? Why did you write it in such a mysterious, difficult and almost coded language?" I answered (just to tease him, I guess, and give him a lesson) "I did it purposely, in order to establish an indelible record against any claimant, typists, assistants, collaborators, that they have written it. I left my fingerprint on every page, with all the grammatical errors which only a foreigner could muster, with all its lengthy, un-English constructions, leaving out commas here and there, indulging occasionally in repetitions (to the despair of the reviewers), all this purposely, in order to make it clear for all posterity that the book could not have been written but by myself alone. An idea book like WHO SHALL SURVIVE? cannot be conceived "in collaboration."

Although I took all these precautions to establish the identity of authorship beyond all question, there have been, to my knowledge, at least *three* individuals who claimed that they have written the book.

1945-1952, TEACHING SEMINARS IN AMERICAN UNIVERSITIES AND COLLEGES

In the summer of 1945, upon the invitation of Dr. Elwood Murray, Chairman of the Department of Speech at Denver University, I conducted a seminar which was followed up for several successive summers by a number of my associates. This started

a chain reaction of invitations. Among the Institutions carrying seminars or workshops were: Duke University; University of North Carolina; Claremont Colleges; Stanford University; American University, Washington, D.C.; Washington University, St. Louis; Western Reserve University; Wayne University; Northwestern University; Johns Hopkins University; Emory University; University of Georgia; University of Buffalo; Pasadena Playhouse; University of Houston; University of Oklahoma, Norman; University of Chicago; New York State Teachers College, Albany; Hartwick College, Oneonta; Williams College; Harvard University; Boston University, etc.

The most recent was an appointment to the faculty of the Graduate School of Arts and Sciences, Department of Sociology, New York University, where I gave a course on Psychodrama, Sociodrama and Role Playing.

1946, THE BOOK ON GOD

At the University of North Carolina in the spring of 1946 I was about to make an address before several hundred students. It was some years after I had published the American version of 'The Words of the Father' which aroused, in scientific circles, some controversy as to my sanity. "Well," said I, "I know what some of you are thinking: 'This is the man who, when he was young and vigorous started sociometry; now that he is old and decrepit he has become religious—the usual thing, the tragedy which befalls many good men, turning back to God when they are old.' Now just for your information, gentlemen, I wrote my book on God when I was young, it was almost my first book. It is WHO SHALL SURVIVE? which I wrote when I was about to become an old man. Apparently I was senile first, long before I was juvenile."

1947, PITIRIM A. SOROKIN

Dr. Sorokin was driving with me from his home in Winchester to Boston. Our conversation revolved around a sore spot in our culture, the disheartening way we treat our creative geniuses, as a group. I took the view of urgency, that our generation has a separate urgency in this: creativity is a maternal function. It is not the geniuses as individuals which matter, but as carriers, as

the wombs of our collective babies; they require protection and care throughout the vulnerable period of creative gestation. Sorokin took the position of the historian, the long view. The errors and injustices are transitory, the main current will absorb and straighten out the side currents. Time is a redeemer.

1947, PROFESSOR OF SOCIOLOGY AT HARVARD

At Harvard University the plan was inaugurated to merge the Departments of Psychology, Sociology and Anthropology into a single department. A meeting took place, attended by professors from various universities. The question was raised whom to choose for the important task of heading the laboratory of the department. One of the participants got up and suggested me as having made the greatest contribution to social science for twenty years. There was unanimous agreement as to my prominence and to the uniqueness of my contribution. But then there was a silence. At that point a sociometrist—I do not know his name to this date but I owe him everlasting gratitude for talking in my behalf as an auxiliary ego *in absentia*—remarked that I would hardly accept the job, that I would not fit into academic life, with its formalities and limitations. I heard about this after it was all over and was happy to hear that Sam Stouffer was appointed.

1949, A Theatre of Psychodrama at the Psychological Laboratory, Harvard University

“Before a gathering of grad students and professors that more than filled the modern, newly completed hall, Dr. J. L. Moreno accepted, last Monday, the presentation of his latest ‘child’—the Harvard Psychodrama Theatre. With Harvard as the proud mother, this addition to the clinical psychology family has, as Dr. H. A. Murray pointed out in his introduction, no question of paternity; for the psychodramatic techniques are Dr. Moreno’s great contribution to the science of social relations.”*

I permit here a reporter to describe the event, as I remember only two things clearly: Dr. Murray standing before the audience, he, the exponent of imagination, pleading for it; and then I re-

* See *The Radcliffe News*, October 7, 1949.

member the speech I would have liked to make instead of the one I actually made: "There are two kinds of scientists, the poets and the non-poets, and here are two poets."

Since then Murray and I carry on an imaginary correspondence; he sends me letters which he never actually wrote and I send him letters, often in the middle of the night, which he receives promptly and without benefit of mail carriers. This is a "sociometric imagination test" and consists of four steps: a) the letters I wanted to write him; b) the letters I want to receive from him; c) the letters he wants to write me and d) the letters he wants to receive from me. The test does not require any extrasensory perception, "intrasensory" imagination suffices. It is an excellent method for poor letter writers to keep their correspondence up to date.

1950, Symposium on Group Psychotherapy, American Psychiatric Association

Upon the petition of more than fifteen hundred members and fellows of the American Psychiatric Association an annual symposium on Group Psychotherapy, Theory and Practice, and a Round Table on Group Psychotherapy and Psychodrama was established.

1950, Why Did I Run for the Presidency of the American Psychiatric Association?

For two reasons: because of its bias against creative genius; it has hardly ever elected a genius to be its President, and because of its bias against Jews; in one hundred and seven years it has never elected a Jew to be President.

1950, COMMUNISM AND SOCIODRAMA

I have heard that a form of socio-psychodrama is used for communist propoganda in the Philippines, India and China, in order to convert people to communism. According to an informant the conductor opened a session by putting before the audience an actor portraying an American business man. The portrayal was purposely biased and was able to arouse the audience to active hostility against the ideological counterprotagonist. This is an

illustration in point that *highly directive* sociodrama can be used for the indoctrination of any set of values, religious, communistic or fascistic.

One may think here of the atomic bomb; the bomb is neutral, it does not take sides, it will serve the one who has it, the master. It seems to be the same way with all scientific methods, they cannot be harnessed in favor of one or another cause. A particular form of sociodrama, however, is an exception to the rule, the group-centered form. Here the problem and presentation are not coerced upon the group by a mighty dictator-director but they come from the group. If true spontaneity is permitted to the members of the group the denaturalizing tendencies have to give way sooner or later to the spontaneous aspirations of the participants. The group-centered form of sociodrama, unless prohibited by law, is a natural ally of democratic processes.

1950, GROUP PSYCHOTHERAPY IN FRANCE

The reactions to group psychotherapy varied on the continent. A psychologist who had returned from France gave a report on the response to group psychotherapy. Said he: "Traveling through several cities I saw to my amazement that large numbers of people attended group psychotherapy sessions. I noticed particularly the presence of plain people, workers and peasants besides students and various types of intellectuals. But when I began to mix with the crowd to find out what motives they had in coming, I discovered that the majority of participants were communists."

The logic of this is that ideas and inventions do not belong to one or another society, but to universality. You cannot take them with you, you cannot keep them for yourself.

1951, PSYCHODRAMA IN ENGLAND

You may have heard it said frequently that psychodrama is a typically American eccentricity, a sort of "exhibitionistic" psychiatry, made to order for childlike people, and Americans are like children. It would never go over in England. My best friends began to believe this. Then I came to London in April, 1951. There I gave some lectures and demonstrations at the Royal Medical Society, the Maudsley Hospital and at the Bed-

ford College for Women. I have rarely seen, even in New York, such an uproar of excitement, depth of appreciation and eagerness to participate in the action. It appeared to me that the Englishman's love for understatement is highly exaggerated. Maybe he, like all people, knows when he sees the real thing and gets involved in the presence of it. After it is all over and he has come back to himself, he again sees the world in two parts, overstatement and understatement.

1951, PSYCHODRAMA IN FRANCE

The other day I heard a Parisian report about the reaction of France to psychodrama. "You Americans like psychodrama because you have no private life, so you have to have it at least in public. We, in France, do not need psychodrama, we have too much of it in our private life. But there is another form of psychodrama, the collective form; as we have no public life to speak of we like to have at least sociodrama, a public life in private."

1952, ROLEPLAYING IN GERMANY

Group psychotherapy is rapidly becoming accepted everywhere but psychodrama arouses resistance in many places, perhaps because there is much more to it. In Germany, for instance, the fear was first expressed that people are not intelligent enough for it, or that they would hesitate to expose their feelings in public. But Professor von Wiese proved otherwise; using sociodrama and roleplaying as a method of teaching sociology he has found that the German youth react similar to French, English and American youth.

1952, THE MIND OF J. L. MORENO

The other day a distinguished English scholar wrote a letter to my publisher (ordering all my publications) stating that he is writing a book "The Mind of J. L. Moreno". It looked as if I had been dead for a long time and the moment had come for a historian to look me over. This gave me a hint as to how difficult I make it for my contemporaries to keep my calendar straight. For some who have seen me in action I look like one

of the youngest living social scientists; for others, who know me from prints (reading what I have written or done in 1908, 1911, 1918, 1923, etc.) I am about the oldest. In order to explain this contradiction one of my arch enemies has spread the following tale: there are really two Morenos, the father and the son. The real genius was the father, it is he who came from Vienna, it is he who started the group psychotherapy, the psychodrama, the sociometry and the roleplaying, but he has been dead for a long time. That fellow in Beacon is his son, he is just carrying out and exploiting his father's ideas.

1952, Sociometry and Sociodrama in Education

Sociometric methods have places of application in every state of the union. The names of individual researchers and teachers whose work contributed ideas and materials are too numerous to name. The following are but a few:

PS 181, Brooklyn, New York

Riverdale School, Riverdale, New York

Hunter College, New York City

Collinwood High School and Hazedell School, Cleveland, Ohio

Gove Junior High School, Denver, Colorado

New Park Avenue School, Hartford, Conn.

Clara Barton School, Margaret Fuller School, Ramsey High School and Washburn High School, Minneapolis, Minn.

Camden Street School, Central Avenue School and Pre-Vocational School for Girls, Newark, New Jersey

Colfa School, Girls Vocational High School (Irwin Avenue Unit), H. C. Frick School, and Manchester School, Pittsburgh, Pa.

Thomas A. Doyle School, Providence, Rhode Island

Vashon High School, St. Louis, Missouri

Lake Bluff School, Shorewood, Wisconsin

Adams High School, South Bend, Indiana.

1952, SOCIODRAMA AND ROLEPLAYING IN INDUSTRY

United States Steel Company

Kaiser Aluminum Company

Metropolitan Life Insurance Company
 Radio Corporation of America
 Johnson & Johnson
 Management Development Center
 Baur Inc.
 Industrial Relations Center, University of Chicago

1952, Centers of Sociometric Research

American Council on Education, Washington, D.C.
 Departments of Psychology and Education, Boston University,
 Mass.
 University of California, Los Angeles
 Human Dynamics Laboratory, University of Chicago, Ill.
 College of the City of New York
 Colorado State College of Education, Greeley
 Department of Education, University of Colorado, Boulder
 University of Connecticut, Bridgeport
 University of Connecticut, Storrs
 New York State School of Industrial and Labor Relations, Cor-
 nell University, Ithaca
 University of Florida, Miami
 University of Georgia, Athens
 Laboratory of Social Relations, Harvard University, Cambridge,
 Mass.
 Soziologisches Laboratorium, University of Köln, Germany
 School of Education, London University, England
 Louisiana State University, Baton Rouge
 Psychological and Educational Institute, University of Lund,
 Sweden
 Michigan State College, East Lansing
 University of Michigan, Ann Arbor
 Moreno Institute, New York City and Beacon, N. Y.
 New Jersey State Teachers College, Trenton
 New York State College for Teachers, Albany
 New York University, New York City: Graduate School of Arts
 and Sciences, Department of Sociology, Center of Human
 Relations Studies; School of Education
 North Texas State College, Denton

Oklahoma Agricultural and Mechanical College, Stillwater
 Department of Sociology, University of Oklahoma, Norman
 Laboratoire de Recherches Sociometriques et Psycho-Sociolo-
 giques, University of Paris, France
 Department of Education, Queens College, Long Island, N. Y.
 Department of Education, San Francisco State College, California
 School of Agriculture, University of Saskatchewan, Canada
 Temple University, Philadelphia, Pa.
 University of Texas, Dallas
 University of Toronto, Canada
 Department of Sociology, University of Washington, Seattle
 School of Education
 Yale University, New Haven, Conn.

**1952, Group Psychotherapy and Psychodrama in
 Mental Hospitals and Clinics**

There is hardly a mental hospital in the United States which does not practice some form of group psychotherapy or psychodrama. A number of pioneering hospitals are listed here:

St. Elizabeths Hospital, Washington, D.C.
 Beacon Hill Sanitarium, now Moreno Sanitarium, Beacon, N. Y.
 Boston Dispensary, Mass.
 Kings Park State Hospital, Long Island, N. Y.
 Worcester State Hospital, Mass.
 Pinewood Sanitarium, Katonah, N. Y.
 Psychopathic Ward, Bellevue Hospital, New York City
 Boston Psychopathic Hospital, Mass.
 Boston State Hospital, Mass.
 Alfred Adler Consultation Center, Chicago, Illinois
 Central Islip State Hospital, Long Island, N. Y.
 Rockland State Hospital, Orangeburg, N. Y.
 Milledgeville State Hospital, Georgia
 Mental Health Institute, Independence, Iowa
 St. Louis State Hospital, Missouri
 Longview State Hospital, Cincinnati, Ohio
 Downey Veterans Administration Hospital, Illinois
 Brentwood Veterans Administration Hospital, Los Angeles,
 California

Little Rock Veterans Administration Hospital, Arkansas
 Mental Hygiene Clinic, Veterans Administration, Brooklyn, N. Y.
 Mental Hygiene Clinic, Veterans Administration, Seattle, Wash-
 ington
 Veterans Administration Hospital, Lyons, New Jersey
 Veterans Administration Hospital, Roanoke, Virginia
 Veterans Administration Hospital, Tuskegee, Alabama
 Veterans Administration Hospital, Tuscaloosa, Alabama
 Veterans Administration Hospital, Hines, Illinois
 Veterans Administration Hospital, Montrose, N. Y.
 Veterans Administration Hospital, Northport, N. Y.
 Veterans Administration Hospital, Lebanon, Pa.
 Veterans Administration Hospital, Fort Logan, Colorado
 Veterans Administration Hospital, Murfreesboro, Tenn.
 Veterans Administration Hospital, Knoxville, Iowa
 Veterans Administration Hospital, Marion, Indiana
 Brooklyn State Hospital, New York
 Veterans Administration Hospital, Buffalo, New York
 Veterans Administration Hospital, Augusta, Georgia
 Veterans Administration Hospital, Louisville, Kentucky
 New Jersey State Hospital, Trenton
 Veterans Administration Hospital, Newington, Conn.
 Veterans Administration Hospital, Omaha, Nebraska
 Veterans Administration Hospital, Tacoma, Washington
 Mental Hygiene Clinic, Veterans Administration, San Francisco,
 California
 Veterans Administration Hospital, Houston, Texas
 Mental Hygiene Clinic, Savannah, Georgia
 Emory University, Atlanta, Georgia
 Mental Hygiene Clinic, Veterans Administration, Philadelphia, Pa.
 Johns Hopkins Hospital, Phipps Clinic, Baltimore, Maryland
 Spring Grove State Hospital, Catonsville, Maryland
 A number of hospitals abroad also practice group psycho-
 therapy and psychodrama in some form:
 McGill University Hospital, Montreal, Canada
 Institut Claude Bernard, Paris, France
 Clinic for Nervous and Mental Disease, Leiden University,
 Netherlands
 Maudsley Hospital, London, England

Tavistock Clinic, London, England
Institute of Social Psychiatry, London, England
Sutton General Hospital, Sussex, England
St. Anne Hospital, Paris France
Villejuif, Paris, France
Arbeitskreis für Psychotherapie, Graz, Austria

1952, ACTING OUT

We psychodramatists are not afraid to act out our thoughts and feelings in a form appropriate to their dynamic content. The problem is not the acting out; it is rather whether the actor has the equipment with which to perform and has learned to keep what he performs within the bounds of his equipment.

SECESSIONS FROM THE SOCIOMETRIC MOVEMENT

a) Group Therapy

Until 1935 there was only one group of workers and one complex of ideas associated with the terms group therapy and group psychotherapy, the one which I had started, with myself as their chief exponent. From then on the terms began to be taken up by others and for more than a decade there was only one journal, founded by me—*Sociometry*—which began to publish investigations on group methods and group psychotherapy systematically and exclusively. Then we were able to develop the new methods quietly and without concern for priorities. Indeed, all principal ideas and operations were well established by 1940. But today, within little more than ten years, we have two societies on group psychotherapy, two journals on group psychotherapy and the tendency for further secessions is in the air. What happened? Looking backward, even the manipulations of Slavson are incidental. After drawing his first inspirations from me, being without a medical or psychological degree, he tried to develop a new group and to shield his own insecurity by surrounding himself with some people of professional status. But I realize now that the secession was produced by forces which would have been hard to keep in harness by a single organization: the awakening of the individual schools, as the Freudians, the

Adlerians, the Jungians, to the fact that the old methods of psychotherapy had become stale and that a new orientation was necessary for their survival.

Many of their representatives began slowly to enter the group field and brought with them the theories and interpretations of their own school. Theories and interpretations are not given up overnight, they represent profound emotional, ideological and economic investments, not only of the individual representatives but also of the organization to which they belong.

There was hardly any theoretical block which could not have been overcome. Within the framework of sociometry all prominent psychoanalytic concepts and techniques could have found a niche—transference, resistance, free association, etc. But the block was terminological and metapsychological, and still is. Paul Schilder's reaction was typical; he resisted the idea of group psychotherapy at first when I presented it to him in 1931, but when he saw the light several years later he said: "I agree with your ideas but I do not like your terminology." Actually, what he did not like was my all-out attack upon the psychoanalytic system. It is significant to note that many adherents of the analytic schools with a strong sociological and actional orientation, like the Adlerians, the Jungians and the neo-Freudians are inclined towards our original society, whereas those with an individual and verbal orientation tend towards the secession group.

Among the practitioners, the only term and concept on which there is fair agreement is group psychotherapy and some of its sub-classifications.* The operations used are far more alike than the language describing them would indicate. The secession has slowed up the needed consensus of common terms and common operations by many years. Only after agreement is

* The earliest differentiation made by me was between analytic and non-analytic (suggestive) group therapy (*Group Method*, 1932, p. 65). Soon afterwards I differentiated further *analytic* forms from *activistic* forms of group psychotherapy (First Edition, *WHO SHALL SURVIVE?*, 1934, p. 301). A few years later I suggested a more detailed differentiation of Group Psychotherapy into eight classes based on the description of the methods practiced. 1) lecture methods, 2) analytic group methods, 3) psychodramatic methods, 4) socio-dramatic methods, 5) sociometric methods, 6) musical methods, 7) dance methods and 8) motion picture methods (*Group Psychotherapy Symposium*, 1945). A more dynamic type of classification is my Basic Categories of Group Psychotherapy, contained in the same volume, p. 318-319.

reached as to terms and operations can the next stage be fruitfully approached—the formulation and testing of hypotheses.

b) Group Dynamics

The similarities between Kurt Lewin's work in action and group research and my own has been so striking that many have wondered what kind of interdependence there is between Lewin and myself. Moreover, many of Lewin's students have also been my students, writing articles published in *Sociometry* and *Sociatry* since 1938, on subjects with which I have been widely identified, sociometric methods, dynamics of group structure, sociodrama and roleplaying, psychodrama and roletraining. After I had initiated them they began to write similar articles for other journals and in books, having the stamp of my thought. In consequence, group dynamics, the name which was frequently used by them, as a label covering their common interests, was considered by interested observers as a branch of the sociometric movement. My obvious support, linked with my silence may have encouraged such a view.

I have frequently been bombarded with questions about this. An illustration is the query of a French psychologist, Roger Girod, in a book on the current situation of the social sciences in the United States.

“On peut distinguer au moins deux courants principaux au sein de la microsociologie americaine: un courant sociometrique dont l'animateur est Moreno et un courant—d'inspiration lewinienne surtout—orienté vers l'étude de la dynamique des groupes, plus particulièrement des groupes dont les membres sont en rapports direct les uns avec les autres out ont en commun un projet d'action précis. *Ces deux courants presentent de nombreux points communs et de nombreuses similitudes. Ils se developpent en étroite liaison mutuelle.*”* (Italics mine.) “One can distinguish at least two principal currents in the center of American microsociology: a sociometric current, of which Moreno is the driving force and a current—primarily of Lewinian origin—focussed upon the study of group dynamics, more particularly upon groups of which

* Roger Girod, *Attitudes Collectives et Relations Humaines*, Tendances actuelles des sciences sociales americaines, Presses Universitaires de France, Paris, 1953.

the members are in direct contact with one another or have a specific action project in common. *These two currents have many points in common and present many similarities. They are developing in close mutual relationship.*" (Italics mine).

Many an idea is started by two or more individuals independently. But this is not a case of duplication of ideas. It can be shown on the basis of printed records that the leading associates of group dynamics have been in close contact with me. Theirs is not a problem of productivity, theirs is a problem of *interpersonal ethics*. In the case of duplication of ideas the carriers do not know one another, they work in different places. But the imitators sit near the one from whom they steal the eggs; they are parasites. I did not harbor ill feelings towards them, this is the reason I remained silent. I said to myself: Just as there are people who can have no children, so there are people who cannot create any ideas, therefore they adopt them. What matters is whether they fulfill their obligation and bring them up well. *It is unfortunate—and this is why I am breaking my silence now—that these students of group dynamics have not only published distorted versions of my ideas and techniques, but they are practicing them on actual people in so-called research and training laboratories,* receiving large fees and research grants without being properly trained for the job.*

The first question which I shall try to clarify here is: Did I influence Lewin's ideas and methods and where and how did this take place? It should be clear that when I talk about ideas and methods I refer exclusively to group theory and group methods, action theory and action practice, that is, only to the work which Lewin had begun to do since about 1936, soon after the time that he had met me, and not to his work in Gestalt and topological psychology prior to that time.

Kurt Lewin met me for the first time early in 1935, and during that year we had several meetings. As Dr. Alfred Marrow, an intimate friend and student of Lewin's reports in the obituary to Lewin in *Sociometry*, Volume 10, 1947, "I recall the day when I first introduced Dr. Lewin to Dr. Moreno. Both recent

* The Research Center for Group Dynamics, Massachusetts Institute of Technology; the National Training Laboratory, Bethel, Maine; the Research Center for Group Dynamics, University of Michigan, Ann Arbor.

arrivals here, they had known of each other, but had never met. It was not long after the publication of Moreno's *WHO SHALL SURVIVE?* and of Lewin's *Dynamic Theory of Personality*. Both men quickly found common ground." He was acquainted with sociometry and with some of the work I had done in Europe, especially *das Stegreiftheater* and had read *WHO SHALL SURVIVE?* Up to that time Lewin's publications did not deal with either group or action dynamics.[†] For better or worse, my pioneering status in this field was already established and so I became the model for his first efforts in this, for him, new direction of research. He expressed in our talks particular interest in the democratic structure of groups, in contrast to their *laissez faire* and authoritative structure, problems with which I experimented at that time; it happened that my report on this topic in "Advances of Sociometric Techniques" appeared in the same issue of the *Sociometric Review* (February, 1936) in which he announced the carrying on of sociometric research at the Child Welfare Research Station at the University of Iowa. His first report of this study was subsequently published, two years later, in *Sociometry*, Volume I, No. 3-4, 1938. A careful reader of my publications* up to that time who knew also of my direct, face to face contact with Lewin, must have gained the impression that he was a student of my work and under my influence, that he tried to combine his concepts and experiences in Gestalt and topological psychology with the new acquisitions. As the matter stood by 1938, I was in the circles which were interested in the new developments of action and group theory, the acknowledged leader.

Because of gentle pressure the editors of a recent collection[‡] of their publications, Kenneth D. Benne and Bozidar Muntyan made a special acknowledgment, giving me full credit for having originated the ideas with which they were preoccupied, in *Human*

[†] See Bibliography in Ronald Lippitt's "Kurt Lewin, 1890-1947, Adventures in the Exploration of Interdependence," *Sociometry*, Vol. 10, 1947, pp. 87-97.

* *Das Stegreiftheater*, 1923; *The Group Method*, 1932; *Psychological Organization of Groups in the Community*, 1933; *WHO SHALL SURVIVE?*, 1934; "Advances of Sociometric Techniques," 1936; "Interpersonal Therapy and the Psychopathology of Interpersonal Relations," 1937; "The Place of Sociometry Among the Social Sciences," 1937; "Sociometric Statistics of Social Configurations," 1938.

[‡] Containing articles by Kurt Lewin, Alex Bavelas, Ronald Lippitt, Alvin Zander, Leland Bradford, etc.

Relations in Curriculum Change, published by the Dryden Press, New York, 1951 :

“The editors make special acknowledgment to Dr. J. L. Moreno, who has pioneered in the areas currently referred to as psychodrama, sociodrama, roleplaying, action dynamics, warming-up technique, group psychotherapy and sociometry, and who first introduced these terms into the literature, with some of the meanings emphasized in the present volume. To a great extent, the basic impetus for certain new trends in group and action research can be traced to the work of Moreno and his numerous associates.”

*But it should be clear that I strictly separate Kurt Lewin from the group of students who attended my workshops in Beacon and in New York in the course of the last ten years. I am inclined to believe that Lewin himself was rather naïve as to their astute and Macchiavellian practices, especially as these tactics did not show their true face until after his death. The journal *Sociometry* (and the journal *Sociatry*, later called *Group Psychotherapy*) became one of the chief organs in which appeared a large number of their articles dealing with experiments in group and action methods. Indeed, these articles on psychodrama, roleplaying, sociodrama and other sociometric techniques, by Ronald Lippitt, Alvin Zander, John R. P. French, Alex Bavelas, Leland P. Bradford, C. Hendry, Margaret Barron, Kenneth D. Benne and others, differed little, if any, in theoretical position, description of techniques and hypotheses to be tested, from those of any other workers more closely identified with sociometry. Increasingly, I suppose, the temptation came over them to play different games on both sides of the fence, on one side to appear as students of Lewin, on the other as students of Moreno, by printing the same or similar articles in the context of various publications. It was a shrewd device to plant, at least in the mind of *some* people, the idea that by sheer coincidence of circumstances the same ideas developed independently. By using a technique of quoting only each other, that is, those who belong to their clique, and not quoting any of my close associates or myself their double game became the laughing stock of the connoisseurs and initiated in this new form of “interdependence.”*

The other day I was reading old protocols of psychodramatic sessions* which are now in preparation for a special volume. Among them were some of the transcripts in which these men were participating as students or protagonists before they began to write on the subject and organize workshops of their own. I still see the bright boys sitting in my classes and role-playing on the psychodramatic stages of Beacon and New York.

Lewin's dependence can be further shown in three respects.

a) *The Sociometric Institute served consciously or unconsciously as a model for the Research Center for Group Dynamics.* Compare, for instance, the following points taken from his announcement of the Research Center[†] with the announcement of the Sociometric Institute. The dominant tone and objectives are the same.

"Social science needs an integration of psychology, sociology and cultural anthropology into an instrument for studying group life. . . . Although philosophical prejudice had 'proved' the impossibility of controlled experiments with social groups, today, I think, it is fair to say that the possibility of such experiments has been demonstrated.

Finally, the development of *sociology* proper has brought about a state of affairs which seems to demand group experiments.

More recently, data are considered which are obtained by intimate studies of small-scale groups, by recording interaction between their members and investigating typical attitudes of individuals in typical roles.

One last point: Experiments with groups have not only to overcome philosophical prejudices and technical difficulties; they have also to justify themselves as honorable and necessary social procedure. "Group manipulation" is a term that is dreaded, at least in a democratic country. It seems to go counter to the basic dignities of man.

The Center is devoted to the development of scientific

* See *Group Psychotherapy*, Vol. 5, No. 1-3, 1952. The acquaintance and sociometric tests presented in the protocols show that Ronald Lippitt played a key role; he was to become the chief manipulator in the more organized efforts of the later Research Centers for Group Dynamics.

† *Sociometry*, Vol. VIII, 1945, p. 126-136.

concepts, methods, and theories of group life which should lead to a deeper understanding and permit a more intelligent management of social problems in small and large settings. Emphasis is placed on laboratory and field experiments for studying systematically the forces which determine group life and changes in group life."

b) *The divergence between his theory and his actual research work in group dynamics.* He tried to apply topological theory to the various group methods which I had developed. It is not astonishing that the two did not fit well together and that a considerable artificiality resulted as soon as they were translated from paper into practice. Therefore, I agree with Eysenck's critique* of Lewin although for different reasons. Lewin was original as a theoretician but his experimental work in group and action dynamics was not original. The techniques which made his work popular stem from me, they led him and his students to the study of autocratic and democratic group structure, group decision and roleplaying. He did not have firsthand inspirations in these areas but was quick in secondary elaboration and giving them a topological costume. He became belatedly aware of this incongruity and tried to develop, supplementary to topological theory, a theory of action of his own, using my action theories as a model. But he did not succeed in this, he did not see clearly the relationship between spontaneity, warming up, the stages leading up to and the operational circumstances emerging in the moment of action. He tried to set up a theory of change without a theory of spontaneity, a theory of action without a theory of the actor *in situ*, a

* See the review of *Field Theory in Social Science*, by Kurt Lewin, written by H. J. Eysenck in *The British Journal of Sociology*, Dec. 1952, Vol. III, No. 4. "Most experimental psychologists have found this mixture somewhat indigestible and have protested that Lewin's theory had but a very tenuous relation to his experimental work. This has been hotly denied by Lewin's followers who insist that theory preceded experiment, and that the latter would have been impossible without the former. If this contention is correct, the volume under review is obviously of the greatest importance; if not, it may be dismissed as Teutonic philosophizing of a particularly unintelligible kind. The reviewer believes that the latter alternative is the correct one for the following reasons. In the first place, qualified mathematicians who have examined the Lewinian theme have shown in great detail that his use of topological concepts bears little relation to the orthodox usage. Lewin has never answered these criticisms, which, even to the mathematical tiro, appears reasonable, and in the absence of such a refutation, it is difficult to take Lewin's topological analysis very seriously."

theory of productivity without a theory of creativity. This theoretical deficiency led to deficiencies in the comprehension and the effect of action techniques. *Lewin's chief handicap was that he tried to formulate a theory of action without being an action technician himself.* He had to depend upon his students to be indoctrinated into them and they were themselves unimaginative and inadequately trained. This is confirmed by Ron Lippitt: "It will be of interest to readers of this Journal to note that his (Lewin's) growing interest in the theory and methods of social change has led him to sign up as a student in a course in psychodramatic techniques this semester. He was looking forward eagerly to this opportunity to learn."[†] Which of our "mutual" students was teaching this course on psychodrama?

c) *Many of his students merely render lipservice to topological theory; they lean upon sociometric theory or theories of similar origin.** Since Lewin's death the Research Center has lost the dignity and direction which he was still able to supply. Behind a carefully groomed scientific facade lurks the cold head of a business organization.

I am not sociometry, only its spokesman. The creative efforts which have gone into its development can be traced to many persons. The secession is not from me personally, but from the entire group. If sociometry would be a sum of writing which I have exclusively produced, it would be a personal matter. As a person I might have decided to let the bad actors run away with the goods. I have never expected that sociometrists would give each other a reference or a footnote on every occasion. It would be like saying to the woman you adore: I love you, whenever she turns up. Such behavior may be considered as bad manners. But the chronic neglect of references is bound to produce some anxiety in the potential recipients.

I cannot close this unpleasant chapter without asserting that I have not written it because I personally have been cheated of any benefits. I have written it for *ethical* reasons, and for the de-

[†] See Ronald Lippitt, "Kurt Lewin, 1890-1947, Adventures in the Exploration of Interdependence," *Sociometry*, Vol. 10, 1947, p. 87.

* Good examples are: *Training in Community Relations* by Ronald Lippitt, 1949; *Human Relations in Curriculum Change*, edited by Kenneth D. Benne and Bozidar Muntyan, 1951; *Social Pressures in Informal Groups*, Leon Festinger et al., 1950.

light of all participants in the various social atoms involved, so that everyone should know "that they did not get away with it." I hope it will do something for the morale of the group dynamic students and that they will enroll for a refresher course at the Moreno Institute next term. Actually, I have greatly benefitted from their intervention, they have helped to spread my ideas faster than I could have done alone and directed the attention of readers everywhere to my work.

THE PRIMACY OF SOCIOMETRIC VALUES IN THE INTERPERSONAL RELATIONS OF SCIENTISTS

The motives for exposing interpersonal conflicts with former associates has little to do with "priority" or "recognition". My craving for ego-satisfaction, for "being loved and admired" has been comfortably reciprocated. If a father of ideas gets fifty percent returns he can consider himself lucky, and I got more than this. This book appears simultaneously in three languages, English, French and German.

Behind the histrionic stylist of the Preludes is an humble man who remembers every kind thing which has been done for him, but unfortunately perhaps, he remembers also the many kind things he has done for others. The dilemma is that I cannot write a book like WHO SHALL SURVIVE? and, at the same time, lead an entirely unsociometric life. There is nothing more distasteful, I think, than a "sociometric hypocrite"—to have it all for science but nothing for his own behavior. I am a devotee of primary relations and cannot conceive of a world to survive in which warmth and friendship, truth and clarity are entirely replaced by cunning, calculated cleverness and reliance that the technical media of communication, as the printing press, can obliterate the here and now, the face to face communications.

THE RAPPROCHMENTS

There are developing a number of combinations between psychodrama and psychoanalysis, in recent years. Interesting is the use of psychodramatic operations followed up by orthodox psychoanalytic interpretation. An illustration is John N. Rosen's*

* See *Direct Analysis*, 1953.

treatment of schizophrenic patients. As Meiers puts it,[†] "He—came to act as what the psychodramatic theory calls an 'auxiliary ego,' *i.e.*, in the role(s) necessitated by the psychotic fantasies of the patient." "It will be observed that Rosen reestablished the patient's 'contact with Reality' *not* through his (R's) 'assuming the identities' of the various figures of the patient's persecutory phantasies. What evidently first took place was the patient's meeting his dreaded 'figures' in reality: hearing and seeing them embodied—in this case—by the doctor."

Another promising rapprochement is the work of French psychoanalysts like Dr. S. Lebovici and R. Diatkine. Their work appears to be more advanced than Rosen's towards "an analytic psychodrama".[‡] A step closer towards operational psychodrama, analysis and action going hand in hand, is illustrated in Carp's work.[§] Last not least is the work of courageous English group psychotherapists and psychodramatists, Dr. Maxwell Jones at Sutton General Hospital, Dr. S. H. Foulkes at Maudsley Hospital and Dr. Joshua Bierer at the Institute of Social Psychiatry. In Graz, Austria, Dr. H. Teirich has been pioneering.

On the sociological side the school of Dr. Leopold von Wiese founded upon his *Beziehungslehre* became to the sociometric school a source of mutual inspiration and intellectual friendship. The scientific printing press runs in the USA at such a mad tempo that the great work of von Wiese is not sufficiently appreciated. He has introduced sociodrama and roleplaying in his classes as a sociological teaching method and sociometry is paving its way through German schools.*

The greatest help to sociometry in the last decade, however, has not come from the United States, but from France. The credit for having inspired interest for sociometry and sociodrama in most European countries goes to Professor Georges Gurvitch, probably the most courageous and most productive French soci-

† See "Reaching out for the Psychodrama," *Sociatry*, Vol. 1, 1947, p. 64-69.

‡ See *Group Psychotherapy*, Vol. 5, No. 1-3, 1952, "Application of psychoanalysis to group psychotherapy and to psychodramatic psychotherapy in France."

§ E.A.D.E. Carp, *Psychodrama*, 1949.

* See *Schule und Schülergemeinschaft, Soziometrie im Gruppenleben*, Helen H. Jennings, edited by Ernst Lichtenstoin, Christian-Verlag, 1951; *Grundlagen der Soziometrie*, J. L. Moreno, Westdeutscher Verlag, 1953, with an Introduction by Leopold von Wiese.

ologist since Durkheim. Gurvitch was the driving force in the establishment of the Laboratoire de Recherches Sociometriques et Psycho-Sociologiques at the University of Paris and wrote the most penetrating analysis of sociometry yet made.[†] Under his supervision and with the assistance of Jean Maisonneuve the French sociometric laboratory is making original contributions and valuable modifications to sociometry and sociodrama.

1953, FINAL WORD

I have been the chief public carrier of these ideas. Therefore, besides the facts and figures, my personal struggle towards their realization, coupled with my "histrionic syndrome" may help the reader to warm up to the *elan vital* of the sociometric movement.

Why did I write the Preludes? On the way to New York from Beacon one day a well meaning critic said: "Do you want to know what is wrong with your books? I'll tell you. It is that they mix autobiography with science." Here, then are the Preludes. They try to indicate how the thought grew in *my* mind, and to tell some fragments of the psychodrama of my life. *There is no controversy about my ideas, they are universally accepted. I am the controversy.* The fondest dream of my youth has come true, they are already used anonymously in many places.

I have tried to explain why an individual of my type was particularly suited to produce them. I hope that I succeeded some and that everyone, friends and enemies will enjoy them, because they are autobiography "unadulterated". Now I fear only that many will read the Preludes and not the book.

[†]"Microsociologie et Sociometrie," *Cahiers Internationaux de Sociologie*, 1947.

DR. WILLIAM ALANSON WHITE'S FOREWORD
TO THE FIRST EDITION

The affairs of men are dynamic; they do not remain in any particular state but are ever changing, ever responding to the bombardment of forces which alter them. One of the ways in which these affairs can be considered is after the analogy of the heart beat, ever-recurring diastoles and systoles. We might take as an example the function of administration in a small institution, say a hospital of one hundred or two hundred beds. From the time it begins to function it begins to add here and there to its undertakings, and perhaps increases somewhat in size. It is a very simple matter to begin with concentrating all these functions in a central office. We have the well known administrative unit centrally organized. But let this process of complexity and differentiation proceed a bit further. Let the extent of the increase, its operations, extend spatially farther and farther from the central office. It soon comes to be seen that an exclusively centralized administration has self-imposed limitations. The whole structure becomes so complicated that instant response to needs is no longer possible. These needs develop at some distance from the functional center of the institution, and unless there is someone at the point where these needs develop to respond to them adequately a disintegration of the administrative scheme begins. If this does not take place the needs are met by a beginning decentralization of administration, the locating of individuals at critical points throughout the institution with power to act when the necessity demands, the transferring to these subordinate centers of an increasing amount of responsibility as the institution begins to grow, and the building up of each one according to the same general principles involved in the building up of the original central office. Then this process continues until it limits itself in the same way as did the original process and a still further differentiation begins, and so the diastole and the systole of administrative development is represented by the repeated replacement of the functions of centralization and decentralization by each other in accordance with the needs as they develop.

I have given the above illustration because it seems that it might be within the experience of almost every reader to have observed something closely similar, and to warn the reader that in approaching the contents of this book he must not expect to find society or social groups considered as if they consisted of the sum of the individuals composing them. Wherever two or more people are functioning as a social group that group not only consists of those individuals, but, more important perhaps, if that is possible, than the individuals themselves and without which their functioning as a social group could not be expressed, are the relations which maintain between them. It is these intangible, imponderable and invisible aspects of the situation which enable the mathematical sum of a certain number of individuals to function as a social group. Dr. Moreno's book might be described briefly as a study of these relations between individuals. To qualify this description still further, it might be added that it is a study of the emotional relations between individuals who are functioning as a social group, or, as the cross-currents of emotion as they play back and forth between individuals.

The statement of the material studied as it is expressed above is a very simple one. But, like a small hospital unit which starts with a very simple administrative set-up, as we begin to investigate and study it, it becomes increasingly complex, more and more highly differentiated in accordance with the growth, development and evolution of the social group studied.

All of us, not only in our work but in our daily life, are constantly classifying individuals after some principle or other but usually largely on the basis of our likes or dislikes, upon our feelings of their trustworthiness and dependability or the contrary. In our institutions our classifications are crude. They are based upon behavioristic principles and the trial and error method, putting patients together who seem to belong together on the basis of their general outward appearances and conduct manifestations and separating those who seem to introduce discord into the situation. Dr. Moreno develops a technique for a process of classification which is calculated, among other things, to bring individuals together who are capable of harmonious interpersonal relationships, and so creating a social group which can function at the maximum efficiency and with the minimum of disruptive

tendencies and processes. I will not undertake to explain this technique, which he has described so well in this book—in fact that is what the book is about—but will only make certain comments which strike me as pertinent to the entire problem which he sets himself.

I can think advantageously of the whole problem of the emotional cross-currents of plus and minus signs which flow between individuals in terms of energy distribution. Complex patterns of social structure are built from simpler ones by increasing the number of individuals, increasing the qualities of interest which each has for the other, and so increasing in the final analysis the capacity for bringing about results of a social nature. These emotional cross-currents, as has already been indicated, may be attractive in their function or they may be repellent, so that every individual in the group feels the pull of the emotional interests of his fellows and the pressure of their repulsion. These currents not only flow as between individuals who are differently located and thus have a spatial pattern of distribution, but they also flow as between individuals of different degrees of development and thus have a temporal pattern of distribution. The quality of the interest differs in each instance. There may be a definite love attraction or an attraction based upon an emotional factor which is perhaps less positive, certainly is so in its description; for example, a likeness, which may be very mild and may refer to any one of many things. The same thing may be said of the repellent currents. They may run the gamut from hate to the simplest sorts of dislike, while, in addition, certain individuals may find themselves isolated because no currents of any sort move in their direction. There is an indifference of their associates to them. We therefore can vision an infinite series of possibilities: people who are held in high esteem and are much beloved by a large number of people, on the other hand individuals who are hated or feared or both, and, finally, a group who are isolated either by a preponderance of repellent emotions or by a general attitude of indifference.

Without pursuing this matter further it is interesting, and to my mind significant, that in the analysis of social groups Dr. Moreno has discovered again many homely truths which have been recognized by others but he has rediscovered them by a

different method and a method which permits of their development to a more highly differentiated degree as well as their utilization for the benefit of the individual. For example, he refers to the so-called volume of "emotional expansiveness" of an individual, upon which depends the number of those with whom he may at any one time be acquainted, the "acquaintance volume," or, when expressed in number of individuals, the "social expansion." This at any particular time for any particular individual seems to be rather definitely limited. On the other hand, experimentation indicates that the volume of acquaintance may be enlarged by stimulating the individual's interest along certain lines that include types of other individuals not previously encompassed within the limits of his acquaintance. Similarly, within a given more or less homogeneous group members of an alien group may be introduced, but it will be found that there is a fairly definite saturation point for such aliens. The group can assimilate, as it were, a certain number, but beyond that point assimilation is rendered difficult or impossible and the group tends to break up along the lines of cleavage created by the alien group forming a minority group within the majority group. The preserving and conserving tendencies of group traditions, the development of cultural patterns, the adding by the individual of his mite to the traditions or the patterns as he passes through—all of these things are discovered anew by Dr. Moreno's methods, and discovered in a way which makes them available for constructive purposes, which means, in many instances at least, for therapeutic ends.

Just a word about the therapeutic ends mentioned above. Certain individuals with certain patterns of personality find themselves merely by the accident of circumstances in a certain group which operates in a specially disadvantageous way with respect to their particular personality patterns. For example, an exceedingly timid person may find himself in a gang dominated by a cruel bully and be so completely frustrated as to find no avenues of adequate self-expression. Generally speaking, the same principle is involved in any situation where an individual has a personality pattern which requires certain kinds of individuals through which his emotions can find some sort of adequate outlet, and when placed in a social group where these possibilities are reduced to a

minimum the type of personality he presents, finding no possibilities of expression and growth, is stunted in its development, retarded in its growth, rendered frequently regressive in the direction in which it seeks satisfactions, and the individual to whom it belongs becomes an increasing social liability. If, now, the problem can be appreciated in all its ramifications, if the individual can be sufficiently understood on the basis of his needs of expression, and the qualities of other individuals who, so to speak, are needed to supplement him can be derived from this understanding, then it is theoretically possible to place such an individual in a human environment where he would, as it were, blossom and grow and be not only a socially acceptable and useful, but a relatively happy person. These are some of the possibilities which not only suggest themselves but which have been definitely intimated in the discussion of the formulations and the theory, and examples of which are here and there given.

In reading Dr. Moreno's book it is interesting to bear in mind what has been happening during the present century with respect to certain particular therapeutic problems. In the early part of the century the therapeutic devices available for handling problem children were confined almost entirely to changing their environment. It was generally felt that whatever the symptoms of the child might be, whether they expressed themselves in cruelty, lying and stealing, sex offenses, or what not, that in some way or other they were the expressions of disharmonies existing within the household, more especially as between the parents, and that if the child could be removed to another family group he had a fair chance of straightening out his emotional difficulties. And thus among other things arose the frequent utilization of the foster home as a therapeutic agent. As time went on, however, and under the constantly increasing influence of the psychoanalytic school, more attention was paid to the purely subjective aspects of the problem, and child analysis began to develop. The attack on the problem, therefore, was shifted somewhat by this new growth from the environment to the individual child. Now it is very interesting that Dr. Moreno comes back, apparently, to the position in which the environment seems to have the greater significance, but he comes back to that aspect of the problem not on the same level as it existed originally but

at a higher level; and the interesting thing is that while he does come back to a consideration of the environment, that consideration includes the subjective aspect which has been almost exclusively emphasized in the development of child analysis. So we have here one of those typical advances which swings from one point of view to another but in doing so includes that other. At the same time Dr. Moreno emphasizes the fact that he differs from the psychoanalytic approach in another very significant way, namely, that the analyst works backward to an explanation for the individual's conduct while he takes the individual's conduct as the starting point and works forward. All of these various points of view, methods, techniques, seem to me to be of very great significance. Take, for example, if this technique works out with the possibilities that it has, what a valuable aid it would be in choosing a foster home, in relating the individuals of this home to the child and the child to these individuals. Think of how much may be added to our capacity for dealing with our mentally ill patients in institutions by a more intelligent classification, a classification which shall not be just a simple matter of practically conducting the wards as administrative units but a classification which would go deeply into the individual problems of each patient and relate them one to another, and more particularly perhaps to the nurses, upon a basis which has definite therapeutic objectives. And think, further, if you have no objections to flights of the imagination, of what possibly it may offer to an understanding of the problems of democracy as they occur in a country like the United States made up of races from all the four quarters of the globe.

WILLIAM ALANSON WHITE

Washington, D. C.

1933

INTRODUCTION

SOCIAL AND ORGANIC UNITY OF MANKIND

A truly therapeutic procedure cannot have less an objective than the whole of mankind. But no adequate therapy can be prescribed as long as mankind is not a unity in some fashion and as long as its organization remains unknown. It helped us in the beginning to think, although we had no definite proof for it, that mankind is a social and organic unity. Once we had chosen this principle as our guide another idea developed of necessity. If this whole of mankind is a unity, then tendencies must emerge between the different parts of this unity drawing them at one time apart and drawing them at another time together. These tendencies may be sometimes advantageous for the parts and disadvantageous for the whole or advantageous for some parts and disadvantageous for other parts. These tendencies may become apparent on the surface in the relation of individuals or of groups of individuals as affinities or disaffinities, as attractions and repulsions. These attractions and repulsions must be related to an index of biological, social, and psychological facts, and this index must be detectable. These attractions and repulsions or their derivatives may have a near or distant effect not only upon the immediate participants in the relation but also upon all other parts of that unity which we call mankind. The relations which exist between the different parts may disclose an order of relationships as highly differentiated as any order found in the rest of the universe. A number of scant proofs have been uncovered which indicate that such a unity of mankind does exist. Its organization develops and distributes itself in space apparently according to a *law of social gravity* which seems to be valid for every kind of grouping irrespective of the membership.

Once the unity of mankind had come within the possibility of proof the next question which by necessity arose was how this unity originated. A closer relationship must have existed between individuals in the earlier stages of the development; in the absence of social organs, such as language, the interactions between the members of a group were physically more intimate than in

levels of a later date. A predominantly psycho-organic level of society must have preceded the predominantly psycho-social level in which we live. A process of increased individualization must have gone parallel with increased differentiation of the groups the individuals formed, a gradual evolution from simpler to more complex patterns according to a *sociogenetic law*. Something must have happened which drew individuals more and more apart than they were before,—the source of differentiation may have been one time a new climate, another time the crossing of different racial groups,—but however far apart they were drawn by these differences something evidently was left to fill the gap between them, like a remainder from more primitive days, a certain mold of interrelations into which their social impulses craved to be fitted and upon which social organs as language were drafted. We are used to reckon with a strict determination of our physical organism. We are gradually learning that also our mental organism develops as a unit step by step. But we are not yet used to reckon with the idea that also the whole of mankind develops in accord with definite laws. But if such laws exist and can be ascertained then the adjustment of man to them is a logical consequence and therapeutic procedures have to be constructed accordingly.

Christianity can be looked at as the greatest and most ingenious psycho-therapeutic procedure man has ever invented compared with which medical psycho-therapy has been of practically negligible effect. It can be said that the goal of Christianity was from its very beginnings the treatment of the whole of mankind and not of this or that individual and not of this or that group of people. An attack against its foundations has been attempted many times during its existence but none has been so persuasive and aggressive as the concentrated efforts against it during the last hundred years. The one line of attack as led by Marx asserted that Christianity is a tool in the hand of the capitalistic class, a narcosis of the people to keep them under suppression. The other line of attack as led by Nietzsche asserted that Christianity has brought into the world a subtle technique of sublimation with which it tried to keep the instinctual drives of man in submission, but that this process of sublimation has never changed more than the surface and that the human beast breaks out of these chains

whenever it has an occasion. Marx thought little of psycho-therapeutics of any sort. He thought the psyche a private matter and expected a solution from economics. But Nietzsche suggested, and Freud did that later in fuller measure, a form of negative sublimation, a reversal of the active form of Christian sublimation, attained through analysis of psychological development, unaware that they didn't do else but continue on a side line the very doctrine of Christianity they thought to have overcome.

In considering this we began to speculate over the possibility of a therapeutic procedure which does not center primarily in the idea of sublimation but which leaves man in the state in which he is spontaneously inclined to be and to join the groups he is spontaneously inclined to join; which does not appeal to man either through suggestion or through confessional analysis but which encourages him to stay on the level towards which he naturally tends; which does not forcibly transgress the development of individuals and groups beyond their spontaneous striving as has often been attempted by sublimating agencies. We were developing a therapeutic procedure which leaves the individuals on an unsublimated level, that is on a level which is as near as possible to the level of their natural growth and as free as possible from indoctrination. It is based upon the affinities among them and the patterns resulting from their spontaneous interactions. The patterns are used as a guide in the classification, the construction, and, when necessary, for the reconstruction of groupings. This concept carried us away from such forms of psycho-therapy as center in the idea of changing the individual or of restoring him to normalcy through direct attack and towards a therapy which centers in the idea of leaving the individual unchanged, changed only so far as this is bound to occur through the reorganization of groupings. But it appeared to us in a final conclusion that if an individual had once found his place in the community in accord with laws which appear to control the psychological properties of population, the laws of sociogenetics, of sociodynamics and of social gravitation, he would be safeguarded against trespassing the limits of his natural growth and expansion and that sublimation in a modified form could then be called back to function again as agent. It is a form of *active* sublimation, productive as well as curative, productive of individuality, a form

of sublimation which does not arise through analysis backward towards the past trauma but through the training of the individual's spontaneity based on the analysis of present performance.

THE PROBLEM OF NATURAL SELECTION WITHIN THE FRAMEWORK OF SOCIOMETRY

After a community was analyzed throughout, down to its "social atoms," more general questions arose in face of the imbalances found within its entire structure. 1) Do we have to retreat to a less differentiated form of society in order to reach a stage from which a fresh start can be made, and, if this is so, how far back do we have to go? 2) Or can we overcome the imbalances as we advance without halting the present flow of progress? 3) What type of society can, then, and which shall survive?

Darwin's hypothesis of natural selection contends that the organisms best adapted to the environment survive; variations favorable to adaptation tend to be preserved, those unfavorable to adaptation tend to be destroyed. *Who Shall Survive?* is a question which has been asked thus far from the point of view of the biologist. We are raising this question again, but it is from the point of view of the sociologist, more precisely, that of the sociometrist. Which are the "social" laws of natural selection? *Who shall survive?* The question could be asked only in a society which is, as sociometry has proven with overwhelming evidence, satisfied with wasting a very considerable part of its human element. In contrast, it would lose meaning in a sociometric society where no one would be cast out and all be given an opportunity to participate to the best of their abilities, in other words, to survive.

For the gross manifestations of natural selection of the species which Darwin described, direct evidence is impossible or difficult to obtain, whereas by means of sociometric methods we are able to gain direct evidence as to how natural selection takes place continuously in the very society of which we are a part, every second, in millions of places. Individuals and groups are pushed out from the anchorages in social aggregates to which they belong, from material resources which they need, from love and reproduction, from jobs and homes. It is in billions of small

groups, therefore, in which the process of natural, social selection comes to the awareness of the sociometrist. It is in sociograms that these minute processes are brought to visibility. How the microscopic social laws which we have discovered may correlate with the gross evolutionary laws of the biologist is secondary at this point. However, one cannot help but think that if these minute social forces are given long and continuous range of influence into the remote recesses of the past and future, the gross developments which evolutionary theory postulates might result from them.

Therefore, it is important to know whether the construction of a community is possible in which each of its members is to the utmost degree a free agent in the making of the collectives of which he is a part and in which the different groups of which it consists are so organized and fitted to each other that an enduring and harmonious commonwealth is the result. But when we began to let loose each individual and each group against one another, each in full pursuit of his happiness, each striving to see his particular wishes or the wishes of his group fulfilled, then we recognize the origin of different psychological currents which pervade the population of the community and divide it into different sections. In the face of the clash of the spontaneous forces we reconsidered the problem of freedom.

Looking for a solution we turned our mind back to a similar dilemma in which we found ourselves when we attempted years ago to adjust men's mental and nervous equipment to impromptu situations. The occasion was the organization of play groups to whose participants nothing but spontaneous expression was permitted. However brilliant the spontaneous, creative ability of an individual appeared as long as he acted alone, as soon as he had to act together with a group of individuals who had to release also only spontaneous expression the product often lacked in unity and harmony. In the face of this difficulty we refused to turn back to the dogmatic patterns in play. We decided to stick by all means to the *principle of spontaneity* for the individuals participating in the group training. To meet it we devised a technique to support individuals in the attempt at spontaneous group production.

When we faced a community we realized the similarity of the problem. We had only to substitute for the play groups social

groups. As in the one case we wanted to keep the principle of spontaneity pure, in this case we wanted by all means to keep the principle of freedom, for the individual and for the collective, as far as possible unrestrained and uncensored; and just as in the first instance every participant takes direct part in the authorship, direction, and performance of the production, in the second instance every individual is permitted to impress his intentions upon every activity of which he is a part. And in the face of the contradicting and combating psychological currents, which are the more powerful and complicated the larger the populations are, again we did not turn back to dogmatic, out-lived forms. We sought a "*technique of freedom*," a technique of balancing the spontaneous social forces to the greatest possible harmony and unity of all.

THE HISTORIC ROLE OF SOCIOMETRY

During the first quarter of the twentieth century there were several main directions of thought in development, each apparently unrelated and uncoordinated to the other.

One line of thought was represented by Bergson in his work "Creative Evolution." His concept of evolution was a real advance over Spencer as it brought man in his immediate inner experience in contact with evolution. But this *elan vital* was in itself insufficient. If his "Creative" Evolution should be true, it cried for a demonstration, for its continuity in the realm of action, or, as we formulated it then, for the *evolution of the "creator."* It was this which brought about our attempt to turn the *elan vital* into the reality of experimentation, the training of spontaneous personality. The experiment compelled us to develop a psychology of the creative act, to recognize the limitations of man as a spontaneous creative agent and to invent spontaneity techniques which might lift him beyond these limitations.

The second line of thought was represented by Freud. In that period psychiatry and psychology were overstuffed with general concepts. Psychoanalytic method marked a real advance. Instead of trusting all to the all-might of outer appearance and observa-

tion Freud called the subject to his aid (free association). Yet he didn't do the job completely. Instead of calling the whole subject to aid, he was satisfied with the half, the subject who remembers, who looks back towards the "trauma"—*a la recherche du temps perdu*. And so the same method which had been an advance at first was its own block against a further advance. We reversed the psychoanalytic technique and turned the subject loose as a totality, turned him into spontaneous action, into a spontaneous actor. Instead of searching after past experiences, the subject turned his mind to the present, to immediate production. Instead of free association we sought the full release of the subject, his mental and mimic expression. When other subjects had a part in the same pattern of action, also the inter-actions among the subjects were free. In consequence of this broadening technique of training, psychoanalytic method became but a preliminary to the task of spontaneity therapy.

Freud and Nietzsche were essentially historians. Nietzsche, the philosopher, circled around morals and cultures of the past which he tried to surpass. Freud, the physician, circled around the traumatic origins of mental disturbance. They were both psychoanalysts, they recommended this returning, remembering and analyzing as a therapy in itself. To them the "now and here" seemed superficial. They did not know what to do with the *moment*. They did not take the moment in earnest, they did not think it through. It seemed to them that the only thing to do with the moment and its conflicts was to explain them, that is, to uncover the associations back to their causes. The other alternative would have appeared an absurdity to them: to live, to act out in the moment, to act unanalyzed. It would have seemed to be the end of psychology and of the psychologist. Spontaneity and spontaneous acting would have been refused by them because it appeared to be an affirmation of immaturity, of childhood, of unconscious living, a dangerous disregard for just that which the psychoanalyst tried to illumine. But *there is an alternative: to step into life itself, as a producer, to develop a technique from the moment upward in the direction of spontaneous-creative evolution, in the direction of life and time.*

A third line of thought developed by the Nancy school, especially by Bernheim, made the stimulus of a person another person

and this gradually led to the study of groups and crowds. It was an advance as it put emphasis upon the group rather than upon the single individual. Russian investigators began to perceive the group as a reality superior to the individual, as a collective, and to study the form collectives might assume under different conditions. But the larger the groups became the more were the individuals reduced to *symbols* and their inter-actions to nebulous processes. As the investigators could not travel except on the surface of these collectives, they could not study more than structures as they appeared on the surface. We met this difficulty with a method which considered the individual *in* the collective, we entered into the group to call all the subject-centers within the group to aid. And as we studied the development of the collective from within the collective we became able to estimate its inner organization.

A fourth line of thought originated by Comte in his Positive Philosophy was brought to fresh advance by Le Play and his disciples. His study of the nature occupations, hunting, mining, agriculture, fishing, herding, woodcraft, gave the general concepts of Comte a concrete anchorage. His observational method elaborated by his disciples disclosed man in interaction with nature, conditioned by environment. But the further they moved away from their original objective of investigation, man's inter-dependence with nature, the more they attempted to study in civic surveys more complex conditions than the rural district, for instance, urban populations, the more their methods began to look stale and their results unconvincing. Man is not only conditioned by nature's environment but also by man's society, by its social structure. The economic side is only one phase of this structure, covering up the psychological structure of society which is beneath the surface and most difficult to ascertain. To produce an advance here a changed methodology was necessary. Instead of developing a survey from the geographical set-up in its relation to men and their occupations, we have developed a survey from within society. The channels and structures as they are erected by man, families, schools, factories, etc., had to be presented in their inner unfoldment. A picture was thus gained which was geographic and psychological at the same time, the "*psychological geography*" of a community.

A fifth line of thought was represented by economic planning based on an analysis of society as an economic-materialistic process (Marx). Economic planning was a real advance. But the tacit basis of this planning was the collective, the collective of *symbolic* membership. It attempted to function in disregard of the individual as a psychological energy and of society as a growing complex continuously pressed by psychological currents and the networks they form. Or better said, it had so little regard for the psychological factor that it thought to suppress or denaturalize without expecting any particularly harmful consequences. As the planning progressed and began to manage the nature of man and society according to the economic criterion curious disturbances appeared, the cause of which was a puzzle.

The founder of scientific socialism underestimated religious forces for the same reason which made him underestimate socio-psychological forces operating in groups. He failed to integrate them into his theory of social revolution and communistic government. This occurred for the same reason which made him distinguish between the first phase of communistic society and the highest phase of it. It was a theoretic obsession with strategic procedure, splitting a unity into two different issues. The deep analyst of the relation of merchandise to man was a poor psychologist of human interrelations. Marx thought that the economic and the socio-psychological problems of man can not be attacked at one time; that the psychological problem can wait; that, so to speak, two different revolutions were necessary and that the economic-social revolution has to precede what we have called the psychological or creative revolution of human society. He tried to prove that, in the long run at least, all decisive psychosocial changes are produced by economic revolutions; that from the division between capital and labor derived the structure of two different classes, bourgeoisie and proletariat, and with this all major differences among men. The change of economic structure in Russia has not brought about, however, after the revolution of 1917, the expected change in the socio-psychological behavior of the masses. Looking at the Russia of today he might be amazed to find that the socio-cultural changes lag far behind the economic changes. This lag is perhaps easily comprehensible if we apply a frequent Marxist phrase to Soviet Russia itself: the

communistic society is still in its first phase; the chief objectives of scientific socialism have remained unfulfilled, because the State has not yet "withered away." But it seems as if the communistic society in its highest state of development is becoming a comfortable myth, to be set aside permanently as an Utopian goal, as unattainable, as soon as the economic program of the first phase is achieved.

Finally a sixth line of thought developed, the idea to improve man as a kind through eugenic measures (Galton). Is it meant to improve what is worth improving or to improve what just happens to survive in the battle of existence, to create an elite or to improve all of mankind? Who shall survive?

It is through a synthesis of these six lines of development that gradually the preliminary ground was laid for an experiment in the psychosocial planning of society.

SOCIOMETRY, SOCIOLOGY AND SCIENTIFIC SOCIALISM

In the last hundred and fifty years three main currents of social thought developed, sociology, scientific socialism and sociometry, each related to a different geographic and cultural area: sociology to France, socialism to Germany-Russia, and sociometry to the USA. Each of the three disciplines is defined broadly. The focus of sociology was to develop a rigorous system which embraces all social sciences. The focus of socialist doctrine was to prepare and produce proletarian revolutions. The focus of sociometry was to comprehend and measure the socius. This is a heuristic hypothesis, designed to arrange the productivity of social science, around these three points of reference.

The first part of the hypothesis, that is, that sociology owes its origin to France is probably most easy to accept, as it is primarily to the French revolution between 1789 and 1795, and French writers like Claude Saint Simon, Auguste Comte, Pierre Proudhon and Emile Durkheim that sociology owes its name and existence. The productivity of the French revolution consisted of the emancipation of the bourgeois class—that is how far it went or

was able to go; it spent itself in doing it—and inspired the emergence and consolidation of sociology as a scientific system. The total configuration of social forces during the nineteenth century in France—and also in England—did not permit the victory of a proletarian revolution to cluster although it was the battleground of at least two major efforts. As already said, its revolutionary energy had spent itself in the emancipation of the bourgeois and its theoretical energy in the development of sociology.

The second part of the hypothesis, that scientific socialism owes its origin to the German-Russian combine, is also plausible. No one denies that many seeds of thought which entered into the doctrine of Karl Marx came from French and English writers, but on the other hand, no one can deny that it is in Germany and Russia where its most feverish theories developed and that it is there where the most violent proletarian revolutions culminated in victory. Scientific socialism became, in the hands of Marx, Engels and Lenin as rigorous a system of revolutionary social science and interpretation of history as sociology in the hands of Comte and Durkheim.

This hypothesis is, of course, an oversimplification and this it is meant to be. Its merit would lie in helping to bring the speed, development and direction which the social sciences have had in the last two centuries in line with the powerful political currents of our time. The first consequence would then be to consider Marx exclusively as the founder of scientific socialism and not to claim him, as it is often the case, along with Comte and Proudhon as one of the founders of sociology, an honor which he would most likely have refused. This also gives proper consideration to the deep cleavage and divergence which exists between sociology and revolutionary socialism. By classifying Marx as a "sociologist" one dilutes and sentimentalizes the theoretical and practical clash between the two historical movements. This hypothesis makes more understandable the tight resistance against sociology in Soviet Russia and in the countries dominated by its influence and, in turn, the tight resistance against revolutionary socialism in the western democracies. One may assume that this sharp demarcation of boundaries is not only due to political reasons but to genuine differences of thoughtways which hinder the infiltration of sociology and western cultural concepts into the Soviet world.

The third part of the hypothesis, that sociometry owes its origin to the USA is more difficult to explain; indeed, it needs more elaborate explanation. First one would have to prove that it is a "main current" of thought, it smacks of arrogance to single it out among other significant trends in the USA, and second, it does not explain the rich development of sociology in the USA *before* the advent of sociometry. Before I go into the discussion of these two arguments let me define clearly the position I am taking. *All the excellence of American sociology, I claim, has found its climax in sociometry and its allied developments. It is for the first time, in sociometry, that the social sciences in the USA showed "collective originality."* By this I mean that sociometry is not so much the work of a single individual, but a collective effort within a "favorable" social climate.

It may be helpful here to differentiate between sociometry and the sociometric movement, sociometry being the most systematic and the farthest developed crystallization of the trend towards group measurement in the social sciences in the last two decades, sociometric movement being the influence beyond its pales, upon all branches of social sciences, anthropology, sociology, psychology, psychiatry, etc. This does also not mean that sociometric measurement is an exclusive property of the USA; it is known that some seeds of social measurement existed already in France, England and Germany in the work of forerunners as Adolphe Quetelet, John Graunt and Johann Sussmilch, but their efforts did not take root—they did not develop beyond the "demometric" variety—the historical situation was not ready and the social climate not favorable.

The first argument, that sociometry has become a main current of thought, can easily be verified by referring to the many thousands of quantitative studies of group structure which have been carried out in the last thirty years, in the great majority of cases under the term sociometric, and perhaps even more striking is the fact that sociometric terms and techniques are becoming increasingly anonymous, universally applied, and frequently used as the basic reference for studies which are in themselves non-sociometric.

An analysis of American sociology before sociometry entered the field could easily show that my second argument is also reasonable, as it was largely under foreign influence, particularly that

of Comte, Spencer and Darwin. This influence can be especially noted in the two great leaders of American sociology, Ward and Giddings. This does not reduce their genius as "individuals" but their work did not develop a collective productivity, a specific school of thought; it was colored by the cultural determinants which were French and English. On the other hand, one can already discern a tendency towards sociology in the work of Cooley, Mead and others, which substantiates the historic continuity of sociological thought in the US. It is in the spirit of my hypothesis that, although certain aspects of sociology and microsociology had already been conceptualized by Simmel, von Wiese, Gurwitsch and myself in Europe, it is still a genuine American movement because it would have died there, whereas it flowered here to great productivity. More than any other living variety of the human species, the American man loves to express status in figures, he is the "*homo metrum*."

When I speak of the sociological movement I mean sociology in its broadest sense and the direct and indirect influence it has exercised upon all branches of social science in the last thirty years; sociology as it has marched on under various labels, guises and in various modifications as group dynamics, action research, process and interaction analysis, etc., a) spontaneity theory and evaluation of spontaneity; b) theory of interpersonal relations and theory of action; c) the revision of the experimental method in the social sciences; d) the measurement of interpersonal relations and the measurement of groups; e) the empirical and experimental study of small groups; f) the emergence of social microscopy and microsociology; g) initiation and development of social interaction research; the study of social networks and communication; h) the gradual emergence of an experimental sociology; i) the experimental approach to role theory known as role playing, psychodrama and sociodrama; j) experimental spontaneity and creativity research.

There has been considerable consensus among leading social scientists in giving sociology a broad definition, as a point of confluence of many individual contributions:

"Sociology is the mathematical study of psychological properties of populations, the experimental technique of and the

results obtained by application of quantitative methods," so reads the definition of the subject given by J. L. Moreno,* who has chiefly popularized the term among students of human behavior. My inclination is to go to the etymology of the word which shows it to be a combination of the Latin 'socius', meaning social, and the Latin 'metrum', meaning measure, or the Greek 'metron', meaning measure. Thus the term would mean social measurement."[†]

"Sociometry is and probably will remain a generic term to describe *all* measurements of societal and interpersonal data."[‡]

"There is no doubt that to the general public the word 'sociometric' means today having to do with the measurement of social phenomena."[§]

"Sociometry seems to have solved this age-old methodical difficulty in a more satisfactory way than any other attempts to introduce quantitative methods into social science; for in Moreno's pregnant terms, it does not sacrifice the 'socius' to the 'metrum', empirical content to formal technique."^{||}

"In the social field mathematics was applied first to demographic statistics, whose original assumption was that the human individual is an ultimate 'indivisible' entity and that consequently every collective phenomenon is a mere sum of individual phenomena. The majority of sociologists, however, are by now fully aware that the human individual as member of a collectivity is not an independent unit but a participant in collective systems and processes and that the main task of mathematical methods in sociology is the quantitative analysis of such systems and processes. A step toward the final elimination of this old source of confusion is the recent development of sociometry—a method of research with important, though as yet only partially realized, possibilities."^{||}

* Moreno, J. L., "Psychological Organization of Groups in the Community," *Proceedings of the 57th Annual Session of the American Association on Mental Deficiency*, Boston, June, 1933; read at the joint meeting of the American Psychiatric Association and the American Association on Mental Deficiency.

† Chapin, F. Stuart, *Sociometry*, 1940, Vol. 3, p. 245.

‡ Bain, Read, *Sociometry*, Vol. 6, 1943, p. 212.

§ Lundberg, George A., *Sociometry*, Vol. 6, 1943, p. 219.

¶ Znaniecki, Florian, *Sociometry*, Vol. 6, 1943, p. 227.

|| Znaniecki, Florian, *American Journal of Sociology*, Vol. 50, No. 6, 1945.

“That which constitutes all the originality of sociometry is that the measure (metrum) is only a technical, very limited means of obtaining better understanding of purely qualitative relationships with the *socius*; these relationships are characterized by their *spontaneity*, their *creative element*, their link with the *moment*, their integration into concrete and unique configurations.”†

“We consider sociometry as a method, which if it is applied consequently and in the most comprehensive way possible would raise our science from the position of social scientific astrology to astronomy.”‡

“If statistics deal with measurement, why is there any necessity for a separate field of sociometry which also is concerned with measurement? The superficial answer might be that statistics is concerned with measurement in general and that sociometry is confined to social phenomena. But there would be no point in creating a new discipline unless there were something in the nature of social phenomena that required the devising of special methods of measurement. If society is conceived as an aggregate of individual organisms, as in population studies, there would be no need of sociometry. But if we take as our subject-matter the person and groups of persons, then the analysis of interpersonal relations and the devising of instruments for their measurement become important. Sociometry is to be further differentiated from statistics in the fact that the former deals with all types of measurement significant for understanding human behavior and not exclusively with those requiring statistical formulae.”*

Before I elaborate further on the historical and political significance of the sociometric movement several questions should be answered: 1) What, precisely, is sociometry? 2) Why did sociometry emerge in the US and why could it not emerge elsewhere, for instance in France, Germany or Soviet Russia? 3) Why did it succeed in the USA?

† Gurvitch, Georges, *Sociometry in France and the United States*, 1949, p. 2.

‡ Von Wiese, Leopold, *Sociometry in France and the United States*, 1949, p. 214.

* Burgess, E. W., *Sociometry*, Vol. 6, 1943, p. 223.

1) What, precisely, is sociometry? The cornerstone of sociometry is its "Doctrine of Spontaneity and Creativity." It has created an experimental methodology which is applicable to all social sciences. It is the sociometric revision of the scientific method of the social sciences that will gradually make such a thing as a science of society possible. It gives its subjects research status by changing them from subjects into participating and evaluating actors; a social science becomes sociometric to the degree in which it gives the members of the group research status and the degree in which it is able to measure their activities; it goes to work with actual or prospective groups and develops procedures which can be used in actual situations. It puts an equally strong emphasis upon group dynamics and group action as upon measurement and evaluation. In the early phases of sociometry measurement was mere counting, for instance, counting of words, of acts, of roles, of choices and rejections, of steps in walking or of mouthfuls and pauses in eating; these naive, rough forms of measurement were an indispensable first step before standardized units of universal validity could be established.

2) When sociometry entered the field three powerful currents of ideas existed in the United States: pragmatism, progressive education and social engineering (to have things "done"). But more important, perhaps, is that the United States of America is a commonwealth in which *small* groups enjoy (or at least enjoyed at the time when sociometry emerged) a greater degree of independence of action than in France, Germany and Soviet Russia, and therefore more easily amenable to open experiments with small groups and genuine small groups research—and negatively, the absence of an over-all religious or cultural ideology as Marxism, Catholicism or Nationalism which might have been so overpowering as to hinder the growth and outbursts of small-group "spontaneity." Its supreme political position after the First World War made it into an enormous sociological island, open to everything novel, people, ideas, and almost carelessly embracing and permitting every form of social experimentation. If we could chart the nation's social structure, a sociogram of its human relations, positive and negative, of its sympathies and antagonisms, we will probably see millions of small groups, each gravitating around its own center, the connections between them

being weak or distorted in the majority of cases. It must have been due to the continuous influx of new groups of pioneering migrants and the comparative independence of the small group to start and take off, left unharnessed by a rigid, central idea of government, or culture, that it became the natural soil for the ever-changing and pliable sociometric action experiments and methods. The low social cohesion of the American nation as a whole had to be offset by a high autonomy and cohesion of its small groups.* In contrast to the United States, some of the cultural *centers* on the European continent, for instance Germany and Soviet Russia, could not consolidate themselves except on extreme levels of high cohesion of social structure which went parallel with a low degree of freedom—their only alternative was social anarchy and chaos—they could not integrate their social forces on a median level (between the two extremes) which would permit the spontaneous and natural movement of their small groups.

3) Sociometry succeeded rapidly in the USA because it fulfilled an important need for its gradual integration into a united, national culture; its three major forms, the sociometric experiment, group psychotherapy and psychodrama provide a binder to tie the parts together. They promise to transform areas of low cohesion into areas of high cohesion without sacrificing, however, the spontaneity and the freedom of small groups. Cohesion of the group is measured by the degree of cooperativeness and collaborative interaction forthcoming from as many sub-groups and members as possible on behalf of the purpose for which the group is formed. There is great probability that in a spontaneously growing society the cohesion rises and declines in proportion to the number of small, independent groups within it and with the number of independent goals (criteria) around which they revolve. As a free, democratic society is more inclined to permit the production of a large number of independent small groups with a large number of different and independent goals, its cohesion will tend to be low.†

* See "The Function of a 'Department of Human Relations' Within the Structure of the Government of the United States," *Sociometry, Experimental Method and the Science of Society*, p. III.

† For factual evidence in support of the above hypotheses see *Sociometry*, Vol. 1-15, 1937-1952.

The historic significance of sociometry rests with the medial position which it has between sociology and scientific socialism. If one would like to play with the Hegelian formula of dialectic development one could say that sociology presented the thesis, socialistic doctrine the antithesis and sociometry the synthesis; every step, however, being somewhat more than the previous step. Sociology is historically defined by the two or three great systems it has developed. Scientific socialism is defined by the two or three great proletarian revolutions it has incited. Sociometry is defined by its operations, it is immaterial whether they are called sociometric or by any other name. Sociometry is recognized by what it does, stirring to action and keeping action open but using scientific precision and experimental methods to keep action in bounds. Sociology, for instance, becomes a science in proportion to becoming sociometric, but the same is true about revolutionary socialism; it, too, becomes a science in proportion to becoming sociometric. It is bound to happen sooner or later that sociology, with its dependent social sciences, and revolutionary socialism will converge and meet on a new level of social insight—the sociometric. The methodical development of sociometry is the dynamic link which should bring sociology and scientific socialism to increased convergence and, finally, to unity. Universally accepted standards of social measurement will also aid to resolve the international tension between the communistic and democratic societies. There are two principles pregnant in sociometry which it shares with sociology, but not with revolutionary socialism and vice versa. It shares with classic sociology the tendency towards elaborated social systems, a tendency which is not shared by scientific socialism in equal measure. Sociometry shares with revolutionary socialism the idea of planned social action, with the fundamental modification, however, that it must be experimentally devised and controlled, that it must be applied to small groups first and applied to larger groups as the knowledge derived from small systems increases. It is thus the sociometric action experiment which links sociometry with scientific socialism and separates them both from sociology. *It is in the sense of the dialectic theory of sociometry that the analysis made here will become increasingly "less" true the more scientific socialism will permit its Marxistic hypotheses to be tested within sociometric*

settings (this may sound Utopian, but ideas have a way of boring from within) and the more sociology will include into its operations actual experiments. Indeed, this analysis is less portent and correct today than thirty years ago when sociology was entirely engrossed in general systems which, however ingenious in prospect and vision, never actually stepped from the libraries and classrooms into social reality of the "Ding an sich" and never became a "sociology of the people, by the people and for the people."*

Sociometry did not develop in a vacuum; many generations of social philosophers have anticipated and formulated a number of the hypotheses which I have brought to a clearer formulation and empirical test. However, I do not have any illusions as to my importance, I am fully aware that sociometry might have come into existence without me, just like sociology would have come into existence in France without Comte, and Marxism in Germany and Russia without Marx.

EMERGENCE OF SCIENTIFIC METHOD

My first scientific dream was that if I were God, the Creator of the universe, I would be able to start an adequate science of the universe. Or, if I would have been at least there and near the source on the first day of creation, his auxiliary ego and participant observer—instead of being born into the twentieth century of an elusive mankind's history—my account of the meaning of the universe would have some semblance of reality. This fanciful dream of getting into the midst of creation, of "ongoing life and production," has never forsaken me and is behind all my actional and written communications and my insistence that all measures and tests of humanity should be constructed after the model of God involved in the creation of the universe.

When I had the courage to put the idea of the Godhead to an empirical test I concluded from it one thing: just like a science of the Godhead also a science of culture cannot be produced at

* Moreno, J. L., "Contributions of Sociometry to Research Methodology in Sociology," *American Sociological Review*, Vol. 12, 1947.

a distance and post mortem by philosophers and historians; it must be initiated and inspired by the creators of the cultures themselves. They know the origins, they are at the source, they are the source, the designers of its value systems, the inventors of its instruments and emblems. If they could be made to speak and to investigate the cultural order as they create it in *locus nascendi* a light can be thrown upon the forthcoming development of the culture and a guide can be prepared which may prevent its deterioration.

It is probably because of this ontology of my scientific work that I cannot resist the temptation to apply sociometric concepts and findings to problems which have stubbornly eluded explanation heretofore; the temptation has been greater than the obligation to stick to facts and to facts only. So I succumb here to the lure of discussing, before an audience of benevolent readers, the common origin of three age old riddles, the scientific method, social revolution, and social communication.

Although I had studied many systems of sociology they often contradicted each other and, even worse, they did not offer any specific starting point for my own designs. I saw no other way than to start from scratch, trying to establish experimental foundations for a new science of social change, even if it should differ substantially from the society systems of the past. I needed two allies, a community which was willing to cooperate with me in a revolutionary venture, and a scientific method which could give me clues as to how to develop a design of a genuine social experiment. The disappointment came when I discovered that the classical experimental method as developed by Mill did not meet with the requirements of a human society in *locus nascendi*.

I tried first to clarify in my mind what the scientific method might signify. We all dream up concepts as we focus our imagination on a specific problem area, long before we begin with actual, concrete empirical and experimental studies. The degree of "right" guesses depends upon the genius of the investigator. There are, of course, some people who have more genius than others, a sort of affinity for a certain problem; there have been rare men in all fields of esthetic and scientific endeavor who have demonstrated "adequate" intuition without any carefully conducted empirical and experimental studies. This condition exists

especially in an early stage of a science when men with inspirational talent are indispensable for primary crystallization of concept. But as a particular science develops these men do not provide tangible proofs for the correctness of their intuitions, they are all based upon their authority. This is fair enough for geniuses but it is insufficient for more mediocre minds. It is, of course, for *mediocrity*, that is, for the average minds, that scientific method is particularly designed and beneficial. Without science the intuitions of great men would have to *wait* for geniuses of equal talent and similar aspiration to recognize and repeat their intuitions within their own minds. This is usually called "confirmation." However, what is sufficient for an aristocratic, intellectual elite is insufficient for the universal scientific fraternity. For it the great intuitions are primary and indispensable but still a preparatory step only for the actual research to follow. Whereas the "genius" method made the participation in the sciences and arts an exception, the scientific method strives towards making the participation universal. This may mean that the brave world of men needs not only to be shared but also *co-produced*; that it is to be created not only by one or a few geniuses but through the efforts of all people. The principle propelling the gradual growth of the scientific method appears to have the characteristics of an "ethical" principle and to be rooted in the dynamics of the history of human civilization.

As a sociometrist I was not satisfied with the explanation that an ethical drive underlies the scientific method. What dynamic social structures might correspond to such ethical constellations? This ethical drive seemed to proscribe that a majority of people should participate and share in the development of scientific instruments and scientific progress. It stands to reason that this shift from the few to the many and vice versa must have some sociometric connotations. Shifts in power from the few to the many or vice versa can frequently be observed within the structure of groups, in fact, they belong to its standard phenomena. One of them has become known as the "sociodynamic effect," the unequal distribution of emotional volume among the members of a group, dividing them into socioemotionally rich and poor. We see frequently, especially in rigid, authoritarian structures that the volume of social power hinges upon one or a few indi-

viduals only, the majority remaining neglected or powerless, and that any extension of opportunities for incoming choices, directly or indirectly (symbolic), private or collective, increases the socio-emotional power of a few out of any proportion. We have also observed that, as long as a social system rigidly maintains its social structure the form of the sociodynamic effect within it remains little changed. At times a loosening of the structure takes place, the volume of choices begins to spread to new focii, to new individuals or subgroups which had previously been neglected.

The precipitating cause may be a social trauma which affects the group, some factor which decimates its crop of leaders, an economic war or call to arms, migration, sickness or death in the course of famines or epidemics. It appears then that the volume of social emotions begins to get a wider dispersion and under the impetus of that trauma a larger number of members of the group begins to share in the love which is mobile. In certain moments the sociodynamic effect changes from a narrower (authoritarian) to a wider (democratic) distribution of the social energy the group is capable of spending. These are moments in the development of a group which are wide open for social change, either in one dimension only, say the axiological, or the economic, or the involvement may reach all dimensions of the society. This ripening first becomes manifest as a change of the sociodynamic effect within that particular group. From the sociometric networks comes then the voice of the people embodied in key individuals who proclaim and request certain changes in the social order. But just as the loosening of structure indicates a relaxing of the sociodynamic effect, an increased rigidity of the structure indicates a rehardening of the sociodynamic effect. This hardening and crystalizing may have in its wake a relapse of the social order, a counter-revolution which is reflected in the sociogram by the sudden increase of the inequality of tele distribution. One may ask: what are the causes of the sociodynamic effect? The cause of the sociodynamic effect rests in all its forms—on the economic, the ecological, axiological or the sociometric level—in the *differential* character of human society itself. The effect can be altered but it may never be entirely removed.

The question is now to define the sociometric forces which pushed the genius from his lofty place of isolation above the crowd

down the ladder unto the level of mediocrity. The exploitation of creative genius and the struggle against his exalted position has been waged as far back as there is human history, to extricate from him the secrets and inventions of his mind which he was able to attain in a miraculous way of communicating with the mysteries of nature. We know from previous work with sociometry about the existence of strictly aristo-telic structures* in which a creative individual influences, through the media of several powerful leaders, the total community. But what renders him powerless and keeps him from direct contact with the people? The myth of Prometheus might give us a clue. The Greek gods lived on Mount Olympus, entering only in rare instances into contact with humans. According to legend, Prometheus was an exception. As protest against the Godhead Zeus he brought fire to earth so that everybody could share its blessings. But why did Prometheus betray Zeus? He was a half-god and jealous of the superiority of the gods. He was unpopular and rejected by them. He did not have the creativity of a god but he was permitted to share their secrets. Prometheus did not invent the fire, he "stole" it. Through such an act of piracy he could look like a god and when he could not fool the gods with his god-likeness, he tried to impress those who did not know better, the plain people on earth. According to the myth he succeeded and became a hero. This phenomenon might be called "*creator envy*". Promethian individuals, the precursors of the "public relations" men of our enlightened age, may have made their appearance frequently in the course of history, the heroes of the people acting like anti-genius and genius at the same time. From the dawn of history this situation repeated itself innumerable times, again and again there were rival geniuses in conflict with one another, the fire was stolen in every generation and thus gradually the scientific method developed.

I figured that the sociogram of creative genius—if one could get at such a thing—may reveal in a tangible manner some of the trends persistently dramatized in the mythologies. My hypothesis was that the involvement of a man of genius in the product of his mind and its appreciation by others reveals significant behavior patterns; praising or condemning, stealing or silently overlooking,

* See p. 324.

quoting infrequently or non-quoting the work of a genius is a dynamic way of defining its place in the sun. One technique[†] of testing this hypothesis was to study the "quoting behavior" among scientific writers; it resulted in characteristic sociometric patterns. The sociometric pattern of genius was a unique case among them. Exploring a sample of sociograms attained through the examination of such sociometrized people may give us clues as to the sociodynamic status of genius. I used as sociometric specimens a dozen living authors considered as pioneers in their field of endeavor. I selected them at random; the purpose was to attain as large a variety of sociograms as possible. The test which I used was actuary, "cold sociometric" (cold because it is frozen in the books). Their bibliographies and reference lists were systematically examined, starting with their first publication up to the last one, in some cases up to the point of death, and listing all the persons whom they quoted. Then I looked through the bibliographies and references of all the people who quoted them. The following known sociometric symbols were used as references: quoting himself equals self attraction or autotele; being quoted equals attraction or chosen by; quoting equals attracted to or choosing; unquoted equals unchosen; unfavorable, critical reference or footnote equals rejection; discontinued quotation and reference equals emphasized indifference; mutual quotation equals a dyadic relation or a pair; a quoting clique is a number of individuals quoting each other or persistent in not quoting certain other individuals. It was not, however, until I was able to follow up a small sample of the sociograms by interview, role playing and psychodrama that the insights which the sociograms indicated began to show a significant relationship to this discussion. The protagonist formed positive and negative pair relations to individuals, each himself a center of attraction. The mass of individuals represented in one of the sociograms was divided into two subgroups, 1) attracted to the protagonist, either directly, or most often indirectly through the key individuals charged with positive tele in favor of the protagonist. The psychodramatic production showed the profound investment of love, admiration and faith projected into the protagonist. This involvement was deeply

[†] See "Sociometry and the Cultural Order," *Sociometry*, Vol. 6, 1943, p. 327-329.

enforced by the key individuals linked to him and resulted in a network composed of chain reactions; one could call this phenomenon sympathy with the pioneer or "*creator love*"; 2) rejecting the pioneer, the protagonist, either directly or indirectly through the individuals charged with negative tele and in disfavor with the protagonist. The psychodramatic production revealed a profound hostility, being reinforced by one or two key individuals and rivals, which resulted at times in a distorted perception of the pioneer and his work. A chain reaction produced a social network of negation which might be called antipathy for the pioneer or "*creator envy*". This love and envy is here not qualified as an individual characteristic; one individual may be attracted to one type of leader and to one set of ideas and disapprove of another, but the frequent recurrence of these two structures in the sociograms suggests that we are dealing here with collective phenomena. Thus the sociogram of creative genius underwent a profound change in the course of history. He had to move from the exiled and exalted top into the middle and within the social group; it looked like a plot aimed at the harnessing of genius. This reversal of position did not take place without vigorous protest from the side of the genius and hero-worshippers of old, only that they did not know against what to strike. The scientific method as a way to deal with the riddles of the universe was in itself a creative job of the first order in which a long line of superior men had cooperated. It is as if it would be the destiny of creative genius to destroy himself in order to give to the world the best products of his labor.

The emergence and development of the scientific method and the problems of social change are closely related. Viewing the emergence of scientific method in *statu nascendi* has enabled us to understand some of the sociodynamic factors operating in its genesis. A similar approach may help us in understanding the meaning of social revolutions as experiments of nature.

EXPERIMENTAL SOCIAL REVOLUTION

A social revolution has all of humanity in a test tube. If one could be a participant-actor in it and, at the same time outside of it, an observer, this might make a good beginning for a research

of revolutions in *statu nascendi*. The great French revolution may be called the "cradle of sociology". It is the outstanding contribution which France has made towards the development of the social sciences. It started a chain reaction from Saint Simon, Fourier, Comte, Proudhon to Durkheim. The same distinction goes to the socialistic revolutions culminating in Russia. The Paris Commune of 1871, the Russian Revolutions of 1905 and 1917 are the three cradles of Marxism. In spite of their mental confusions, distortions of precept and madness of leadership, these experiments of nature and history—though to a great extent unplanned and uncontrolled—did more to seduce people into thinking about the major social problems of humanity than all the Departments of Sociology since established. But what has such irrational thing as a social revolution to do with thinking and science? The explanation is simple: in the emergent phase of a revolution humanity is in a highly productive phase; similar to a man of genius in a state of inspiration, ideas which have been dormant come suddenly to the fore and form new, exciting and creative constellations; similar to a mental patient in the sudden outbreak of an acute phase, or the outpouring of elevating ideas and actions in the initial phases of a new religion.

I played with the idea of putting revolutions on an experimental basis. They seemed to be much more rewarding for gaining knowledge than the writing of comprehensive sociological systems and scholarly critiques of revolutions. It appeared to me also that making revolutions on a very small scale would be more advantageous than the global ones. They could be more concentrated and thoroughgoing, the phenomena could be studied as if under the microscope. It would be the quickest and most direct way of learning about problems which look very different post mortem; they look like every other corpse after life has vanished. What I dreaded most, however, was to fall into the abyss of make-believe and the artificiality of contrived experiment. The small revolution had to be as real as the global one. In the course of years several opportunities offered themselves, communities of people who were willing to engage themselves in a total change of their social relationships, a cooperative revolution, and I was able to see with my own eyes how a society can be changed and what happens after the change is accomplished. In the course

of microscopic experiments I encountered many of the problems which have been described about revolutions on a big scale, the idea stage, the propaganda stage and the stage of violent action; the various types of social revolution, the Christian kind of "introverted action", accompanied by a minimum of social involvement, the Marxist type of "extroverted action", accompanied by a high degree of social involvement, the "all out" type of revolution as in the sociometric scheme. (In the Marxist revolution only the working classes are "all out", the bourgeoisie is on the defense.) In the microscopic forms as in the global ones the existing social order is confronted by a new one. The existing order is rejected by the prophet of the new order or by the majority of the revolutionary group. The new social order must be visualized with a reasonable degree of clarity and intensively wanted by the prophet (in the religious case) or the leaders of the group (in the social case) in order for such a revolutionary experiment to become meaningful and effective. If these conditions exist the crucial problem for the leaders is how to get the masses *ready for action* and for the acceptance of the new order; how to mobilize the spontaneity of the masses, to turn them into spontaneous actors in behalf of the project of replacing the existing social order. Some methods of "warming up" are indispensable to get them ready. We see here three categories operating which sociometry has pointed out with particular emphasis: the category of creativity, a clear vision of the new order; the category of spontaneity, the masses arousing themselves and being aroused to make the visionary order a reality and the category of the warming up, to get the prophet or the leaders and the masses ready for action.

I tried to clarify in my mind what the *modus vivendi* of a social revolution might be and arrived at the following tentative hypotheses: a) it is the degree of the impact of the social groups as historical forces upon the current situation; b) the degree to which the smallest functional units of society, the socio-atomic structures are directly affected by the political rebellion and integrated into the official sect or party organization; c) the degree to which the leader or leaders of revolution are "intuitive" sociometrists—adequately able to gauge the sociodynamic forces operating in the immediate present within the population involved—thus the chances for a successful revolution rise and fall. This

applies to every type of revolution whether religious or political, bourgeois or proletarian. The Christian revolution tried to bring certain religious values and intellectual properties of the Jewish intelligentsia, the Pharisees, and of a few, exclusive saints to poor and rich alike, to Jews and non-Jews alike, to all people of all nations. However lofty and mystical the Scriptures are, there are many clues which can be used to draw sociometric and role diagrams of personal and ideological forces criss-crossing the emerging Christian revolution. If leaders like Jesus of Nazareth and Saint Paul would not have had a clairvoyant's sense for the actual forces operating at the moment, the potentialities of the social unrest within the masses might have taken a different course, a military or political revolution might have succeeded instead of the religious one. The imagination of the leaders must have been sensitive to the now and here forces in order to transform the potential into real achievement. The American revolution of 1776 proclaimed: "All men are created equal" and the French revolution raised the banner of: "Egalité, Liberté, Fraternité". These two revolutions tried to extend the influence of the many and reinforced the principle of universality. At first sight the Russian revolution of 1917 with its "Dictatorship" of the Proletariat may seem to be of a different order. Like Marx, Lenin was hardly aware of the sociometric nature of society, but he was convinced that the economic forces of the class struggle were pushing human society inevitably towards a socialistic form of government. He felt that he had the mission at this moment of history to bring to conclusion, as it were, this unavoidable experiment of Nature. But there were two Lenins, the loyal servant of dialectic materialism and the other, the practical Lenin, besieged by enormous difficulties and more than ever by the realization that many of the communist promises are impossible to attain. He recognized that there were not two classes sharply separated, fighting each other—as it is with the armies of two states at war—but that there were innumerable shades and degree of class distinctions. Class is sociometrically not only a specially qualified social group, it has a quantitative distribution. Social classes like bourgeoisie and proletariat are metasociological constructs, the tangible thing is the "party organization". He had to make a decision to win for the party with whose cause he had

identified his life. Like a general he began to survey the present field of action before him. Without an intuitive, quasi-sociometric analysis of the total situation in Russia from day to day and without letting his insight move his decisions, the opportunity for a successful revolution might have gone astray, notwithstanding that ideal political conditions for victory existed. In his mind he drew the picture of the sociograms of the persons and groups and ideological and military forces operating for or against him and his people and then he started the proletarian war which preceded the proletarian dictatorship. He may have said to himself: "The dictatorship of the bourgeoisie is ruthless, tyrannical and murderous when it comes to suppressing the working class. Therefore, the war of the proletariat cannot be won by soft talk, it will have to use warlike weapons; it will have to be equally ruthless, tyrannical and terroristic." What bolstered Lenin's courage to lead a social revolution with all its brutalities was full of ethical and moral implications: "It is true," he may have said to himself in moments of honest cynicism, "that we are merely reversing the order of who is suppressing whom, reversing one government of terrorism and suppression with another, but at least the government which will suppress from now on represents the producing masses, the many against the few."

A sort of ethical motive, the idea of universal participation, which we found implied in the development of scientific method apparently also plays a role in the makings of social revolutions. There is a similarity in sociometric position between Lenin, the Tartar, the tribune of the masses bringing political power to the people, and Prometheus, the tribune of science, bringing scientific power to them.

THE BASIC LANGUAGE

The phenomenon of creator envy was not without its good social points. It helped to deliver the scientific method. The phenomenon of social revolution has had its good points too, it stimulated the critique and re-evaluation of experimental method of social science. There is another shackle which mankind did not accept but with profound misgivings, that is language. The dominance

of language in our culture is so all-pervasive that we are inclined to forget that we are not language-born, but bred into it. Man is born a sound-making, pantomimic autistic actor. Language, perhaps the most important of his social inventions is only gradually absorbed by the infant who gives in to the enormous pressure of the cultural carriers around him; parallel with a spontaneous acceptance and acting out a considerable "resistance against language" can be observed. The baby languages resist the emergence of organized language and leave their mark upon it; but also the delayed development of speech, stammering and stuttering should be counted into the "anti-language syndrome" of the infant. The bizarre mutism of catatonic patients and the worship of silence as a greater virtue than speech in the folklore of many cultures are also manifestations of this resistance. The over-estimation of language involvement had reached its climax in our century with the idea of psychoanalytic therapy, the idea that by talking what is on your mind the material of the psyche and even of the socius is laid bare, the idea that language acts upon them like a sponge, absorbing their essence. As a matter of fact, the resistance against language suggests the opposite, that considerable parts of psyche and socius developed outside the domain of language and that they still develop outside of it. The effort of some writers to give social psychology a foundation by means of the socially significant symbols of language badly needs correction. Observation of infants and of mental patients indicate that there are two kinds of gestures, "pro"semantic and "anti"semantic, empathetic to and contrary to language formation. The answer to this dilemma is not in mere language analysis showing off its contradictions to logic and reducing expression to logical barrenness in the sense of the semanticists. The answer is also not in the classification of language as a demonic partition of behavior, making this partition the source of all mental evil in the sense of phylo-analysis. The answer is neither in logic nor in metapsychology but in the development of experimental methods which deal directly with the action patterns of men, from the most primitive to the most complex, a study not only from the languages down, but from the act up.

The myth of the Tower of Babel is a prophetic anticipation of this problem. The Lord said: "And the whole earth was of one

language and of one speech. . . . Let us go down and there confound their language, that they may not understand one another's speech."*

Let us imagine for a moment that the confusion of the tongues would have gone on unlimited, that man, after being scattered upon the face of the earth, would not have developed local languages to supersede the one universal language he originally had, according to the myth. How confusing would this confusion have been? If the grammatical language is a later stage of communicative behavior the question remains: how much would man have been able to do with the resources of his "action residua" alone? What language was this which, according to the Scriptures was the "universal" one? The language meant here must have been one more natural and more primitive than the languages of which we know, an "infra" language, one which can be spoken without learning it, a language which flows naturally and spontaneously from all lips. The baby languages are spontaneous language formations, of an autistic character. Although they differ from the organized language of the adult, they have a structure of their own which is more actional than verbal, closer to the spontaneous act than to the frozen word. The language to which the Scriptures refer in the Babel myth "And the whole earth was of one language and of one speech" must have existed before man developed the local, concrete languages of our more recent cultures; it must have been a pre-social, universal language, a universal baby-like language at a time when the adult development of speech was still inarticulate; they may not have had then at their disposal but a form of actional phonetic guttural speech which, however unformed, uneven, full of guesswork, required people to "feel into each other" rather than to think and talk with each other. It is what I once called the *basic language* or primordial language.†

Basic language is a spontaneous formation of words, it is void of the mutually significant language symbols. Feelings are linked to phonetic sounds and to gestures. The language has no logical

* The Bible, quoted from the authorized St. James version, National Bible Press, Philadelphia, p. 15.

† See J. L. Moreno, "Interpersonal Therapy and the Psychopathology of Interpersonal Relations," p. 52, *Sociometry*, Vol. 1, 1937; also *Group Psychotherapy*, Vol. III, No. 3, p. 256, 1950.

grammatical structure. It seems meaningless to an outsider who is not involved but the gestures and the feelings which accompany the sounds provide them with a dramatic and vivid character. The words are free combinations of vowels and consonants. It is an "unlearned" language and differs from the learnable languages like English, Chinese or Esperanto, for instance. It was found helpful in giving stutterers, aphasics, certain deteriorated schizophrenics and senile patients the experience of sound communication.

It is the matrix out of which and upon which our grammatical and organized languages grew. The spontaneous use of the basic language is not only helpful to infants before they learn to speak their mother tongue, but to all humans in the course of certain neuropsychiatric disturbances during which they have either lost the function of speech, like an aphasia, or are fearful of it, like in certain mental disorders. The basic language has cathartic value as a reservoir of unlimited spontaneity expression, uninhibited by the barriers of official languages. The polarity between spontaneity and cultural conserves, as in spontaneous drama versus the drama conserve, the spontaneous state of courtship versus the organized situation of marriage, reappears here in the area of language. We can imagine that in the phylogenesis of languages infra-forms correspond to the baby languages in their ontogenesis. The question came up as to the dynamic relationship of baby language to the grammatically structured one of the socius. If we could answer this we might be in a better position to understand the function of the ancient *micro-languages* in the development of speech. A ray of light was thrown upon this problem in the course of treating stutterers by means of psychodramatic techniques. We were able to relate speech disorders to three sources: a) physical deficiency; b) intra language deficiency; the speech defect emerges "within" the structured, grammatic language and the roles in which the individual operates; c) pre-language deficiency; the speech disorder appears already "before" the infant speaks his mother tongue, his performance neurosis appears within the framework of his autistic baby language, either because of a *refusal* to accept the language of adults or because of deficiency in the relationship to the adult auxiliary egos around him. We see, therefore, in the basic language test

that there are individuals who stutter in their mother tongue but do not stutter in the basic language. Then there are those who, although they do not stutter in the basic language, as there is nothing to stutter in, show a muffled, inarticulate and painful way of using it. It may become the objective of the psychodramatic therapist to teach the stuturer not only how to speak in his mother tongue but to teach him how to use again his baby language, and so to bring all the stages in the evolution of speech into a better balanced integration. A universal language for all people on earth may never be entirely adequate until all the shades of the rhythmic, actional microlanguages are brought into a synthesis. In order to prevent stuttering in later life the speech therapist of the future may pay attention to speech behavior of the infant preliminary to learning the official language of his culture.

Sociometry has gained a respectful hearing for its discovery of the unofficial, invisible structures of human groups and because it has demonstrated the powerful effect they have upon human conduct. It has also carried the argument that a profound relief from the current global social tension can be attained by integrating the psychosocial underground into social reality. Language is one of the dominant social institutions of mankind. The discovery of the infra languages and the basic language technique may become of similar importance for the science of communication as the discovery of the tele, social atom and network has been for the formation of groups. They can serve as creative antidotes to a logically and emotionally overstuffed civilization.

The kiss, the embrace, the handshake, the "magic" touch of the hand, the looking into each other's eyes, the signs and gestures of love and friendship, of longing and despair, of pain and misery, the rhythm of the body in motion, at work, in dance, walking and in song, in plays and games, have potentialities which have been only partially unharnessed. The frozen forms of language and arts have held them back and have not permitted them to grow and develop and lend life a new richness: *a spontaneous-creative cultural order*. There are human situations of such universality as to cause our social symbols and customs, our cultural standards to be suddenly transcended; "we" experiences become possible without their direct aid. I remember a man and a woman in love, one from an African culture, the other from a Nordic one, who

could not speak to each other except by unheard-of sounds, the look in their eyes, the touch of their hands, the rhythms of their bodies acting in unison. Who has not seen a mother talking to her infant, a few weeks old, taking the part of the baby as well as her own in perfect harmony. Here the logical-emotional languages of our culture would rather interfere than aid.

Last not least, I recall my recent journey to Paris, when I found myself before large French audiences to whom I talked in English. I was astounded at the amount of appreciation and enthusiasm which met me and assumed for a moment that they all understood English well. I was surprised to hear afterwards that they understood me, not by understanding English, but by watching the expression of my eyes and hands and legs and a certain musical quality of the sounds I made, and particularly because language did not interfere with their direct observation of my actions. We have been taught, and believed it, that peace will come to men when they understand one another. This should be easy, but it is not. Languages bring not only understanding, they frequently increase misunderstanding. A greater message has come to us from the old myth of the confusion of the tongues, that peace will not come to men only through understanding; *peace will come to men in the distant future when they learn to get along although they do not understand one another.*

BOOK I

THE SOCIOMETRIC SYSTEM

DOCTRINE OF SPONTANEITY-CREATIVITY

The cornerstones of sociometric conceptualization are the universal concepts of spontaneity and creativity. Sociometry has taken these concepts from the metaphysical and philosophical level and brought them to empirical test by means of sociometric method. A presentation of these concepts is the first step within the sociometric system.

Spontaneity and creativity are not identical or similar processes. They are different categories, although strategically linked. In the case of Man his *s* may be diametrically opposite to his *c*; an individual may have a high degree of spontaneity but be entirely uncreative, a spontaneous idiot. Another individual may have a high degree of creativity but be entirely without spontaneity, a creator "without arms". God is an exceptional case because in God all spontaneity has become creativity. He is one case in which spontaneity and creativity are identical. At least, in the world of our experience we may never encounter pure spontaneity or pure cultural conserves, they are functions of one another.

The universe is infinite creativity. The visible definition of creativity is the "child." Spontaneity by itself can never produce a child but it can help enormously in its delivery. The universe is filled with the products of spontaneity-creativity interaction, as a) the effort which goes into the birth and rearing of new babies, b) the effort which goes into the creation of new works of art, "cultural conserves"; of new social institutions, social conserves and stereotypes; of technological inventions, robots and machines, and c) the effort which goes into the creation of new social orders. Spontaneity can enter the creatively endowed individual and evoke a response. There were many more Michelangelos born than the one who painted the great paintings, many more Beethovens born than the one who wrote the great symphonies, and many more Christs born than the one who became Jesus of Nazareth. What they have in common are creativity and the creative ideas. What separates them is the spontaneity which, in the successful cases, enables the carrier to take full command of his resources, whereas the failures are at a loss with all their treasures;

they suffer from deficiencies in their warming-up process. Creativity without spontaneity becomes lifeless; its living intensity increases and decreases in proportion to the amount of spontaneity in which it partakes. Spontaneity without creativity is empty and runs abortive. *Spontaneity and creativity are thus categories of a different order; creativity belongs to the categories of substance—it is the arch substance—spontaneity to the categories of catalyzer—it is the arch catalyzer.*

The fate of a culture is decided by the creativity of its carriers. But creativity as a scientific frame of reference has never been established and so a basis for a critique of deviations has been missing. If a disease of the creative functions has afflicted the primary group, the creative men of the human race, then it is of supreme importance that the principle of creativity be redefined and that its perverted forms be compared with creativity in its original states.

There are works which survive their creators and eventually dominate men's patterns of culture. They survive because of certain technological processes which conserve them. These conserves may enter into the flesh of the artist and control him from within, as, for instance, in the actor, or they provide technological forms with a content, for instance, books. We can visualize a period of civilization before they were discovered. There are *cultural conserves* underlying all forms of creative activities—the alphabet conserve, the number conserve, the language conserve, and musical notations. These conserves determine our forms of creative expression. They may operate at one time as a disciplining force—at another time, as a hindrance. It is possible to reconstruct the situation of creativity at a time prior to the conserves which dominate our culture. The *pre-conserve man*,* the man of the *first universe*, had no musical notations with which he could project the musical experiences of his mind, no alphabetic notations with which he could project his words and thoughts into writing. He had no mathematical notations which became the basic language of science. Before he had selected from the inarticulate mass of sounds and vowels which developed into our

* *Pre-conserve man* and *first universe* are relative concepts, considering the thousands of varieties of culture through which mankind has passed; every pre-conserve man was a conserve man to an earlier one and every first universe was a second universe to a still earlier universe, and so *ad infinitum*.

languages he must have had a relation to the process of creativity different from modern man, if not in the source itself, certainly in projection and expression. When we removed, by a process of deconserving, one conserve after another from an actor, and nothing remained but his naked personality, the pre-conserve man came closer to our understanding. He must have been guided by the warming-up process inherent in his own organism, his master tool, isolated in space, unspecialized yet, but working as a totality, projecting into facial expressions, sounds, movements, the vision of his mind. A sort of psychodrama may have been the common denominator of all sorts of cultural conserves in which culture has gradually specialized itself. The sounds uttered by him originally, a simple device for making a life situation as expressive as possible, developed gradually into the phonetic residuum of the first alphabet which was selected in preference to other sounds. We find a hangover of the pre-conserve technique of the psychodrama in the preparatory phase of every individual work of culture. The inspirations which lead a creative man to produce a work of culture are spontaneous. The more original and profound the problem is which a genius sets himself the more is he compelled to use, like the pre-conserve man, his own personality as an experimental tool and the situation around him as raw material.

The struggle with the cultural conserves is profoundly characteristic of our whole culture; it expresses itself in various forms of trying to escape from them. The effort to escape from the conserved world appears like an attempt to return to paradise lost, the *first* universe of man, which has been substituted step-by-step and overlapped by the *second* universe in which we live today. It is probable that all cultural conserves are the final projections of the tremendous abstractions which man's conceptual mind developed in a struggle for a superior existence. Gradually abstraction led from the pictures of things to the letters of the modern alphabet and to the numbers of arithmetic. The gradual abstraction and differentiation of sounds laid the ground for musical notations. But what must have been common to the Beethoven of a pre-conserve culture and the Beethoven of our time is the *spontaneity level of creation*. However, it was then unchanged by the devices which dominate our culture and it was

perhaps for that reason more powerful—on the other hand, less articulate, and less disciplined than our products today.

Spontaneity operates in the present, now and here; it propels the individual towards an adequate response to a new situation or a new response to an old situation. It is strategically linked in two opposite directions, to automatism and reflexivity, as well as to productivity and creativity. It is, in its evolution, older than libido, memory or intelligence. Although the most universal and evolutionarily the oldest, it is the least developed among the factors operating in Man's world; it is most frequently discouraged and restrained by cultural devices. A great deal of Man's psycho- and socio-pathology can be ascribed to the insufficient development of spontaneity. Spontaneity "training" is therefore the most auspicious skill to be taught to therapists in all our institutions of learning and it is his task to teach his clients how to be more spontaneous without becoming excessive. There is ample evidence that the spontaneity of the infant has "something to do" with his arrival in this world. During pregnancy he warms up to the act of birth. The length of gestation is largely determined by the genotype of the foetus and not by the dam of the carrying individual. The infant wants to be born. Birth is a primary and creative process. It is positive before it is negative, it is healthy before it is pathological, it is a victory before it is a trauma. Anxiety results from "loss" of spontaneity.*

Spontaneity propels a variable degree of satisfactory response which an individual manifests in a situation of variable degree of novelty. The warming up process is the *operational* expression of spontaneity. Spontaneity and warming up process operate on all levels of human relations, eating, walking, sleeping, sexual intercourse, social communication, creativity, in religious self realization and asceticism.

The place of the s factor in a universal theory of spontaneity is an important theoretical question. Does the s factor emerge only in the human group or can the s hypothesis be extended within certain limits to non-human groups and to the lower animals and plants? How can the existence of the s factor be reconciled with the idea of a mechanical law abiding universe, as, for instance, with the law of the conservation of energy? *The idea of*

* For a discussion of the relation of anxiety to spontaneity, see p. 336-337.

the conservation of energy has been the "unconscious" model of many social and psychological theories, as the psychoanalytic theory of the libido. In accordance with this theory Freud thought that, if the sexual impulse does not find satisfaction in its direct aim, it must displace its unapplied energy elsewhere. It must, he thought, attach itself to a pathological locus or find a way out in sublimation. He could not conceive of this unapplied effect vanishing because he was biased by the physical idea of the conservation of energy. If we, too, were to follow here this precept of the energy pattern, and would neglect the perennial inconsistencies in the development of physical and mental phenomena, we would have to consider spontaneity as a psychological energy—a quantity distributing itself within a field—which, if it cannot find actualization in one direction, would flow in another direction in order to maintain its volume and attain equilibrium. We should have to assume that an individual has a certain amount of spontaneity stored up to which he adds and which he spends as he goes on living. As he lives he draws from this reservoir. He may use it all or even overdraw. Such an interpretation is, however, unsatisfactory according to spontaneity research, at least on the level of human creativity. The following theory is offered.

The individual is not endowed with a reservoir of spontaneity, in the sense of a given, stable volume or quantity. Spontaneity is (or is not) available in varying degrees of readiness, from zero to maximum, operating like a catalyzer. Thus he has, when faced with a novel situation, no alternative but to use the *s* factor as a guide or searchlight, prompting him as to which emotions, thoughts and actions are most appropriate. At times he has to invoke more spontaneity and at other times less, in accord with the requirements of the situation or task. He should be careful not to produce less than the exact amount of spontaneity needed—for if this were to happen he would need a "reservoir" from which to draw. Likewise he should be careful not to produce more than the situation calls for because the surplus might tempt him to store it, to establish a reservoir, conserving it for future tasks as if it were energy, thus completing a vicious circle which ends in the deterioration of spontaneity and the development of cultural conserves. Spontaneity functions only in the moment of its emergence just as, metaphorically speaking, light is turned

on in a room, and all parts of it become distinct. When the light is turned off in a room, the basic structure remains the same, but a fundamental quality has disappeared.

The physical law of the conservation of energy was accepted during the second half of the nineteenth century in many quarters as a universal axiom. Many scholars regarded energy in all its manifestations as though it would be a volume of water in a glass. If the water disappeared entirely or in part, it could not have vanished. It must have been consumed, spilled or transformed into an equivalent. They assumed that the volume of energy which it originally had must have been constant at any point of the process. Freud likewise speculated with the assumption that libido energy is to remain constant. If therefore the flow of libido energy is interrupted and inhibited from its aim, the dammed up energy must flow elsewhere and find new outlets, i.e., as aggression, substitution, projection, regression or sublimation. These phenomena which appear on the surface apparently unrelated could now be expressed in terms of a single principle, libido energy. In such a closed psychodynamic or sociodynamic system there is no place for spontaneity. If libido energy must remain constant socio-psychological determinism is absolute. As a factor like spontaneity is not admitted to operate the psychodynamic or socio-dynamic factors causing a behavior manifestation—if they cannot be traced to recent events—must be deferred farther and farther to an elusive past. The findings of spontaneity research had made such forced systems of intellectualization unnecessary. The unity and universality of explanation which they offered has become too high a price to pay. It led to over-simplification of interpretation and to a dangerous inertia hindering the development of new methods of fact finding and experimentation. As long as spontaneity was a vague, mystic and sacred notion such rigid systems could prosper almost undisputed, but with its inevitable emergence as a vigorous concept, as a clearly discernible and measurable agent, the tide began to turn in favor of more flexible systems.

The principle which set sociometry into motion is the twin concept of spontaneity and creativity, not as abstractions but as a function in actual human beings and in their relationships. Applied to social phenomena it made clear that human beings do not

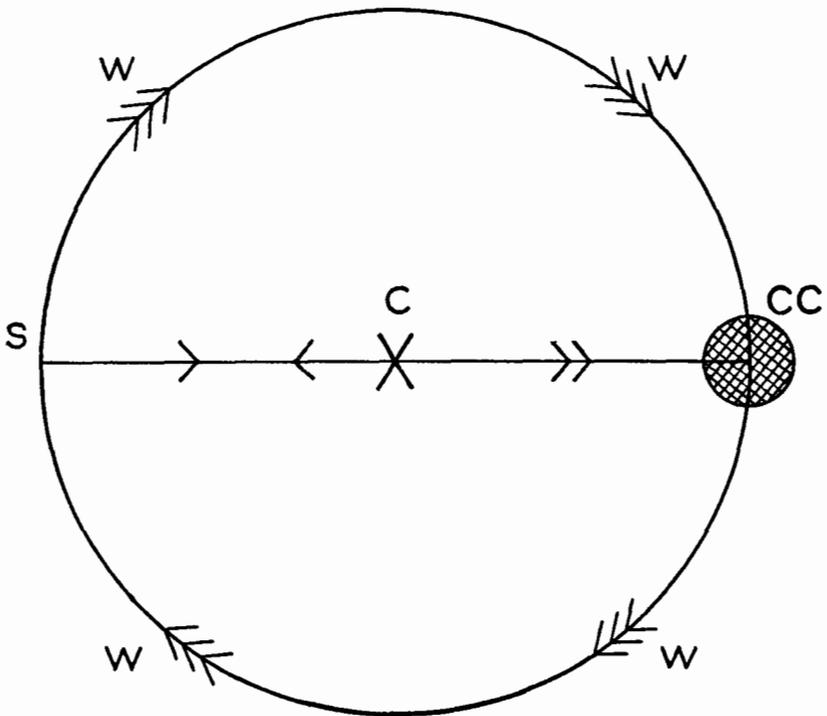
behave like dolls, but are endowed in various degrees with initiative and spontaneity. The so-called social structure resulting from the interaction of two and a half thousand million individuals is not open to perception. It is not "given" like an immense visual configuration—for example like the geographical configuration of the globe, but it is every *moment* submerged and changed by inter-individual and collective factors. If there is any primary principle in the mental and social universe, it is found in this twin concept which has its most tangible reality in the interplay between person and person, between person and things, between person and work, between society and society, between society and the whole of mankind.

The fact that spontaneity and creativity can operate in our mental universe and evoke levels of organized expression which are not fully traceable to preceding determinants, causes us to recommend *the abandonment or reformulation of all current psychological and sociological theories, openly or tacitly based upon psychoanalytic doctrine, for example, the theories of frustration, projection, substitution and sublimation. These theories have to be rewritten, retested and based on spontaneity-creativity formulation.*

In spontaneity theory energy as an organized system of psychological forces is not entirely given up. It reappears in the form of the cultural conserve. But instead of being the fountain-head, at the beginning of every process such as libido, it is at the end of a process, an end product. It is evaluated in its relativity, not as an ultimate form but as an *intermediate* product from time to time rearranged, re-shaped or entirely broken up by new spontaneity factors acting upon them. It is in the interaction between spontaneity-creativity and the cultural conserve that the existence of the s factor can be somewhat reconciled with the idea of a law-abiding universe, as for instance with the law of the conservation of energy.

The canon of creativity has four phases: creativity, spontaneity, warming up process and conserve (See diagram, p. 46). Spontaneity is the catalyzer. Creativity is the elementary X, it is without any specialized connotation, the X which may be recognized by its acts. In order to become effective, it (the sleeping beauty) needs a catalyzer—spontaneity. The operational manifestation of

CANON OF CREATIVITY
SPONTANEITY - CREATIVITY - CONSERVE



FIELD OF ROTATING OPERATIONS BETWEEN SPONTANEITY-CREATIVITY-CULTURAL
CONSERVE (S-C-CC)

S—Spontaneity, C—Creativity, CC—Cultural (or any) Conserve (for instance, a biological conserve, *i.e.*, an animal organism, or a cultural conserve, *i.e.*, a book, a motion picture, or a robot, *i.e.*, a calculating machine); W—Warming up is the “operational” expression of spontaneity. The circle represents the field of operations between S, C and CC.

Operation I: Spontaneity arouses Creativity, C. $S \longrightarrow C$.

Operation II: Creativity is receptive to Spontaneity. $S \longleftarrow C$.

Operation III: From their interaction Cultural Conserves, CC, result.
 $S \longrightarrow C \longrightarrow CC$.

Operation IV: Conserves (CC) would accumulate indefinitely and remain “in cold storage.” They need to be reborn, the catalyzer Spontaneity revitalizes them. $CC \longrightarrow S \longrightarrow CC$.

S does not operate in a vacuum, it moves either towards Creativity or towards Conserves.

Total Operation

Spontaneity-creativity-warming up-act \leftarrow ^{actor} _{conserve}

the interacting spontaneity-creativity is the warming up process. As far as is known the only products of such interactions are the conserves.

The universe is infinite creativity. But what is spontaneity? Is it a kind of energy? If it is energy it is *unconservable*, if the meaning of spontaneity should be kept consistent. We must, therefore, differentiate between two varieties of energy, conservable and unconservable energy. There is an energy which is conservable in the form of "cultural" conserves, which can be saved up, which can be spent at will in selected parts and used at different points in time; it is like a robot at the disposal of its owner. There is another form of energy which emerges and which is spent in a moment, which must emerge to be spent and which must be spent to make place for emergence, like the life of some animals which are born and die in the love-act.

It is a truism to say that the universe cannot exist without physical and mental energy which can be preserved. But it is more important to realize that without the other kind of energy, the unconservable one—or spontaneity—the creativity of the universe could not start and could not run, it would come to a standstill.

There is apparently little spontaneity in the universe, or, at least, if there is any abundance of it only a small particle is available to man, hardly enough to keep him surviving. In the past he has done everything to discourage its development. He could not rely upon the instability and insecurity of the moment, with an organism which was not ready to deal with it adequately; he encouraged the development of devices as intelligence, memory, social and cultural conserves, which would give him the needed support with the result that he gradually became the slave of his own crutches. If there is a neurological localization of the spontaneity-creativity process it is the least developed function of man's nervous system. The difficulty is that one cannot store spontaneity, one either is spontaneous at a given moment or one is not. If spontaneity is such an important factor for man's world why is it so little developed? The answer is: man *fears* spontaneity, just like his ancestor in the jungle feared fire; he feared fire until he learned how to make it. Man will fear spontaneity until he will learn how to train it.

When the nineteenth century came to an end and the final accounting was made, what emerged as its greatest contribution to the mental and social sciences was to many minds the idea of the unconscious and its cathexes. When the twentieth century will close its doors that which I believe will come out as the greatest achievement is the idea of spontaneity and creativity, and the significant, indelible link between them. It may be said that the efforts of the two centuries complement one another. *If the nineteenth century looked for the "lowest" common denominator of mankind, the unconscious, the twentieth century discovered, or rediscovered its "highest" common denominator—spontaneity and creativity.*

FOUNDATIONS OF SOCIOMETRY

Sociometry aspires to be a science within its own right. It is the indispensable prologue for all the social sciences. Without giving up the vision of totality by an inch, it has retreated from the maximum to the minimum, to the social atoms and molecules. It can therefore be called a sociology of the microscopic dynamic events, regardless of the size of the social group to which it is applied, small or large. The result of sociometric development has been that the investigation of the smallest social aggregates has become more interesting than that of the large ones. For the future development of sociometry it may be desirable to separate it as a special discipline and to consider it as a microscopic and microdynamic science underlying all social sciences. It has several subdivisions like microsociology, microanthropology, microeconomics, microsociatry, microecology. It is not merely a slogan indicating a special type of research, a single method or a number of techniques. Its present stage of development is still embryonic and scattered but there can be no question as to the potentialities of the new science. For the future progress of the social sciences it is of the greatest importance that a science of sociometry is set up and delineated, and its relation to other social sciences defined. Its range and boundaries, its operations and objectives are already more sharply visible than the same references in sociology or

anthropology. It does not supplant and it must not overlap with anthropology or economics, for instance, but their findings on the overt, macroscopic level may receive a new interpretation from the point of view of sociometric research.

The old definitions of sociology: "Science of Society" and "Science of Social Phenomena" did not need any further specification until *the development of social microscopy and the discovery of the sociometric matrix suggested the division between macroscopic and microscopic social disciplines*. Before this there did not exist any dynamic, material reason to digress from Comte's opinion that sociology is a unitary science of society.

The logico-methodological argument of Georg Simmel and Leopold von Wiese in favor of separating sociology from other social science specialties as, for instance, historical sociology and social philosophy, was a necessary step to clear the way through the jungle of disciplines. But these divisions occurred, metaphorically speaking, on the floors above; the basement underneath remained untouched by them. This time a division of the social sciences became urgent in the *vertical* dimension. For every macroscopic social discipline a microscopic social discipline could be envisioned, microsociology versus macrosociology, microanthropology versus macroanthropology, microeconomics versus macroeconomics, microecology versus macroecology, etc. The final arbiter for such drastic division is the productivity it has for research. In other sciences division proved fruitful for the advancement of knowledge as between anatomy and histology or physics and chemistry. By putting together all the microscopic social sciences into one block the focus of the social investigator will be more sharpened in the choice of hypotheses and experimental design and in giving these areas the systematic attention they deserve.

The old definition of sociology should, therefore, give place to another which is more in accord with what sociologists actually deal with—*the science of the macroscopic systems of human society, their description and measurement*.

The resistance in some quarters against sociometric theory and terminology is largely due to its claim of representing a new science; but it did this because it could not see how the new outlook and the new discoveries could be incorporated into the old frame-

work of concepts of the social sciences without undue sacrifice of clarity and order. When, out of new empirical and experimental evidence new concept dynamically arises, it is against the spirit of science to force it into an outworn and limited framework of classification and interpretation, out of reverence for tradition. What is relevant to new concept goes also for new terminology; with new concept and new evidence appropriate terms logically arise. The recommendation of academic sociologists to adapt new constructs to old terms and phrases as "social process", "social statics", "social dynamics", etc., is not easily accomplished. Properly coined terms in a new discipline help the advance of knowledge and stir up the imagination of the investigator. The matter is entirely different when a new term and meaning, for instance, "actor" is used for an old term and meaning as "organism"; or a new term and meaning "act" is used for an old term and meaning "behavior"; then the change is unwarranted.

Such behavior is not new in the history of science; it reminds one of the period when chemistry was emerging as a new discipline. The "operations" which characterized the new science of chemistry were rapidly accepted but antiquated interpretations, as the phlogiston theory, were preferred. Similarly, one of the difficulties in the development of sociometry has been the rapid assimilation of its techniques, operations and methods, and the parallel ignorance of and resistance against its theories. This has proven to be unfortunate, not only for the formulation of significant hypotheses, but also for the further refinement of the techniques themselves. One could follow with amusement how rapidly sociometric techniques such as the sociogram, the sociometric test, small group analysis, role playing, psychodrama and sociodrama were taken for granted *as techniques*, but their theoretical background, the concepts of the actor *in situ*, the alter or auxiliary ego, spontaneity, creativity, tele, warming up, social atom, psychosocial networks of communication, sociodynamic effect, etc., were taken lightly, ignored or smuggled into literature without reference to the source. This would not be so serious if these hypotheses would have developed independently from sociometric techniques, but as it is they developed and they were imposed by empirical evidence; they have been the result of rigorous thinking in working through the material gathered. This circumstance is unfortunate for yet an-

other reason. The new system of theories and concepts do not only give important clues for significant hypotheses, they are also important *prerequisites* for the proper use of the techniques and for the setting up of productive experiments.

Sociometry is to a large extent a classificatory science, and generalizations can be made on the basis of such classifications. Geography and geology are examples of other classificatory sciences. Their counterpart within sociometry is psychological or sociometric geography. Some day a psychological geography of our planetary human population will be drawn without any reference to outside criteria. In fact, as soon as the whole field can be tackled as a unit, the cause-effect relation as well as any other relation may be visible; then there will not be any criterion left outside of it and the experimental method will not be necessary for proof.

Sociometry deals with the mathematical study of psychological properties of populations, the experimental technique of and the results obtained by application of quantitative methods. This is undertaken through methods which inquire into the evolution and organization of groups and the position of individuals within them. One of its special concerns is to ascertain the quantity and expansion of the psychological currents as they pervade populations.

My first definition of sociometry was, in accordance with its etymology, from the Latin and Greek, but the emphasis was laid not only on the second half of the term, *i.e.*, on "metrum," meaning measure, but also on the first half, *i.e.*, on "socius," meaning companion. The old dichotomy, qualitative versus quantitative is resolved, within the sociometric method, in a new way. The qualitative aspect of social structure is not destroyed or forgotten, it is integrated into the quantitative operations, it acts from within. The two aspects of structure are treated in combination and as a unit. Both principles, it seemed to me, had been neglected, but the "socius" aspect had been omitted from deeper analysis far more than the "metrum" aspect. The "companion," even as a problem, was unrecognized. The measurement of interpersonal relations as well as the experimental production of social interaction have never been seriously tackled. What remains of a

society to be investigated if the individuals themselves and the relationships between them are considered in a fragmentary or wholesale fashion? Or, to put it in a positive way, the individuals themselves and the interrelations between them must be treated as the nuclear structure of every social situation.

The phrase sociometry has a linguistic relatedness in construction to other, traditional scientific terms: biology, biometry; psychology, psychometry; sociology, sociometry. From the point of view of systematics it is preparatory to topical fields as sociology, anthropology, social psychology, social psychiatry. It is concerned with the "socius" and "metric" problems common to *all* social fields. It has developed three departments of research: a) dynamic, or revolutionary sociometry, engaged in problems of social change; b) diagnostic sociometry, engaged in social classification; and c) mathematical sociometry.

Sociometry starts practically as soon as we are in a position to study social structure as a whole and its parts at the same time. This was impossible as long as the problem of the individual was still a main concern, as with an individual's relation and adjustment to the group. Once the full social structure could be seen as a totality it could be studied in its minute detail. We thus became able to describe sociometric facts (descriptive sociometry) and to consider the function of specific structures, the effect of some parts upon others (dynamic sociometry).

Viewing the social structure of a certain community as a whole, related to a certain locality, with a certain physical geography, a township filled with homes, schools, workshops, the interrelations between their inhabitants in these situations, we arrive at the concept of the sociometric geography of a community. Viewing the detailed structure of a community we see the concrete position of every individual in it, also, a nucleus of relations around every individual which is "thicker" around some individuals, "thinner" around others. This nucleus of relations is the small social structure in a community, a *social atom*. From the point of view of a descriptive sociometry, *the social atom is a fact, not a concept*, just as in anatomy the blood vessel system, for instance, is first of all a descriptive fact. It attained conceptual significance as soon as the study of the development of social atoms suggested that

they have an important function in the formation of human society.

Whereas certain parts of these social atoms seem to remain buried between the individuals participating, certain parts link themselves with parts of other social atoms and these with parts of other social atoms again, forming complex chains of interrelations which are called, in terms of descriptive sociometry, *sociometric networks*. The older and wider the network spreads the less significant seems to be the individual contribution toward it. From the point of view of dynamic sociometry these networks have the function of shaping social tradition and public opinion.

It is different and more difficult, however, to describe the process which attracts individuals to one another or which repels them, that flow of feeling of which the social atom and the networks are apparently composed. This process may be conceived as *tele*. Tele is two-way empathy, like a telephone it has two ends.* We are used to the notion that feelings emerge within the individual organism and that they become attached more strongly or more weakly to persons or things in the immediate environment. We have been in the habit of thinking not only that these totalities of feelings spring up from the individual organism exclusively, from one of its parts or from the organism as a whole, but that these physical and mental states after having emerged reside forever within this organism. The feeling relation to a person or an object has been called attachment or fixation but these attachments or fixations were considered purely as individual projections. This was in accord with the materialistic concept of the individual organism, with its unity, and, we can perhaps say, with its microcosmic independence.

The hypothesis that feelings, emotions or ideas can "leave" or "enter" the organism appeared inconsistent with this concept. The claims of parapsychology were easily discarded as unfounded by scientific evidence. The claims of collectivistic folk unity of a people appeared romantic and mystical. This resistance against any attempt to break the sacred unity of the individual has one of its roots in the idea that feelings, emotions, ideas must reside in some structure within which they can emerge or vanish, and within which they can function or disappear. If these feelings, emotions and ideas "leave" the organism, where then can they reside?

When we found that social atoms and networks have a per-

* For a discussion of the position of tele within the sociometric system, see p. 325-328.

sistent structure and that they develop in a certain order we had extra individual structures—and probably there are many more to be discovered—in which this flow can reside. These may be conceived as two-way or multiple-way structures. One-way or projected feelings do not make sense sociometrically. They require the complementation of “retrojected” feelings, at least, potentially. This has been studied particularly through *sociometric perception tests*. One part does not exist without the other. It is a continuum. We must assume at present, until further knowledge forces us to modify and refine this concept, that some real process in one’s life situation is sensitive and corresponds to some real process in another person’s life situation and that there are numerous degrees, positive, negative and neutral, of these interpersonal sensitivities. The tele between any two individuals may be potential. It may never become active unless these individuals are brought into proximity or unless their feelings and ideas meet at a distance through some channel, for instance, the networks. These distance or tele effects have been found to be complex sociometric structures produced by a long chain of individuals each with a different degree of sensitivity for the same tele, ranging from total indifference to a maximum response.

A social atom is thus composed of numerous tele structures; social atoms are again parts of still a larger pattern, the sociometric networks which bind or separate large groups of individuals due to their tele relationships. Sociometric networks are parts of a still larger unit, the sociometric geography of a community. A community is again part of the largest configuration, the sociometric totality of human society itself.

SOCIOMETRY IN RELATION TO OTHER SOCIAL SCIENCES

Sociometry cuts through all social sciences as it deals with social phenomena at a deep level where they merge or more precisely before they “e”merge into “psychological,” “sociological,” “anthropological,” or “economic” phenomena. This should by no means indicate that these departments do not attain usefulness and

meaning on the macroscopic level of their emergence on which the differences between them become articulate and distinct.

Sociometry and Psychology

The sociometrist takes the position that as long as we as experimenters draw from every individual the responses and materials needed, we are inclined—because of our nearness to the individual—to conceive the tele as flowing out of him towards other individuals and objects. This is certainly correct on the individual-psychological level, in the preparatory phase of sociometric exploration. But as soon as we transfer these responses to the sociometric level and study them not singly but in their interrelations, important methodological reasons suggest that we conceive this flowing feeling, the tele, as an inter-personal or more accurately and broadly speaking, “as a sociometric structure.”

Sociometry and Sociology

The sociometric experiment does not base its discoveries upon the interview or “questionnaire” method (a frequent misunderstanding); it is an action method, an action practice. The sociometric researcher assumes the position of the “status nascendi” in research; he is interiorating the experimental method, a participating actor. He insists on sticking to the material inquiry and does not permit himself to step out into the logical part unless he can safely do so. He tries to measure what can be measured, to validate what can be validated, but he disdains measurement and validation for their own sakes.

According to Sociometry, social systems are attraction-repulsion-neutrality systems. Human preferential systems cannot be examined adequately by the old methods of fact-finding objectively as statistical methods and observational methods, but the methods themselves and the instruments derived from them have to undergo a process of subjectification in order to return to the researcher endowed with a more profound objectivity, having gained a grasp of the social processes on the depth level.

This new sociometric objectivity owes a great deal to sociomicroscopic studies. By sociomicroscopic configurations we do not mean only the informal small groups, but the dynamic social

units of which they are comprised, the pattern variants of social atoms, the clustering of social atoms into larger associations invisible to the eye of the human observer (social molecules), psychosocial networks, the clustering of numerous such networks into more comprehensive formations; finally the study of dyads, triangles, quadrangles, pentagons, and chains of persons. We assumed that the study of these primary atomic structures of human relations is the preliminary and indispensable groundwork to most macrosociological investigations.

Sociometry and Anthropology

The real data of a sociometric anthropology have died with the people after a cultural system has perished. If the cultural system is still in existence, a sociometric method should be applied to it in order to tap the actual dynamic processes operating within it. A sociometrically oriented anthropologist studying the family system of a culture would utilize two guiding hypotheses: (1) the existence of "informal" group structures surrounding the official family setting like a social aura; (2) the existence of "sub"-family forms of social organizations, forms of association including various individuals and structural relations but which may have never crystallized.

The micro-anthropologist may arrive at the generalization that there is a *universal sociometric matrix* with many varieties of structures underlying all known and potential family associations, an interweaving and crossing of numerous sociatomic and culturalatomic processes, but not necessarily identical with the family of one type or another as a social group.

An interesting example of the sociometric approach to anthropology may be illustrated in the following example. Let us examine two different family cultural structures: (1) In an Islamic culture, a harem, consisting of twelve individuals of a single family unit, and (2) in our American setting a comparable group of twelve individuals organized into six family units of two. The Islamic group's official role structure may be identified as the male head of the household, six wives and five servants (eunuchs), comprising one household. The American group's official role structure may be identified as six husband-wife relationships com-

prising six families. The official institutional structures which exist externally within these two cultural systems are profoundly different from a structural point of view, due to the different dynamics of harem polygamy as compared to American monogamy. Each institutional setting imposes entirely different roles upon the individual members of the two different systems. Each system exhibits to the casual observer a considerable degree of stability and conformity to the official societal roles.

The application of sociometric techniques to the two different household systems revealed the following: in the harem sociogram the male household head is the center of all the female attractions. In the American sociogram one male is the center of all feminine attraction similar to the male household head of the harem.

It is demonstrated that two diametrically opposed institutional structures, which externally present two entirely different "official" patterns may produce identically similar "sociometric" structures. This points out the sociometric-matrix which a microscopically oriented anthropology would reveal to the investigator.

Sociometry turned the attention of the Psychologist, Sociologist and the Anthropologist away from marginal primitive social systems to the present societies in which *they* are participant actors as well as observers. The responsible domain of social science requires expansion to include the immediate and practical structuring and guidance of present day human society on all its levels from the physical up to the societal plane. This job may have to begin by cleaning up our research shelves and laboratories, and concentrating all our efforts upon a few strategically selected points. The weakest spot in the armor of present day society and culture is its ignorance of its own social structure, especially of the small local structures in which people actually spend their lives. The time has come for sociometry to move from the closed into the "open" community. By means of practical, direct and immediate demonstrations of the usefulness of the sociometric methods faith in science can be regained and cemented. By such means can science be "saved" and put to full use. With the cooperation of "all" the people we should be able to create a social order worthy of the highest aspirations of our times. This is the meaning of revolutionary, dynamic sociometry.

Sociometry and Economics

It is beyond the province of this discussion to deal with all the intricacies of modern economics and their relation to sociometry. This note on the relation of sociometry to Marxian economics is presented because of its importance within the framework of the dialectics of sociometry.

Mankind cannot live from creativity, spontaneity and freedom alone; it needs material foundations. There are three factors in general economics, 1) the natural resources (n), 2) the genesis of production (c) and 3) the finished product (p). A great deal of emphasis has been placed, especially since Marxism entered the arena of economics, upon the question: "To whom does the finished product belong?" The capitalist says: "It belongs to me, I bought the machines, I bought the materials and I have hired the men and paid them wages for their labor." The worker says: "It belongs to us, the profits you make belong to us, they are the fruits of our labor. The machines you bought have been built by the labor of our comrades nearby, they belong to them. No one had a right to sell them to you, it was outright robbery, the contract between one capitalist and another, it is null and void. The factory here has been built by other comrades, it belongs rightly to them and to us" and so, on goes the argument, endlessly. But no one stops and thinks and asks the more fundamental question: "What are the forces underlying a universal system of creative economics?" In order to answer this question we have to analyze the situation before production begins, and define the *locus* and *status nascendi* preceding all production. What is it that is necessary to have on hand before production of goods is possible? First, there must be in existence the natural resources (n) of the planet, the mountains and the rivers, the mines in the depth of the earth and the unleashed elements of the atmosphere. They are there before they are touched by any labor, before they are discovered by any man and they would be there even if mankind would not exist. Next to the natural resources are the generators of production, the creative ideas (c). They are the fountainhead of all technical and social inventions, of the instruments and the blueprints; without them the processes of production could not be contemplated. Without creative ideas the most abundant natural resources of all the universe could go on for eternities unharnessed. Then there

is another factor in the genesis which must exist before any production can start. It is spontaneity, that all-pervasive plastic element which begins to warm up out imagination as soon as the natural resources and the creative idea meet. These three phenomena, natural resources, creativity and spontaneity pre-exist and condition the labor process. They belong to the universe. They do not belong to the capitalist class, they do not belong to the labor class, they do not belong to any particular individual or any particular group. They are *universalia*. What the worker puts into the process is his labor and the time which is spent working. ($n + c + s = u$; $l + g + t = h$; $u + h = p$). (n is natural resources; c is creativity; s is spontaneity; u is universe; l is labor; g is group; t is time; h is human; p is product.)

Marx, by reducing his analysis of merchandise and production to the part which labor puts into it, has left out, perhaps unconsciously, the deeper forces without which the labor process itself could not be realized. The capitalist as well as the Marxist view of the labor process are both derivatives and functions of a more universal system of creative economics.

ONTOLOGY OF SOCIOMETRIC THEORY

Every science refers to a constellation of facts and the means of their measurement. Without adequate means of how to discover the facts and without adequate means of measurement a science does not exist. The preliminary step in the development of every science is to realize the conditions under which the significant facts emerge. How to accomplish this differs from science to science. How to realize the conditions under which physical and biological facts emerge is comparatively well known. The problem of creating the conditions under which the significant facts of human relations emerge is far more complicated. It requires nothing short of a revolutionary method. The reasons why there should be such a great difference between the preliminaries required for the social sciences as compared with the physical sciences are not immediately obvious. In the physical sciences, since the subjects are inanimate, most of the emphasis has been

placed upon the mechanical, physical aspects of the situation. We do not expect the subjects, stone, water, fire, earth or planets, suns and stars to contribute anything themselves to the study of their own selves; except in the mythologies, we do not ascribe to them any soul or personality, or at least, we do not do it anymore. Therefore, the metaphysical relations which might exist between the planets and stars, to each other, as mythological soul-bearing actors, do not concern the science of physics. This problem does not change much when it comes to nonhuman organisms, *e.g.*, in experiments with rats, guinea pigs and the like. The social investigator, the one who sets up the experiment and interprets the data, is a human being and not a guinea pig or a rat. The rats or guinea pigs, so to speak, have no part in such experiments as actors in their own behalf. All such experimental designs are human designs and not designs of guinea pigs or rats. If a poetic mind à la Swift could describe how rats feel about each other and what the experiments which men make on them mean to them, it would probably be within our artistic comprehension but outside of our scientific comprehension. One could say here that we are trying to measure the behavior of rats as it "is" to us and not what rats feel it is, but this does not change the methodical difficulty which we encounter when we apply the same techniques of observation to the relationships of men among themselves. With animal societies one can take the stand that they are given and preordained, just like the individual animal organisms are, but human society is not automatically given and preordained. Although deeply related to physical and biological conditions, it has a structure whose creation and development is initiated and can be studied from within.

The internal, material structure of the group is only in rare instances visible on the surface of social interaction; and if it is so, no one knows for certain that the surface structure is the duplicate of the depth structure. In order, therefore, to produce conditions by means of which the depth structure may become visible—operationally—the "organisms" of the group have to turn into "actors;" they have to emerge presently in behalf of a common goal, a point of reference (criterion), and the "environment" or "field" has to turn into specific, action-filled situations, charged with motivating provocations. As even our most minute

observations of the interaction may be incomplete, meaningless or useless to the actors, we must get our actors to act as they would when engaged in real living. The organism in the field becomes "*the actor in situ.*" Whole cultures can be "acted out" piecemeal in the experimental settings of axiodrama and sociodrama, with protagonists as creators and interpreters.

In undertaking research on the levels of warming up of the person it is profitable to view the process from the top down: first is the actor, then the organism, and then the act. You cannot produce acts unless you have an organism, and you cannot make your organism productive unless it becomes an actor. You cannot study the actor in reverse if he is unable to act in reverse. You cannot study him but along the lines of his productivity emerging at the time of your study. *If you induce him—for research reasons—to warm up in a direction for which he is not ready or which is contrary to his inclinations, you introduce an element of artificiality into your "control" which cannot be ironed out adequately by inferential and logical argumentation.* The human actor may lose his spontaneity in an instant, and a few moments later he may have a hard time to recall the experience during the act. In order to be adequate in a particular act he should begin to warm up as *near to the act* as possible and the experimenter ought to know when he begins to warm up. (Rule of the warming up process or active productivity.)

In the warming up process of the group it is best to view all the coactors *in situ* and to view them in the direction of their productivity. In order to view them you have to move with them, but how can you move with them unless you, the experimenter, are a part of the movement, a coactor? The safest way to be in the warming up process yourself is to become a member of the group. (Rule of "coaction" of the researcher with group.) But by becoming a member of the group you are robbed of your rôle of the investigator who is to be outside of it, projecting, creating, and manipulating the experiment. You cannot be a genuine member and simultaneously a "secret agent" of the experimental method. *The way out is to give every member of the group "research status,"* to make them all experimenters and as each is carrying on his "own experiment" there are a hundred experiments and a coordination of each single experiment with every other is re-

quired. Sociometry is the sociology of the people, by the people, and for the people; here this axiom is applied to social research itself. (Rule of universal participation in action.) But the experimenter, by giving up his identity—what has he gained for the logical part of his inquiry? At first sight it does not seem that he has gained anything. It does not seem that he can set up, in order to prove a hypothesis, two controlled contrasting situations more easily than he could before. But he has gained something: he is having experience, experience *in situ*; he is learning.

As a dialectic movement toward a genuine socioexperimental method of the future he is making slow but real progress. Instead of hurrying to test a hypothesis by quickly constructing a control group versus an experimental group, a pseudo-experiment with pseudo-results, he takes his time for thinking his new situation through. A hypothesis might still be true although never validated, and vice versa. It is better to wait until it can be truly validated instead of unvalidated by validating it prematurely. As time goes on he may become better adjusted to his double rôle, since he shares it with every member of his group. But when he plans an experiment he may watch his step and not impose it too hastily on the group. Indeed, he should not assume the allures of an experimenter more than any other member. Living in the group he will soon discover that there is a deep discrepancy between the official and secret needs, official and secret value systems. (Rule of dynamic difference in group structure, peripheral versus central.) He will also soon discover that the individuals are driven at times by private, at other times by collective aspirations, which break up the group into another line of cleavage. (Group cleavage produced by psycho- and sociostructuring). Before any experimental design or any social program is proposed he has to take into account the actual constitution of the group. In order to give every member adequate motivation to participate spontaneously, every participant should feel about the experiment that *"it is his own cause, and not for the one who promotes the idea—the tester, the employer, or any other power agent."* As his learning expands to knowing how to bore with research ideas from within he may get the idea of being a member of two or more groups, one serving as a control of the other. *This should not be an experiment of nature without the conscious participation of the actors,*

but one consciously and systematically created and projected by the total group. All this, of course, could only happen if the warming up process of all human characters and all participating groups coalesce naturally into an experiment. (Rule of "gradual" inclusion of all extraneous criteria.) There are many steps and more barriers which a sensitive crew of coexperimenters might encounter on the way to a scientific utopia. However little or far they advance they never fool themselves and never fool others; they prefer the "slow" dialectic process of the sociometric experiment *in situ* to social experiments which are based on inference and logic only or the social revolutions of mass action which do not know when to start and when to end.

THE STATUS OF SCIENCE AND THE HIERARCHY OF THE SCIENCES

This leads us to a consideration of the position and meaning of science itself. The construction of a higher domain of inquiry, of a "superscience" which may be neither metaphysics nor religion, is a postulate of our critical faculties. Such an inquiry would have the task to explore the logical limits of science and should not reduce its authority. The chief attribute of science should be that it is always ready to study itself and to disagree with itself.

Comte's Hierarchy of the Sciences, 1) mathematics, 2) astronomy, 3) physics, 4) chemistry, 5) biology, and 6) sociology, has become obsolete. His assumption that all sciences can be treated by the same basic methodology is an error. The social sciences need—at least in their crucial dimension—different methods of approach. The crux of the ontology of science is *the status of the "research objects."* Their status is not uniform in all sciences. There is a group of sciences like astronomy, physics, chemistry and biology in which the research objects are always mere "objects." Their actions speak for themselves and the generalizations concluded from them are not threatened by any metaphysical protest or social revolution of their kind.

Then there is another group of sciences, the social sciences.

It is because of a chronic inertia in their development that sociology has raised the question: *how are social sciences possible?* It has found that the social sciences like psychology, sociology and anthropology require that its objects be given "research status" and a certain degree of scientific authority in order to raise their level from a pseudo objective discipline to a science which operates on the highest level of its material dynamics. It accomplishes this aim by considering the research objects not only as objects but also as *research actors*, not only as objects of observation and manipulation but as *co-scientists* and *coproducers* in the experimental design they are going to set up.

The differentiation between an organism-in-environment and an actor-*in-situ* is useful for the following reasons. The *homo-metrum* shares the classification "organism" with all research objects which can be subjected to the same methods, observation, experimentation, comparison and historical study. But as actor *in situ* he is unique in the social sciences, not because of any particular superiority as compared with non-humans, only because of these new methods which make it possible for him to set up his own frames of reference, create his own experimental designs, and be able to use the conclusions drawn from them to enlarge his knowledge about his own society.

THEORY OF INTERPERSONAL RELATIONS

The theory of interpersonal relations is based upon the "primary dyad," the idea and experience of the *meeting* of two actors, the concrete-situational event preliminary to all interpersonal relations. The limiting factor in the individual centered psychologies and mass centered sociologies is the non-presence of the "other actor." The socius, except as an abstraction, is left out from direct contact, active combat and communication.

The corrective for this dilemma—enhanced and produced by gadgets entering between, or robots taking the place of the actors—is the return to the original meeting, the event preceding but foreboding "zwischen-menschliche Beziehungen" or interpersonal relationships. The German "zwischen-menschlich" and the Eng-

lish "interpersonal" are anaemic notions compared with the living fact of "meeting". They are the semantic end-products after many stages of intellectual distortions and blood letting for the sake of a technical term useful in scientific language. It is dangerous for science to forget the origin of words, especially of the key words in their own scientific vocabulary. The modern fear of language has resulted in semanticism;—instead of compensating for itself by escape into less sensuous and less tangible logical symbols and algebraic formulae—it may find a *saner* way out by turning every key word they use back to its *status nascendi*.

"Meeting" means more than a vague interpersonal relation. It means that two or more actors meet, but not only to face one another, but to live and experience each other, as actors each in his own right, not like a "professional" contrived meeting, a case-worker or a physician or a participant observer and their clients characterized by the "unequal" status of the participants, but a meeting of two people. In a meeting the two persons are there in space, with all their strengths and all their weaknesses, two human actors seething with spontaneity only partly conscious of their mutual aims. Only people who meet one another can form a natural group and start an actual society of human beings.

There are several dividing lines between sociometric and non-sociometric methodology, with regard to interpersonal relationships. The first dividing line is the distinction between one-way and two-way relations between actors. The one-way relation in itself, that is, separated from the actual or possible responses of other actors, is outside of the sociometric domain. One million individuals, each treated as a separate monad, each the source of innumerable outgoing relations, add up to a *sum* of individuals, but they do not form a *unit* of people, a group in a sociometric sense. Individuals as isolated organic units plus their one-way projections are study objects of the psychological and the socio-psychological disciplines. Sociometry separates from its immediate range of research activities all psychology of the single individual, psychometry, psychoanalysis, and the so-called projection techniques. They are sub-fields of psychology. Individuals with their one-way relations and projections are sociometric study objects only if they are viewed and analyzed as fragments or *parts* of a total human social structure.

The second dividing line between sociometric and non-sociometric methodology is the division between one-way role and two-way role relations. From the point of view of a psychologist for instance, a one-way relationship is the cardinal feature of the psychoanalytic situation. There is only one person for whom the role is made to order, the patient. If he would turn into an actor, stand up and assume the role of the analyst and fight with him, it would soon bring the meaning of the psychoanalytic situation to absurdity and to an end. But from the point of view of the meeting it would develop into something which is certainly more human and perhaps more salutary than a psychoanalytic situation—into a meeting between two people, each with his various roles and aspirations. It would develop into a dramatic encounter, a phenomenon which with some modifications I later called the *psychodramatic situation*. Looking backwards to my first book, it is now clear that from the idea of the meeting, the encounter between author and reader, preacher and follower, husband and wife, each in his “role,” it was only a short step from putting them on a stage on which they can battle their relationship out, unhindered by the threats and anxieties of their real life situation. This is how the idea of the psychodrama was born.

A third dividing line between sociometric and non-sociometric methodology is the emphasis upon the psycho-social organization of the group and the way it functions. Organization and function of a group appear to be closely related. An illustration is the relation of leadership to the organization of the group. The number of imposed “leaders” are few and remain unchanged as long as the boss is in power, or they are changed more or less arbitrarily. In spontaneously and democratically organized groups the leadership process is set free to express itself. Far more individuals are given a chance to take part in the leadership process and far more have an opportunity to function in leadership positions for a certain time. The fact that a larger number of individuals can take part in the leadership process, makes the struggle for leadership in a democracy far more violent and extensive than in a regimented society. A fear of leadership may suggest checks and balances against any leadership—in the name of democracy. Sociometric findings explain why there are often on the European continent schools in science, the arts and politics, each with a strong

leader on top. Feudal and autocratic societies encourage this type of structure. Strong leaders of more or less rigidly controlled groups of this kind cannot be easily unseated by spontaneous changes in the group. They maintain their power beyond the sociometric saturation point for their ruling. They provide good soil for cultism. On the North American continent the situation is quite different. A democratically minded society encourages the development of comparatively larger number of sects but leadership is weak, sub-leaders are preferred. Strong leadership does not develop so easily because it has more hindrances to overcome from within—many other individuals in the group are pressing for their own leadership position, the group being more spontaneously structured.

A fourth dividing line between sociometric and non-sociometric methodology is the emphasis on *measurement* of interpersonal and intergroup relations. The empirical system of two-way relations introduced by sociometry marked a new phase in the development of the social sciences. Sociometry introduced an approach to the measurement of phenomena such as interpersonal relations, interrole relations, emotional currents, spontaneity and creativity, which had been considered in the past as outside of the domain of measurement.

The fifth dividing line between sociometric and non-sociometric methodology is the emphasis in sociometry upon the *activated* relation between the individual components (members) to the structure and the function of the group; in other words, the emphasis upon their spontaneity and the warming up process between them. There is no durable structure of a group if it does not correspond to its functioning and no function can be adequate if it is not upheld by the initiative and enthusiasm of the individual members.

The idea of the meeting hides the seed of two concepts each at the opposite ends of a scale, the concept of spontaneity and the concept of the doll. An illustration is the relation between the author of a "book" and his reader. In the pre-book era the prophet, the forerunner of the author, could not help but meet his friends or followers face to face. But the reader is absent from the primary situation, the author can make him a helpless target. The same is in principle true about millions of radio listeners listening to a speaker. As in the case of readers, their "counter-

spontaneity" is reduced to a minimum, their opportunity to counter with their own spontaneities is made difficult or impossible. This situation is best symbolized by a doll which is exposed to the aggressiveness of a child. In the world of the infant the doll is the symbol for all human beings who are deprived of their spontaneity, or better, who are in a position of being unable to counter with it. Whereas the book is a representative of a cultural conserve, the doll, because of its intentional semblance to human beings or humanized animals, represents the mechanical being, the robot, the "zooaton." They are beings who can be loved and hated in excess and who cannot love or fight back, who can be destroyed without a murmur, in other words dolls are like individuals who have lost all their spontaneity. This *dead-aliveness* of the doll should become an earnest concern to parents and educators, as we are placing it not into a museum, but into the hands of our children. Dolls become their best comrades, memories to which they return in their adolescent phantasies. Toys such as dolls are inanimate objects and the child can create the roles of master and slave. The dolls cannot fight back if and when the child exerts his physical strength by mishandling or destroying the doll. This is contrary to the very principle of democracy. Children get used to "easy" spontaneity.

The difficulty can be surmounted. Our homes and nursery schools should replace many of their doll equipments by auxiliary egos, real individuals, who take the "part" of dolls. The individuals portraying doll roles and fantastic situations are trained to reduce their own and permit the child a greater amount of spontaneity than in real situations, but behind the doll playing subject there is a real, feeling person. The child will learn by the auxiliary ego technique what he cannot learn by the doll playing technique—that there are limits to the extremes of love just as well as to the extremes of hate.

The function of dolls in the early life of children must undergo a revision. I do not wish to warn against their discrete use. Their reckless application cannot be but harmful. Sociometry would be meaningless and could not be applied to a society of dolls. Every individual doll is isolated from the other. They do not form a social structure. It cannot be explored because it does not exist. In a human society the opposite is true. Because every individual

flows over with spontaneity, spontaneity flows between individuals. There is so much social structure that many essential parts cannot be seen. It cannot be explored but in the degree in which the spontaneous interest is aroused, and it cannot be changed but in the degree in which its participants cooperate in the project.

THE THEORY OF THE ATOM IN THE SOCIAL SCIENCES

Human society has an atomic structure which is analogous to the atomic structure of matter. Atom is derived from a Greek word "atomos" meaning "any very small thing." The term was introduced into scientific language by Democritus. He used it to indicate the smallest particles in the physical universe. Physicists have no priority on the terms; many words introduced by early philosophers describing physical phenomena as gravitation, atom, attraction, saturation, have a poetic-symbolic character; they are metaphors for psycho-social experiences and belong rightly in our social vocabulary, whence they have been taken. We may learn more about the meaning of atomic structure from sociometric studies than we ever learned from physics.

There are two significant microscopic formations of the atom, the social atom and the cultural atom. Their existence has been brought to empirical test by means of social microscopy. A pattern of attractions, repulsions and indifferences can be discerned on the threshold between individual and group. This pattern is called the "social atom". It is the smallest functional unit within the social group. Every person is positively or negatively related to an indefinite number of socii, who in turn may be related to him positively or negatively. Besides these two-way relations there are one-way relations observable. Some socii are related to the central person and unknown to him, and he may be related to some socii unknown to them. It is this total configuration which comprises the social atom. An individual has from birth a structure of relationships around him, mother, father, grandmother and other members of his early environment. The volume of the social atom

is in continuous expansion as we grow up; it is within it that we live most concretely.

Every individual, just as he is the focus of numerous attractions and repulsions, also appears as the focus of numerous rôles which are related to the rôles of other individuals. Just as he has at all times a set of friends and a set of enemies, he also has a range of rôles and a range of counter-rôles. They are in various stages of development. The tangible aspects of what is known as "ego" are the rôles in which he operates. The focal pattern of rôle-relations around an individual is called his *cultural atom*. We are here coining a new term, "cultural atom", since we know of no other which expressed this peculiar phenomenon of rôle relationships. Obviously, the term is selected as an analogue to the term "social atom". The use of the word "atom" here can be justified if we consider a cultural atom as the smallest functional unit within a cultural pattern. The adjective "cultural" can be justified when we consider rôles and relationships between rôles as the most significant development within any specific culture. The socio-atomic organization of a group cannot be separated from its cultural-atomic organization. The social and cultural atom are manifestations of the *same* social reality.

SOCIOMETRIC FRAMES OF REFERENCE

There is some confusion in sociometric work in regard to the frames of reference. The experiences, feelings, choices and decisions of the individuals forming a certain social aggregate are one class of facts to which we refer. They are a psychological frame of reference. The social situations—families, churches, industrial units—in which these social aggregates take part are another class of facts to which we refer. They are a sociological frame of reference. Similarly, a cultural frame of reference, a biological frame of reference, an ecological frame of reference and others can be discerned as affecting social structure. Methodical scrutiny shows that none of these classes of facts is separable from another. The facts that belong to these realms are raw, preparatory materials, but not the frame of sociometric

reference itself. The reference which is sociometrically valid is the composite of individual and symbolic responses which represents the living social aggregates, into the weaving of which many factors have contributed.

It is undeniable that the social configurations as portrayed in our sociograms are elementary and rough in texture compared with the complex relationships, rhythms and tempos operating within a living social aggregate. With the devising of new sociometric techniques and with the improvement of the present instruments, the more subtle and more mature processes—the economic milieu, the religious milieu, the cultural milieu, which operate within social aggregates—will be made increasingly comprehensible. It is our contention that these entities, economy, religion, or culture, whatever the logic of their existence may be, cannot be so impersonal as to exist independent of the societies in which the persons actually think, live and act. These processes must express themselves within living social aggregates although their interaction may be more difficult to trace. It is to the comprehension of these richly textured, integrated and fully matured configurations that sociometric work aspires.

As the object of sociometric study is not a single series of data, a series of psychological data, a series of sociological data, of cultural or biological data, but the whole configuration in which they are interwoven, the ultimate sociometric frame of reference could be neither of these series of data exclusively, but the social configurations in which they are interwoven as a whole.

Sociometrically Oriented Experimental Method

The experimental method in science was given its authoritative formulation by John Stuart Mill, whose system of logic owes many valuable thoughts to Comte.

The model of how the findings of the social sciences should be validated was taken by Mill from the physical sciences. He came to the exasperating conclusion that the experimental method cannot be applied to the social sciences, their subject matter being too complex. The question raised here is whether he did not start with a false premise, whether the model he held authorita-

tively before the social sciences was not the wrong one. In the generation when the two theorists, Comte and Mill constructed their universal systems of experimental method Karl Marx was busy building his own. His system had a different slant. He was a theorist and a thinker of practice. One who is versed in sociometric methods could venture to say that he was unconsciously following a model of experimental method more indigenous to the social sciences, a model of social actors in a world of action. But there is no trace to be found of the Marxistic kind of logic in the system of logic of Mill. It should not be implied here that Marx was interested in experimental method *per se*. He was not interested in the type of precision and validation for which the experimental method stands. But he was interested in significant methods which work in practice and are borne out by "experiments of nature."

The experimental method should, therefore, discern two parts, a *material* part and a *logical* part. Mill's canon deals exclusively with the logical part, or as he calls them, the methods of experimental inquiry. They were designed to be methods of discovering causal connections and methods of conclusive proof. He differentiated between the method of agreement, the method of difference, the joint method of agreement and difference, the method of concomitant variation and the method of residues. It is due to the apparently invincible pathos of the logical exposé of the experimental methods that they have become sacred to all worshippers of science. They rest on the dogma of the uniformity of nature or, in Mill's own words, "There are such things in nature as parallel cases, that what happens once, will, under a sufficient degree of similarity of circumstances, happen again." The uniformity of nature, he says, is the "ultimate major premise of all inductions."

The logical aspects of experimentation have been stressed abundantly, from Francis Bacon to Mill and up to our own time; the material part has been so sadly neglected that the development of the social sciences has been seriously crippled and with it the possibility of providing the total of human society with more rigorous and adequate instruments of social change than are available. It has become, therefore, an important task of the sociological thought of our own century to correct the most

flagrant error of methodical insight which has made social research trivial and confusing while deteriorating its outlook.

The experimental situation in its broadest meaning consists of three phases: (a) the material part, that is, the matter for whose study an experiment is designed; (b) the logical part, that is, the methods constructed in order to test the validity of an hypothesis or of a universal law; and (c) the relationship between the material of the experiment and the logico-experimental part of the procedure. In the physical sciences and, to a degree, in the biological sciences the material target of the experimental method does not matter so much as in the social sciences.

The dynamic logic of social relations is particularly intricate and has remained unconscious with Man because of his maximal proximity and involvement in his own situation. For millennia, therefore, the activities of human society have been a greater mystery to him than every other part of the universe. Because of their greater distance from him he could see the movement of the stars and planets, or the life of the plants and animals more objectively. It takes enormous sacrifice and discipline to view and accept himself as he is as an individual man, the structure of the individual psyche, its psycho-dynamics; but the degree of invisibility of the structure of human society, of its sociodynamics is much greater than that of the single individual. The effort of becoming objective toward the socius encounters many more obstacles than to be objective toward his own individual mind. The involvement of the ego he can still grasp, perhaps he can pretend to know it because it operates within him. The involvements of the socius, however, he cannot pretend to know as it operates outside of him, but it is an outside to which he is inescapably tied.

Science of Action

A science of action rests upon the fundamental difference between the world of organism and the world of actors, the organism-in-environment versus the actors *in situ*. The organism is an abstraction, an abstraction from the actor, and behavior is an abstraction, an abstraction from the act. We should keep, for methodological reasons, the actorial system of the human group distinct from its behavioral system.

A science of action which postulates that organism equals actor

and behavior equals action is a science of action in name only. The equalization of actor and organism is not merely a matter of semantics, it is a perversion of significant terms and further a crucial block in the advancement of an experimental methodology in the social sciences. How does a social experiment start? It does not start with organisms, behaviors and cathexes; such is the view of observers and spectators. It starts with "you" and "me," with meetings and encounters, with actors and counter-actors. It does not start with "he" and "she," with "interpersonal relations" and the world of the "outsiders." A science of action begins with two verbs, *to be* and *to create*, and with three nouns, *actors, spontaneity and creativity*. A collective of actors has a different meaning than a collectivity of organisms, it is a "we," not a "they," it is a "creatocracy," not a universe of interacting organisms. It is urgent that the relation between organism and behavior on one hand and between actor and action on the other be clearly differentiated. The actor's "actings out" and the "data" or interpretations of the observer should not be treated as if they were identical—they may be supplementary but they are not identical. *An action matrix registers acts and events. A behavior matrix registers "observations" of acts and events.* The actor must become an observer of himself and an actor towards the observer, i.e., the observer must become an actor towards the observed and an observer of himself; one must co-act with the other, a meeting is taking place. In an ongoing socio-psychodrama the subjective view of the actor and the objective view of the co-actor are one, they are on the same plane. Indeed, as alter or auxiliary egos to each other on the plane of action the degree of their reciprocal subjectivities and objectivities are continuously in a process of mixture; A acts towards B, B acts towards A; A observes himself as he acts towards B, B observes himself as he acts towards A; A observes A, B observes B; A observes A *and* B, B observes B *and* A; A acts towards C, A acts towards B *and* C, C acts towards B *and* A, etc. A genuine theory of action and actors deals with actorial categories and interaction potentials like spontaneity, creativity, the warm up, the moment, the meeting, alter or auxiliary ego and other categories which express the co-experiential level of an actor's world on the level of action.

The actorial system is based on a consensus which exists only

within the collectivity of actors. This secret, internal consensus can be "objectified" with the *research aid* of the actors and used by the observers of the behavior of such a collectivity of actors to supplement and amplify the system they are developing from behavioral cues. Frequently even the aid of the actors is not sufficient, the observers have to become "subjectified" and to turn into members of the actorial collectivity themselves in order to get the cues from the inside, from their own existential participation in the process. The collectivity of actors is also not identical with the point of view of any individual actors, just as the collectivity of interacting organisms is not identical with the behavior of any individual organism. A total systematization of a theory of action as a social system is a formidable task but it requires, before theorizing, some existential prerequisite, for instance, *a living and reflecting through a long series of psycho- and sociodramatic sessions, dealing with a variety of socio-cultural contexts*. A psychoanalytic experience on a couch is not sufficient. The theoretical god has to come down from his high horse and become a co-actor, either on the sociodramatic or on the "socio" existential level. A system of personality—of society and culture cannot emerge without being founded on a theory of spontaneity and creativity.

Theory of Roles*

Every role is a fusion of private and collective elements; it is composed of two parts,—its collective denominators and its individual differentials. It may be useful to differentiate between *role-taking*—which is the taking of a finished, fully established role which does not permit the individual any variation, any degree of freedom—*role playing*—which permits the individual some degree of freedom—and *role creating*—which permits the individual a high degree of freedom, as for instance, the *spontaneity player*. *The tangible aspects of what is known as "ego" are the roles in which it operates*. Roles and relationships between roles are the most significant development within any specific culture. Working with the "role" as a point of reference appears to be a methodological advantage as compared with "personality" or "ego." These are less concrete and wrapped up in metapsychological mystery.

* See also "Two Schools of Role Theory," p. 688-691.

Role emergence is prior to the emergence of the self. Roles do not emerge from the self, but the self may emerge from roles. The hypothesis upheld by many that the genesis of role emergence and the genesis of language are one and the same is not tenable according to experimental role research. Long before language-linked roles emerge in the child's world, "psychosomatic roles" operate effectively (for instance, the role of the eater, the sleeper and the walker). There is considerable psychic resistance against the intrusion of language in infants and even some resistance against gestural infiltration. There is no reason to assume that the language-free areas are non-human. There is overwhelming evidence that these silent areas are co-existent with the vocal ones on the human level and have great potentialities for independent growth. There may be forms of social communication without gestural involvement. *The tele phenomenon operates in all dimensions of communication* and it is therefore an error to reduce it to a mere reflection and correspondent of the communication process via language.

The roles of *the mother, the son, the daughter, the teacher, the negro, the Christian, etc.*, are social roles; the roles of *a mother, a teacher, a Negro, a Christian, etc.*, are psychodramatic roles.

The term role itself comes from the language of the stage. Role playing may be considered as an experimental procedure, a method of learning to perform roles more adequately. The present popularity of the term and concept derives from the value it has proven to have as a training device in various social, occupational and vocational activities, and resulted from the initiative which the author has taken in developing them. It is through the study of roles in action that new knowledge about roles developed. In contrast with role playing, role taking is an attitude already frozen in the behavior of the person. Role playing is an act, a spontaneous playing; role taking is a finished product, a role conserve.

A simple method of measuring roles is to use as a norm permanently established processes which do not permit any change, role conserves like Shakespeare's Hamlet or Othello, Goethe's Faust or Byron's Don Juan. If a number of performers are given the instruction to use the Hamlet text either literally as it is given by Shakespeare, or to change it freely in the course of the performance, some will prefer the original text, others may ad lib

into the text smaller or major changes. These deviations represent the degrees of freedom of the particular performer which can be ascribed to the operation of an *s* factor. Their additions or substitutions may be within or far below the Shakespearean level of expression. A scale of Hamlet versions would result, the original Shakespeare version being on one end of the scale, a fully transformed personalized text on the other.

Another method of measurement uses as norms social roles which are rigidly prescribed by social and legalistic customs and forms. Illustrations for this are social roles as the policeman, the judge, the physician and so forth. They are roles or social stereotypes and differ from role conserves as the sequence of situations, the text of their speeches, are not rigidly outlined. No Shakespeare has written "their" lines and actions in advance. A varying degree of spontaneity is permitted, indeed, it is expected from them. A policeman, for instance, may be required to represent the authority of the law in every situation into which he enters, but he may be required to act differently in varying situations. In fact, without some degree of spontaneity his words and actions may have fatal consequences for him and his fellow citizens. Placing a number of policemen, therefore, into a number of standard life situations which require their interference would result in a scale. On one end of the scale will be the most adequate policeman performance in a particular situation, on the other end the most inadequate performance in the same kind of situation.

Another method of measurement is to let a subject develop a role *in statu nascendi*, placing him into a situation which is little structured, up to situations which are highly organized. The productions of different subjects will differ greatly and will provide us with a yardstick for role measurement.

Another method of measurement is to place a number of subjects unacquainted with each other into a situation which they have to meet in common. Illustration: six men of equal military rank are camping. Suddenly they see an enemy parachutist landing in the nearby forest. They have to act on the spur of the moment. A jury watches to see how the group grows in *statu nascendi*: it may discern a) what relationships develop between the six men; who is taking the initiative in the first phase, in the intermediate phases, in the final phase of their interaction. Who

emerges as the "leader?" b) What action do they take towards the enemy? c) How is the situation ended and by whom?

Another method is to place a number of subjects in a specific role independently and at different times, opposite the *same* auxiliary ego, whose performance has been carefully prepared and highly objectified. He, the ego, can then be an instrument which measures the variations of response coming from the subjects tested.

Yet another method is the study of the same role, for instance the role of the stranger, in a number of different situations. A subject taking this role is for instance first placed *vis a vis* a girl who happens to be his neighbor in a train; later accosting her on the street. At a still later stage proposing marriage to a girl of a different ethnic background, and finally being fired from his job after several years of dutiful service because of his race. This series would permit the development of a scale in reference to the same role, for instance, stranger, son, worker, and so forth.

There is a consensus in all studies made that role taking and role playing have a common origin. The genesis of role development shows clearly how one grows out of the other, that role playing and role taking are two phases of the same process. It has been found in hundreds of tryouts that the process of role taking is not only cognitive and that, on the other hand, the process of role playing is not only behavior or mere acting, but that cognition, perception, behavior and action are finely interwoven and cannot be neatly separated. There are enactable and unenactable roles; recognized and unrecognized roles; enactment of roles before the level of their recognition; recognition of roles before the level of their enactment; adequate, distorted, partial and loss of role perception; adequate, distorted, partial and inability of role enactment. There is often a discrepancy between the assessment of role behavior by observers and the assessment of such roles in action by the actors and co-actors themselves. However much taken and frozen a role has become and however much integrated it is into the perception and behavior of a certain individual, there is a weak spot in its armor; in order to emerge in a certain moment it must pass (a) through a process of warming up, however minimal, in which the whole organism is involved, (b) a process of mimetic learning as to how

to take the role of the other—however “generalized” this “other” may be. The individual represents every time a slightly different version; this is not possible without some minimal playing towards the role, gradually learning and struggling to approximate it—however fragmentary, rudimentary and embryonic this role playing process might be. Role acting and role perception, role playing and role taking go hand in hand in the primary learning and conditioning process. *In situ* they cannot be separated.

The Social Trichotomy

It is of heuristic value to differentiate the social universe into three tendencies or dimensions, the external society, the sociometric matrix and the social reality. By external society I mean all tangible and visible groupings, large or small, formal or informal, of which human society consists. By the sociometric matrix I mean all sociometric structures invisible to the macroscopic eye but which become visible through the sociometric process of analysis. By social reality I mean the dynamic synthesis and interpenetration of the two. It is obvious that neither the matrix nor the external are real or can exist by themselves, one is a function of the other. As dialectic opposites they must merge in some fashion in order to produce the actual process of social living.

The dynamic reason for this split is the underground existence of innumerable social constellations which impinge continuously upon external society, whose structure may vary from one cultural order to another, partly in an effort towards its disintegration, partly in an effort towards their realization and, last not least, because of the resistance which external society puts up against its substitution or change. As the profound and chronic conflict between these two tendencies is never fully resolved, the result is a synthesis in the form of what may be called the “social reality”.

A position which has become axiomatic for sociometrists until proven otherwise is that the official (external) society and the sociometric (internal) matrix are not identical. The one is visible to the senses, it is macroscopic, the other is invisible, it is microscopic. In the sense of this dichotomy all groupings, whether as rigidly formalized and collectivized as an army or a church, or as casual and transitory as a meeting of people on a street-

corner, they belong, as long as they are visible to the naked macroscopic eye, to the externally structured society. One can not assume in advance that the sociogram of an army platoon, for instance, is radically different from the official structure of the platoon, rigidly imposed upon the men, or that the sociogram of a casual gathering on a streetcorner is equal or nearly equal to the actually visible formation. It is possible that in certain cultures, widely divergent from our own, the sociogram of a rigid social institution is identical with its actual social structure on the reality level. It is therefore methodically of utmost importance not to mix the sociometric position which is neutral (or let us say as neutral as possible) with the social order just existing and passing. Sociometry is equally applicable to every type of society which has emerged in the past or which might emerge in the future.

The structure of the external society is comparatively easy to describe. It consists of visible, overt and observable groups; it is made up of all the groups recognized by law as legitimate, of all the groups rejected by law as illegitimate, as well as of all the neutral groups permitted, although unclassified and unorganized. The shortest way to obtain a picture of the legitimate groups is to use the system of law ruling a particular society as a guide. In order to obtain a picture of the illegitimate groupings excursions into the underworld are effective. Illustrations of legitimate groups are: the family, the workshop, the school, the army or the church. Illustrations of informal and illegitimate groups are: the casual encounter of two, the crowd, the mass, the mob, the streetcorner gangs or criminal rackets.

The structure of the sociometric matrix is more difficult to recognize. Special techniques called sociometric are necessary to unearth it; as the matrix is in continuous dynamic change the techniques have to be applied at regular intervals so as to determine the newly emerging social constellations. The sociometric matrix consists of various constellations, tele, the atom, the super-atom or molecule (several atoms linked together), the "socioid" which may be defined as a cluster of atoms linked together with other clusters of atoms via inter-personal chains or networks; the socioid is the sociometric counterpart of the external structure of a social group; it is rarely identical with what a social group externally shows because parts of its social atoms and chains may

extend into another socioid. On the other hand, some of the external structure of a particular social group may not make sense configuratively as a part of a particular socioid but may belong to a socioid hidden within a different social group. Other constellations which can be traced within a sociometric matrix are psychosocial networks. There are in addition large sociodynamic categories which are frequently mobilized in political and revolutionary activities; they consist of the interpenetration of numerous socioids and represent the sociometric counterpart of "social class" as bourgeoisie or proletariat; they can be defined as sociometric structure of social classes or as "classoids".

The social reality itself is the dynamic interweaving of and interaction of the sociometric matrix with the outer, external society. The sociometric matrix does not exist by itself, just as the outer society does not exist by itself; the latter is continuously pushed and pulled by the structure underneath. Within a sociometric system we distinguish therefore three processes, the outer reality of society, the internal reality of the sociometric matrix and the social reality itself, the historically growing, dynamic social groupings of which the actual social universe consists. If one knows the structure of the official society and the sociometric matrix he can recognize the bits and pieces which enter from the two dimensions into the synthesized forms of social reality. Social conflict and tension increases in direct proportion to the sociodynamic difference between official society and sociometric matrix.

SOCIOMETRIC METHODS AND TECHNIQUES AS FOUNDATIONS OF SOCIOMETRY

PSYCHODRAMA

Drama is a transliteration of the Greek *δρᾶμα* which means action, or a thing done. Psychodrama can be defined, therefore, as the science which explores the "truth" by dramatic methods. It deals with inter-personal relations and private worlds.

The psychodramatic method uses mainly five instruments—the stage, the subject or actor, the director, the staff of therapeutic

aides or auxiliary egos, and the audience. The first instrument is the stage. Why a stage? It provides the actor with a living space which is multi-dimensional and flexible to the maximum. The living space of reality is often narrow and restraining, he may easily lose his equilibrium. On the stage he may find it again due to its methodology of freedom—freedom from unbearable stress and freedom for experience and expression. The stage space is an extension of life beyond the reality test of life itself. Reality and fantasy are not in conflict, but both are functions within a wider sphere—the psychodramatic world of objects, persons and events. In its logic the ghost of Hamlet's father is just as real and permitted to exist as Hamlet himself. Delusions and hallucinations are given flesh—embodiment on the stage—and an equality of status with normal sensory perceptions. The architectural design of the stage is made in accord with operational requirements. Its circular forms and levels of the stage, levels of aspiration, pointing out the vertical dimension, stimulate relief from tensions and permit mobility and flexibility of action. The locus of a psychodrama, if necessary, may be designated everywhere, wherever the subjects are, the field of battle, the classroom or the private home. The ultimate resolution of deep mental conflicts requires an objective setting, the psychodramatic theatre.

The second instrument is the subject or actor. He is asked to be himself on the stage, to portray his own private world. He is told to be himself, not an actor, as the actor is compelled to sacrifice his own private self to the rôle imposed upon him by a playwright. Once he is warmed up to the task it is comparatively easy for the subject to give an account of his daily life in action, as no one is as much of an authority on himself as himself. He has to act freely, as things rise up in his mind; that is why he has to be given freedom of expression, spontaneity. Next in importance to spontaneity comes the process of enactment. The verbal level is transcended and included in the level of action. There are several forms of enactment, pretending to be in a rôle, re-enactment or acting out a past scene, living out a problem presently pressing, creating life on the stage or testing oneself for the future. Further comes the principle of involvement. We have been brought up with the idea that, in test as well as in treatment situations, a minimum of involvement with other persons and

objects is a most desirable thing for the subject. In the psychodramatic situation all degrees of involvement take place, from a minimum to a maximum. In addition comes the principle of realization. The subject is enabled not only to meet parts of himself, but the other persons who partake in his mental conflicts. These persons may be real or illusions. The reality test which is a mere word in other methods is thus actually made true on the stage. The warming up process of the subject to psychodramatic portrayal is stimulated by numerous techniques, only a few of which are mentioned here: self presentation, soliloquy, projection, interpolation of resistance, reversal of rôles, double ego, mirror techniques, auxiliary world, realization and psycho-chemical techniques. The aim of these sundry techniques is not to turn the subjects into actors, but rather to stir them up to be on the stage what they *are*, more deeply and explicitly than they appear to be in life reality. The patient has as *dramatis personae* either the real people of his private world, his wife, his father, his child, etc., or actors portraying them, auxiliary egos.

The third instrument is the director. He has three functions: producer, counsellor and analyst. As producer he has to be on the alert to turn every clue which the subject offers into dramatic action, to make the line of production one with the life line of the subject, and never to let the production lose rapport with the audience. As director attacking and shocking the subject is at times just as permissible as laughing and joking with him; at times he may become indirect and passive and for all practical purposes the session seems to be run by the subject. As analyst he may complement his own interpretation by responses coming from informants in the audience, husband, parents, children, friends or neighbors.

The fourth instrument is a staff of auxiliary egos. These auxiliary egos or participant actors have a double significance. They are extensions of the director, exploratory and guiding, but they are also extensions of the subject, portraying the actual or imagined personae of their life drama. The functions of the auxiliary ego are threefold: the function of the actor, portraying roles required by the subject's world; the function of the counsellor, guiding the subject; and the function of the social investigator.

The fifth instrument is the audience. The audience itself has a double purpose. It may serve to help the subject or, being itself helped by the subject on the stage, the audience becomes the problem. In helping the subject it is a sounding board of public opinion. Its responses and comments are as extemporaneous as those of the subject, they may vary from laughter to violent protest. The more isolated the subject is, for instance, because his drama on the stage is shaped by delusions and hallucinations, the more important becomes, to him, the presence of an audience which is willing to accept and understand him. When the audience is helped by the subject, thus becoming the subject itself, the situation is reversed. The audience sees itself, that is, one of its collective syndromes portrayed on the stage.

In any discussion of psychodrama the important dynamics which operate should be considered. In the first phase of psychodramatic process the director may meet with some resistance from the subject. In most cases the resistance against being psychodramatized is small or nil. Once a subject understands the degree to which the production is of his own making he will cooperate. The fight between director and subject is in the psychodramatic situation extremely real; to an extent they have to assess each other like two battlers, facing each other in a situation of great stress and challenge. Each of them have to draw spontaneity and cunning from their resources. Positive factors which shape the relationship and interaction in the reality of life itself exist: spontaneity, productivity, the warming up process, tele and rôle processes.

The psychodramatist, after having made so much ado to get the subject started, recedes from the scene; frequently he does not take any part in it, at times he is not even present. From the subject's point of view his object of transference, the director, is pushed out of the situation. The retreat of the director gives the subject the feeling that he is the winner. Actually it is nothing but the preliminary warm up before the big bout. To the satisfaction of the subject other persons enter into the situation, persons who are nearer to him, like his delusions and hallucinations. He knows them so much better than this stranger, the director. The more they are in the picture the more he forgets him and the director wants to be forgotten, at least for the time being. The

dynamics of this forgetting can be easily explained. Not only does the director leave the scene of operation, the auxiliary egos step in and it is between them that his share of *tele*, transference and empathy is divided. In the course of the production it becomes clear that *transference is nothing by itself, but the pathological portion of a universal factor, tele*, operating in the shaping and balancing of all interpersonal relations. As the subject takes part in the production and warms up to the figures and figure-heads of his own private world he attains tremendous satisfactions which take him far beyond anything he has ever experienced; he has invested so much of his own limited energy in the images of his perceptions of father, mother, wife, children, as well as in certain images which live a foreign existence within him, delusions and hallucinations of all sort, that he has lost a great deal of spontaneity, productivity and power for himself. They have taken his riches away and he has become poor, weak and sick. The psychodrama gives back to him all the investments he had made in the extraneous adventures of his mind. He takes his father, mother, sweethearts, delusions and hallucinations unto himself and the energies which he has invested in them, they return by actually living through the rôle of his father or his employer, his friends or his enemies; by reversing the rôles with them he is already learning many things about them which life does not provide him. When he can be the persons he hallucinates, not only do they lose their power and magic spell over him but he gains their power for himself. His own self has an opportunity to find and reorganize itself, to put the elements together which may have been kept apart by insidious forces, to integrate them and to attain a sense of power and of relief, a "catharsis of integration" (in difference from a catharsis of abreaction). It can well be said that the psychodrama provides the subject with a new and more extensive experience of reality, a "*surplus*" reality, a gain which at least in part justifies the sacrifice he made by working through a psychodramatic production.

The next phase in psychodrama comes into play when the audience drama takes the place of the production. The director vanished from the scene at the end of the first phase; now the production itself vanishes and with it the auxiliary egos, the good helpers and genii who have aided him so much in gaining a new

sense of power and clarity. The subject is now divided in his reactions; on one hand he is sorry that it is all gone, on the other he feels cheated and mad for having made a sacrifice whose justification he does not see completely. The subject becomes dynamically aware of the presence of the audience. In the beginning of the session he was angrily or happily aware of it. In the warming up of the production he became oblivious of its existence but now he sees it again, one by one, strangers and friends. His feelings of shame and guilt reach their climax. However, as he was warming up to the production the audience before him was warming up too. But when he came to an end they were just beginning. The *tele-empathy-transference* complex undergoes a third realignment of forces; it moves from the stage to the audience, initiating among the audio-egos intensive relations. As the strangers from the group begin to rise and relate their feelings as to what they have learned from the production, he gains a new sense of catharsis, a group catharsis; *he has given love and now they are giving love back to him*. Whatever his psyche is now, it was moulded originally by the group; by means of the psychodrama it returns to the group and now the members of the audience are sharing their experiences with him as he has shared his with them.

The description would not be complete if we would not discuss briefly the role which the director and the egos play in the warm up of the session. The theoretical principle of psychodrama is that the director acts directly upon the level of the subject's spontaneity—obviously it makes little difference to the operation whether one calls the subject's spontaneity his "unconscious"—that the subject enters actually the areas of objects and persons, however confused and fragmented, to which his spontaneous energy is related. He is not satisfied, like the analyst, to observe the subject and translate symbolic behavior into understandable, scientific language; he enters as a participant-actor, armed with as many hypothetic insights as possible, into the spontaneous activities of the subject, to talk to him in the spontaneous languages of signs and gestures, words and actions which the subject has developed. Psychodrama does not require a theatrical setting, a frequent misunderstanding; it is done *in situ*—that is, wherever the subject is found. According to psychodramatic theory a considerable part of the

psyche is not language-ridden, it is not infiltrated by the ordinary, significant language symbols. Therefore, bodily contact with subjects, if it can be established, touch caress, embrace, hand shake, sharing in silent activities, eating, walking or other activities, are an important preliminary to psychodramatic work itself. Bodily contact, body therapy and body training continue to operate in the psychodramatic situation. An elaborate system of production techniques has been developed by means of which the director and his auxiliary egos push themselves into the subject's world, populating it with figures extremely familiar to him, with the advantage, however, that they are not delusionary but half imaginary, half real. Like good and bad genii they shock and upset him at times, at other times they surprise and comfort him. He finds himself, as if trapped, in a near-real world. *He sees himself acting, he hears himself speaking, but his actions and thoughts, his feelings and perceptions do not come from him, they come, strangely enough, from another person, the psychodramatist, and from other persons, the auxiliary egos, the doubles and mirrors of his mind.*

SOCIODRAMA

Sociodrama has been defined as a deep action method dealing with inter-group relations and collective ideologies.

The procedure in the development of a sociodrama differs in many ways from the procedure which I have described as psychodramatic. In a psychodramatic session, the attention of the director and his staff are centered upon the individual and his private problems. As these are unfolded before a group, the spectators are affected by the psychodramatic acts in proportion to the affinities existing between their own context of roles, and the role context of the central subject. Even the so-called group approach in psychodrama is in the deeper sense individual-centered. The audience is organized in accord with a mental syndrome which all participating individuals have in common, and the aim of the director is to reach every individual in his own sphere, separated from the other. He is using the group approach only to reach actively more than one individual in the same session. The group approach in psychodrama is concerned with a group of *private* individuals, which makes the group itself, in a

sense, private. Careful planning and organizing the audience is here indispensable because there is no outward sign indicating which individual suffers from the same mental syndrome and can share the same treatment situation.

The true subject of a sociodrama is the *group*. It is not limited by a special number of individuals, it can consist of as many persons as there are human beings living anywhere, or at least of as many as belong to the same culture. Sociodrama is based upon the tacit assumption that the group formed by the audience is already organized by the social and cultural rôles which in some degree all the carriers of the culture share. It is therefore incidental who the individuals are, or of whom the group is composed, or how large their number is. It is the group as a whole which has to be put upon the stage to work out its problem, because the group in sociodrama corresponds to the individual in psychodrama. Sociodrama, therefore, in order to become effective, has to assay the difficult task of developing deep action methods, in which the working tools are representative types within a given culture and not private individuals. Catharsis in the sociodrama differs from catharsis in the psychodrama. The psychodramatic approach deals with personal problems principally and aims at personal catharsis; the sociodramatic approach deals with social problems and aims at social catharsis.

The concept underlying this approach is the recognition that *man is a rôleplayer*, that every individual is characterized by a certain range of rôles which dominate his behavior, and that every culture is characterized by a certain set of rôles which it imposes with a varying degree of success upon its membership.

The problem is how to bring a cultural order to view by dramatic methods. Even if full information could be attained by observation and analysis, it has become certain that observation and analysis are inadequate tools for exploring the more sophisticated aspects of inter-cultural relations, and that deep action methods are indispensable. Moreover, the latter have proven to be of indisputable value and unreplaceable because they can, in the form of the sociodrama, *explore as well as treat in one stroke*, the conflicts which have arisen between two separate cultural orders, and at the same time, by the same action, undertaking to change

the attitude of the members of one culture versus the members of the other. Furthermore, it can reach large groups of people, and by using radio or television it can affect millions of local groups and neighborhoods, in which inter-cultural conflicts and tensions are dormant or in the initial phases of open warfare. Therefore, the potentialities of drama research and role research for giving clues to methods by which public opinion and attitudes can be influenced or changed are still unrecognized and unresolved.

ROLE TEST AND ROLEPLAYING

The rôle test measures the rôle behavior of an individual; it reveals thereby the *degree* of differentiation which a specific culture has attained within an individual, and his interpretation of this culture. The rôle range of an individual stands for the inflection of a given culture into the personalities belonging to it. As the intelligence test measures the mental age of an individual, the rôle test can measure his *cultural* age. The ratio between the chronological age and the cultural age of an individual may then be called his cultural quotient.

The set of rôles used for the test may vary from one community to another, and more drastically, from one culture to another. The selection of the rôles to be tested is of crucial importance, because if the rôles of which the set consists are only incidental to the life of that particular community, no true picture of the individual's rôle behavior and potentialities can be attained. Therefore, the point is to select such rôles which are truly representative and operative in the community in which the testees live.

GROUP PSYCHOTHERAPY

The late arrival of group psychotherapy has a plausible explanation when we consider the development of modern psychiatry out of somatic medicine. The premise of scientific medicine has been since its origin that the *locus of physical ailment is within an individual organism*. Therefore, treatment is applied to the locus of the ailment as designated by diagnosis. The physical disease with which an individual A is afflicted does not require the collateral treatment of A's wife, his children and friends. If A suffers from

an appendicitis and an appendectomy is indicated, only the appendix of A is removed, no one thinks of the removal of the appendix of A's wife and children too. When in budding psychiatry scientific methods began to be used, axioms gained from physical diagnosis and treatment were *automatically* applied to mental disorders as well. The premise prevailed that there is no locus of ailment beyond the individual, that there is, for instance, no group situation which requires special diagnosis and treatment.

Although, during the first quarter of our century, there was occasional disapproval of this exclusive, individualistic point of view, it was more silent than vocal, coming from anthropologists and sociologists particularly. The decisive turn came with the development of sociometric and psychodramatic methodology.

When the locus of therapy changes from the individual to the group, the group becomes the new subject (first step). When the group is broken up into its individual little therapists and they become the agents of therapy, the chief therapist becomes a part of the group (second step) and finally, the medium of therapy is separated from the healer as well as the group therapeutic agents (third step). Due to the transition from individual psychotherapy to group psychotherapy, group psychotherapy includes individual psychotherapy.

The three principles, *subject*, *agent* and *medium* of therapy can be used as points of reference for constructing a table of polar categories of group psychotherapies. Here follow eight pairs of categories: amorphous vs. structured, *loco nascendi* vs. secondary situations, causal vs. symptomatic, therapist vs. group centered, spontaneous vs. rehearsed, lectural vs. dramatic, conserved vs. creative, and face to face vs. from a distance. With these eight sets of pairs, a classification of every type of group psychotherapy can be made.

BASIC CATEGORIES OF GROUP PSYCHOTHERAPY

Subject of Therapy

1. As to the *Constitution* of the Group

Amorphous	vs.	Structured (organized) Group
Without considering the organization of the group in the prescription of therapy.		Determining the dynamic organization of the group and prescribing therapy upon diagnosis.

2. As to *Locus* of Treatment

Treatment of Group in <i>Loco Nas-</i> <i>cendi, In Situ</i>	vs.	Treatment Deferred to Secondary Situations
Situational, for instance within the home itself, the workshop itself, etc.		Derivative, for instance in especially arranged situations, in clinics, etc.

3. As to *Aim* of Treatment

Causal	vs.	Symptomatic
Going back to the situations and indi- viduals associated with the syndrome and including them <i>in vivo</i> in the treatment situation.		Treating each individual as a separate unit. Treatment may be deep, in the psychoanalytic sense, individually, but it may not be deep groupally.

*Agent of Therapy*1. As to *Source* or *Transfer* of Influence

Therapist Centered	vs.	Group Centered Methods
Either chief therapist alone or chief therapist aided by a few auxiliary therapists. Therapist treating every member of the group individually or together, but the patients themselves are not used systematically to help one another.		Every member of the group is a thera- peutic agent to one or another mem- ber, one patient helping the other. The group is treated as an interac- tional whole.

2. As to *Form* of Influence

Spontaneous and Free	vs.	Rehearsed and Prepared Form
Freedom of experience and expression. Therapist or speaker (from inside the group) is extemporaneous, the audi- ence unrestrained.		Suppressed experience and expression. Therapist memorizes lecture or re- hearses production. The audience is prepared and governed by fixed rules.

*Medium of Therapy*1. As to *Mode* of Influence

Lecture or Verbal	vs.	Dramatic or Action Methods
Lectures, interviews, discussion, read- ing, reciting.		Dance, music, drama, motion pictures.

2. As to *Type* of Medium

Conserved, Mechanical or Unspontaneous	vs.	Creative Media
Motion pictures, rehearsed doll drama, rehearsed dance step, conserved music, rehearsed drama.		Therapeutic motion pictures as pre- paratory steps for an actual group session, extemporaneous doll drama with the aid of auxiliary egos behind each doll, psychomusic, psychodrama and sociodrama.

3. As to *Origin* of Medium

Face to Face	vs.	From-a-Distance Presentations
Any drama, lecture, discussion, etc.		Radio and television.

THE SOCIOMETRIC TEST

Sociometry has taught us to recognize that human society is not a figment of the mind, but a powerful reality ruled by a law and order of its own, quite different from any law or order permeating other parts of the universe. It has, therefore, invented methods called sociometric, by means of which this area can be adequately defined and explored. We describe, in this book, several original sociometric techniques; the sociometric test, the test of emotional expansiveness, the acquaintance test, the spontaneity test, the role playing test, and techniques which deal with the inter-action research of small groups. Because of the great productivity and the universal character of our methodology it can be assumed that in the course of time other sociometric techniques will develop. The sociometric test has a dominant place in this book and is more thoroughly described than the other tests. This should not lead to the conclusion that it answers all questions or that it is the most essential. It is only a favorable and strategic *first* step for the more thorough investigation of the depth structure of groups.

My premise before starting to build the theoretical framework of sociometry was to doubt the value of and discard all existing social concepts, not to accept any sociological hypothesis as certain, to start from scratch, to start as if nothing would be known about human and social relations. It was a radical pushing out, from my consciousness at least, all knowledge gained from books and even from my own observations. I insisted upon this departure not because I did not assume that other scholars before me had excellent ideas, but because their observations were in most cases authoritative instead of experimental. The naivete, therefore, with which I went after my objectives was not that of a man who is ignorant of what other scholars have done before him, but that of one who tries to be ignorant in order to free himself from clichés and biases, in hope that by warming up to the role of the naive he might be inspired to ask a novel question.

I tried to erase from my memory and particularly from my operations terms and concepts as individual, group, mass, society, culture, We, community, state, government, class, caste, communion and many others for which there were dozens of good

and bad definitions, but which appeared to block my way of making the simplest possible start. I could not help, of course, using these terms frequently in my writings, but I always used them with the overt suspicion that they did not represent social reality and will have to be replaced by the truly reality-bearing social concepts.

An instrument to measure the amount of organization shown by social groups is called *sociometric test*. The sociometric test requires an individual to choose his associates for any group of which he is or might become a member. He is expected to make his choices without restraint and whether the individuals chosen are members of the present group or outsiders. The sociometric test is an instrument which examines social structures through the measurement of the attractions and repulsions which take place between the individuals within a group. In the area of interpersonal relations we often use more narrow designations, as "choice" and "rejection." The more comprehensive terms, as attraction and repulsion go beyond the human group and indicate that there are analogous social configurations in nonhuman groups.

This test has been made in respect to home groups, work groups, and school groups. It determined the position of each individual in a group in which he has a function, for instance, in which he lives or works. It revealed that the underlying psychological structure of a group differs widely from its social manifestations; that group structures vary directly in relation to the age level of the members; that different criteria may produce different groupings of the same persons or they may produce the same groupings; that groups of different function, as, for instance, home groups and work groups, tend towards diverse structures; that people would group themselves differently if they could; that these spontaneous groups and the function that individuals act or intend to act within them have a definite bearing upon the conduct of each individual and upon the group as a whole; and that spontaneous groupings and forms of groupings which are superimposed upon the former by some authority provide a potential source of conflict. It was found that chosen relations and actual relations often differ and that the position of an individual cannot be fully realized if not all the individuals and groups to which he

is emotionally related are included. It disclosed that the organization of a group cannot be fully studied if all related groups or individuals are not included, that individuals and groups are often to such an extent interlocked that the whole community to which they belong has to become the scope of the sociometric test.

The introduction of sociometric procedure, even to a very small community, is an extremely delicate psychological problem. The psychological problem is the more intricate, the more complex and the more differentiated the community is. On first thought one would be inclined to minimize the difficulties involved. Sociometric procedures should be greeted favorably as they aid in bringing to recognition and into realization the basic structure of a group. But such is not always the case. They are met with resistance by and even with hostility by others. Therefore a group should be carefully prepared for the test before submitting to it.

Sociometric techniques have to be fashioned in accord with their maturity and their disposition towards the test which may vary at different times. This psychological status of individuals may be called their *degree of sociometric consciousness*. The resistance against sociometric procedures is often due to psychological and educational limitations. It is important for the field worker to consider the difficulties one by one and to try to meet them.

The first difficulty which one ordinarily meets is ignorance of what sociometric procedure is. A full and lucid presentation, first perhaps to small and intimate groups, and then in a town meeting if necessary, is extremely helpful. It will bring misunderstandings in regard to it to open discussion. One reaction usually found is the appreciation of some that many social and psychological processes exist in their group which have escaped democratic integration. Another reaction is one of fear and resistance, not so much against the procedure as against its consequences for them. These and other reactions determine the degree of sociometric consciousness of a group. They determine also the amount and character of preparation the group members need before the procedure is put into operation.

The resistance seems at first sight paradoxical as it crops up in face of an actual opportunity to have a fundamental need satisfied. An explanation of this resistance of the individual versus the group

is possible. It is, on the one hand, the individual's fear of knowing what position he has in the group. To become and to be made fully conscious of one's position may be painful and unpleasant. Another source of this resistance is the fear that it may become manifest to others whom one likes and whom one dislikes, and what position in the group one actually wants and needs. The resistance is produced by the extra-personal situation of an individual, by the position he has in the group. He feels that the position he has in the group is not the result of his individual make-up only but chiefly the result of how the individuals with whom he is associated feel towards him. He may even feel dimly that there are beyond his social atom invisible tele-structures which influence his position. The fear against expressing the preferential feelings which one person has for others is actually a fear of the feelings which the others have for him. The objective process underlying this fear has been discovered by us in the course of quantitative analysis of group organization. The individual dreads the powerful currents of emotions which "society" may turn against him—it is fear of the psychological networks. It is dread of these powerful structures whose influence is unlimited and uncontrollable. It is fear that they may destroy him if he does not keep still.

The sociometrist has the task of gradually breaking down the misunderstandings and fears existing or developing in the group he is facing. The members of the group will be eager to weigh the advantages which sociometric procedure is able to bring to them—a better balanced organization of their community and a better balanced situation of each individual within it. The sociometrist has to exert his skill to gain their full collaboration, for at least two reasons: the more spontaneous their collaboration, the more valuable will be the fruits of his research, and the more helpful will the results become to them.

The Sociogram

The responses received in the course of sociometric procedure from each individual, however spontaneous and essential they may appear, are materials only and not yet sociometric facts in themselves. We have first to visualize and represent how these responses hang together. A process of charting has been devised

by the sociometrists, the *sociogram*, which is more than merely a method of presentation. It is first of all a method of exploration. It makes possible the exploration of sociometric facts. The proper placement of every individual and of all interrelations of individuals can be shown on a sociogram. It is at present the only available scheme which makes *structural* analysis of a community possible.

As the pattern of the social universe is not visible to us, it is made visible through charting. Therefore the sociometric chart is the more useful the more accurately and realistically it portrays the relations discovered. As every detail is important the most accurate presentation is the most appropriate. The problem is not only to present knowledge in the simplest and shortest manner, but to present the relations so that they can be studied. The matrix of a sociogram may consist in its simplest form of choice, rejection and neutrality structures. It may be further broken up into the emotional and ideological currents crisscrossing these attraction and rejection patterns.

Numerous types of sociogram have been devised. They have in common that they portray the pattern of the social structure as a whole and the position of every individual within it. One type shows the social configurations as they grow in time and as they spread in space. Other types of sociograms present the momentary and transitory picture of a group. As the technique of charting is a method of exploration, *the sociograms are so devised that one can pick from the primary map of a community small parts, redraw them, and study them so to speak under the microscope.* Another type of derivative or secondary sociogram results if we pick from the map of a community large structures because of their functional significance, for instance, psychological networks. The mapping of networks indicates that on the basis of primary sociograms we may devise forms of charting which enable us to explore large geographical areas.

Sociometric Criteria

Sociometric criteria are in microsociology what social norms and standards are in macrosociology. They are the sociometric norms. The size of the human population approximates two and

a half billion individuals, but the number of inter-individual associations existing on earth at this moment is so many times larger—because in a sociometric sense a person belongs to many more small groups than the ones visible to the naked eye. Millions of small groups are continuously formed and dissolved. *What gives every sociometrically defined group its momentum is the "criterion", the common motive which draws individuals together spontaneously, for a certain end.* That criterion may be at one time as fundamental as a search for home and shelter, as a need for food and sleep, as love and companionship, or as casual as a game of cards. The number of criteria on which groupings are continuously forming go into many millions. They give to the overt and tangible human society a deeply unconscious and complicated "infra" structure. It is difficult to uncover the latter because of its remoteness from immediate experience and because there is no strict separation between the infra and the overt structures. One is interwoven with the other. At times genuine inter-personal structures can be perceived on the surface, at other times they require extensive sociomicroscopic study before they can be discovered.

Sociometric work has centered from the beginning upon testing all the basic collectives of which a community consists. Sociometrists have been particularly interested in groups which are built around *strong* criteria; formal and institutional groups were the first and the most rewarding targets, home groups, work groups, school groups, cultural groups. Sociometry started out to enter into every social situation of which a community consists, from the simplest to the most complex, from the most formal to the most informal ones. This was and is the chief driving motive of its enterprise, however large the work yet undone may loom.

In the course of the construction of sociometric tests it was recognized early that there are for every particular group certain values, goals, standards or norms for the sake of which, apparently, groups are formed or which gradually emerge in the course of group formation. It is easy to spot these values in the case of official, institutional organizations, but they are the harder to define the more informal, casual and marginal the groupings are. Therefore, instead of fixing our eye upon the social values and standards

as they are given on the surface, we tried to enter a wedge at a level which is as universal as possible and as free of a cultural bias as possible. By taking, for instance, the sociogram of the official structure of an institution, of a family, a school, a religious or governmental hierarchy, and by replacing it by the sociograms of the unofficial structures of the particular family, school, church, government, etc., the result was an ever-changing variety of social profiles, a wealth of expanding and spontaneous, infinitely small and infinitely protean social structures, invisible to the naked eye but of the greatest significance for the macroscopic social structures surrounding them.

We started with the simplest possible social value clusters which we called "sociometric criteria," microscopic norms. An illustration is "living in proximity," in the same room, the same cabin, the same house. "With whom *do you live* in proximity?" and "With whom *do you wish to live* in proximity?" are two of the earliest sociometric questions used. These criteria are so universally constructed that they can be applied to groups of any culture, sex, race or age, whether the household is a Christian family, a harem, a family of the Jibaro Indian Tribe, a couple living out of wedlock or any number of individuals choosing to live together sharing the daily tasks of eating, sleeping, etc., for a reasonable period of time. Other criteria were "working in proximity" and "visiting each other." Such criteria as these three we found in all communities surveyed. Then there are criteria which are found in some communities but not in others, as going hunting, fishing, boating, playing cards, playing baseball. The number of criteria increases with the complexity of the society in which they emerge. Criteria must be kept apart from the "motivations" and usefulness they have for the members of the group. In one culture the members may live in proximity because they like each other, in another culture because members of both sexes are present; in another culture because all members are of the same sex. Criteria questions are of exploratory value if they are significant to the members of the group at the time of the test; for instance, the questions, "With whom do you visit?" or "Whom do you invite for a meal?" imply that the individuals mentioned have had and still have a special value for the respondent or otherwise they would not have been selected. All criteria have this in common: that the respond-

ents have some actual experience in reference to them, whether *ex post facto* or present; in sociometric language, they are still "warmed up" to them otherwise the questions would not arouse any significant response.

Another consideration which may be useful would be to differentiate between diagnostic and action criteria. An illustration of a diagnostic criterion is "Whom do you invite to have meals in your house?" It is specific but it does not provide the subjects with the opportunity to get into immediate action and it does not justify the sociometric director to prompt the subjects to act; in other words, the test provides only for information but not for action. An action criteria involves a different situation. It prompts the subjects to a different warming up process. It requires different instructions than a diagnostic test. An illustration of an action criterion in application is the sociometric planning of a new settlement. The settlers come to a town meeting and they are addressed by the sociometric counselor as a group: "You are preparing to move into the new settlement. Whom do you want there as a neighbor?" This is obviously a situation which is different from the diagnostic case. The people have an immediate goal to which they are warmed up. The choices they make are very real things, they are not only wishes. They are prompted to act at present and in the presence of the group. In the diagnostic case the reference is to the past, however crucial; the diagnostic approach can easily be changed into an actional one. Choices are then decisions for action, not "reportings" of actions.

The theory of sociometric testing requires: a) that the participants in the situation are drawn to one another by one or more criteria, b) that a criterion is selected to which the participants are bound to respond, at the moment of the test, with a high degree of spontaneity, c) that the subjects are *adequately motivated* so that their responses may be sincere, d) that the criterion selected for testing is strong, enduring and definite, and not weak, transitory and indefinite. Let us imagine that the problem is to determine the scientific status of the members of the American Sociological Society, and of members of other leading social science associations. One sociometric procedure would be to investigate *who is quoting whom*, to look up their written records, research

papers, books, and so forth. This sociometric test is not a choice technique but a *quotation test*. It deviates in form from other sociometric tests I constructed. The scientists may not know one another face to face, they may know each other only by their recorded works. The sociometric investigator may not have to meet them, at least not in the first stage of the test. This test, although apparently cold and impersonal, fulfills the basic requirements. It considers two-way relations, quoting and being quoted, how often and by whom. Quotation is a strong criterion and should help to determine the status of scientists among the membership of scientific societies. Last but not least, a great deal of spontaneity enters into the choice of quoting someone, or leaving others out from a "table of references." The investigator would be interested to determine among other things—whether the subject quotes himself and how often, whether he is quoted by others, and whether he quotes others, positively or negatively; whether he quotes living authors or dead authors, or whether he quotes no one. The quoters and the quotees may be charted by means of sociograms of the scientific societies to which they belong. The sociograms may give clues to the degree of cohesion between the members of a given society, the affinity or friction between two societies of a similar order.

Sociometric Orientations

A. Observational and Interpretative

We have studied group formation in three ways. The first way may be called observational and interpretative. We watched the children as, free of supervision, they ran out of school to the playgrounds, the manner in which they grouped themselves spontaneously. We noted a regularity in their spontaneous groupings,—one particular girl followed by a bunch of others, many who paired themselves off, and two or three, often more, walking alone. Similar patterns were formed when they played about the grounds undirected. A rough classification of the position of the individuals in the groups was possible—the isolates, the pairs, and the bunch that clung to the leader—but this did not reach beyond surface judgments in understanding the organization of the groups.

B. The Sociometrist As Participant Observer

We then approached the task from a different angle. Instead of observing the formation of groups from without we entered *into* the group, became a part of it, and registered its intimate developments. We ourselves experienced the polarity of relations among members, the development of gangs within the group, the pressure upon one individual or another. However, the larger the group under study was the more we ourselves became victim of such pressure, the more attached we found ourselves to some of its sections and the more blindfolded to other parts. Through this method of "partnership" we arrived at a somewhat finer classification of each individual than we were able to through observation. Or we selected a member of the group who was in the position to know its underlying relations,—for instance, in a family group we consulted the mother; in a school class, the teacher; in a cottage group of an institution, the house-mother; in a work unit, the foreman, etc. The selected informer, due to the mechanism of partnership, had often an inaccurate insight into the workings of the group.

C. Direct Sociometric Methods

We cannot adequately comprehend the central direction of an individual in his development either through observation, for instance, a child, through watching its most spontaneous expression, its play life, or through partnership. We must make him an experimenter. Considering group formation, we must make the members of the prospective groups themselves the authors of the groups to which they belong. To reach a more accurate knowledge of group organization the sociometric test is used. It consists in an individual choosing his associates for any group of which he is or might become a member. As these choices are initiated by the persons themselves, each individual is taken into partnership. This is true not only for himself but also for each individual towards every other individual. Thus we win an insight into how group structures of their own look compared with group structures imposed from without. This method is experimental and synthetic.

Sociometric procedure is not a rigid set of rules, but it has to

be modified and adapted to any group situation as it arises. Sociometric procedure has to be shaped in accord with the momentary potentialities of the subjects, so as to arouse them to a maximum of expression. If the sociometric procedure is not attuned to the momentary structure of a given community, we may gain only a limited or distorted knowledge of it.

The participant observer of the social laboratory, counterpart of the scientific observer in the physical or biological laboratory, undergoes a profound change. The observing of movements and voluntary association of individuals has value as a supplement if the basic structure is known. But how can an observer learn something about the basic structure of a community of one thousand people if the observer tries to become an intimate associate of each individual simultaneously, in each role which he enacts in the community? He can not observe them like heavenly bodies and make charts of their movements and reactions. The essence of their situations will be missed if he acts in the role of a scientific spy. The procedure has to be open and apparent. The inhabitants of the community have to become participants in the project in some degree. The degree of participation is at its possible maximum when the decisions of the members are carried by them to full realization. The degree of participation is at its possible minimum when the individuals composing the group are willing only to answer questions about one another. Any study which tries to disclose with less than maximum possible participation of the individuals in the group the feelings which they have in regard to one another is *near sociometric*. Diagnostic tests are of much value in the present stage of sociometry. They can be applied on a large scale, and within certain limits without unpleasantness to the participants. The information gained in near-sociometric studies is based, however, on an inadequate motivation of the participants, they do not fully reveal their feelings. In near-sociometric situations the participants are not quite spontaneous. They do not warm up quickly. If an individual is asked "Who are your friends in town?" he may leave one or two persons out, the most important persons in his social atom, persons with whom he entertains a secret friendship of some sort which he does not want known.

The observational method of group research, the study of group formation from the outside is not abandoned by the sociometrist.

This becomes, however, a part of a more inclusive technique, the sociometric procedure. In fact, the sociometric procedure is operational and observational at the same time. A well trained sociometrist will continuously collect other observational and experimental data which may be essential as a supplement to his knowledge of the inside social structure of a group at a particular time. Observational and statistical studies may grow out of sociometric procedures which supplement and deepen structural analysis.

The transition from diagnostic to dynamic sociometric procedures depends upon the methods of creating the motivation to more adequate participation. If the participant observer succeeds in becoming less and less an observer and more and more of an aid and helper to every individual of the group in regard to their needs and interests, the observer undergoes a transformation, a transformation from observer to auxiliary ego. The observed persons, instead of revealing something, more or less unwillingly, about themselves and one another, become open promoters of the project; the project becomes a cooperative effort. They become participants in and observers of the problems of others as well as their own; they become key contributors to the sociometric research. They know that the more explicit and accurate they are in expressing whom they want, whether as associates in a play, as table mates in a dining room, as neighbors in their community, or as co-workers in a factory, the better are their chances to attain the position in their group which is as close as possible to their anticipations and desires.

In school groups the test had the following form. The tester entered the classroom and addressed the pupils:

"You are seated according to directions your teacher has given you. The neighbor who sits beside you is not chosen by you. You are now given the opportunity to choose the boy or girl whom you would like to have sit on either side of you. Write down whom you would like first best; then, whom you would like second best. Look around and make up your mind. Remember that next term the friends you choose now may sit beside you."

One minute was allowed for deciding upon choices before the pupils were to write. The tester tried to get into rapport with the pupils and to transfer clearly the particular significance of the decisions.

For home groups the test had to be varied. The tester called the whole population of a given community together and addressed them:

"You live in a certain house with certain other persons according to the directions the administration has given you. The persons who live with you in the same house are not chosen by you and you are not chosen by them, although you might have chosen each other. You are now given the opportunity to choose the persons whom you would like to live with in the same house. You can choose without restraint any individuals of this community whether they happen to live in the same house with you or not. Write down whom you would like first best, second best, third best, fourth best, and fifth best. Look around and make up your mind. Remember that the ones you choose will probably be assigned to live with you in the same house."

Three points are of methodological significance. First, every individual is included as a center of emotional response. Second, this is not an academic reaction. The individual is caught by an emotional interest for a certain practical end *he* wishes to realize and upon his knowledge that the tester has the authority to put this into practice. Third, the choice is always related to a definite criterion. In the first instance, the criterion is of *studying in proximity*, actually sitting beside the pupils chosen. In the second, the criterion is of *living in proximity*, actually within the same house. When this test was applied to work groups, the criterion was *working in proximity*, actually within the same work unit and collaborating in the function to be performed. *Other criteria must be used according to the special function of any group under study.*

The test has been carried out in three phases: 1, spontaneous choice; 2, motivation of these choices; and 3, causation of these choices. Spontaneous choice reveals how many members of his own group, whatever the criterion of the group, are desired by an individual as associates in the activity of this group. The motivations, as they are secured through interview of each individual, reveal further the number of attractions and repulsions to which an individual is exposed in a group activity. The underlying causations for these attractions and repulsions are studied through spontaneity and role playing tests adapted to sociometric aims. The spontaneity test places an individual in a standard life situa-

tion which calls for definite fundamental emotional reactions, called spontaneity states, as fear, anger, etc. If permitted to expand they turn into role playing. The range of mimic and verbal expression during the plays is recorded and offers characteristic clues to the makeup of the personality acting, to his relation to the life situation acted, and to the person or persons who act opposite him in the test.

Construction of the Sociometric Test

The problem was to construct the test in such manner that it is itself a motive, an incentive, a purpose, primarily for the *subject* instead of for the tester. If the test procedure is identical with a life-goal of the subject he can never feel himself to have been victimized or abused. Yet the same series of acts performed of the subject's own volition may be a "test" in the mind of the tester. We have developed two tests in which the subject is in action for his own ends. One is the sociometric test. From the point of view of the subject it is not a test at all and this is as it should be. It is merely an opportunity for him to become an active agent in matters concerning his life situation. But to the sociometric tester it reveals his actual position in the community in relation to the actual position of others. The second test meeting this demand is the spontaneity and roleplaying test. Here is a standard life situation which the subject improvises to his own satisfaction. But to the tester it releases a source of information in respect to the character, intelligence, conduct and social relations of the subject.

Psychometric tests and psychoanalysis of the child and of the adolescent, however contrasting in procedure, have one thing in common. They throw the subject into a passive state, the subject being a role of submission. The situation is not motivated for him. This tends to produce an attitude of suspicion and tension on the part of the subject towards the tester and to attribute to him ulterior motives in inducing the subject to submit to the test. This *situational* fact has to be considered irrelevant to how valuable and significant the revelations may be which come from psychometric testing and from psychoanalysis. This aspect of the testing becomes especially conspicuous if the findings are used for

the purpose of determining some change in the life situation of the subject, as, for instance, his transfer to an institution for the feeble-minded. Through the sociometric, spontaneity and role playing tests the artificial setting of the psychoanalytic situation and of the Binet intelligence tests can be substituted by natural or life settings.

Directions for Sociometric Testing

A point which deserves emphasis is the *accurate giving* of the sociometric test. Only such a test can be correctly called *sociometric* which attempts to determine the *feelings* of individuals towards each other and, second, to determine these in respect to the *same criterion*. For instance, if we demand from the inhabitants of a given community to choose the individuals with whom they want to live together in the same house and to motivate these choices, this is a sociometric procedure. Or, if we determine through such procedure to whom the individuals are sexually attracted or with whom they want to study together in the same classroom. In each of these cases a definite criterion is given, living in proximity, working in proximity, or sexual proximity. Further, a sociometric test to be accurate has *not* to gain the necessary information through observation of these individuals only, how they appear to behave in their home groups, work groups, or whatever, to one another and to construct, through these observations, the position they possibly have in their groups. But it is necessary that the subjects themselves be taken into partnership, that they become sufficiently interested in the test, that they transfer to the tester their spontaneous attitudes, thoughts, and motivations in respect to the individuals concerned in the same criterion. Whatever additional material is gained by other methods to support the essential information, this is not able to substitute the two requirements mentioned above. If, therefore, the inhabitants of a community are asked whom they like or dislike in their community irrespective of any criterion this should be called near-sociometric. These likes and dislikes being unrelated to a criterion are not analytically differentiated. They may relate to sexual liking, to the liking of working together, or whatever. Secondly, the individuals have no interest to express their likes and dislikes

truthfully as no practical consequences for themselves are derivable from these. Similarly, if children in a classroom are asked whom they like or dislike among their classmates irrespective of any criterion and without immediate purpose for them. Even if such a form of inquiry may at some age level produce similar results as the results gained through our procedure, it should not be called sociometric testing. It does not provide a systematic basis for sociometric research.

THE SOCIOMETRIST

The problem of investigating a social situation has two fundamental aspects, the *first* of which is the question of how to achieve a close and accurate approach to the social process to be investigated so that the truly real and valid facts are harvested and not, perhaps, illusionary and unreliable ones. Sociometry in communities and the psychodrama in experimental situations make a deliberate attempt to bring the subjects into an experimental state which will make them sensitive to the realization of their own experiences and action-patterns. In this "spontaneity state" they are able to contribute revealing material concerning the web of social networks in which they move and the life-situations through which they pass. This conditioning of the subjects for a more total knowledge of the social situation in which they are is accomplished by means of processes of warming-up and by learning to summon the degree of spontaneity necessary for a given situation.

The second fundamental aspect of the problem concerns the investigator himself. In the social sciences, the problem of the investigator and the situation in which the experiment or study is to be carried out have been of the gravest concern. However, the methods for dealing with this fundamental difficulty have been most unsatisfactory to date.

The participant observer, in the course of his exploration, enters into contact with various individuals and situations, but he, himself—with his biases and prejudices, his personality equation and his own position in the group—remains unexamined and therefore, himself, an unmeasured quantity. The displacement in the situation to be investigated which is partly produced by his own social pattern does not appear as an integral part of the findings.

Indeed, we have to take the inviolability of his own judgments and opinions for granted and the "*uninvestigated investigator*" constitutes, so to speak, an ever-present error. This is, of course, only true for social studies in which the investigators are, as individuals, essential parts of the investigation. It is different in social studies which investigate finished products—processes which have become stereotyped and stationary, lending themselves to actuarial study and the development of scales. Social measurements of such processes are, of course, a part of sociometry in its broader sense, but they have a limited practical meaning without the frontal approach—the direct measurement of interpersonal phenomena.

In order to overcome the grave errors which may arise in and from the investigator himself, we resort to a sociometric approach which is especially adapted to the microscopic study of social phenomena. The participant observer—in one particular form of this work—does not remain "objective" or at a distance from the persons to be studied: he becomes their friend. He identifies himself with their own situations; he becomes an extension of their own egos. In other words, the "objective" participant becomes a "subjective" one. As a *subjective participant* he can enter successively or simultaneously into the lives of several individuals, and then function as a medium of equilibration between them. This is the first step.

If we consider the investigator who gives out questionnaires as being in a situation of maximum *formal* objectivity then the investigator who identifies himself successively with every individual participating in the situation approaches a *maximum of subjectivity*. A professional worker acting in this fashion produces excellent therapeutic effects, but the method does not improve upon the intended objectification of the investigator, himself.

A step beyond this is the *psychodramatic method*, a situation which provides an experimental and a therapeutic setting simultaneously. Here, the director of the theatre is present, but outside the exploratory situation, itself. The investigators to be tested are placed in life-situations and roles which may occur in the community or in their own private lives until their ranges of roles and their patterns of behavior in these life-situations have been

adequately gauged. This procedure is carried on until every one of the investigators is thoroughly objectified. Re-tests are made from time to time in order to keep pace with any changes which may have taken place in their various behavior-patterns.

In the course of such work, the range of roles and the range of expansiveness of each investigator become clearly defined and the stimulus which he may be to the subjects of his investigations has become a known quantity. Thus, the psycho-dramatic procedure provides a yardstick by which we can measure and evaluate an indefinitely large number of subjects in specific life-situations and in specific roles. The paradox is that the investigator, although he has become objectified by this process—a “controlled participant observer,” so to speak—still continues to be what he originally started out to be: a subjective participant.

The process of objectifying the investigator takes many forms in accord with the situation which he is to explore and it has, also, many degrees of perfection. An ideal situation of this kind is obtained with a psycho-dramatic group in the experimental setting of the therapeutic theatre. For the members of a psychodramatic group, a range of spontaneity is permitted in roles and situations which far surpasses that of any actual community and yet may include all the roles and situations which exist there. At the same time, the behavior of every member of the community—however spontaneous it may be—is recorded in addition to the interaction between the members of the group both on the stage and off it. Thus, the ideal background is constructed for the task assigned to testers within the psychodramatic group, itself.

When the investigator has been tested in this manner, we are able to use him as a tool for testing any group of subjects in typical situations, as described above. In addition to this, he can be used for the treatment of subjects in his new qualification as a subjective participant who is objectified to a point where he can be considered a known quantity in the procedure. He has become an auxiliary ego whose behavior in the process of guidance on the psychodramatic stage is within some degree of control.

This method can be used to advantage as an improvement upon the participant-observer technique of investigation. As a result of careful gauging of the personalities of the investigators who are to be employed as sociometrists or observers in the community

at large, a frame of reference is established at the research center to which the investigators return with their data and findings. The use of this frame of reference provides a more objective basis than has heretofore existed for evaluating the reflection of the investigators' own behavior-characteristics upon their findings in the community. *The social investigation of any community, when based upon sociometric principles, is equipped with two complementary frames of reference. The one is the objectified investigator so prepared and evaluated that his own personality is no longer an unknown factor in the findings. The other frame of reference consists of the members of the community who are brought to a high degree of spontaneous participation in the investigation by means of sociometric methods, and therefore contribute genuine and reliable data.* Thus, the social structures which actually exist in the community at the moment of investigation are brought to our knowledge with a minimum of error on the part of both the investigators and the investigated.

THE DIALECTIC CHARACTER OF SOCIOMETRY

The dialectic attitude of the sociometric investigator is brought about on one hand by the natural resistance of the community to a scheme which carries the social process to a maximum degree of realization (for which it is as yet unprepared and uneducated) and, on the other hand, by the resistance of people who favor the other earlier methods and ideologies in the manipulation of population problems. When sociometry began to arouse public attention twenty years ago, the number of procedures which were ready for application was few as compared with the number of social problems which were to be faced in any community study. Economic, technological and political problems of all sorts pressing for an immediate solution could neither experiment with untried procedures nor wait until they were ready. I recommended, therefore, that supplementary techniques should be used around the true sociometric core, even if they did not fulfill the requirements of genuine sociometric procedures. To the category of supplementary techniques belong, among others, public opinion studies, studies of attitudes and socio-economic measurements.

When I introduced terms like "sociometry," "sociometric techniques," and "sociometric scale," I anticipated that such terms would be applied to types of social measurement which are in some degree sociometric (near-sociometric) in addition to methods developed by me and my closer associates. I also anticipated that, partly because of the influence of sociometry, and partly as a result of the natural development of social science, methods and concepts in sociology, psychology and psychiatry would become more flexible and realistic and thus approach the point of view which has been fostered by sociometry. An illustration is the development from Bogardus who studies attitudes towards people as a race or as a class and gets an answer which cannot be but a symbolic one and the scale based upon similar data a symbolic scale of attitudes, to studies like that of Ford, who asks questions which deal with personal contacts. This time the answers must be more concrete—they must be based upon "Experiences"—but they are still a far cry from the specific individual with whom the contact took place although it is within the field of the *status nascendi* of a relationship. An attempt is made, at least, to shape a questionnaire in such a fashion that it more nearly covers the actual inter-individual structures which exist.

Another illustration is the development from the older public opinion questionnaire, which expected uniform responses from rigid, set questions, to the recent refinements in pre-testing questionnaires—adjusting the questions to the group which is to be studied. The latter procedure is also far removed, however, from the sociometric approach which would disclose to the investigator the key individuals in the group, the psycho-social networks through which opinion moves, and whether the opinions which are collected represent the opinions of the key individuals only or the opinions of the groups under their influence. Consequently, what these investigators measure may not be what they intend it to be, an opinion of the public, but the private opinions of a small number of people. It can be expected that sociometric methods which include the interpersonal relation system in their tests will gradually replace methods which investigate social situations in a more or less indirect and symbolistic fashion.

Because of the dialectic character of human relations all sociometric terms and instruments have a dialectic character; dialectic

means here that in the course of advancing the cause of sociometric consciousness a reconciliation of opposites and of numerous social dimensions, a flexibility of position and definition, may be required. For illustration, as long as vital statistics and the current public opinion polls are the only kind of sociometry acceptable to the sociometric consciousness of a population, they are all that sociometry can be. It is most fortunate that social science technicians grossly underrate the social spontaneity of people, when they deal directly with their own, immediate projects, and their readiness for sociometric procedure. But as soon as finer instruments are acceptable to a population they can be applied towards the improvement and measurement of interpersonal and intergroup relations; then the older methods become less desirable, and also reactionary, unscientific and unsociometric. As long as a population has a low sociometric consciousness distinctions between psychological and social properties of populations have no value. Indeed, from the point of view of action methods over-emphasis upon logical purity of definitions may be outright harmful and over-developed logical systems may produce a false sense of security and of scientific well-being which discourages and delays action practice.

The other field in which sociometry can demonstrate its value is that of social planning. There are many concepts and hypotheses in the conduct of human affairs which stand in the way of the application to their fullest extent of sociometric ideas. The philosophy of anarchism, for instance, may criticize the various schemes of present-day governments, however liberal, as authoritarian regimes, but in a society which is sociometrically planned, a special niche for anarchists is not necessary because sociometry is based upon the principle of spontaneity and gives expression to even the most extreme individualism. The philosophy of communism, particularly of Marxism, may maintain that the rule of one social class which represents the mass of the producers is necessary in order that a maximum of justice, perhaps arbitrary, may prevail, but in a sociometrically planned society the genuine contribution of collectivism could be brought to its fullest expression without any necessity of resorting to arbitrary measures. The economic factor, and with it the production and distribution of goods, cannot be artificially divorced from the total system of

interpersonal relations. Within the scope of sociometric investigation a first clue to the solution of this knotty problem has been found in the relationship between the sociodynamic effect and the distribution of wealth.

The philosophy of totalitarianism proposes a regime in which a master race, self chosen, is to rule all other peoples, the master race itself being governed by a leader at the top with a number of auxiliary leaders carrying out his orders. But the central problems of this ideology, the leader and the race question, can be handled within a sociometric scheme without violence and certainly with a far greater precision and with a minimum of friction. Within a totalitarian society, the group of leaders who have inaugurated the regime, whether self chosen or elected, may go stale. This may become the Achilles' heel of the totalitarian society, relying as it does upon a distorted distribution of all the total available spontaneity which places, if possible, all the spontaneity in the leaders (maximum spontaneity at the top) and no spontaneity in the peoples (minimum spontaneity at the bottom). This crucial problem, the proper equilibrium between leaders and followers, can be dealt with by means of sociometric planning without having to resort to a totalitarian regime.

It has been demonstrated within a community which is administered along sociometric lines that the set of individuals who are in key positions today can easily be ascertained by sociometric tests. In the course of routine re-testing at regular intervals it becomes dramatically apparent that these key individuals wane in influence and others come up to take their places (*in statu nascendi*). This raises the question as to whether leadership artificially maintained may not become a "conserve" and therefore a stultifying instead of a spontaneous and inspiring agent. In addition, the problem of race is managed as an inherent part of the sociometric scheme. By means of concepts like race cleavage and the racial saturation point, populations which differ ethnologically can be distributed within a given geographic area without having to resort to forced and hit-or-miss migration.

Sociometry can well be considered the cornerstone of a still underdeveloped *science of democracy*. The so-called democratic process is not truly democratic as long as the large spheres of invisible processes disclosed by sociometric procedures are not

integrated with and made a part of the political scheme of democracy. Sociometry can assist the United States, with its population consisting of practically all the races on the globe, in becoming an outstanding example of a society which has no need of extraneous ideas or of forces which are not inherent in its own structure.

One can look at this as a new phase in the yet unfinished democratic process slowly encircling the globe. Following political models it now continues its declaration of independence on the level of scientific research. The people, after taking the government in their own hands, are also taking the social sciences in their own hands; a government of the people, by the people and for the people is logically followed by a science of the people, by the people and for the people.

In his desperation the social scientist has called the research objects to his aid—to rescue social science from perennial strivings in unfulfillment. The research objects can now “turn the tables” on him and “take science in their own hands”. It is paradoxical and amusing that the scientist must give his “guinea pigs” research status and power in order to make some headway himself. This very step forward appears to threaten his own status and push him back. Is he fearful that the selfawareness of the guinea pigs will grow into undue proportions and does he envision the rising of a new kind of dictatorship, the dictatorship of the “scientific” proletariat?

The pivotal point of dialectic sociometry is that sociometry returns the social sciences to the “aboriginal” science from which it came—“ethics”—without, however, giving an inch of the objective goals of scientific method. Sociometry is the social ethics par excellence. Behind the front of the sociometric operations there are hidden a number of ethical principles. Between the lines of a sociometric test we are pleading with the participants: When you choose or reject a partner “be truthful” and “be spontaneous”; and in a psychodrama or sociodrama, when we instruct a participant, individual or group, to act out problems we plead with them to expose themselves unselfishly; in other words, these are ethical prescriptions: 1) give truth and receive truth, 2) give love to the group and it will return love to you, and 3) give spontaneity and spontaneity will return.

THE SOCIOMETRIC CONCEPT OF SOCIAL CHANGE

The sociometric concept of social change has four chief references: a) the spontaneity-creativity potential of the group, b) the parts of the universal sociometric matrix relevant to its dynamics, c) the system of values it tries to overcome and abandon and d) the system of values it aspires to bring to fulfillment. In this sense genuine social change may already be observed in small groups; a simple sociometric test can become a revolutionary category of investigation. It upsets the group from within. It produces a social revolution on a microscopic scale. If it does not produce an upheaval in some degree it may arouse suspicion that the investigator has modified it—in respect for an existing social order—so that it becomes a harmless, poverty stricken instrument. On the other hand, changes initiated by generals and politicians on a large scale may effect great commotion, but no genuine transformation.

In order to change the social world social experiments have to be so designed that they can produce change; in order to produce change the people themselves have to be included in its operation. You cannot change the world *ex-post-facto*, you must do it *now and here*, with and through the people. No enduring change of human society can be effected by indirect, mechanical manipulation or by the arbiter of force. Whatever the type of government and social institutions coerced upon the people, whether they are cooperative communities, communistic, democratic, autocratic or anarchistic types of government, sooner or later they lose their hold upon the people. The people discard them, if they do not root in the productive spontaneity of the people and if they are not created with full participation of every individual member. *No* study of group structure can be taken seriously if it does not use sociometric methods wholeheartedly; *they cannot be bypassed*.

The simultaneous applications of revolutionary sociometric methods in the United States as well as in Soviet Russia might bring about a rapprochement between the two types of governments. The revolutions of the socialistic-marxistic type are outmoded; they failed to meet with the sociodynamics of the world situation. The next social revolution will be of the "sociometric" type.

The term revolutions is here used in reference to methods and instruments which attempt to produce changes of a major character in a given social order. The failure of the academic social sciences to develop instruments for change of their own, elemental methods of action which are able to operate "on the spot," has had disastrous consequences in the political arena of our time. Socialism and communism—and with them many of their halfbreeds like fascism and nazism—have been superior and quicker to seize this opportunity. It is widely understood that mass meetings, political organizations of workers, labor unions, seizing the power and control of the armed and judiciary forces, of press and radio, and other acts of overthrowing governmental authority, are instruments of revolution.

Communists and fascists have a large repertory of dramatic, physical, spectacular and super-Machiavellian techniques of all sort. The fraternity of social scientists, being without action techniques, has been taken by surprise. Living in the midst of wars and revolutions for nearly half a century they had to look on passively and permit charismatic generals and politicians to play with the social emotions of the people. They tried to argue when elemental measures were required. Intelligent reasoning and polite conference manners were ineffective against weapons of destruction, party slogans, invectives, laughter, shouting, vulgar jokes and swearing, lies and distortion of facts. They tried to fight action and surprise methods with lyrics and editorials. Before they had learned their lesson it was too late. When they awakened from the state of panic and paralyzed fear the game was taken out of their hands and the initial phase of the battle was lost. In other words, the *avant garde* of academic social science did not have social instruments of attack and counterattack available in a period of emergency. At last we sociometrists stepped into the breach and developed several instruments of social change in order to harness the spontaneous-creative forces of the community, the population test, the socio-drama, social and psychodramatic shock methods which may well become scientific instruments of social action, preventives or antidotes against the mass hypnotism and persuasion of purely political systems.

The population test is an instrument operating *in situ*; it brings the population to a collective self expression and to the transaction

of its plans in respect to all fundamental activities in which it is or is about to be involved. It is a flexible procedure which calls for immediate action and for the immediate application of all the choices and decisions made. The population may consist of residents of a village, manager and workers of a factory, etc. Sociometry is an instrument by means of which social truth, truth about social structure and conflicts can be explored and social change transacted by means of psychodramatic and sociodramatic methods. It may operate like a town meeting with the difference that only the individuals involved in a social issue are present and that decisions are made and actions are taken which are of basic importance to their own community. The productions and solutions in a sociodrama grow out of the group. The choice of the social issue and the decision of its implementation come from the group and not from a particular leader.

Sociodramatic workers have the task to organize preventive, didactic and reconstruction meetings in the community in which they live and work; to organize, upon call, such meetings in problem areas everywhere; to enter communities confronted with emergent or chronic social issues, to enter mass meetings of strikes, race riots, rallies of political parties, and so forth, and try to handle and clarify the situation on the spot. The action agent moves into the group accompanied by a staff of auxiliary egos, if necessary with the same determination, boldness or ferocity as a fuehrer or union leader. The meeting may move into an action as shocking and enthusiastic as those of a political nature, with the difference that the politicians try to submit the masses to their political schemes, whereas the sociodramatist is trying to bring the masses to a maximum of group realization, group expression, and group analysis. The methods have opposite aims, the development of the meetings, therefore, takes a different form. The political drama starts from within the politician and his clique, it is pre-arranged and carefully calculated to arouse hostility or bias against a foe. The sociodrama, however, starts from within the audience present, it is calculated to be educational, clarifying and energizing to all members, to serve as a stimulus to spontaneity, creativity, love and empathy, and as a check and balance to cultural tensions and hostilities arising from local or

world-wide events and as a means of social catharsis and integration.

In the social sciences, the subjects must therefore be approached in the midst of an actual life-situation and not before or after it. They must be truly themselves, in the fullest sense of the word. They must be measured in a real and natural situation; otherwise we may find ourselves measuring something totally different from the situation we set out to measure. If we have not a clear picture of the problem, it may result in our measuring the subjects at a time when they are half in and half out of the situation, before they begin to act in it or long after they have lived through it and the situation has grown "cold", a social conserve. It is evident that the situation to be measured must be caught in statu nascendi and the subjects warmed up to it. This emphasizes the importance of the category of the moment for all conceptual thinking relevant to the preparation of truly genuine experiments of social change.

SOCIOPSYCHOPATHOLOGY AND SOCIATRY

The oldest and most numerous proletariat of human society is the sociometric proletariat. It consists of all the people who suffer from one form of misery or another, psychological misery, social misery, economic misery, political misery, racial misery, religious misery. There are numerous individuals and groups whose volume of attractions, or role expansion, of spontaneity and productivity is far beneath their needs and their ability to consummate them. The world is full of isolated, rejected, rejecting, unreciprocated and neglected individuals and groups. The sociometric proletariat cannot be "saved" by economic revolutions.

The pathology and the therapy of the *normal* groups have been neglected but it is upon them that the social health of mankind depends; it is with the pathology of the normal groups that sociopsychopathology and sociatry deal. The frontiers of psychiatry have never been clearly drawn. Its frame of reference has been traditionally the mental healing of the single organism. But playing with phrases like "social" psychiatry indicates a widely spread confusion as to the finality of the boundary between psychiatry

and sociology. "Sociatry" is logically the healing of normal society of the *socius*. The term derives from a Latin and a Greek root, the one is *socius*, the "other fellow", the other *iatreia*, healing. Sociatry must be defined as to its position within a system of both, social and medical sciences. Psychiatry is the branch in medicine that relates to mental disease and its treatment; it treats the individual psyche and soma. Sociatry treats the pathological syndromes of normal society, of inter-related individuals and of inter-related groups. It is based upon two hypotheses: 1) "The whole of human society develops in accord with definite laws"; 2) "A truly therapeutic procedure cannot have less an objective than the whole of mankind."

Sociatry is remedial sociometry. It is just as much a pure science as is sociometry. They differ in method and emphasis rather than in purity. A research science is not purer than a therapeutic science. The adjective "remedial" should not connote a lower degree of accuracy. Sociometry may just as often be applied sociatry as sociatry applied sociometry. One is a function of the other. They are differentiated as notions but not in concrete functioning. The value, for instance, of psychodramatic audience therapy or sociometric regrouping, or other forms of social therapy, is determined by the demonstrable evidence of effects. A sociatrist is thus one skilled in sociatry. A doctorate, or diplomate of sociatry is a degree to be given in the future not exclusively to doctors of medicine, as it is now with psychiatry, but to doctors of education, psychology and sociology as well. The art and skill of the sociatrist will depend upon a synthesis of knowledge towards which all social and psychiatric sciences will have made their contribution.

The lifeline of the new era is marked by the combination of three developments: the diagnostic—sociometry, the actional—psychodrama and the therapeutic—group psychotherapy. In the last thirty years they have led the way *beyond* psychoanalysis and the speculative group psychologies. New vehicles and new operations have been introduced. The psychoanalytic vehicle was the couch. The antiquated couch was transformed into a multi-dimensional stage, giving space and freedom for spontaneity, freedom for the body and for bodily contact, freedom of movement, action and interaction. Free association was replaced by

psychodramatic production and audience participation, by action dynamics and dynamics of the groups and masses. With these changes in the research and therapeutic operation the framework of psychoanalytic concepts, sexuality, unconscious, transference, resistance and sublimation was replaced by a new, psychodramatic and sociodynamic set of concepts, the spontaneity, the warming up process, the tele, the interaction dynamics and the creativity. These three transformations in vehicle, form and concept, however, transcended but did not eliminate the useful part of the psychoanalytic contribution. The couch is still in the stage—which is like a multiple of couches of many dimensions, vertical, horizontal and depth—sexuality is still in spontaneity, the unconscious is still in the warming up process, transference is still in the tele; there is one phenomenon, productivity-creativity, for which psychoanalysis has given us no counterpart.

THE SOCIOMETRIC EXPERIMENT

A sociometric test is an examination of the structure of a specific group, at times for the purpose of its reconstruction. It is not by itself an experiment. Many other sociometric techniques are used in a full-fledged experiment, acquaintance tests, spontaneity tests, role tests, interview, psychodramatic and sociodramatic tests, etc., as the situation requires.

A sociometric study becomes an experiment a) if all its situations, its home, work, educational, recreational, cultural and administrative groupings are created by the total community of citizens-investigators, each citizen being an investigator and each investigator being a member of the community. The social actors are producing and analytic actors at one and the same time. The setting must obviously be life itself and not a laboratory. One may, of course, call an ongoing concern like a community, a laboratory, but this kind of a laboratory has a different meaning from that of the physicist or the animal psychologist. b) If all its formal and informal groups, in accord with its criteria, are involved in the social transformation. c) If, whenever necessary, with the full consent and cooperation of the entire community,

certain social conditions are kept constant, whereas the hypothetical conditions are allowed to vary. d) If all sociometric techniques known today are used by the population to transform its present social structure into a new social order in accord with the set of values which they, the people have decided to pursue. This set of values may be a Christian system of values, a Hinduistic system of values, a cooperativistic system of values, a communistic or a democratic system of values. Whatever the system of values, the sociometric method is the surest guide towards their realization.

Sociometric experiments have been carried out in closed and open communities, but always only to a degree, depending upon the courage of the experimental leader and the degree of sociometric consciousness of the population.

The closest to a complete, sociometric experiment was the Hudson community, however, we should be aware how far it was from going the whole way. Its administrative structure was only partly involved; the profit motive and economic dynamics did not enter into the experimental design. Because of the paternalistic character of the community its non-inclusion made the experiment comparatively flat and easy. A change in the system of values did not enter into the experiment, because the desire for such change was not articulated in the membership. I assisted a few years later in a project in an open community where sociometric methods were applied in an experiment in agricultural and industrial cooperatives; it headed in this direction more closely. However, it was, compared with the Hudson experiment, far inferior in research design and in determined execution. Therefore, all in all, the sociometric experiment is still a project of the future.

It is significant to differentiate between the major experiment in sociometry and the minor experiments. The major experiment was visualized as a world-wide project—a scheme well-nigh Utopian in concept—yet it must be recalled again and again to our attention lest it be crowded out by our more practical daily tasks in sociometry.

We assumed—naively perhaps—that if a war can spread to encircle the globe, it should be equally possible to prepare and propagate a world sociometry. But this vision did not arise

wholly out of thin air. Once we had successfully treated an entire community by sociometric methods, it seemed to us at least theoretically possible to treat an infinitely large number of such communities by the same methods—all the communities in fact, of which human society consists.

The ground is still gradually being prepared for the major experiment. Schemes like Marxism, and others, which have attempted worldwide reorganization of human relationships, have been analyzed and the causes of their failure disclosed. Their failure seems to have been due to a lack of knowledge of the structure of human society as it actually existed at the time of the attempt. A partial knowledge was not sufficient; knowledge of the total structure was necessary. We know that, in order to attain this total knowledge, all the individuals in a society must become active agents. Every individual, every minor group, every major group, and every social class must participate. The aim is to gain a total picture of human society; therefore, no social unit, however powerless, should be omitted from participation in the experiment. In addition, it is assumed that, once individuals are aroused by sociometric procedures to act, to choose and to reject, every domain of human relationships will be stirred up—the economic, the racial, the cultural, the technological, and so on—and that they all will be brought into the picture. The sociometric experiment will end in becoming totalistic not only in expansion and extension but also in intensity, thus marking the beginning of a political sociometry.

It is a fact that the work to date has consisted in minor experiments and studies. Sociometric investigators have turned their attention away from a general experiment towards a more strategic and practical objective—the refining of old methods and the invention of new ones; the study of every type of children's group, adolescent group and age group; the investigation of communities, closed and open, primitive and metropolitan. The investigators have been concerned with every aspect of a community—the economic, the cultural and the technological—for which there was found some degree of aspiration or expression within the community. At times a project was carried to the maximum point of its domain, not only exploring the structure of a community but also applying the findings to the community situations and

thus relieving tensions and producing social catharsis. At other times, however, possible upheaval within the political administration of a community and resistance on the part of its citizens was hindered through sociometric experimentation. Cases have occurred where the investigator had to be content with gathering only partial data (and this by indirection) because of the low sociometric adaptability of the population under observation, resulting in studies which were only halfway sociometric. In these cases, the findings could necessarily cover only a peripheral segment of a community, and the application of these data to the people themselves was not considered. Nevertheless, a critical survey of all the sociometric studies which have been made to date, evaluating the methods used and the results obtained in all cases, whether completely sociometric or only partially so, would be of substantial assistance in the preparation of more dependable sociometric procedures for future use.

The result of these small scale experiments has been twofold. On the one hand, they led to important discoveries in the realm of human relations which were confirmed by every new study, and, on the other hand, they made it possible to put together, like a jigsaw puzzle, the pieces of sociometric structure which had been found in various communities and get, with the assistance of these miniature patterns, a bird's eye view of the sociometric foundation of society at large. The greater the number of valid studies in the years to come, the more accurate and complete will be our psycho-geographical model of the world, as compared with the still sketchy and primitive model which is available to us today.

BOOK II

EVOLUTION OF GROUPS

DEVELOPMENTAL LEVEL OF GROUPS

The growth of the individual organism as a unity from a simpler to more highly differentiated levels is well recognized. But the development of a society of individuals is still problematic. Does society change only, or does it grow? Both points of view have found advocates. Some claim that civilizations grow and decline (Spengler) or that they are ever changing, their form conditioned by economic forces (Marx). The question is if these processes must take their course of necessity or if they are subjectable to change and control. Experimentation only can decide, a form of sociogenetic experiment which begins to work with the simplest groups first and step by step approaches more complex ones. It must be understood that when we say higher and lower differentiation we do not imply any judgment of value (good or bad) as, for instance, that a more highly differentiated group is an improved group, a less differentiated, an impaired group. We are only expressing varying levels of differentiation as they are found in the structures and as they are related to different criteria.

SOCIOMETRIC TEST OF BABY GROUPS

It is well known that the human infant is born with only a few and weak, unlearned reactions but with a plasticity for learning, a high degree of spontaneity. Our study of group organization indicated that humans, long after the first years of life are unable to develop permanent societies, that they compare unfavorably with certain highly developed animal societies, that social organization trends are precipitated through the interplay of their spontaneous affinities. The older a society of humans, the more differentiated its social structure, the more original spontaneity becomes restrained and channelized. We arrived at findings described below through the study of the relation of infants and children at different developmental levels towards other infants and children. Observation of infants, prior to the onset of socio-

metry, has been confined to individual-centered responses. Studies of the emotional and social development of infants have left untouched the evolution of group organization among infants of the *same* age level, perhaps because babies do not group themselves spontaneously and an artificial experimental situation is needed to uncover the underlying possibilities of organization on the different developmental levels. To meet the problem we placed a group of nine babies in proximity in the same room from the day of birth. They were studied over a period of 18 months. The inquiry focussed on what developmental level the babies reached *as a society*, not what developmental level this or that infant reached.

At first the test was arranged for groups of babies from birth on, all participants of any one group being on the same age level. The babies were placed in close proximity in the same room in which they were and had been living since birth. The objective of the study was to ascertain what types of structures appear earliest in the evolution of groups during the first three years of life. The infant-to-infant relations were observed. The point was not whether the reactions of each individual were a really social response or not but primarily if group organization resulted from the accumulative effect of their interaction and what forms it took. The main lines of development may be summarized as follows: a stage of *organic isolation* from birth on, a group of isolated individuals each fully self-absorbed; a stage of *horizontal* differentiation of structure from about 20-28 weeks on, the babies begin to react towards each other, the factor of physical proximity and physical distance making respectively for "psychological proximity" or "psychological distance," the "acquaintance" beginning with neighbors first, a horizontal differentiation of structure; a stage of *vertical* differentiation of structure from about 40-42 weeks on, one or another infant commands disproportionate attention shifting the distribution of emotion within the group from the horizontal to a vertical differentiation of structure, the group which had been up to this point equally "levelled," develops more prominent and less prominent members, a "top" and a "bottom." No one stage appears to function exclusively at any one level: there appears to be a "hangover." This phenomenon seems to account largely for the growing complexity of organization which one

meets with at the higher chronological age levels. The development of association of infants compared with the development of individual infants is "retarded." Numerous, momentary contacts between babies get lost and do not aid in producing social organization. Mutual interactions must appear with a certain frequency and constancy before they can be classified as a social structure.

The babies were of the same chronological age, either born the same day or a day or two apart. If a baby left the hospital, it was replaced by a baby of the same age. The observations were made daily by two observers and immediately recorded. The categories of contacts of babies with babies were as follows: a) How many times a baby looked at the other, initiating or responding; b) how many times a baby cried with the other, initiating or responding; c) how many times a baby smiled at the other, initiating or responding; d) how many times a baby tried to grasp the other, initiating or responding; and finally, e) how many times a baby touched the other, initiating or responding.

A control study was devised, replacing the babies by dolls in reference to the five categories of contacts enumerated above. In the doll sociograms only one participant was an actual baby, the other eight participants were dolls. The purpose of this experiment was to study the deviations between the sociogram of actual babies with the sociogram of dolls. The doll experiment was repeated once in 30 days. As the babies grew older the deviations between actual and doll sociograms increased while the factor of chance influence receded.

SOCIOMETRIC TEST OF A PUBLIC SCHOOL

As the next step the sociometric test was given to the boys and girls of all classes in a public school, from the kindergarten through the 8th grade. Each child was asked to choose among their classmates those whom he wanted to have stay in the same classroom and to sit near him. A quantitative analysis of their choices revealed that the attractions between the sexes, boys choosing girls and girls choosing boys, was highest in kindergarten and 1st grade, 35.5% and 32.9% respectively, of all choices made; that this ratio of attraction fell in the 2nd grade to 8.5%; in the 3rd

grade to 4.7%; in the 4th grade to 1.6%, its lowest level; it showed a slight increase in the 5th, dropped to zero in the 6th, rose to 3.2% in the 7th and gained a considerable increase in the 8th, rising to 10.53%. It revealed that the number of boys choosing girls was the same as that of girls choosing boys in the kindergarten, 17.75%; in the 1st and 2nd grades boys take the initiative, 27% versus 5.9% and 6.8% versus 1.7% respectively; in the 3rd girls have the initiative, 3.1% versus 1.6%; in the 4th, 5th, 6th and 7th grades they are about even, but girls take the initiative again in the 8th grade, 6.58% versus 3.95%.

As a consequence of the test given to these pupils a complex structure of the class organization was uncovered, widely differing from the prevalent one. A number of pupils remained unchosen or isolated; a number chose each other, forming mutual pairs, triangles or chains; others attracted so many choices that they captured the center of the stage like stars.

The percentage of individuals isolated, that is, unchosen by their own classmates, fluctuated between 15.4% and 45.7% in the various classes. This percentage started at 27% in the kindergarten; rose to 45.7%, its highest point, in the 1st grade; decreased to 30.5% in the 2nd; dropped to 21.2% in the 3rd; to 18.2% in the 4th; rose sharply to 28.6% in the 5th; dropped in the 6th and 7th grades to 15.4% and 15.6% and rose again to a high point in the 8th, 29.5%. The number of mutual pairs was lowest in the kindergarten, 3; rose slowly to 6 in the 1st grade; to 12 in the 2nd grade, to 14 in the 3rd grade, to 17 in the 4th grade; dropped to 13 in the 5th, rose to 23 in the 6th, dropped again to 15 in the 7th and fell still lower, to 12, in the 8th grade. The forming of more complicated structures, such as triangles, chains, etc., was lowest in the kindergarten and 1st grade, where they were totally absent; they made their appearance in the 2nd grade and were in evidence from then on.

The findings in respect to the baby groups and in respect to children's groups from 4 to 15 years are presented in Tables, in Frequency Histograms, and particularly through the means of a process to visualize the position of each individual within his group as well as the interrelations of all other individuals as these are affected by attractions and repulsions, the *sociogram*.

PUBLIC SCHOOL, FIRST TEST

TABLE 1.

QUANTITATIVE ANALYSIS OF CHOICES BETWEEN THE SEXES IN THE GRADES OF A PUBLIC SCHOOL

<i>Of All Choices Made:</i>	<i>Boys Chose</i>		<i>Girls Chose</i>	<i>Both Sexes</i>
	<i>Girls</i>	<i>Boys</i>		
Kindergarten.....	17.75%	17.75%		35.50%
1st Grade.....	27.00%	5.90%		32.90%
2nd Grade.....	6.80%	1.70%		8.50%
3rd Grade.....	1.60%	3.10%		4.70%
4th Grade.....	1.60%	0.00%		1.60%
5th Grade.....	0.00%	2.00%		2.00%
6th Grade.....	0.00%	0.00%		0.00%
7th Grade.....	1.60%	1.60%		3.20%
8th Grade*.....	3.95%	6.58%		10.53%

* The upward trend is further indicated by a large number of heterosexual choices going outside the class group.

TABLE 2

STRUCTURAL ANALYSIS OF SCHOOL GROUPS

<i>Of All Choices Made:</i>	<i>Unchosen</i>	<i>Pairs</i>	<i>Triangles</i>	<i>Chains</i>
Kindergarten.....	27.0%	3	0	0
1st Grade.....	45.7%	6	0	0
2nd Grade.....	30.5%	12	1	0
3rd Grade.....	21.2%	14	0	1
4th Grade.....	18.2%	17	2	0
5th Grade.....	28.6%	13	1	2
6th Grade.....	15.4%	23	3	1
7th Grade.....	15.6%	15	0	2
8th Grade.....	29.5%	12	1	0

TABLE 3

NUMBER OF UNCHOSEN BOYS COMPARED WITH NUMBER OF UNCHOSEN GIRLS AND NUMBER OF PAIRS FORMED BY BOYS COMPARED WITH NUMBER OF PAIRS FORMED BY GIRLS, FROM KINDERGARTEN TO EIGHTH GRADE

<i>Of All Choices Made:</i>	<i>Unchosen</i>		<i>Pairs*</i>	
	<i>Boys</i>	<i>Girls</i>	<i>Boys</i>	<i>Girls</i>
Kindergarten.....	5	4	2	1
1st Grade.....	12	4	3	3
2nd Grade.....	2	7	7	5
3rd Grade.....	3	4	9½	4½
4th Grade.....	2	4	9	8
5th Grade.....	5	5	6	7
6th Grade.....	2	4	11	12
7th Grade.....	3	2	6	9
8th Grade.....	6	7	6½	5½

* Figures include inter-sexual pairs.

Analysis

Up to the second grade more boys are unchosen than girls. From the second to the fifth grade the picture is reversed. From the fifth to the eighth the distribution is approximately even.

More pairs are formed by boys up to the fifth grade. From the fifth grade to the eighth grade more pairs are formed by girls. It is the quantity of *pairs* and the interlocking between them which is decisive for group stability and cohesion, and not the high or low number of unchosen. If the greater tendency of girls to form pairs and this, after a poor start, the older they become, then this may be a clue to an interesting hypothesis which should be tested on a large sample: that the female shows a greater tendency towards socialization than the male, a greater trend towards constancy of choice and the formation of stable groups.

PUBLIC SCHOOL, SECOND TEST

One class from each grade was retested after a period of seven weeks had elapsed to find out (a) to what extent the choices of the children fluctuate and (b) if the general trend of organization persists which had been found characteristic for this class in the first test. It appears that although one or the other pupil's position changes the general trend of organization persists. After a period of almost two years (twenty-two months) the population of the same public school was retested. Tables 4-6 indicate the findings.

The findings of the second test corroborate the findings of the first test in every main aspect. This appears of great significance as it can be said that we met the second time a practically different population due to the turnover within two years and the changed distribution of the classes. It can be expected that future socio-metric testing of similar public school populations will further corroborate our findings.

However, the following variations between the findings of the first and of the second test can be noted. The number of intersexual attractions was found to decline more gradually and the number of mutual pairs to increase more gradually from the 1st grade on. Complex structures appear two years later. Other variations are very slight. The degree of accuracy of teachers' judgments in respect to most popular and to most isolated pupils has the highest

TABLE 4
QUANTITATIVE ANALYSIS OF CHOICES BETWEEN THE SEXES IN THE
GRADES OF A PUBLIC SCHOOL

<i>Of All Choices Made:</i>	<i>Boys Chose</i>		<i>Girls Chose</i>	<i>Both Sexes</i>
	<i>Girls</i>	<i>Boys</i>		
Kindergarten.....	15.0%	12.0%		27.0%
1st Grade.....	13.0%	8.6%		21.6%
2nd Grade.....	16.0%	9.8%		25.8%
3rd Grade.....	9.2%	10.6%		19.8%
4th Grade.....	4.2%	4.7%		8.9%
5th Grade.....	2.4%	1.5%		3.9%
6th Grade.....	.5%	.6%		1.1%
7th Grade.....	1.5%	1.9%		3.4%
8th Grade.....	1.2%	4.0%		5.2%
Ungraded Classes.....	1.2%	0.0%		1.2%
Physically Handicapped.....	5.1%	2.2%		7.3%

TABLE 5
STRUCTURAL ANALYSIS OF SCHOOL GROUPS

<i>Of All Choices Made:</i>	<i>Unchosen</i>	<i>Pairs</i>	<i>Triangles</i>	<i>Chains</i>
Kindergarten.....	27%	6%	0	0
1st Grade.....	32%	5%	0	0
2nd Grade.....	29%	12%	0	0
3rd Grade.....	29%	10%	0	0
4th Grade.....	25%	16%	2	1
5th Grade.....	21%	18%	1	2
6th Grade.....	16%	16%	6	1
7th Grade.....	21%	17%	3	3
8th Grade.....	20%	20%	3	2
Ungraded Classes.....	27%	17%	0	0
Physically Handicapped...	29%	17%	3	2

point in the kindergarten and 1st grade, declines from then on, and shows the lowest point in the 7th grade.

Parallel with the test given to the pupils, a judgment test was given to their teachers. Each teacher was asked to write the name of the boy and the girl in her classroom whom she would judge will receive most of the choices from their classmates and the two who will receive next most; also the name of the boy and the girl whom she would judge will receive the least choices and the two who will receive next least. In 48% of the instances the teachers' judgments coincided with the findings through the sociometric test in respect to the two most chosen boys and girls; in 38% of the instances in respect to the two least chosen boys and girls in her classroom.

TABLE 6
DEGREE OF ACCURACY OF TEACHERS' JUDGMENTS IN RESPECT TO
MOST CHOSEN PUPILS AND ISOLATED PUPILS

<i>Classes</i>	<i>Percentage of Accuracy</i>
Kindergarten.....	62.5%
1st Grade.....	64.5%
2nd Grade.....	50.0%
3rd Grade.....	50.0%
4th Grade.....	37.5%
5th Grade.....	30.0%
6th Grade.....	30.0%
7th Grade.....	25.0%
8th Grade.....	40.0%

SOCIOMETRIC TEST OF A HIGH SCHOOL FOR BOYS

THE RIVERDALE SCHOOL

The test was further given to boys from the ages of 14 to 18 years in a private college preparatory school and resulted as follows: Of 153 boys, 17 remained isolated, *i.e.*, 9%; 105 formed mutual pairs, *i.e.*, 68%; more complex structures, such as triangles, squares, or chains were formed by 16%. The experimental situation for the college preparatory group was, however, not identical with that used in the public school grades. In the former only boys were subjects and they were given 4 choices instead of 2. About 25% of these boys were boarding at the school while the remainder were day students.

TABLE 7
A PRIVATE PREPARATORY SCHOOL
ANALYSIS OF CHOICES

<i>Unchosen</i>			
<i>After 1st Choice</i>	<i>After 2nd Choice</i>	<i>After 3rd Choice</i>	<i>After 4th Choice</i>
45%	22%	16%	9%
<i>Chosen</i>			
5 or more times chosen including 2 or more mutual choices.....			53% of population
2 or more times chosen including 1 mutual choice			32% of population
Chosen once and with no mutual choice.....			6% of population

The first sociometric test of the Riverdale school population was given two months after the school was in session in the fall.

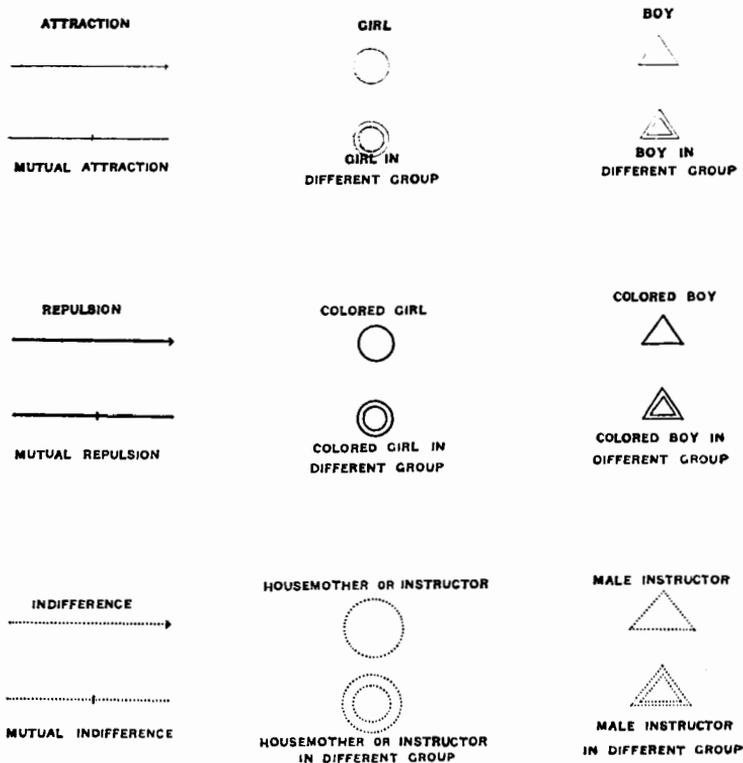
On the basis of the 1st choice, 10% of the new boys (that is, boys who had not attended the school the year before) remained unchosen. It will be noted that this is practically the same proportion as that for the school population generally. New boys received 2.8 choices per boy as against 3.75 choices per boy for the whole school.

Revision of choices taken three months after the first choosing showed adjusted boys usually maintain or improve their position and unadjusted boys maintain generally the same position or else regress. Of the unadjusted boys, only 15% improved their position as against 44% of the adjusted boys who improved their position.

It is of interest to compare the two divisions in the population: the dormitory boys and the day school boys. Considering the dormitory boys exclusively, 82% of this population formed mutual pairs; considering the day school boys exclusively, only 68% formed mutual pairs. The former class of students comprised 25% of the school population; the latter class, 75% of the population. It is evident at once that the psychological position of the two groups is vastly different. The boys living in the more intimate situation and having more frequent and more constant social contact with one another become better adjusted than the day school boys whose opportunities for close contact are more casual. It appears also that the dormitory students are a greater attraction for the day school boys than their fellow students who are similarly "outsiders." The average number of choices received by the dormitory student is 4.85 while for the day student it is 3.32. This is the more striking when we consider the disproportion in numbers of members of the two groups.

The second sociometric test was given after an interval of three months. The findings in respect to changing of choices were as follows: 8% of the 1st choices were changed, 18% of the 2nd choices. Thus the 1st and 2nd choices appear to have a high degree of validity—92% of the 1st choices made remaining unchanged and 82% of the 2nd choices remaining unchanged after this period.

KEY TO SOCIOGRAMS



A circle represents a girl.

A large circle represents a woman.

A double circle or double triangle signifies that the individual is a member of a different group from the one charted.

In one-color charts each line represents an attraction.

A red line represents attraction.

A black line represents repulsion.

A crossed line represents two-sided relation.

A triangle represents a boy.

A large triangle represents a man.

A line drawn from one individual to another represents the relation of one individual to the other.

In multi-colored charts each different color represents a different relation.

A dotted line represents indifference.

An arrowed line indicates one-sided relation.

In charts representing specific emotional reactions of one individual towards another, a red line represents sympathy; a dotted or broken line represents fear; a thin line represents anger; a heavy black line represents dominance.

TYPICAL STRUCTURES WITHIN GROUPS

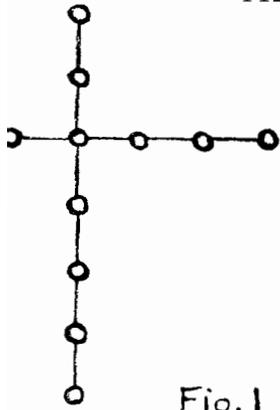


Fig. 1

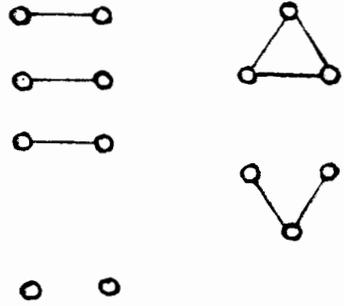


Fig. 2

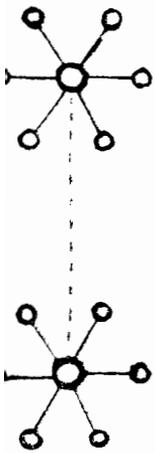


Fig. 3

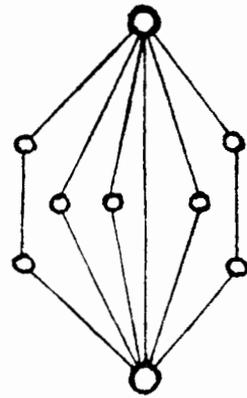


Fig. 4

Fig. 1. Attractions between individuals take the form of a chain.

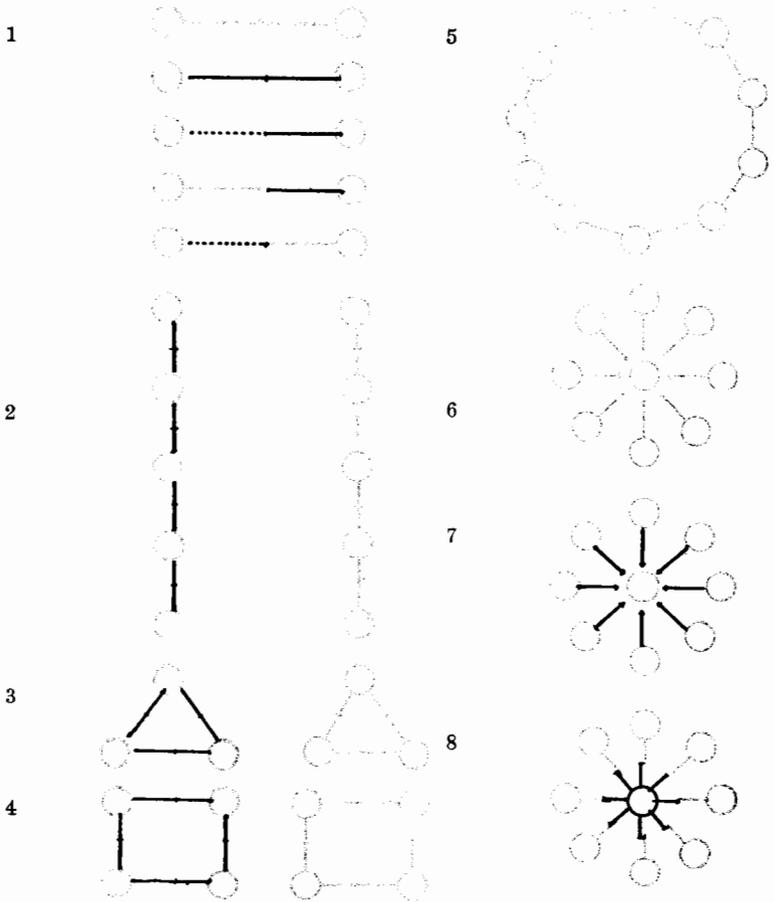
Fig. 2. Attractions between individuals take the form of pairs, isolated units and groups of three.

Fig. 3. The sub-groups are centralized, each about two dominating (star) individuals who have no attractive forces uniting them. The *star* is an individual who receives at least *five* choices.

Fig. 4. A group in which two dominating individuals are strongly united, both directly and indirectly through other individuals.*

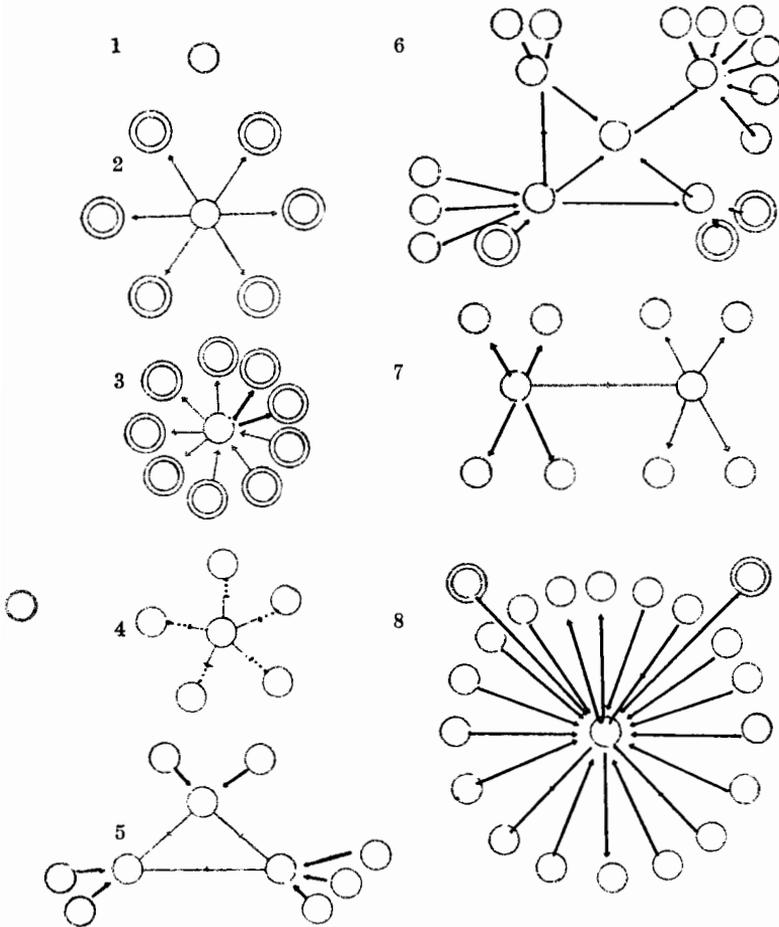
* The above sociograms are from J. L. Moreno, *Application of the Group Method to Classification*, 1932, p. 101.

TYPICAL STRUCTURES WITHIN GROUPS



1. Attractions and repulsions take the form of a *pair*.
 Mutual attraction (red pair).
 Mutual rejection (black pair).
 Indifference vs. rejection.
 Attraction vs. rejection.
 Indifference vs. attraction.
2. Mutual repulsions and attractions take the form of a *chain*.
 Chain of mutual rejections.
 Chain of mutual attractions.
3. Mutual repulsions and attractions take the form of a *triangle*.
 Triangle formed by rejections.
 Triangle formed by attractions.
4. Mutual repulsions and attractions take the form of a *square*.
 Square formed by rejections.
 Square formed by attractions.
5. Mutual attractions take the form of a *circle*.
 Attractions take the form of a *center (star)*.
7. Rejections take the form of a *center (star)*.
8. Center of incompatible relations, rejections vs. attractions.

TYPICAL STRUCTURES WITHIN GROUPS



1. Total isolation—no lines of attraction or repulsion connect subject with any other individual.
2. Subject is attracted to six individuals outside of her group (outside individuals are symbolized by a double circle) who do not reciprocate.
3. Subject is attracted to four individuals outside of her group and rejects two more; they do not reciprocate; three others outside of her group who are attracted to her she does not reciprocate.
4. Subject is attracted to five individuals within her group; they respond with indifference.
5. Mutual attractions between three individuals take the form of a triangle but each of the subjects is otherwise rejected and isolated within her own group; the result is an isolated and rejected triangle of persons.
6. Five subjects, each isolated and rejected within her own group reject and isolate each other.
7. Two subjects, each otherwise isolated in her own group form a pair of mutual attraction; the result is an isolated pair.
8. Subject rejects six and is rejected by fifteen individuals within and two individuals outside of her own group. The result is an isolated and rejected individual.

TYPES OF SOCIOMETRIC DIAGRAMS

Sociometric diagrams are so constructed that interpersonal relations and social interactions can be explored and measured. Several types of sociometric diagrams have been developed: 1. Spontaneous Interaction Diagrams (1923), 2. Acquaintance Diagrams (1934), 3. Sociograms (1932), 4. Sociomatrix (1940), 5. Role Diagram (1940), 6. Space and Movement Diagram (1923).

SPONTANEOUS INTERACTION DIAGRAMS

Spontaneous interaction diagrams are the oldest diagrams which try to portray actual interpersonal relations for the purpose of measurement. The German name which I gave to these diagrams was "Stegreifdiagram" and "Stegreifnoten", which means "spontaneous interaction diagrams." They represent a type of diagramming which aims at the closest possible duplication of life itself. The purpose is, therefore, to present symbolically in the diagram all fundamental variables of a life situation, time, space, number and type of persons present, acts and pauses, initiative (starting a scene), simultaneity of appearance, leadership, change in leadership, ending (a scene).

Key to symbols: t = unit of time; in the diagrams included here it is one minute, one minute being found a convenient unit of measurement; thus, 5 minutes will be $5t$. At other times the smallest time unit used was ten seconds instead of one minute. Every scene (A) consists of acts (a) and pauses (p); $A = na + np$. *An act is a focused operation*, as eating a mouthful, walking across a room, repartee in a dialogue, hitting a target, kissing or falling asleep. *A pause is resting between two acts*. Each of these acts and pauses may vary in duration and may take a fraction of a second, a number of seconds, or longer. In the case of one individual A a mouthful of food is consumed in ten seconds, in that of another individual B in twenty seconds; the pause between two kisses may be in one case one second, in another case three minutes. In life itself the tempo is spontaneous, that is, determined by the partners, but the tempo of an act may be accelerated or slowed down by external conditions, as in business. In the course of observing a large number of acts and interacts certain averages, norms of ideal duration, became noticeable, without any loss to the spontaneity of the actor and the result of the production.

ACQUAINTANCE DIAGRAM

The diagram is a diagram of acquaintances; individuals participating in an open session, being strangers to each other, were found to have few acquaintances within the group. It is of diagnostic value in the analysis of a session to know of the pre-existing social contacts of the participants.

SOCIOGRAMS

In contrast with these diagrams in which a symbol is given to each important life variable there are other diagrams which are more abstract. In a sociogram, for instance, the time and space symbols are not recorded, only the relationships between all the persons interacting are recorded. Sociograms are so recorded as if the processes which they depict take place in a "social" space, [not in actual physical space] and in a timeless universe. There are sociograms, however, in which physical *and* social space are intertwined (see Space and Movement Diagram, p. 149).

In preparation for any analysis sociometric diagrams should be carefully constructed. This is particularly important for sociograms. A readable sociogram is a good sociogram. To be readable, the number of lines crossing must be minimized. The fewer the number of lines crossing, the better the sociogram. After having gathered and tabulated the choices, pick the persons who are most chosen and start the sociogram with them. Place the persons in their natural formations—three persons in a triangle, four in a square, five in a pentagon, etc., well separated on the paper. In the drawing the existence of subgroups should be observable. An illustration of a good diagram is the acquaintance diagram on p. 145. Illustrations of badly constructed sociograms are most of the cottage charts, as the cuts used for them stem from the first edition of the book. For the comparison of two or more groups the sociograms must be constructed after the same principle in order to be readable. The sociogram has many advantages over the sociomatrix; it presents all the data and their relationships at one glance and it permits structural analysis in its most minute detail. Sociograms can be constructed easily if the group is small (below thirty individuals) and if the number of choices and rejections is limited (two to five). If the group is large a "reduc-

tional (decimal, centesimal, etc.) technique" can be used in the construction of the sociogram (see illustration, p. 428).

SOCIOMATRIX*

A sociomatrix is still more abstract than a sociogram; all the persons participating in a situation are recorded but here not only time and space, but also the signs of contact between them are eliminated.

ROLE DIAGRAM

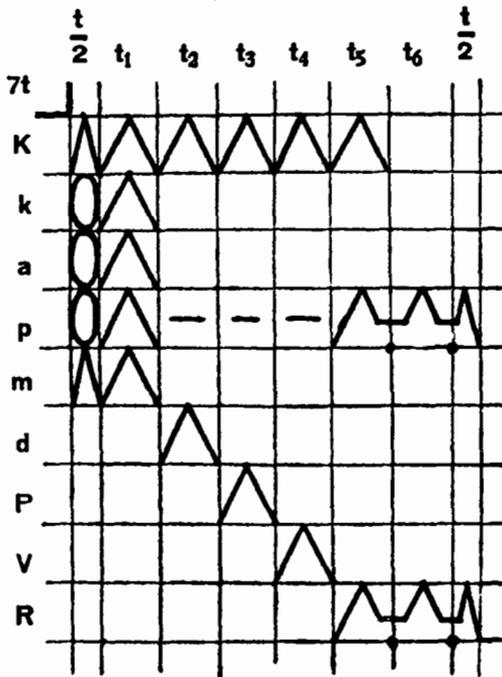
It portrays the clusters of roles of individuals and the interaction between these roles.

SPACE AND MOVEMENT DIAGRAM (LOGOGRAM)

The parallelogram indicates the social space within which movement takes place. Each cross indicates the position in space taken at the moment of interaction by the four individuals a, b, c, and d.

* Symbolistic diagrams of interaction, such as schematic diagrams, scatter diagrams, histograms, record relationships in a still more abstract fashion. The persons themselves have become *symbols* and generalizations, items in scales and frequencies. A numerical representation is the farthest abstraction from the real process, say two and a half billion individuals expressing human life on earth.

TYPES OF SOCIOMETRIC DIAGRAMS

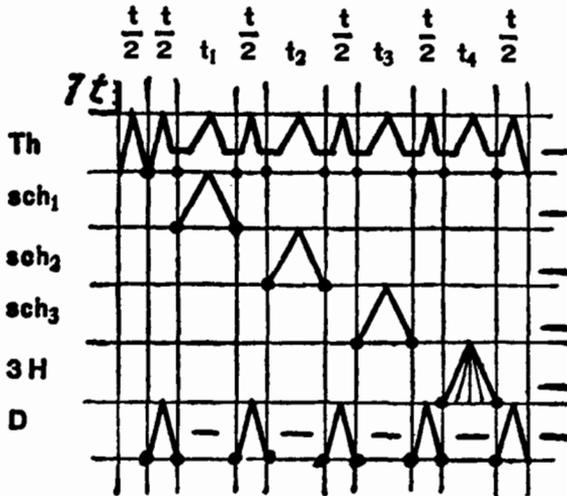


SPONTANEOUS INTERACTION DIAGRAM I*

The diagram represents a process of interaction between nine individuals. K, k, a, p, m, d, P, V, R, are the roles taken by them. The interaction process consists of 6 scenes of equal duration (t_1 - t_6) and 2 of half duration ($t/2$). Duration of entire process is $7t$. t is five minutes, $7t$ is thirty-five minutes. K is the protagonist who dominates the process of interaction. Zero symbol indicates that k, a and p are present in the first situation without having an active part in it. The sign for pause illustrates, as in the case of P, the disappearance of this individual from the scene. Points of coordination are used to indicate simultaneity of action, as is the case with p and R in the last two scenes.

* From J. L. Moreno, *Das Stegreiftheater*, 1923, p. 95.

TYPES OF SOCIOMETRIC DIAGRAMS

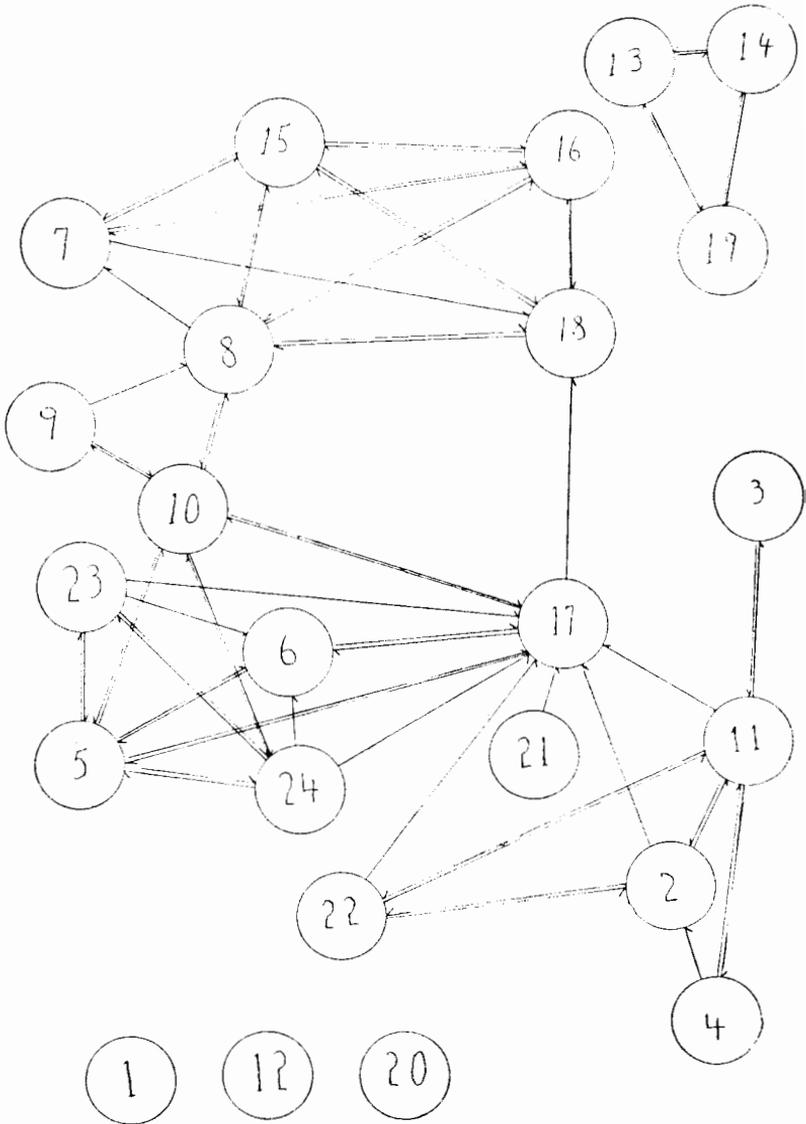


SPONTANEOUS INTERACTION DIAGRAM II*

The diagram represents a process of interaction between eight individuals. Th, sch₁, sch₂, sch₃, 3H and D, are the roles taken by them (3H stands for 3 individuals taking one and the same role). The interaction process consists of 4 scenes of equal duration (t_1 , t_2 , t_3 and t_4) and 6 of half duration ($t/2$). Duration of entire process is $7t$. t is five minutes, $7t$ is thirty-five minutes. Th is the protagonist who dominates the entire process of interaction.

* From J. L. Moreno, *Das Stegreiftheater*, 1923, p. 90.

TYPES OF SOCIOMETRIC DIAGRAMS

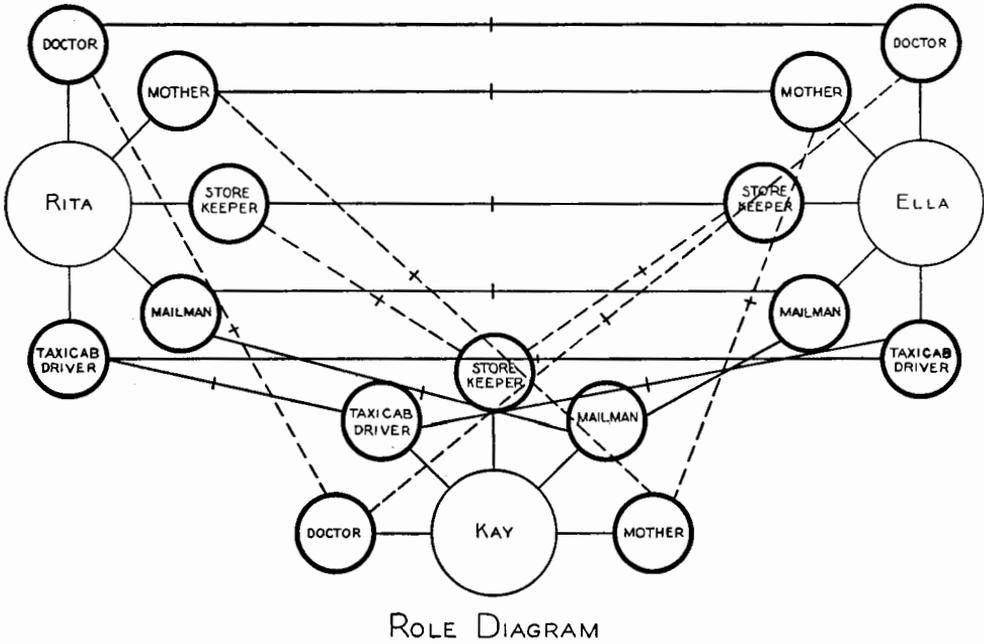


ACQUAINTANCE DIAGRAM*

Twenty-four individuals report with whom they were acquainted before this face-to-face meeting, without any further emotional or social connotations, merely "knowing each other."

* From Edgar Borgatta, *Group Psychotherapy*, Vol. III, 1950, p. 306.

TYPES OF SOCIOMETRIC DIAGRAMS

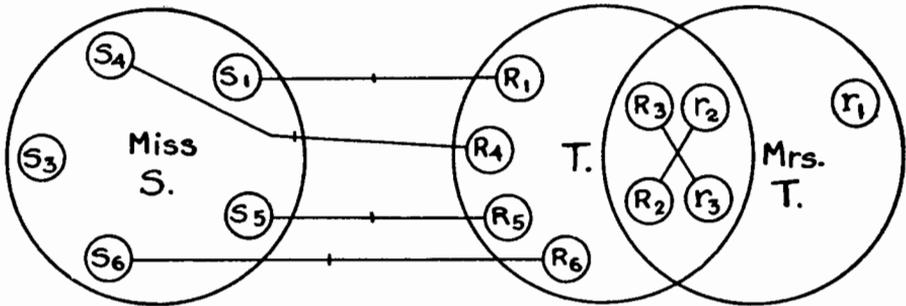


KEY:

- |—: MUTUALLY ANTAGONISTIC
- - -| - - -: MUTUALLY COMPATIBLE

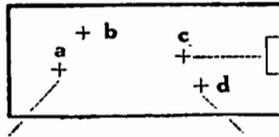
From J. L. Moreno, Ed., *Group Psychotherapy, A Symposium*, 1945.

TYPES OF SOCIOMETRIC DIAGRAMS



ROLE DIAGRAM

Marital state, at a time when a third person has entered the situation, Miss S. Mr. and Mrs. T are attracted to each other in the roles of husband and wife (R3-r3) and the role of supporter and homemaker (R2-r2). Mr. T's love role, in which he is no longer attracted to Mrs. T, finds expression in his relation to Miss S (R1-S1). She also fulfills his poet and adventurer roles (R4-S4 and R5-S5) and his father role (R6-S6).



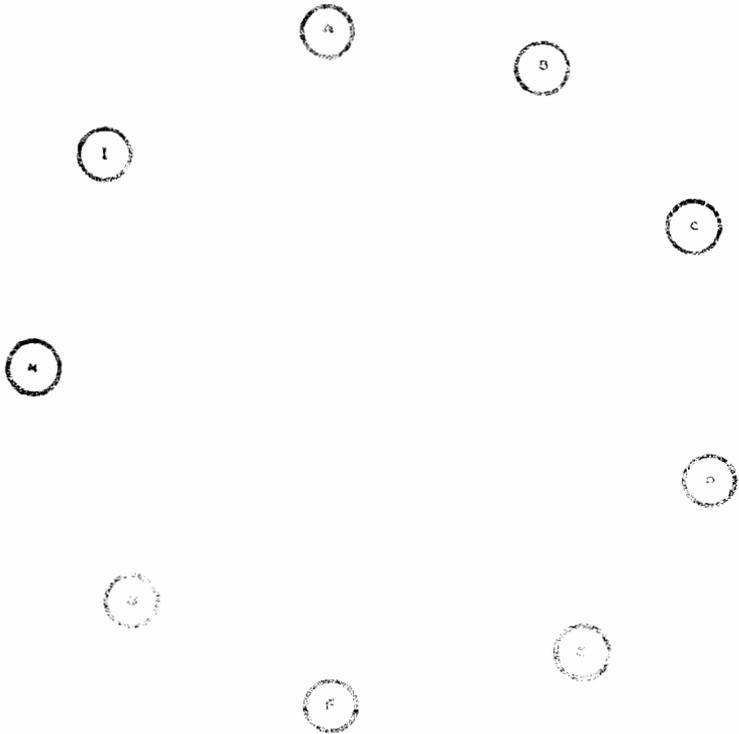
SPACE AND MOVEMENT DIAGRAM*

a, b, c and d are four individuals interacting within the same social space. The diagram is constructed to measure the physical configurations of distance between individuals in any sequence of situations. The physical distance between a and b, and c and d is the same; the distance between b and c is twice the distance between a and b; the distance between a and d is three times the distance between a and b or c and d. Measuring the distances in inches, feet or meters one can follow up the changes in distance from situation to situation and compare the accompanying variations or changes in the action taking or roleplaying of the four individuals. In the space diagram or locogram above a and b and c and d form two physical dyads; in the next scene the locogram may change, a, b and c draw very close, forming a physical triangle, d remains alone, by himself, a physically observable isolate.

Because of measurability of positions and movements in space this type of diagram is more useful than the symbolic representation of relations.

* From J. L. Moreno, *Das Stegreiftheater*, 1923, p. 88.

EVOLUTION OF GROUPS

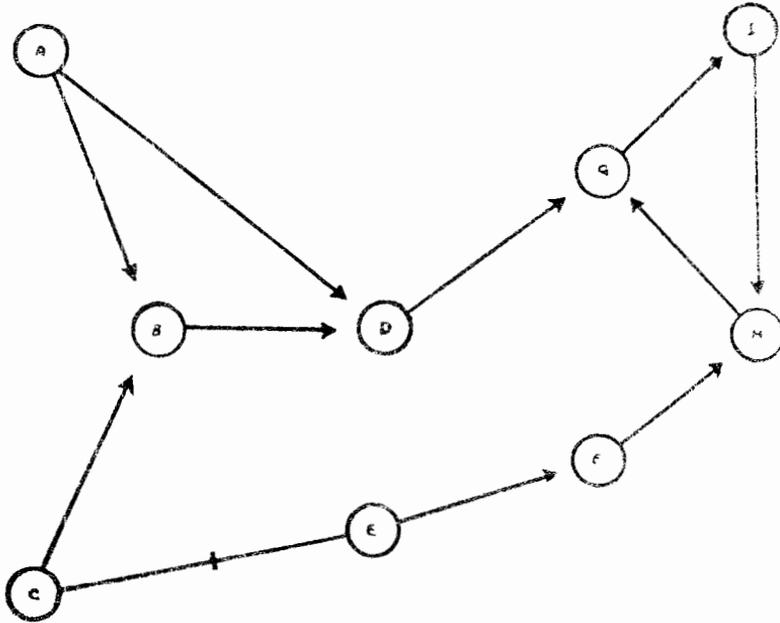


STAGE OF ORGANIC ISOLATION

CRITERION: LIVING IN PROXIMITY

A group of 9 babies of the same age level were placed in the same room and in close proximity, throughout the first year of life. The emphasis of observation was not placed upon the development of the different responses as crying, sucking, clucking, sulking, and whether these are or are not truly social responses, and so on, but upon the early beginnings of interrelation and group formation. No sign of such beginning could be traced during the first 26 weeks in infant-to-infant relation. Each baby lives in isolation from the other. Within this period of isolation and close to the 2-months level, the voice of a crying baby may arouse the attention of his neighbor—marking the subdivision of this period between full isolation and the beginning of the recognition of others.

EVOLUTION OF GROUPS

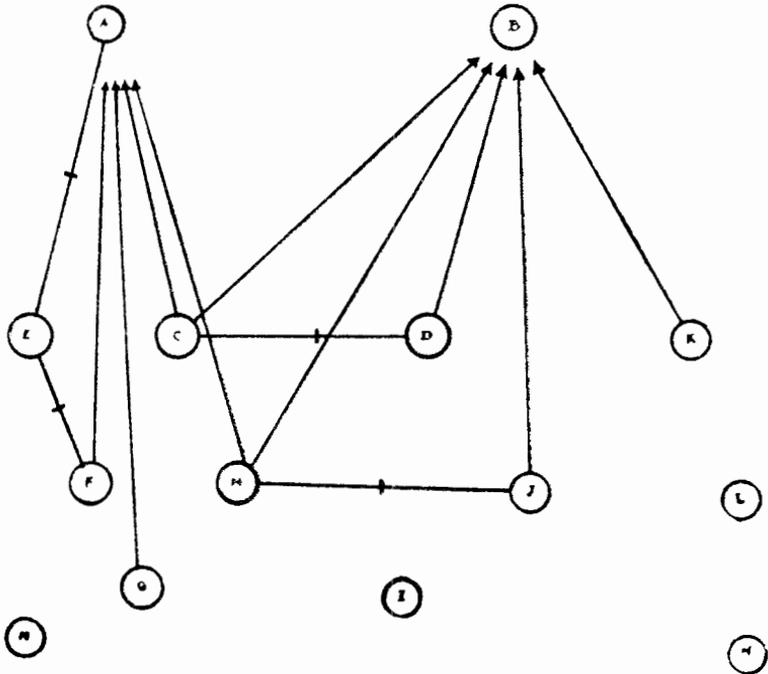


STAGE OF HORIZONTAL DIFFERENTIATION

CRITERION: LIVING IN PROXIMITY

The true beginning of group development starts from twenty to twenty-eight weeks. One baby, C, recognizes its neighbor, E, who recognizes it in return. One baby, D, is recognized by two neighbors, A and B, and recognizes one neighbor, G. One baby, A, recognizes two babies, B and D, but remains unrecognized. B is attracted to D, C is attracted to B; by indirection through C, baby B may become influenced by E—we see here the forerunner of a “chain.” *On this level interrelations are aroused by physical proximity and are based upon physical distance or nearness.* The physical distance produces psychological distance. At this level emotions travel through physical proximity in space horizontally and in consequence there follows the development of group structures through *horizontal* differentiation.

EVOLUTION OF GROUPS

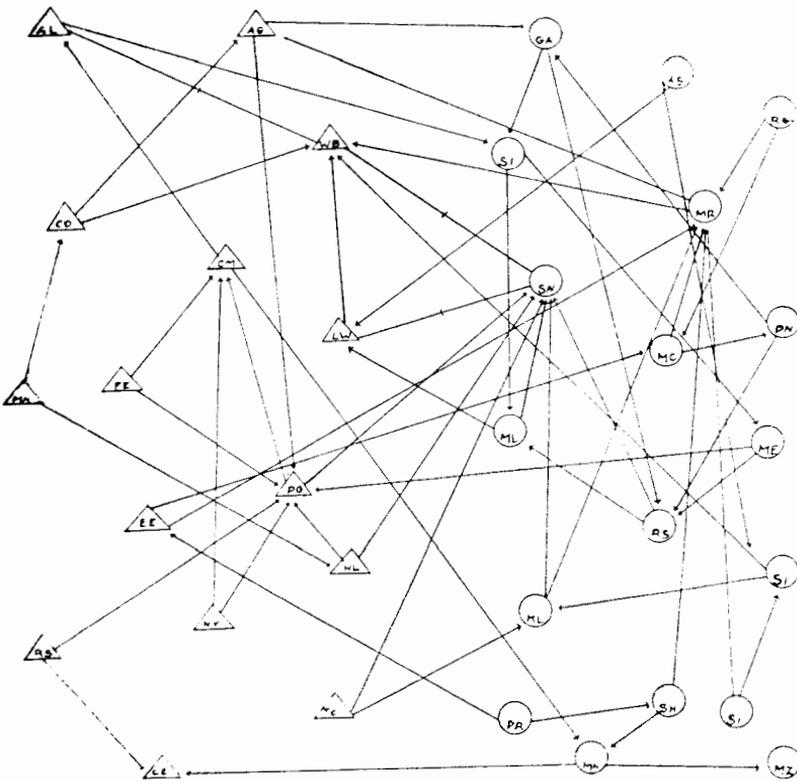


STAGE OF VERTICAL DIFFERENTIATION

CRITERION: LIVING IN PROXIMITY

The difference in physical strength and mental alertness begins to affect the group organization as soon as the babies are able to walk and to move around freely, from forty to forty-two weeks on. The group begins to develop a "top": leaders A and B, and a "bottom": dependents C, D, E, F, G, H, J and K, with isolated members: N, I, L and M—that is, vertical differentiation.

EVOLUTION OF GROUPS



STRUCTURE OF A KINDERGARTEN

CRITERION: STUDYING AND PLAYING IN PROXIMITY, ACTUALLY SITTING BESIDE THE PUPILS CHOSEN; 2 CHOICES

15 boys and 18 girls. *Unchosen* 9, NV, FE, MA, TO, AS, RG, PR and also RS (boy in lower left of chart) and SI (girl in lower right of chart); *Pairs* 3, AL-WB, WB-SN, SN-LW; *Stars* (Centers of Attractions) 4, WB, SN, PG, MR; *Chains* (of relationships) 0; *Triangles* 0; *Inter-Sexual Attractions* 22; *Not Choosing* 2, CE, MZ.

33 pupils make 62 choices; 3 pairs are formed by 4 pupils;
 for 2 pupils both choices are mutual;
 for 2 pupils one choice is mutual.

6% (2 pupils) achieve full success in spontaneous self placement.

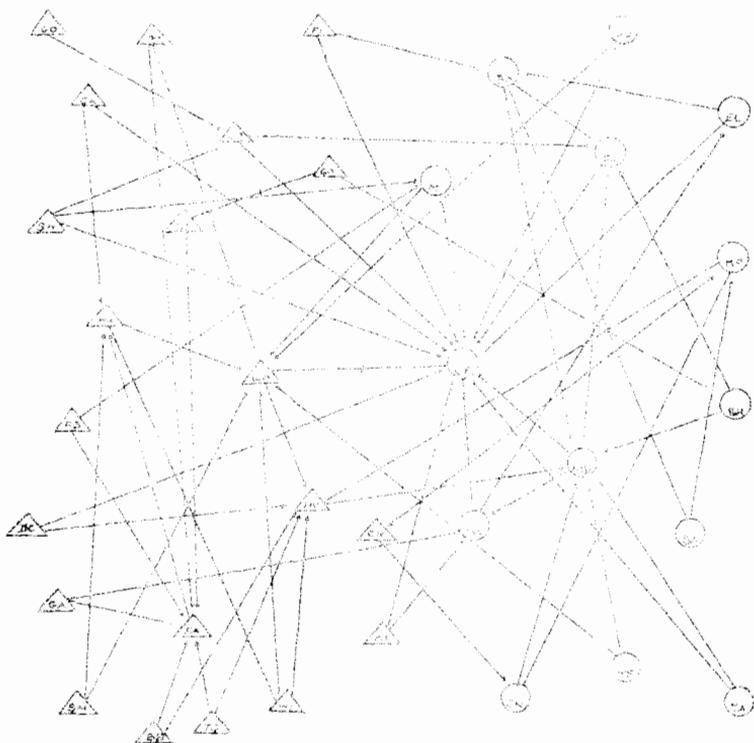
94% { 6% (2 pupils) achieve partial success in spontaneous self placement.
 { 88% (29 pupils) achieve no success in spontaneous self placement.

Out of these 29 pupils { 61% (20 pupils) choose an unreciprocating party.
 { 27% (9 pupils) remain unchosen.

This analysis demonstrates that the tele is weakly developed in this group of children ranging between 4 and 6 years of age.

In a group psychotherapy program special attention may be given to the 2 pupils not choosing and the 9 unchosen ones. Compare the authoritarian seating order in a classroom "before" the sociometric test is given and "after" its results are known.

EVOLUTION OF GROUPS



CLASS STRUCTURE, 1ST GRADE

CRITERION: STUDYING IN PROXIMITY, ACTUALLY SITTING BESIDE THE PUPILS CHOSEN; 2 CHOICES

21 boys and 14 girls. *Unchosen* 16, PR, CA, SH, FI, RS, DC, GA, SM, BB, TS, KI, TA, HF, SA, KR (girl in top right of chart) and GO (boy in top left of chart); *Pairs* 6, SI-GO, HN-WI, WO-CE, KR-HC, KR-CN, CE-HN; *Stars* 5, FA, CE, WO, HC, MB; *Chains* 0; *Triangles* 0; *Inter-sexual Attractions* 23.

35 pupils make 70 choices; 6 pairs are formed by 10 pupils;

for 1 pupil both choices are mutual;

for 8 pupils one choice is mutual.

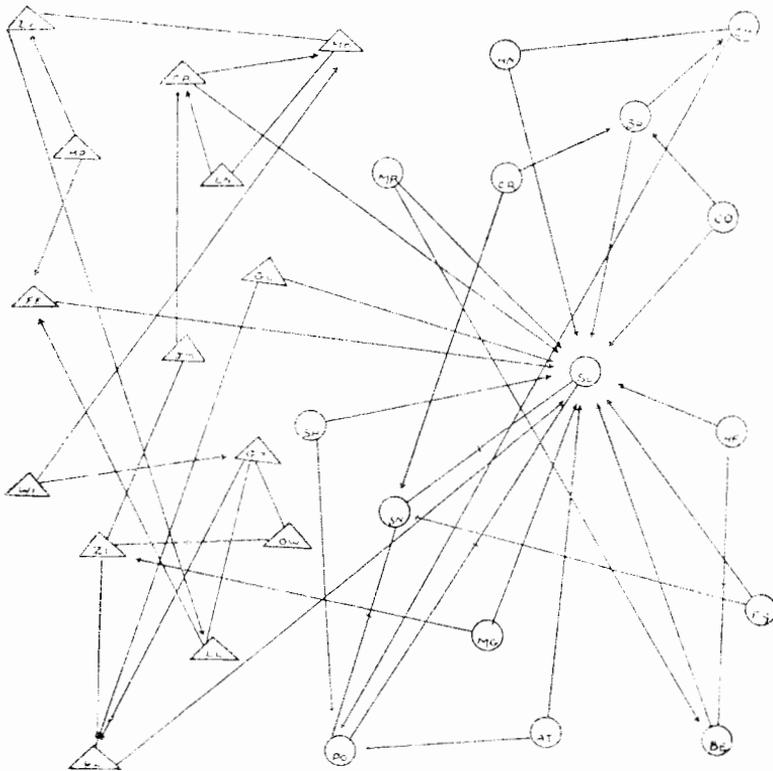
2.9% (1 pupil) achieve full success in spontaneous self placement.

97.1% { 26.9% (9 pupils) achieve partial success in spontaneous self placement.
70.2% (25 pupils) achieve no success in spontaneous self placement.

This analysis shows that the tele is better developed in this group than it is in the Kindergarten group.

In a group psychotherapy program compare how many of the 16 unchosen pupils have found choice partners in other criteria, as playing together or visiting each other outside the school.

EVOLUTION OF GROUPS



CLASS STRUCTURE, 2ND GRADE

CRITERION: STUDYING IN PROXIMITY, ACTUALLY SITTING BESIDE THE PUPILS CHOSEN; 2 CHOICES

14 boys and 15 girls. *Unchosen* 9, WI, KP, MG, AT, FS, CO, CR, MR, SH; *Pairs* 12, ZV-MK, MK-LN, OW-ZI, OW-GR, GR-LL, ZI-JM, HN-CM, SL-JN, JN-PO, PO-SL, HF-BE, GL-GU; *Stars* 2, SL, PO; *Chains* 0; *Triangles* 1, SL-JN-PO; *Inter-sexual Attractions* 5.

29 pupils make 59 choices; 12 pairs are formed by 17 pupils;
 for 7 pupils both choices are mutual;
 for 10 pupils one choice is mutual.

24% (7 pupils) achieve full success in spontaneous self placement.

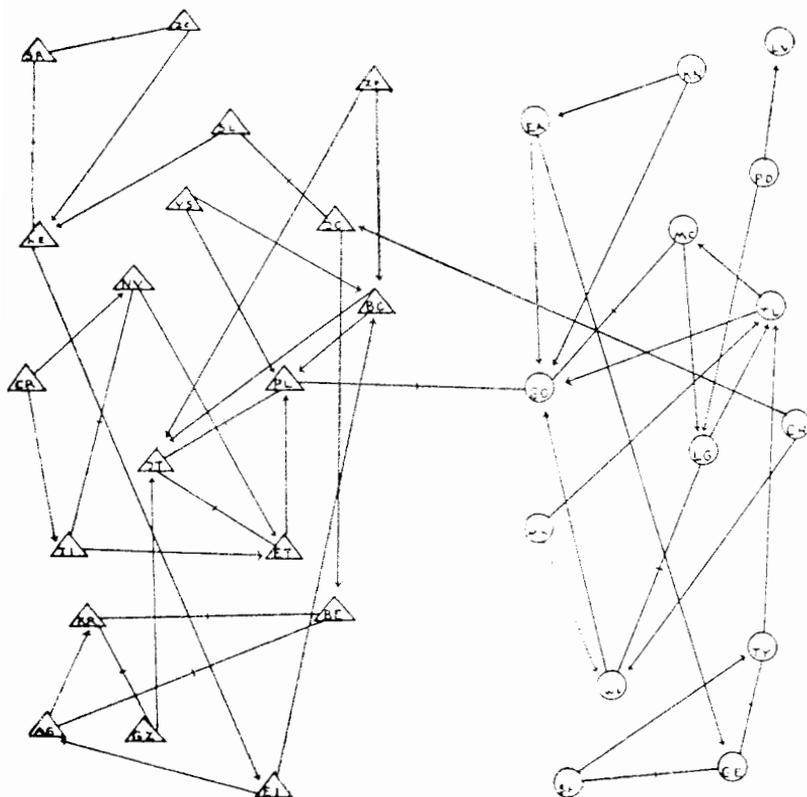
76% { 35% (10 pupils) achieve partial success in spontaneous self placement.
 41% (12 pupils) achieve no success in spontaneous self placement.

Out of the 12 pupils { 10½% (3 pupils) choose an unreciprocating party.
 30½% (9 pupils) remain unchosen.

This analysis shows that the tele is better developed in this group than it is in the 1st Grade group.

In a group psychotherapy program watch the "early" triangle formation, SL-JN-PO and the forces operating in it.

EVOLUTION OF GROUPS



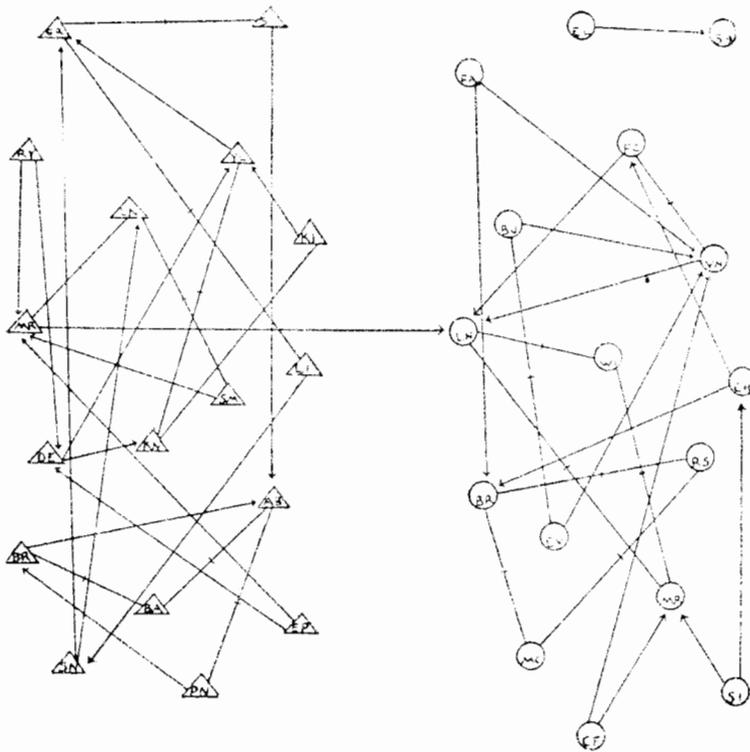
CLASS STRUCTURE, 3RD GRADE

CRITERION: STUDYING IN PROXIMITY, ACTUALLY SITTING BESIDE THE PUPILS CHOSEN; 2 CHOICES

19 boys and 14 girls. *Unchosen* 7, VS, OR, OH, MN, PD, KN, ZK; *Pairs* 14, SR-ZC, SR-NE, SL-JC, NV-TI, PL-JT, JT-ET, KR-BE, BE-AG, KR-GZ, PL-GO, GO-MC, WL-LG, SA-GE, GE-TY; *Stars* 3, GO, PL, JT; *Chains* 1, ET-JT-PL-GO-MC-LG; *Triangles* 0; *Inter-sexual Attractions* 3; *Not Choosing* 1, LV.

In a group psychotherapy program special attention may be given to the pupil not choosing and the chain formed by six pupils.

EVOLUTION OF GROUPS



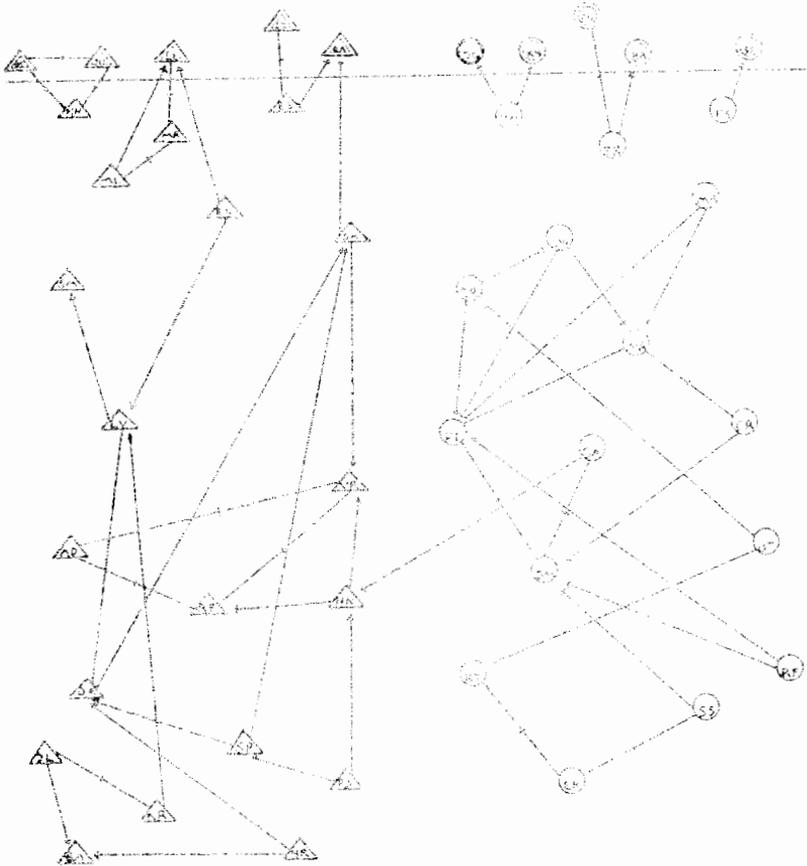
CLASS STRUCTURE, 4TH GRADE

CRITERION: STUDYING IN PROXIMITY, ACTUALLY SITTING BESIDE THE PUPILS CHOSEN; 2 CHOICES

17 boys and 16 girls. *Unchosen* 6, EP, RY, EL, FA, SI, CF; *Pairs* 17, GR-SI, GR-LI, MR-LN, LN-SM, YL-KN, AB-BA, BA-BR, KI-KN, AB-PN, FC-VN, BU-CV, LN-WI, LN-MR, BR-MC, BR-RS, WI-MR, MC-RS; *Stars* 2, LN, VN; *Chains* 0; *Triangles* 2, BR-RS-MC; LN-WI-MR; *Inter-sexual Attractions* 1; *Not Choosing* 1, SH.

In a group psychotherapy program special attention should be given to the rapidly decreasing number of inter-sexual attractions and the role played by the stars, LN and VN, in this process.

EVOLUTION OF GROUPS



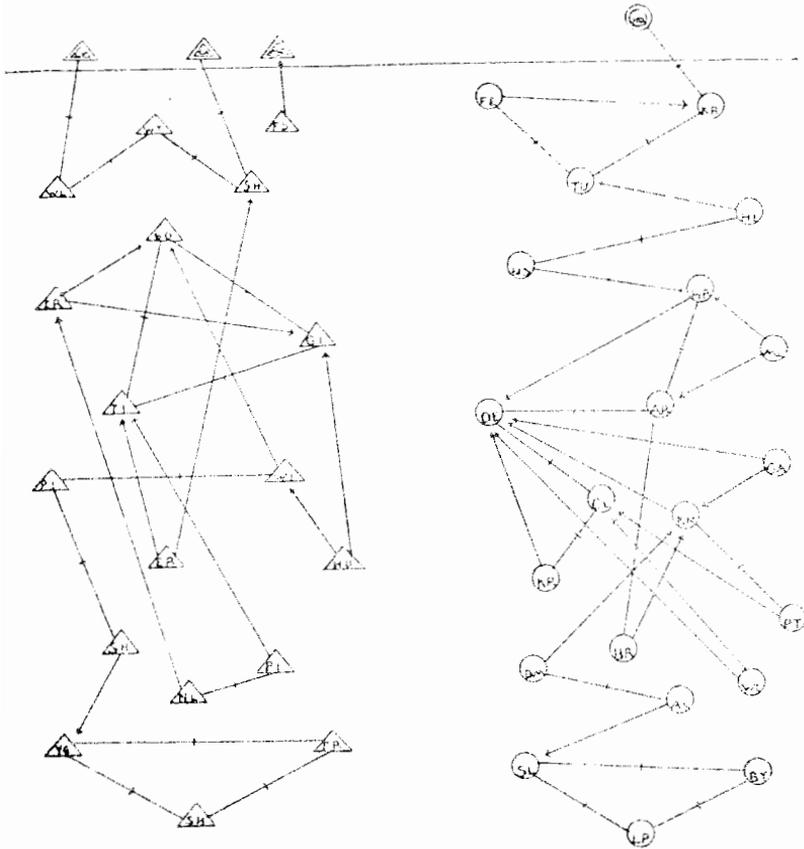
CLASS STRUCTURE, 5TH GRADE

CRITERION: STUDYING IN PROXIMITY, ACTUALLY SITTING BESIDE THE PUPILS CHOSEN; 2 CHOICES

19 boys and 16 girls. *Unchosen* 10, HN, ES, TR, SL, RS, HR, RF, JN, FS and MR (girl, circle in upper right of chart); *Pairs* (mutual choices *inside* of group) 13, ML-MR (boys, triangles in upper left of chart), DA-LV, AD-VR, AD-RE, RE-VR, JL-LR, RT-ER, ER-SS, RT-BT, DM-GA, MR-CR (girls, circles in right center of chart), DM-FI, FI-MR; *Pairs* (mutual choices *outside* of group) 6, ST-HN, ST-NI, NI-HN, MR-ES, ES-FS, TR-PN; *Stars* 2, FI, DM; *Chains* 2, CR-MR-FI-DM-GA-HN, SS-ER-RT-BT-SR; *Triangles* (*inside* of group) 1, AD-VR-RE, (*outside* of group) 1, HN-NI-ST; *Inter-sexual Attractions* 1; *Choosing Outside Their Group* 9, ML, HN, MR, SL, ES, SA, JN, TR, FS; *Not Choosing* 2, SM and GA (boy, bottom left of chart).

In a group psychotherapy program special attention should be given to the centrifugal tendency, 9 pupils choosing outside of their group and the effect it has upon the entire group organization.

EVOLUTION OF GROUPS



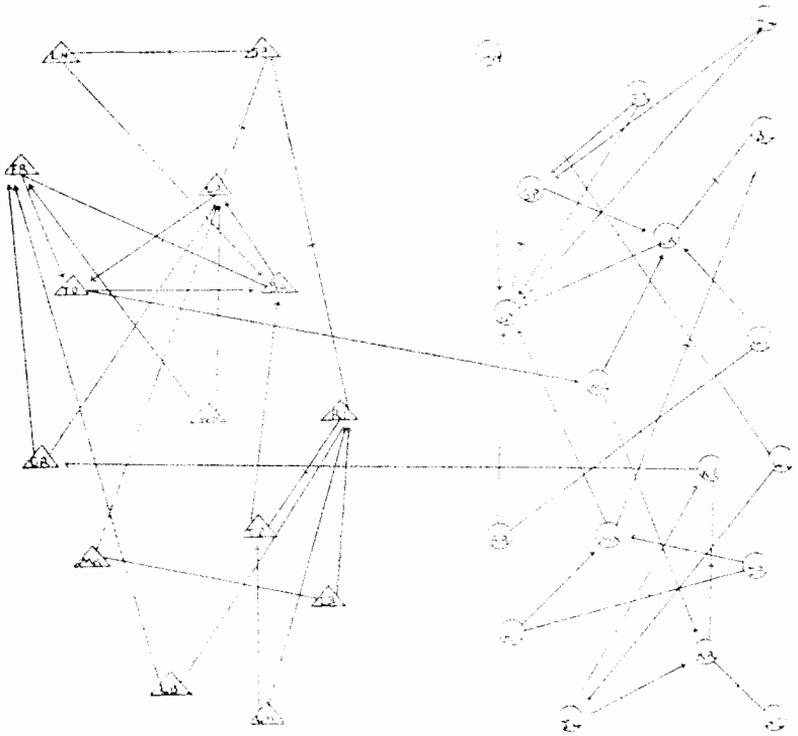
CLASS STRUCTURE, 6TH GRADE

CRITERION: STUDYING IN PROXIMITY, ACTUALLY SITTING BESIDE THE PUPILS CHOSEN; 2 CHOICES

18 boys and 21 girls. *Unchosen* 6, FS, HD, ML, GA, BR, WL; *Pairs (inside group)* 23, WL-WT, WT-SH (boy, triangle top left of chart), GO-GI, GO-TI, TI-GI, PI-WI, PI-SH, NL-PI, YG-FR, FR-SH (boy, triangle extreme bottom left of chart), SH-YG, FE-TU, TU-KR (girl, circle extreme top right of chart), HI-NS, HR-AR, AR-OE, OE-EL, EL-KR, KN-PT, DM-AL, SL-BY, BY-LP, LP-SL; (*outside of group*) 3, WL-LY, SH-CA, KR-HD; *Stars* 1, OE; *Chains (inside of group)* 1, HR-AR-OE-CL-KR-OE, (*outside of group*) 1, LY-WL-WT-SH-CA; *Triangles* 3, GO-GI-TI, YG-FR-SH, SL-BY-LP; *Inter-sexual Attractions* 0; *Choosing Outside Their Group* 4, WL, SH, FS, KR.

In a group psychotherapy program watch whether the complete cleavage between the two sex groups is repeated in other criteria.

EVOLUTION OF GROUPS



CLASS STRUCTURE, 7TH GRADE

CRITERION: STUDYING IN PROXIMITY, ACTUALLY SITTING BESIDE THE PUPILS CHOSEN; 2 CHOICES

14 boys and 18 girls. *Unchosen* 5, WN, CH, LB, JH, BR; *Pairs* 15, LN-SR, SR-LR, SR-RI (Note: SR makes three choices all of which are mutually reciprocated), RI-TP, FR-BA, MR-EB, SP-BY, BY-LA, LA-BC, BC-MN, BB-MY, KE-KR (girl, circle bottom right of chart), KR-HE, JR-KR, MN-WL; *Stars* 4, BY, LR, RI, LA; *Chains* 2, SP-BY-LA-BC-MN-BY, LN-SR-RI-TP-BA; *Triangles* 0; *Inter-sexual Attractions* 2.

In a group psychotherapy program watch the "return" of the inter-sexual choice and inter-sexual leaders.

EVOLUTION OF GROUPS

Fig. 1

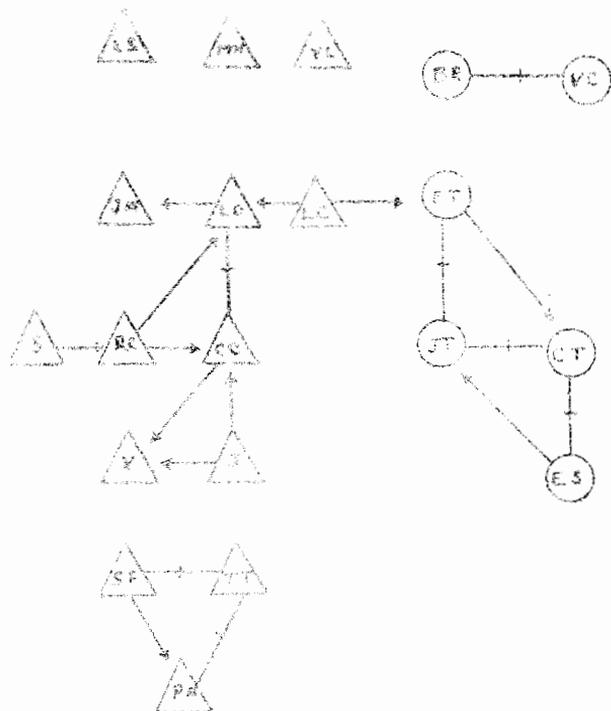
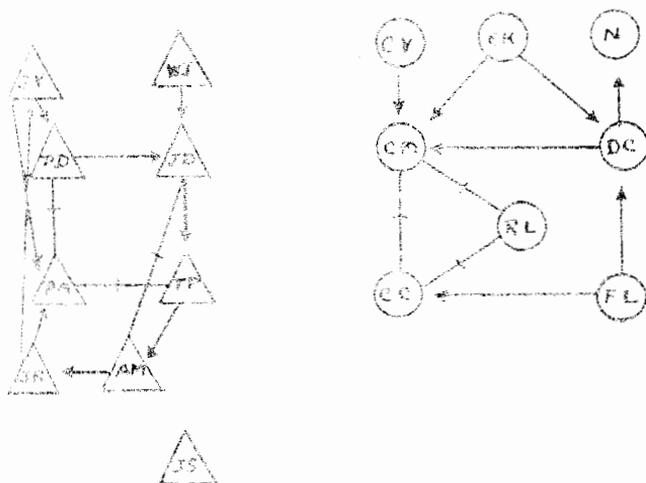


Fig. 2



CLASS STRUCTURE, UNGRADED CLASSES

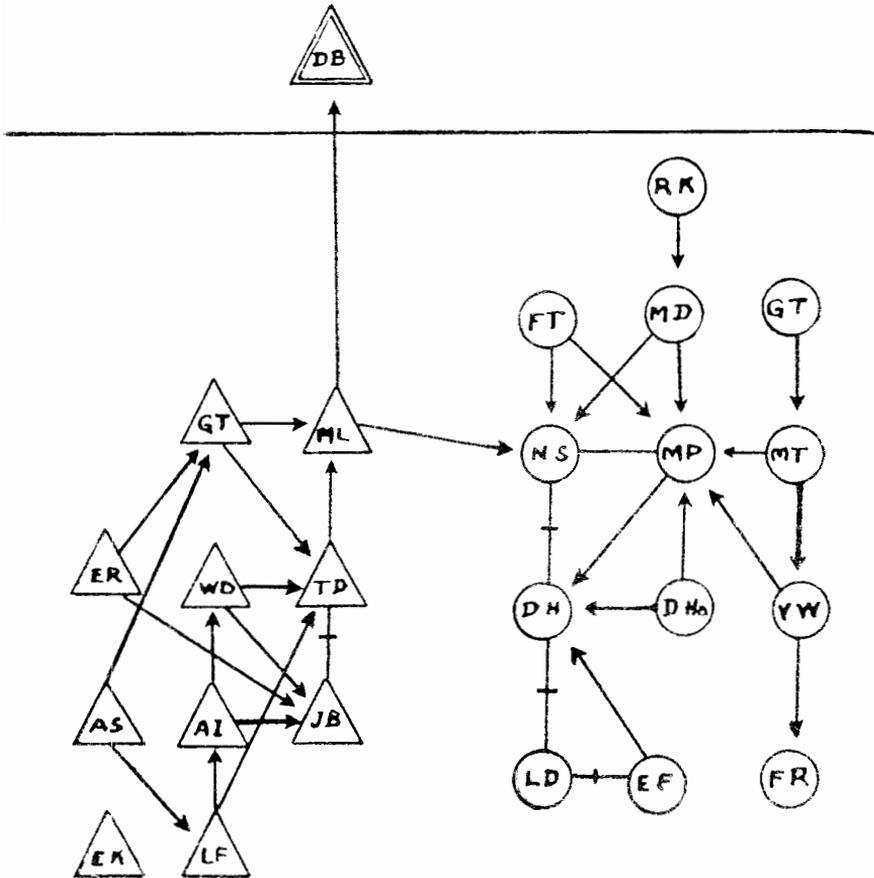
CRITERION: STUDYING IN PROXIMITY, ACTUALLY SITTING BESIDE THE PUPILS CHOSEN; 2 CHOICES

Fig. 1. Ungraded Class 1, 14 boys and 6 girls. *Unchosen* 6, LS, MN, VL, S, J, LC; *Pairs* 7, PA-TT, TT-SF, CC-LO, BR-VC, JT-FT, JT-CT, CT-ES; *Stars* 0; *Chains* 0; *Triangles* 0; *Inter-sexual Attractions* 1; *Not Choosing* 5, LS, MN, VL, JA, V.

Fig. 2. Ungraded Class 2, 9 boys and 8 girls. *Unchosen* 5, JS, WJ, CV, EH, FL; *Pairs* 6, PD-PA, PA-TP, AM-JD, OC-RL, CM-RL, CM-CC; *Stars* 1, CM; *Chains* 0; *Triangles* 1, CM-CC-RL; *Inter-sexual Attractions* 0; *Not Choosing* 2, N, JS.

In a group psychotherapy program pay special attention to the 7 pupils not choosing.

EVOLUTION OF GROUPS



CLASS STRUCTURE, CRIPPLE CLASS

CRITERION: STUDYING IN PROXIMITY, ACTUALLY SITTING BESIDE THE PUPILS CHOSEN; 2 CHOICES

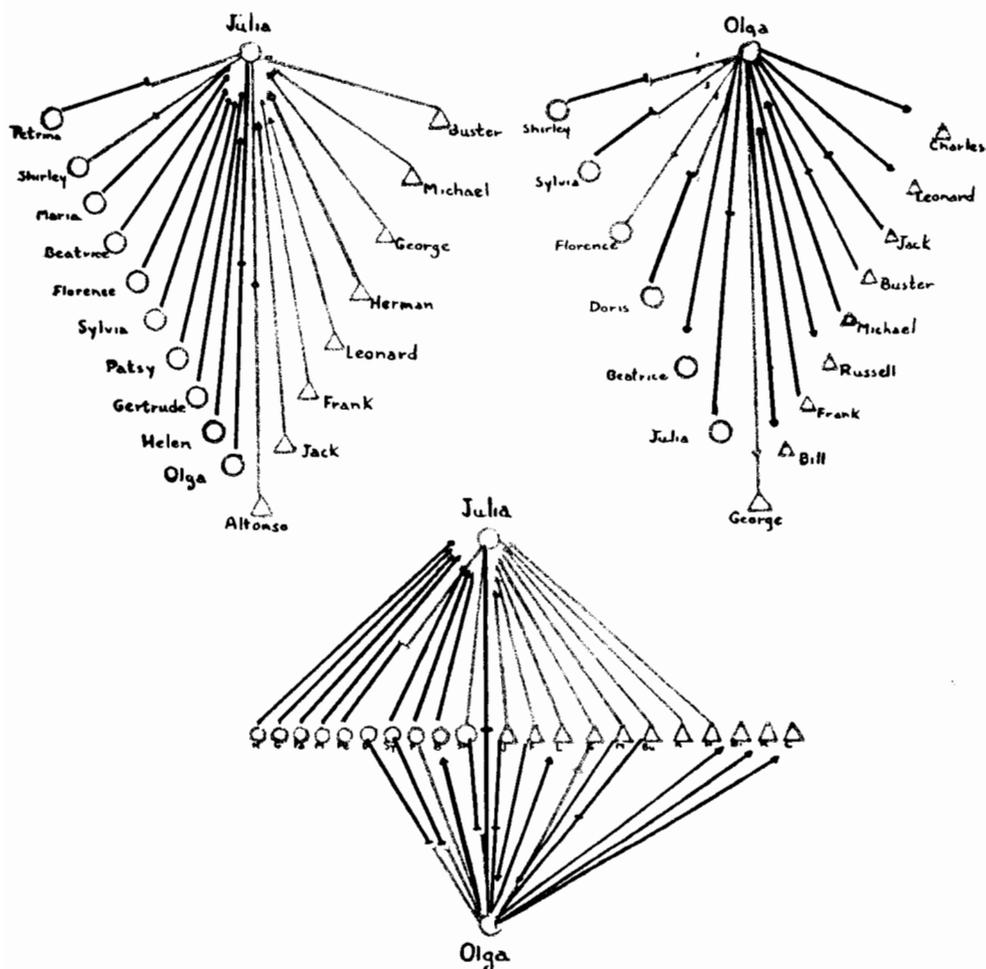
10 boys and 13 girls. *Unchosen* 7, EK, AS, ER, DHa, RK, FT, GT; *Pairs* 5, JB-TD, EF-LD, LD-DH, DH-NS, NS-MP; *Stars* 3, MP, NS, DA; *Chains* 1, EF-LD-DH-NS-MP-DH; *Triangles* 0; *Inter-sexual Attractions* 1; *Choosing Outside Their Group* 1, ML; *Not Choosing* 2, EK, FR.

In a group psychotherapy program attention should be given to the *size* of the class group. In this classroom 2 do not choose, 1 chooses outside the group and 7 are unchosen. The number of pupils may be too large, considering the low emotional expansiveness which some of its members have.

There is no ideal number for the size of a therapeutic group as some workers who advocate in favor of three, five, seven, nine, twelve, etc., appear to think. The size of the group is a function of the emotional expansiveness of its members.

The type of physical handicap, as stuttering, blindness, cerebral palsy, ties, chorea, etc., has a bearing upon the sociometric status of an individual.

EVOLUTION OF GROUPS

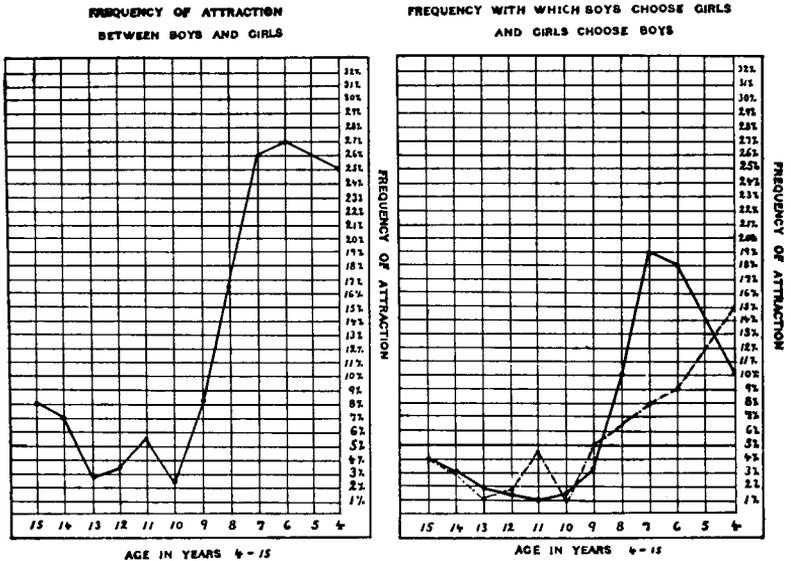


CASE STUDIES

Fig. 1. Psychological organization around a pupil Julia; criterion, studying in proximity; social atom of the subject has developed after eight months in class group 8B1 in P.S. 181, Brooklyn, N. Y. Julia is the first choice of eight boys, Buster, Michael, George, Herman, Leonard, Frank, Jack and Alfonso, who all want to sit beside her in the classroom. Alfonso is the boy who receives her third choice. She is at the same time rejected by nine girls, Olga—whom she rejects in turn—Helen, Gertrude, Patsy, Sylvia, Florence, Beatrice, Maria and her first choice, Petrina, who do not want to sit near her. She is the first choice of Shirley whom she chooses second.

- Fig. 2. Psychological organization around a pupil Olga; criterion, studying in proximity; social atom of the subject has developed after eight months in class group 8B1 in P.S. 181, Brooklyn, N. Y. Olga rejects six boys whom she does not want to sit near her, Charles, Leonard, Bill, Russell, Buster and Jack; the latter who rejects her as do also Frank and Michael. She is mutually attracted to one boy, George. She chooses four girls, Shirley, Sylvia, Florence and Doris, whom she wants to sit near her and with one of them, Florence, she forms a mutual pair. She is rejected by the other three girls and in addition by Julia with whom she forms a mutual rejection. The sixth girl shown in the chart, Beatrice, is rejected by her.
- Fig. 3. The psychological organization around Julia, shown in Fig. 1, and that around Olga, shown in Fig. 2, are presented together in this chart to indicate how the two girls are interlocked directly and by indirection through the individuals who choose or reject them and whom they choose or reject and who overlap in this pattern of rejections and attractions. This psychological organization demonstrates dramatically that group psychotherapy cannot be effectively applied unless all people around an individual are considered; that usually means therapy of the entire group.

EVOLUTION OF GROUPS



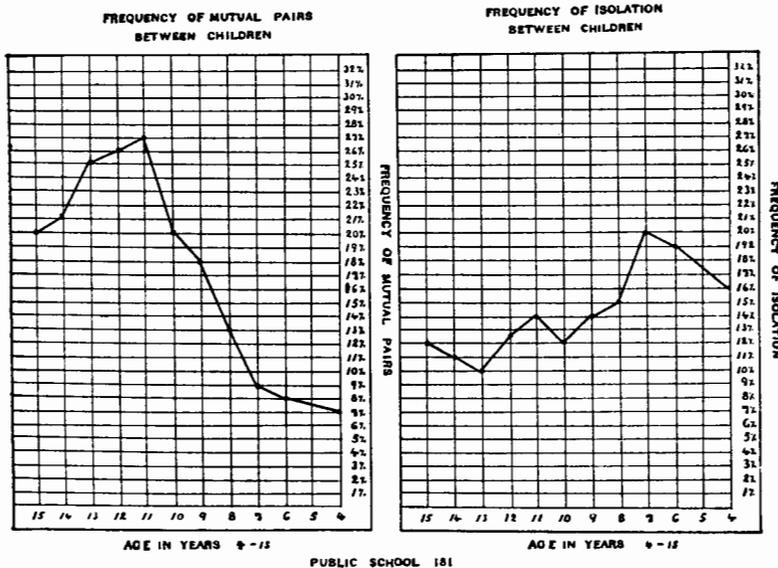
FREQUENCY HISTOGRAM

PUBLIC SCHOOL 181, BROOKLYN, NEW YORK, POP. 1853 (BOYS AND GIRLS)

- Fig. 1. Attraction between the sexes, boys attracted to girls and girls attracted to boys, is represented. This attraction is indicated as highest in the kindergarten, rising to 27% and dropping to 26% in the 1st grade. The ages of these pupils range between 4 and 7 years. In the 2nd grade the attractions fell to 16½%; in the 3rd grade to 8½%; in the 4th grade to 2½%, its lowest level; in the 5th, 6th and 7th grades there is shown a slight increase to 5½%, 3½% and 3% respectively. In the 8th grade, where the ages of the pupils range between 13 and 15 years the attractions rose decidedly to 8%.
- Fig. 2. Initiative on the part of each sex in choosing the other is indicated. From the 1st grade up to the 5th the initiative of the boys in choosing girls is about twice as great as that of girls in choosing boys. In the 5th grade the tables are reversed: girls showing an initiative greater than that of boys. In the 6th, 7th and 8th grades (age range 11-15 years) the initiative of boys and of girls is about equal. (The dot-dash line indicates girls and the plain line indicates boys.)

These four histograms were charted after a part of the data was analyzed. When all the data were analyzed some changes in the percentages were found, although the general trend which they indicate remained unchanged. For further details, see Tables 1 through 5.

EVOLUTION OF GROUPS



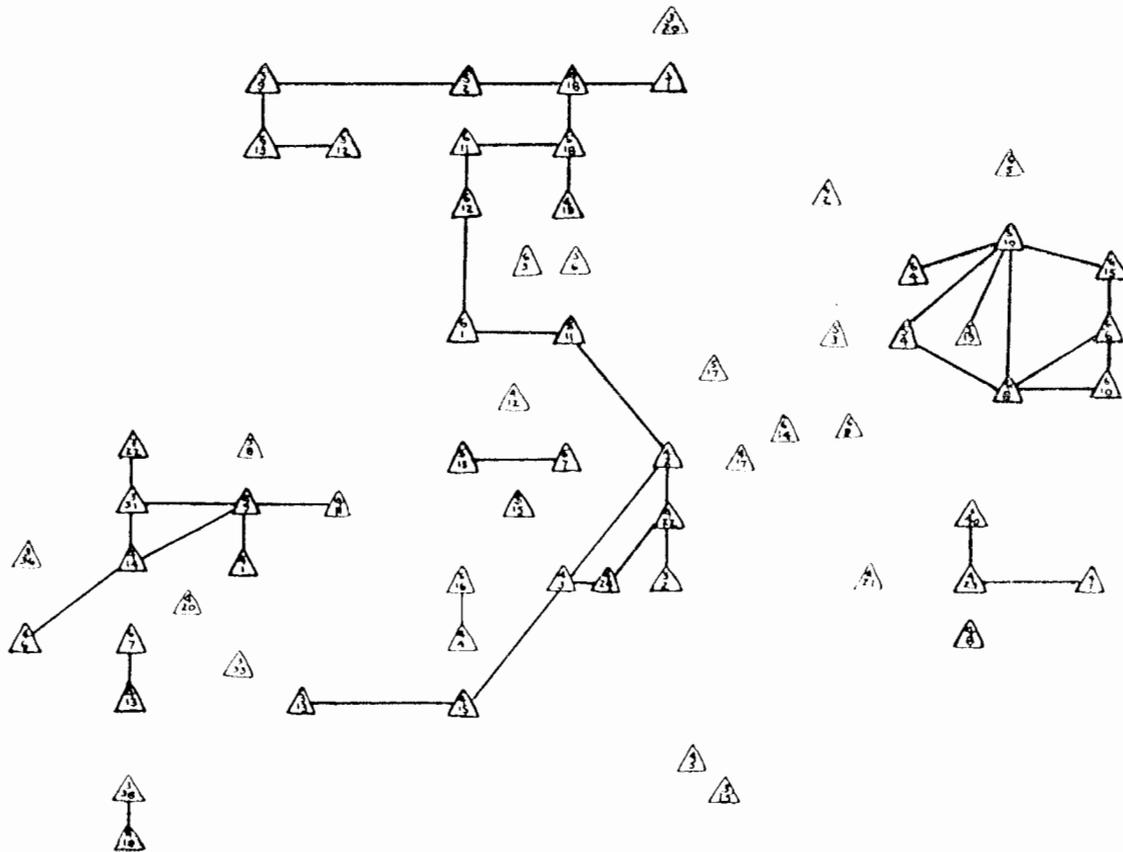
FREQUENCY HISTOGRAM

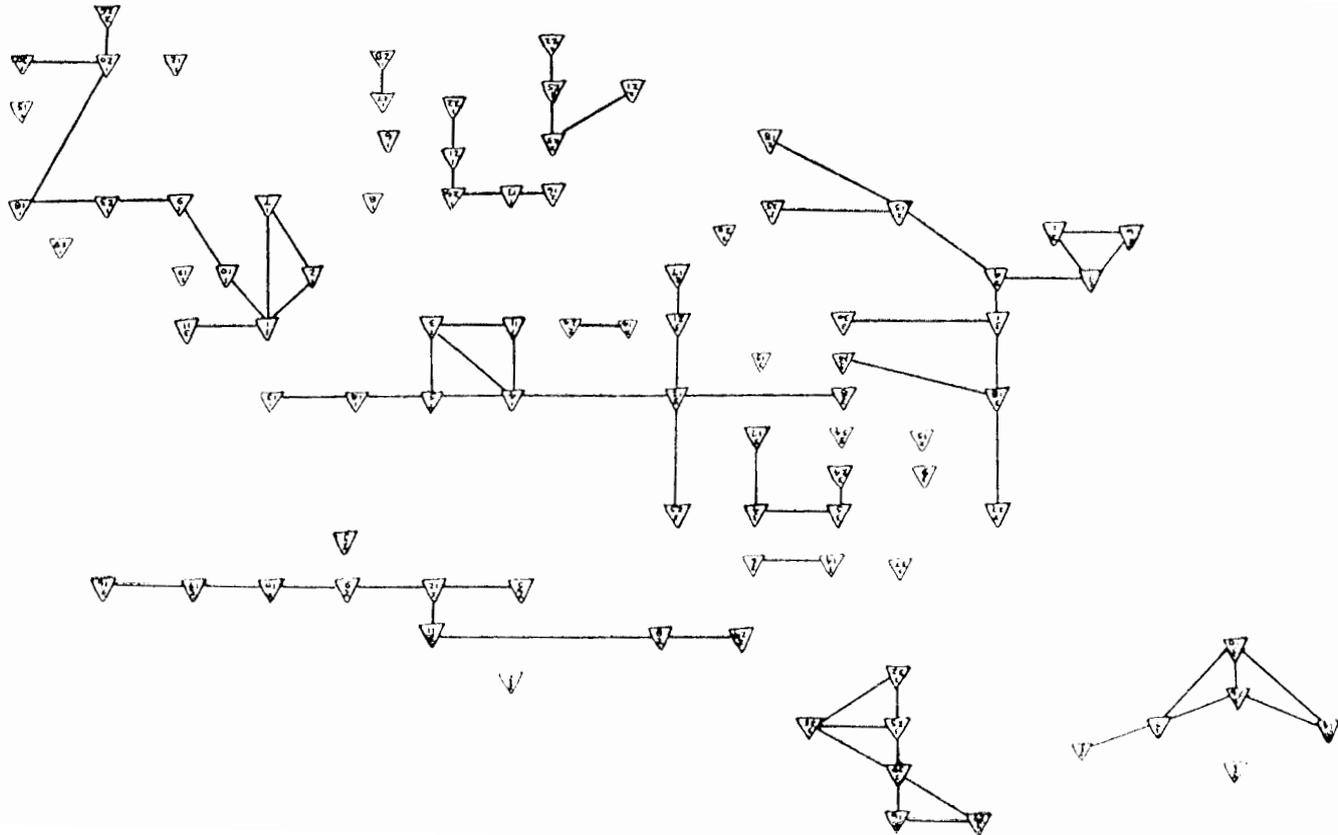
PUBLIC SCHOOL 181, BROOKLYN, NEW YORK, POP. 1853 (BOYS AND GIRLS)

Fig. 3. Mutual attraction between children is represented. The percentage of mutual pairs is lowest in the kindergarten (age range 4-6 years), namely 7-8%; rises to 9% in the 1st grade (age range 6-7 years); rises to 13% in the 2nd grade (age range 7-8 years); rises to 18% in the 3rd grade (age range 8-9 years); rises to 20% in the 4th grade (age range 9-10 years); rises to 27% in the 5th grade (age range 10-11 years); drops to 26% in the 6th grade (age range 11-12 years); drops to 25% in the 7th grade (age range 12-13 years); drops further to 20% in the 8th grade (age range 13-15 years).

Fig. 4. Frequency of isolation among children is represented. The percentage of isolated and unchosen is highest in the kindergarten, 1st and 2nd grades; the ages range from 4-7 years. After 7 years, approximately from the 3rd grade on the percentage drops gradually and reaches a low point at 13 years of age when it tends to increase slightly.

EVOLUTION OF GROUPS
 A PRIVATE PREPARATORY SCHOOL, POPULATION, 153 BOYS
 MAP OF A SCHOOL COMMUNITY
 (For explanatory text, turn to next page.)





EVOLUTION OF GROUPS

A PRIVATE PREPARATORY SCHOOL, POPULATION, 153 BOYS
MAP OF A SCHOOL COMMUNITY

After the data, based on spontaneous choices of the students for each other, with their aversions and the reasons for each had been compiled, the following chart of the entire school was made. Each student is indicated by a triangle in which the upper figure denotes the grade or form. By this means the students may be viewed as a whole, or any part may be seen in its relation to other parts, and to the whole. Many elements have been omitted for purposes of simple presentation here, such as all aversions, all reasons, and what are called "changed choices" made at a later time. Unreciprocated attractions are also omitted, as requiring too complicated a chart. In this chart only mutual attractions are portrayed.

Note the isolated individuals, 34 in number, out of a total of 152; they stand out clearly.

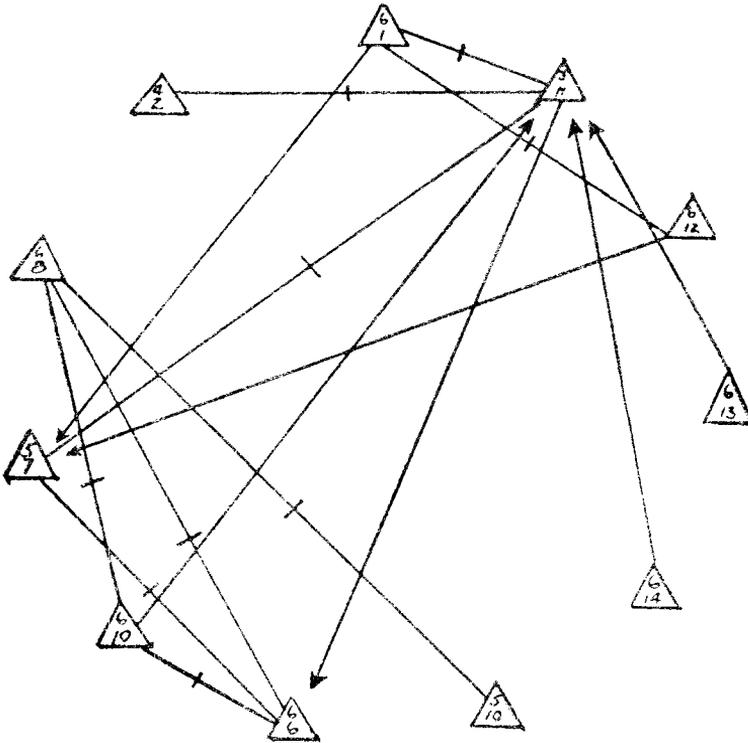
The partly isolated individuals, 22 in number, also appear on the chart, such as the individual 1/30 in the lower right hand corner.

Certain small groups, such as the two in the middle left, which are detached from the main structure, suggest a separate situation for study. Here we have a fifth form boy, 5/14, as leader of a group largely composed of third form boys. The isolated individual, 5/5, and the partly isolated individual, 3/3, seek identification with the group.

It will be noted how the individuals spontaneously group themselves, irrespective of forms, particularly the older students, where a wider participation in activities occurs.

In a group psychotherapy and sociodrama program, attention should be given to the high number of isolates and the large number of cliques producing a community of low cohesion.

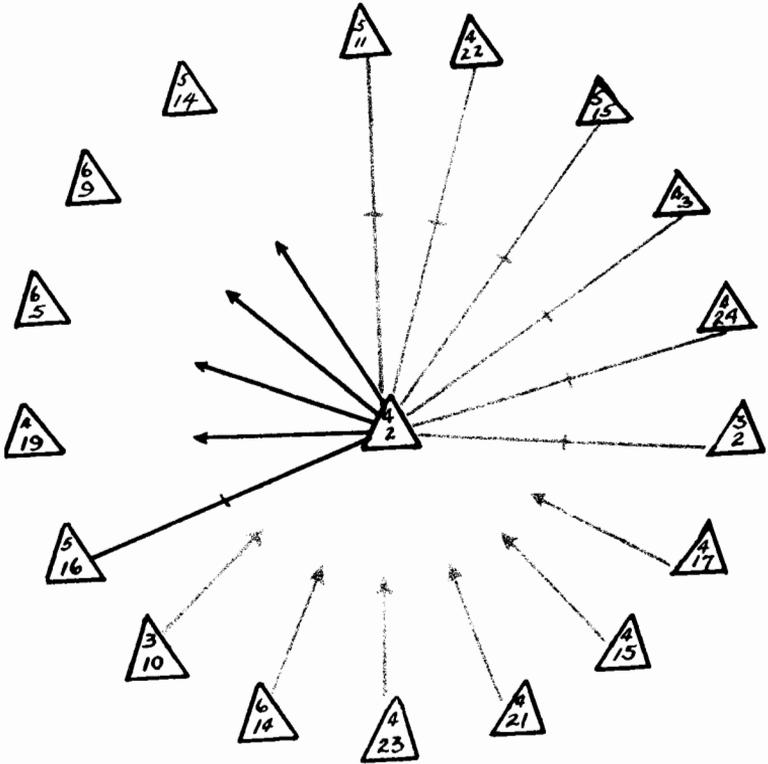
EVOLUTION OF GROUPS



The chart shows a *school fraternity*. Quite understandably, feelings of repulsion are not given frankly by the students because of feelings of loyalty, but nevertheless significant conclusions may be drawn from the fact that two seniors, 6/13 and 6/14, are not desired by anyone in the fraternity in spite of the fact that they were formally elected to join. The individual 5/11 is the center of forces of attraction and is, in fact, the president of the fraternity.

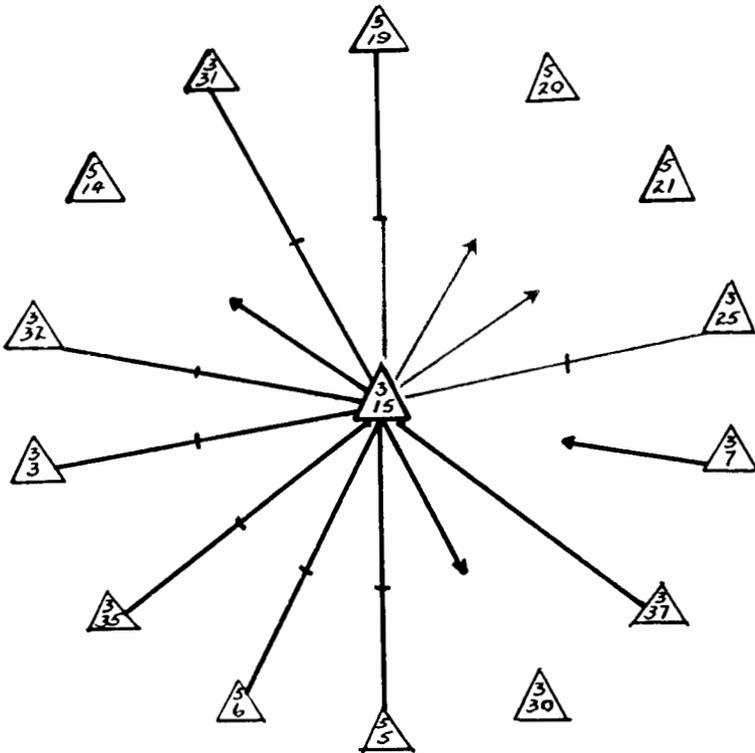
In a group psychotherapy program compare the hierarchic structure of the fraternity with its sociometric structure. The conflict may well be as to what the therapeutic program tries to strengthen: the values of the fraternity system or the sociometric structure which is the cumulative effect of the unorganized protest against them.

EVOLUTION OF GROUPS



The chart shows the position occupied by a *typical leader* in the school. Note that 4/2 has six reciprocal attractions; six additional attractions toward him by individuals to whom he is indifferent; one mutual dislike and four additional dislikes, each of whom feels neutral toward him. This is a high "batting average." The total number of individuals (17) toward whom relations have been expressed in the course of the survey, distributed over four forms, indicates that 4/2 takes an active attitude toward his fellow students and to life and is not on the "side lines."

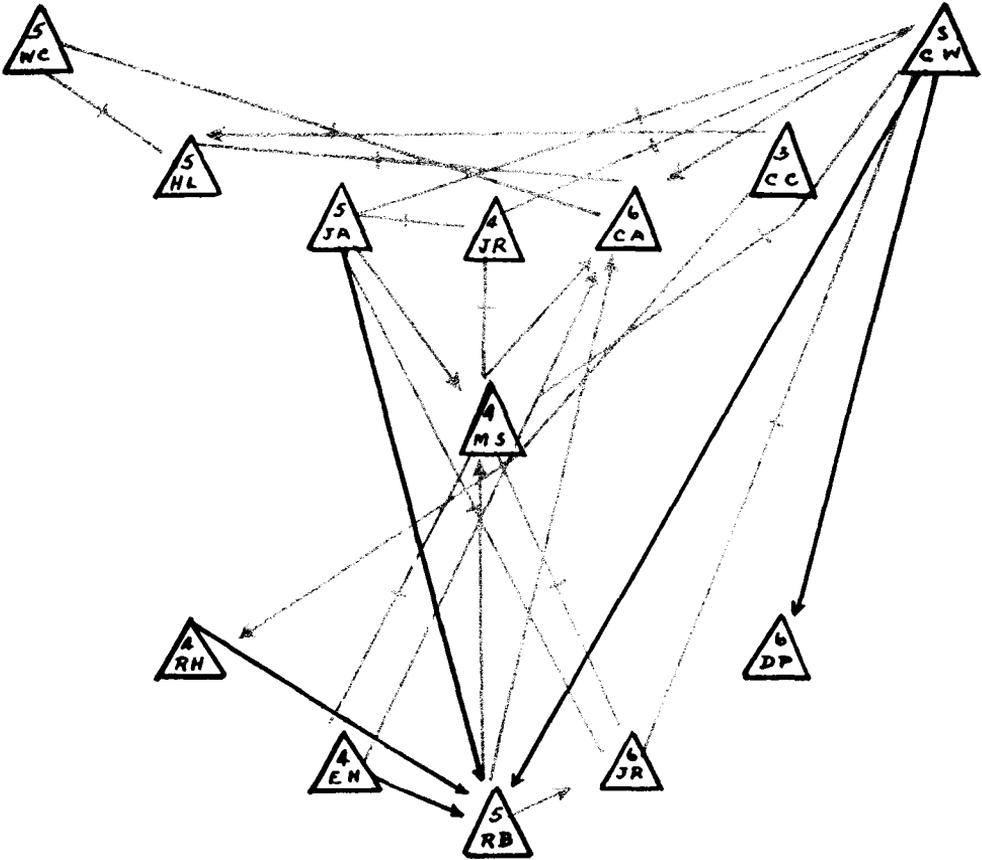
EVOLUTION OF GROUPS



A REJECTED INDIVIDUAL

The student 3/15 arouses active feelings—he is the focus of a great deal of antipathy; he chooses 3/25 and is chosen by him; he also chooses two others, 5/20 and 5/21 who, significantly, are new boys and who are indifferent to him; he further chooses 5/19 who, however, rejects him. This shows that 3/15 has formed only one satisfactory contact in the entire school, while there are six mutual rejections and two which he directs towards persons who are indifferent to him, and another from a person towards whom he is indifferent, besides the rejection from 5/19 already mentioned.

EVOLUTION OF GROUPS



A FOOTBALL TEAM

The chart shows the football team which includes two substitute backs. Note that the quarterback 4/MS is the focus of attraction forces on the team, as he should be, but that fullback 5/RB is chosen by nobody on the team and is rejected by four: 4/RH and 4/EH of the back field, and 5/JA and 5/CW of the line. It is easy to see that when 5/RB is running with the ball he is not apt to get the maximum of cooperation in interference and blocking. (See Map of a School Community, pp. 168-169.)

SOCIOMETRIC SURVEY OF MOTIVATIONS

Through a sociometric survey of the motivations spontaneously given by children we were able to record verbatim the expressions as they were given by them. Using the means of selecting a number of typical instances from the first test of a public school, we here attempt to give in miniature a survey of the material. Each motivation has been broken up into the phrases of which it consists. The frequency of motivations occurring at different age levels in reference to the criterion around which the groups of children were intended can be calculated. Each of these motivations has been evaluated in reference to its meaning in group organization and in reference to the developmental level at which it was found.

KINDERGARTEN

(Ages 4-6 Yrs.)

- | | |
|------------------------|--|
| Neil chooses Loretta: | “She looks nice all the time. She has a nice hankie and a nice dress.” |
| Neil chooses June: | “She takes me to her house and gives me coconut.” |
| Joyce chooses Robert: | “Because he wears so much nice clothes and he always comes around to play with me.” |
| Joyce chooses Howard: | “Because he lives on my block; because all the time when I tell him to come down and play with me 'cause I can't come up, he always does.” |
| Howard chooses Helen: | “Because she's my friend. She's nice.” |
| Lucy chooses Mary: | “She's nice to me. She lets me hold her flowers.” |
| Lucy chooses Rose: | “She's nice to me. She lets me hold her flowers too. Sometimes she lets me play rope with her.” |
| Howard chooses Joyce: | “She lives around my block and she plays with me every day. She's my friend and she never fights with me.” |
| Robert chooses Howard: | “He always comes around my way and he always skates with me and he always calls for me when I come home from school.” |
| Frank chooses Joyce: | “She's my friend. I like her because I want to go over to her house some time. I never went to her house yet.” |
| Frank chooses John: | “Because I like to play with him.” |
| John chooses Joyce: | “She's nice. She says so nice, ‘Miss Harlow, may I go to the bathroom?’” |

- Eugene chooses Daniel: "Once he came around my house and gave me peppermint candy. Then he came around my way and he gave me some candy to give to my brother."
- Eugene chooses Frank: "Because he eats with me."
- Lucy rejects Frank: "He's bad."

BREAKING UP OF THE EXPRESSIONS

<i>In Regard to Sex</i>	<i>In Regard to Level of Motivation</i>	<i>In Regard to Race</i>
. . . when I tell him to come down and play with me 'cause I can't come up he always does.	looks nice has a nice dress wears so much nice clothes	
She says so nice, "Miss Harlow, may I go to the bathroom?"	gives me cocoanut lets me hold her flowers plays with me never fights with me skates with me calls for me want to go over to her house gave me peppermint can- dy eats with me	<i>None.</i>

Conclusions, Kindergarten

Compared with the motivations given in later grades, the utterances of the kindergarten children are extremely naive images which are hardly separable from the accompanying gesture and movement. The mimic-verbal expressions projected as a talking film would present the motivations more adequately. But it is evident that the attractions are definite, however inarticulate the motivations for them may be. Whether or not the phrases given are picked from somewhere and reiterated by the child does not alter the fact that they are used *in relation to a particular other child who is chosen*. Indeed, it appeared that the choice decision and the excitement accompanying the act were greater at this age level than in later years when the children tend to become more circumspect in their choosing and more inclined to think the matter over before making their choices. The kindergarten child instantaneously bubbles over with his choice and with a particular delight as if he were in a hurry to release a pleasant secret. Whether or not the "thinking it over" of the

older child makes the choices more sensible, it certainly diminishes the fresh, spontaneous expression as found in the response of the pre-school child.

Approximately one-third of the choices of the kindergarten population are for the opposite sex. But the motivations given are still so undifferentiated that the motivations for heterosexual choices cannot be distinguished from those for homosexual choices. This does not infer that the sexual feeling is not inherent in the attraction but rather that this feeling does not become articulated except in rare instances. On the other hand, whereas in respect to sex articulation is present although weak, in respect to race and nationality no motivations whatsoever are detectable at this age level. Individuals of different nationality and race attract each other and the distribution of these attractions is as even as if nationality and race were not yet attributes of the individual.

The wild, unreciprocated choosing reflects the role of physical proximity in the making of association and accounts for the predominance of the horizontal structure of differentiation over the vertical structure. The only pronounced vertical differentiation present is the primitive leader structure. The organization of the group is rudimentary. The character of the weakly articulated motivations is esthetic and pre-social.

Whether such expressions as given by children of the kindergarten and 1st grade can be classified as predominantly egocentric (Piaget), or better said, if the notion egocentric is a true duplicate of the actual process, is questionable. They often indicate inarticulate symbolic thinking. In the interpretation of Piaget they appear to be above the so-called autistic and below the so-called logical level of expression, that is, egocentric. In our experimental situations we paid particular attention to what one child thinks of *another*, how he reflects about another in relation to an immediate purpose, and less to what the subjects think about themselves in isolation. We did not consider the verbal expression alone but also the non-verbal, mimic expressions, how a child warms up towards another whom he chooses or how he overlooks other children as if they were not present. In fact, we considered the two phases of expression as inseparable. A very inarticulate, indefinite verbal expression was often accom-

panied by a definite, decisive gesture. We overrate language as a social index if we do not take into consideration the physical and mimic index operating in human interaction. The younger the children the more they emphasize with gestures rather than with words. They project their intelligence through a pantomimic language. The older the children the more they shift their emphasis from the gesture to the spoken word. Formerly the language was a part of their body. Now it is used as a tool. However, also in the higher grades we found a percentage of children who persist in the primacy of bodily action, using words only as an appendage.

It is our opinion that sociometric classification is better able to differentiate the various levels in the pre-socialized period than individualistic classifications as autistic or egocentric. The basis of sociometric classification is not a psyche which is bound up within an individual organism but *individual organisms moving around in space in relation to things or other organisms also moving around them in space*. The tele operates already in the first years of life, however unexpansive or rudimentary its expression in the form of attractions and repulsions. Our sociometric classification formulae on that level simply express the position of an individual within a group of other individuals and things. Below a certain age level, when he has not yet developed the ability to express his affections in so many words, the sociometric classification in the usual sense cannot be made. Activities and movement now replace words and motivations; the sociogram is reduced to an interaction and movement diagram. The objective material itself remains, a living picture of moving subjects and objects.

1st GRADE
(Ages 6-7 Yrs.)

Claire chooses Marion:

"She's my best friend. She comes over to my house lots of times but she goes home very early. She tells me her mother is going to buy a nice toy for me and you. If we meet another girl and I say, 'Let's walk with the other girl,' Marion says, 'No, let's walk with me and you.' I say, 'All right, let's go together.'"

Marion chooses Claire:

"I like her because she always gives me candy when I eat with her. She lends me crayons when I have lost mine. One time she gave me her Dixie cup."

Edwin chooses Lily:

“Because she’s smart. She’s not a chatterbox. She comes to school dressed up nice. She doesn’t scream. She folds her hands nice.”

Lily chooses Edwin:

“Because he’s a boy. He’s a nice boy. He likes me and I like him. Because he gives me things. He goes home with me. He gives me everything what he’s got. He has nice eyes.”

Morris chooses Tony:

“Because he gives me lots of big yellow pencils. He says he likes me. He says he likes me the best of all.”

Tony chooses Morris:

“He eats with me. He helps me build with blocks.”

Morris rejects Francis:

“He takes my caudy.”

Claire rejects Warren:

“Because he hits me.”

BREAKING UP OF THE EXPRESSIONS

<i>In Regard to Sex</i>	<i>In Regard to Level of Motivation</i>	<i>In Regard to Race</i>
He has nice eyes.	She tells me her mother	
Because he’s a boy.	is going to buy a nice	
He likes me and I like	toy for me and you.	
him.	If we meet another girl	
	. . .	
	gives me candy when I	
	eat with her	
	lends me crayons when I	
	have lost mine	
	gives me everything what	<i>None</i>
	he’s got	
	gives me lots of big yellow pencils	
	goes home with me	
	dressed up nice	
	folds her hands nice	
	he has nice eyes	
	helps me build with	
	blocks	

Conclusions, 1st Grade

The motivations at this age level show an increased variety and are clearer than formerly. Besides often having an esthetic character, they include references to third persons and to work relations. Heterosexual and interracial attractions appear in approximately the same proportions and with similar characteristics

as in the kindergarten. Sexual motivations are slightly indicated and interracial motivations are again missing.

2nd GRADE

(Ages 7-8 Yrs.)

Audrey chooses Muriel:

"I like her 'cause she is good, she reads so good. She always says 'Yes' when I ask her to play house with me. She doesn't leave me if another girl comes along."

Audrey chooses Herbert:

"I like Herbert very much. I think he likes me too. I like him 'cause he's fair in everything."

Herbert chooses Benny:

"I met Benny in the class I was in first, long ago. I didn't like him very much and then I got to like him more and more. He used to be bad but now he's getting good. He used to beat up other kids and everything. Now he acts good, like me and some other kids."

Benny chooses Herbert:

"He's nice. He plays nice. Most all the boys like him, he can play ball so good. He can run fast too. He's my best friend."

Muriel chooses Audrey:

"I met Audrey in IA. Teacher put her seat by me. She never laughed at me if I didn't do my numbers right. I want to always sit by her."

Muriel chooses Herbert:

"He likes me too, 'cause he's always lagging around me and wants me to play with him. He never hit me yet."

Herbert chooses John:

"I like John 'cause he makes all the kids laugh."

John rejects Herbert:

"I don't like Herbert. When he reads he makes me almost deaf he reads so loud."

BREAKING UP OF THE EXPRESSIONS

<i>In Regard to Sex</i>	<i>In Regard to Level of Motivation</i>	<i>In Regard to Race</i>
	'cause she is so good, she reads so good.	
	'cause he's fair in everything.	
I like Herbert very much. I think he likes me too.	now he's getting good.	
	now he acts good.	
	'cause he makes the kids laugh.	
He likes me too, 'cause he's always lagging around me . . .	She doesn't leave me if another girl comes along.	<i>None</i>

She never laughed at me
if I didn't do my num-
bers right.

He's nice.
I want to always sit by
her.

Conclusions, 2nd Grade

The occasional development of a triangle at this age level signifies that the children's organization in process of formation is becoming more complex and more finely integrated than formerly. More often the relationships extend beyond those of person-to-person character. The more such structures develop the more the children can begin to liberate themselves from the intimate home group and in particular from the adults of their acquaintance. The child starts to function in a double role, one in his home group, the second in groups of his own choice.

Motivations given in the kindergarten and 1st grades continue and hang over into the 2nd grade. In addition, the children stress the sense of time in relation to the person liked, evaluate his dependability, and give verdicts of moral judgment. Rejections are more sharply defined.

3rd GRADE
(Ages 8-9 Yrs.)

Harold chooses Arnold:

(English) (colored)

"He's my best friend. I knew him before I went to school. He lived acrossed the street from my house. When I first moved there I didn't have any friends, so I saw him and I called him into my backyard. And I said, 'Do you want to be friends?' and he said, 'Yes,' and we started to play ball. Then I was little. I've never been mad at him for three years. We still live near but I moved up the block further. He doesn't get mad right away or rough, like some other boys do. He jokes and fools around a lot. I went to his house about four times. The first time we was in the 2nd grade and he said, 'Do you want to come over to my house to play games?' So we went. Now we always play in the street."

Arnold chooses Harold:

"When I first met him he wasn't quite friends with me, but now he is. When I went to play with him he used to push me down. Then I didn't use to play with him any more for a few days; then he was nice to me. He said to me one day that he'd never fight with me and I said, 'I will never fight with you, too.' One day he lost his lunch and I shared my lunch with him. He likes the sandwiches my mother makes. I like him because he lives near me. He helps me with my homework and he tells me if I make a mistake. Sometimes he tells me the right answer. He rides me on his bicycle sometimes."

Harold chooses Anna:

(Italian)

"She lives about a block from me. I met her in 2A. She was talking to Arnold and so I went over to him and we all started to talk to each other. I thought she was a nice girl. Then we asked her to play punch-ball with us after school in the yard and she did. She was good right off. Even if she couldn't play good we would have played with her till she learned to play good 'cause we liked her. She doesn't play so much with us now outside of school. She does her work good. She's one of the smart girls. She never did anything wrong to us."

Arnold chooses Anna:

"I showed Anna where everybody lives when she didn't know nothing about anybody here. She had just come here. I used to tell her to do things and she used to tell me to do things and that's how we became friends. I help her in number stories. That is hard for her. She shows me spelling."

Anna chooses Harold:

"He's a nice friend of mine. He used to give me plants when he worked for the florist fixing up the cemetery. He was in my class in 2A. We were playing a game and I picked him and then we became friends. He used to like me. I play with him in play-times and I always pick him when it's my turn. Only if he isn't there I pick some other boy. He never chooses other girls either. He's the monitor."

Anna chooses Arnold:

"He's nice. He doesn't hit girls either. Sometimes he lets me water the plants when it's really his turn. I only moved here about two years ago and I knew Arnold the next day after I was here. He was walking around the street and he had a little baby with him wheeling it, and I said, 'Hello,' and he said, 'Hello.' Then I told him my name and he told me his name and then we kept going with each other. He used to play with me mostly all the time but now he plays more with Joseph. I don't know why that is. I feel sad when he goes away from me sometimes. It hurts me. I would like to play with both of them but now mostly girls come after me. Margaret wants me to be her best friend. She says I'm pretty. I like her too and she's pretty, too."

Harold rejects John:

"I don't like him. He talks bad in front of the girls and everybody. He hits the girls."

Harold rejects Rose:

"I don't like her very much. She sits down all the time, doesn't run or anything."

Anna rejects Geraldine:

"When we play ball she gives me such a rotten ball (throw) that I miss; she wants me to miss so she can go up. I'd like her if she didn't do that."

- Anna rejects Carl: "He's fresh and he's rough and he doesn't like girls either."
- Anna rejects her classroom neighbors: "I don't like any of them because they're all boys." (However, she chooses two boys to replace them.)
- Arnold rejects Henry: "He makes all kinds of noises and motions."

BREAKING UP OF THE EXPRESSIONS

<i>In Regard to Sex</i>	<i>In Regard to Level of Motivation</i>	<i>In Regard to Race</i>
We kept going with each other. He used to play with me mostly all the time but now he plays more with Joseph. . . . I would like to play with both of them (boys) but now mostly girls come after me.	I used to tell her to do things and she used to tell me to do things. He helps me with my homework and he tells me if I make a mistake.	When I went to play with him he used to push me down.
I don't like him. He talks bad in front of the girls and everybody. He hits the girls.	I help her in number stories. . . . She shows me spelling. He used to give me plants. Sometimes he lets me water the plants when it's really his turn.	
I don't like her very much. She sits down all the time, doesn't run or anything.	He rides me on his bicycle.	
I don't like any of them because they're all boys.	She does her work good. She never did anything wrong to us.	
I always pick him when it's my turn. . . . He never chooses other girls either.	He doesn't get mad right away or rough.	

Conclusions, 3rd Grade

With the decrease of heterosexual attractions and the increase of homosexual attractions, the motivations given at this age level reveal a more critical attitude towards the other sex. But a warmer feeling towards the same sex is not yet evident. No

restraint is yet apparent in the exercise of choice towards individuals of other nationalities nor are interracial motivations for such choices in evidence. Choices are still made for *individual* reasons.

The children appear to choose associates according to attributes necessary for their joint pursuit of common aims with definite goals. Their estimates are more pragmatic than before. The motivations are given largely in narrative form. With earnestness the children relate how much their friendships mean to them and how badly they feel when the other party seems to be inattentive to them. Here and there it appears in the motivations that a critical point is reached in group development. With the awareness for friendly feelings which are not reciprocated the desire to overcome this dissatisfaction looks for some compensation. We have observed children who are unchosen in the groups previous to the 3rd grade, but little Anna, who, although not unchosen, is aware of her loneliness and expresses it is a novelty because of her degree of articulation. In a spontaneity test this experience could come forth more abundantly and may give clues to the reasons why she is not able to "enjoy" her relations in the group. With the feeling of loneliness the sense for distance increases and a greater awe and fear in respect to individuals who are bigger, stronger, or mentally superior, as adults, or who are different in their physical make-up, as the other sex, begin to dawn in the child. The disappointment about unreciprocated love, for instance, for a parent, does not result in subjective reactions only, as fear, running away, crying, but the child looks for more expression in associations with individuals of his own age than he naturally would otherwise. It can be said that the first total impression of the social group around him may have been the same in its general contours for the child from early infancy on. But as the child grows he develops more differences within himself and becomes aware of more differences in the total picture around him. As long as these differences are experienced in a rudimentary stage they do not affect his emotional reactions and the emotional reactions of his associates, nor, in consequence, his position within the group. The feeling of these differences has to reach a certain saturation point in him and in his associates before it results in repercussions within the group.

4th GRADE
(Ages 9-10 Yrs.)

Donald chooses Nicholas:

(English) (Italian)

"He's the best one in the class. He's such a nice fellow. Always he's jolly. He likes to tell jokes. He's on the football team and is a good tackler."

Nicholas chooses Donald:

"He's always protecting me. There are some older boys who like to make passes at me 'cause I answer them back kind of tough when they call me 'Wop.' My father is always putting his pushcart by the school and when he calls out 'Bananas' or something these kids like to kid me. Donald always sticks up for me. He says he thinks I'd make a good professional football player. I might be that."

Nicholas chooses Ruth:

(Jewish)

"She's nice. She doesn't talk much. She is quite pretty and she says 'Hello' to most of the boys."

Richard chooses Donald:

(Russian)

"He's my pal. He knows a lot about sports. He's interesting to listen to. If you get him mad he has a bad disposition and tries to do nearly everything in his power to get even—starting fights. Then to get over it, he says, 'Let's choose up a game of punchball,' or something. He goes around nice and friendly except when he gets his disposition up. We hang out together practically all the time. He's sort of comical sometimes and other times he's very serious, gets talking about himself. I'd like to sit next to him because of just friendliness."

Richard rejects Leonard:

(German)

"Most of the time he's mad. If you go near him he starts flinging around. He says, 'What's the idea?' He likes sports but he doesn't get the ideas of sports into his head. For a minute he catches on but he gets right off it again. All he's good for is school work."

Richard rejects Harry:

(Jewish)

"He talks a lot. He's comical. Once he was my pal but now I don't seem to like him. He goes with a dumb boy, Louis, who runs with a gang. They never do anything right if they can do it wrong. Outside of school or inside either, they can't be still a minute, always shouting, not nervous exactly but always jumping."

Richard rejects Tony:

(Italian)

"For the least thing he gets mad at you. He's not interesting and he hangs out with bad boys too, mostly Italians. Sort of sneaky. If he can play a trick on you that you won't like, he does it. He and Harry and

Bruno and Joseph used to form gangs and get after children that get A's and B's. They only get C's and D's. If we were playing punchball and didn't let one of them in, they'd start something. The gang was started by these boys' older brothers. The older brothers would tell the younger ones all about it and the younger ones as they got older would follow the same foot-steps. This gang is still meeting and my cousin (age 12 yrs.) says that gang was here ever since he's been here and he's been here five years. His brother says they were here when he was six years old. When we play handball with the younger ones of the gang around our age they get to like us and follow us around and get reformed,—some of them, about a quarter of them. But most of them are fifteen and seventeen years old now because about twenty of the little ones left the gang for good. Some of those who left call themselves still the '35th Street Gang.' They're so ignorant they're not ashamed. They're proud about saying it because their older brothers are in it. We try to explain to them that it's wrong but they keep doing it anyway. The gang uses the younger boys to run errands for them. Some of the older ones work once in a while. But they get fired after a week for doing nothing and coming late. Only one of them had a steady job and he lost it too. Their fathers and mothers give them money to go out and get a job and they spend it any old way. They try to encourage them but they don't care what they do. I know they stole a car once. Some girls who live on that block go out with them. They are older than the boys, I think, and they make themselves look tough by smearing a lot of lipstick and rouge on their faces."

Richard rejects William:

(Irish)

"He can't talk clearly, sort of mumbles, so you can't understand him and it gets on your nerves. He's very clever though, but I don't want to be near him."

BREAKING UP OF THE EXPRESSIONS

In Regard to Level

<i>In Regard to Sex</i>	<i>of Motivation</i>	<i>In Regard to Race</i>
She is quite pretty and she says "Hello" to most of the boys.	is a good tackler knows a lot about sports. interesting to listen to	when they call me 'Wop.'
	He's always protecting me.	
	just friendliness likes to tell jokes	

Conclusions, 4th Grade

The cleavage between the sexes is almost entirely complete at this age level. The boys choose boys very nearly to the total exclusion of girls, and girls choose girls very nearly to the total exclusion of boys. The reflection of this development in their

motivations appears more characteristic and decisive in the 5th grade, where it is discussed. The motivations indicate also the forming of groups in respect to various cooperative aims, open or secret. The children work out schemes to fit reality and often also with the risks involved in life situations. This period marks the first appearance of youthful gang formations operating on a large scale over a long period of time. Such gangs have often a spontaneous and benign character; they are frequently initiated by the children themselves, independently from adult groups and also function independently of them. Choices are made increasingly for *collective* reasons.

Interracial choices appear less frequently but the reason for this is hardly detectable in the motivations. Very seldom is a term expressing racial feelings employed. Individual cases may, at this age level or even earlier, disclose distinct attitudes towards individuals as members of other nationality and social class, but here we emphasize the general trend. Elsewhere in this book the importance of indoctrination, the influence of parents' opinions upon children, is discussed. If, in some cases violently hostile opinions are expressed by parents this may stir up the child's fantasy towards such factors. But the probable reason why even exciting suggestions do not seriously affect the organizations of the groups formed by children up to and including this age level is that the impressions made upon the children by these suggestions are offset in general by their spontaneous attraction to children of other nationalities, especially when the nationalities of the different class members are not disclosed and remain unknown to them. The difference between the sexes is early discovered by the children, but in the child's mind the differences between individuals who belong to this or that nationality overlaps with individual and social factors, so that he is unable to comprehend the adult's suggestion.

Then another element is important. As long as group organization is little developed, the networks binding individuals together are either entirely absent or lacking in continuity at so many points that they cannot be made to function as avenues for shaping opinion. These networks are still rudimentary before the 4th grade and even when the sexual cleavage sets in so decidedly during this period the differentiation of the networks within the

two homosexual sets is still in want of the further differentiation found in the later grades. The adults are able to throw the burning match into the fantasy of the children, but to become a permanently burning flame, to develop into a *collective* feeling, it has to be passed from one child to the other throughout the network.

5th GRADE
(Ages 10-11 Yrs.)

Gertrude chooses Adele:

“Because she is *so* nice, I think. Almost everything is nice about her. She lends me books when I haven’t got any. She keeps in friendship with me a great deal. She’d always help me if I didn’t know a thing. She’s kind to everybody, mostly everybody likes her. She makes a joke sometimes but she isn’t foolish like some other girls are. She’s hardly ever selfish. We may have a quarrel sometimes but the next day we meet we can’t help to say ‘Hello’ and then, of course, we’re friends again. I knew her for one and a half years. She’s hardly ever sulky.”

Gertrude chooses Lillian:

“I have almost the exact feeling I have about Adele. I’m sure I love these girls. They’re so nice, so good. They’re my real, true friends. I could always depend on them and they could always depend on me. I’m very glad she would depend on me because I’d do anything I could for her as long as I could. I met Lillian first and then Adele in the other school and I introduced them and they became very intimate friends. These friends are just somebody else you put close to you instead of a relative, that’s what friendship means.”

Ralph chooses Robert:

“I always play with him because he lives around my way and we have a baseball team. He’s a good sport and doesn’t get mad at the least little thing you do. Like you say something to him he doesn’t like, he doesn’t get mad right away. He can play very good and pitches on our team. When boys get into a fight he stops it and makes boys who are enemies friends. He goes over, makes them stop and shake hands. He’s not stingy; he always helps the other boys and gives them anything he has. Whenever he has anything he always shares it. He acts like he knew a lot, does everything the way he should do it. He’s sort of in-between, not noisy and not quiet. He’s kind to animals and he has a dog and he takes care of it just like he would of a brother. On our team we have twelve fellows, nine regular and three substitutes. Robert and I started it and that kept us close friends.”

Ralph chooses Augustus:

“He has lots of pigeons and he cares for them all by himself. What I like about him is, he shares. He lets me fly his pigeons. He’s good-natured. I have a moving picture machine and we have some tricks. We are trying to organize a club. We have three members already. We charge 5 cents a week and I like the way Augustus is good at collecting the fees. Sometimes he brags about himself and I tell him so. We get along good.”

Sidney chooses Theodore:

(Russian) (Russian)

“He’s one of my best friends and I seem to like him most. He’s a real fellow and yet he’s kind. He found a bird with a broken wing and cared for it till it could fly away. Some boys take advantage of him because he can’t fight so well but I stop them. He has an arm that’s paralyzed but his other arm has a lot of strength on account of that so he can play handball. I have been with him all the way in school except one term since 2A.”

Theodore chooses Sidney:

“When I get into a crowd of boys and they start to fight and I can’t on account of my arm, he always takes my part. I’ve known him since 2A. When they need an extra player and there isn’t anybody to play in a game, he always asks them to take me. We ask each other riddles and all that. I ask him what he learned and I tell him what I learned and we ask each other questions. He has a lot of comical ways about him and can keep everyone laughing. He was told to make jokes for a play, it is so easy for him. He seems to be as good a friend as you can find.”

James chooses Gordon:

(Scotch) (Scotch)

“He speaks Scotch and so do I. I think he was brave to come over alone on a boat and leave his mother there. . . .”

George chooses Chris:

(Greek) (Greek)

“He speaks my language. We’re Greek. We play ‘Cops and Robbers’ together. Chris made a golf course and charged a penny. He has a nice disposition but is sort of lazy. He’s so fat that he can only do things like that well. . . .”

Adeline rejects Anna:

(Italian)

“I don’t like her so much. Sometimes she dresses so filthy I don’t like to look at her. Her hair hangs all over, like most Italians.”

Michael rejects Morris:

(Italian) (Jewish)

“He wants to play with us but we won’t let him. We also beat Norman up because he was on Morris’ side. They’re both Jewish. We beat him up six or seven times. He takes things that don’t belong to him.”

Morris rejects Michael:

“He always brings his friends around who jump on me. I can’t fight him anyway; he wears glasses.”

Helen rejects August:

“He’s colored and very funny acting. I don’t have anything to do with him. I speak to him once in a blue moon. I want to say he never got fresh to me, though.”

Mildred rejects Lydia:

"She is nice sometimes and sometimes I fight with her. She is Jewish and I don't bother with Jewish people. She is nice sometimes though."

Jane rejects William:

"Always digging under the ground to make tunnels and all kinds of houses. Maybe that's not silly but it seems silly to me. He makes up stuff he calls minstrels but I don't see it makes any sense. The teacher laughs with him sometimes and that makes me mad. He's colored."

John rejects George:

"A girl brought flowers to school and they were very nice. But George jumped up and said, 'I'll bring some better than those; that's nothing to what I'm going to bring.' He thinks he's better than everyone else. He's a show-off and he's wild. He comes around and thinks he can hit the boys in the class. He can hit punchball best so he thinks he's best of all."

Russell rejects Vivian:

"If you step on her foot and say 'Excuse me,' she'll stamp right back on your foot. She's always humming in class. If you lend her something she isn't careful of it. Also she talks too slow. I can't stand it how she talks. And she says foolish things instead of nothing."

Edith rejects Antonette:

"She's not honest but I play with her because she's a customer of my father's. She's smart but she thinks she can tell everybody everything."

Adeline rejects Edgar:

"I don't talk to him. When I say something to him, he doesn't know what I'm saying and I don't understand him, so I don't want to sit by him. Other boys call him 'Dummy.' But I don't think it's true. I think he's smart. When he doesn't understand teacher he makes a face and pushes his head forward and the kids laugh and he starts to cry. I don't do that. It isn't right."

Jane rejects Bernice:

"She gets terribly nervous. Then she can't find her pencil box when it's right on the desk. She makes herself think things are hard. She isn't as smart as the rest of us. I'd get to fussing if I were seated by her."

Helen rejects Gloria:

"She is too quiet and she is the teacher's pet. When I'm tired I go around with her and I know she won't jump around. She star-gazes. We all tease her and she won't get angry. She likes to play with dolls. She thinks adventure is sitting on the grass and talking. And that seems like just talk to me."

Ruth chooses Gloria:

"I like the way she talks. She comes from Buffalo and has an accent. She talks very fancy like. I try to get it. She is pretty and chubby-like and quite much fun to listen to. She is always thinking up things with her imagination."

Roberta rejects Bertram:

“He talks to himself and mumbles when he is working. He has firey red hair that doesn’t look nice and he cracks jokes when he is not supposed to. He is funny and no one will sit next to him.”

Roberta rejects Clifford:

“I don’t bother with him at all. He is always sleeping. The teacher claps her hands and then he jumps up. Maybe he is not sleeping but he looks that way.”

Miriam rejects Matthew:

“He is fat and funny. We call him the fat fellow in Our Gang comedy. Even the teacher has to laugh at him. He sits in back as the seats in front are too small for him. His belly goes out too far. I don’t want to be near him.”

Miriam rejects Peggy:

“I keep up a smile so I won’t show I don’t care for her. I used to like her but when I see how she is always slapping her little sister I don’t like her any more. She is fat and talks too much. She won’t play, she is afraid she will reduce. When she does anything she tells you about it.”

BREAKING UP OF THE EXPRESSIONS

<i>In Regard to Sex</i>	<i>In Regard to Level of Motivation</i>	<i>In Regard to Race</i>
	She’d help me if I didn’t know a thing. She is kind to everybody . . . hardly ever selfish.	He speaks Scotch and so do I. He speaks my language. We’re Greek.
	I could always depend on them and they could always depend on me.	Her hair hangs all over like most Italians’.
	He’s a good sport . . . can play good . . . not stingy . . . always helps . . . always shares . . . kind to animals.	They’re both Jewish. He’s colored and funny acting.
	He acts like he knew a lot, does everything the way he should do it.	She is Jewish and I don’t bother with Jewish people. He’s colored.
	he always takes my part.	
	We are trying to organize a club.	
	I like the way she talks . . . fancy-like.	

I don't understand him.
 I'd get to fussing if I
 were seated by her.
 She's too quiet . . . star-
 gazes.
 He talks to himself and
 mumbles when he is
 working. . . . He is
 funny and no one will
 sit next to him.
 He is always sleeping.
 He is fat. . . . His belly
 goes out too far.
 she talks too slow. I can't
 stand it how she talks.
 she is always slapping her
 little sister . . . is fat
 and talks too much . . .
 won't play . . .

Conclusions, 5th Grade

In the 5th grade the intersexual choices are almost totally missing. The group is now split up into two homosexual units. The motivations are often based on similarities of traits, physical and mental, of social standing and of interests in common pursuits. In the boy groups we find warm attachment tending towards hero worship; in the girl groups, attachment tending towards devoted emotional friendship. The rejections are specifically motivated, well articulated and based largely on differences, physical and mental. Prejudices in respect to the nationality and the social affiliations of certain rejected individuals are frequently reflected. At times we recognize an ambivalent choice. Such ambivalent feeling is not always true ambivalence, as between Mildred and Lydia; it reflects a conflict of two criteria, the conflict between the homosexual and ethnic criteria. In such cases, if the individual would have been asked to express the two preferences independently, one for sex and the other for nationality, the ambivalence would have been dissolved in an attraction towards another individual of the same sex and in a rejection towards an individual of a different nationality. The number of interracial choices declines considerably in favor of *intra*-racial choices and of *intra*-nationality choices. The trend is towards a still greater cleavage within the two homosexual groups into divisions along

the lines of nationality and social class (poor or rich, neighborhood of residence, etc.).

6th GRADE
(Ages 11-12 Yrs.)

Stephan chooses Max:

"I play with boys all older than me and I criticize them and he stops them from hitting me. . . . When I first came to the school he was the one who helped me with everything. I always play with him. He's good to play with 'cause he doesn't ever try to cheat you. He's the same nationality as me, too. He's not selfish and whenever he has anything he gives you half."

Gertrude chooses Mae:

"She's Polish and Jewish like me and she's a very nice girl. Her mother and my mother cook the same way and we wear clothes almost just alike. We go to the movies together and her aunt lives in the same house as I do."

Gertrude chooses Eleanor:

"I like her for the same things almost. Only her nationality isn't the same as mine. . . ."

Betty chooses Barbara:

"I'm fat and when I try to be nice to anybody they don't seem to like me. Barbara is fat too and I like her because she has a lot of sense. She doesn't get a temper up like I do if she is teased. She's patient. I'm not and I guess that's why I like her. She always tells me not to get mad so easy."

Madeline chooses Marietta:

"She is about my size and my age. I like to walk with her 'cause I think we look nice together. She isn't noisy or rude, only once in a while she is rude unconsciously, which means she doesn't know she is rude herself. She is willing to play games that are gay and with a lot of action. We like to help each other. She is truthful. Also if you ask her to bring you something she will bring it even if she has a lot of other things to carry just the same."

Joel chooses Gunther:

"I keep tropical fish and I collect stamps and Gunther likes to see my things. He seems to be interested in them and that's what I like about him. He isn't only always wanting to play baseball. I don't see very well so I like to do other things than play sports."

Samuel chooses Daniel:

"He is comical. Once he is your friend he is very loyal to you. He doesn't brag about the pictures he makes although he is about the best artist in the school. Especially airplanes, he can draw wonderful. I don't speak very good English yet and he helps me with it. Then he makes a joke about it when he is correcting me and I don't mind because of the way he does it."

Lucille chooses Anita:

"She's more companionable to you. She's different, has more personality than most people. And she's refined. She doesn't think she's better than

other girls, either. Some, if they were like her, would start bragging but she isn't that kind. She minds her own business. When she says something you know it's the truth and you don't when some girls talk. Mostly too, she isn't bossy."

Anita chooses Doris:

"Everyone says she's nice and I think she is too. She has a nice family and a room by herself. We play actresses together. When you play with her, she is ready to take her turn. Like at games she will give up the ball right away. She doesn't say things to hurt you, saying 'You're no good,' like her cousin does."

Victor rejects Philip:

"He has big ears and laughs like Joey Brown. He has a big mouth like him too and all the kids make fun of him because he walks flat-footed. He's smart in school but I don't care for him."

Myrtle rejects Josephine:

"She is forever mad but not saying what kind of people get her mad. She considers herself higher than anyone else and she bosses everything."

Stephen rejects Felix:

"He always plays with one fellow and then another. He doesn't keep up a friendship right. He's a sissy. He always plays with the girls and gips them too."

BREAKING UP OF THE EXPRESSIONS

<i>In Regard to Sex</i>	<i>In Regard to Level of Motivation</i>	<i>In Regard to Race</i>
	plays fair. He is very loyal to you. He's not selfish.	She's Polish and Jewish like me and she's a very nice girl.
He's a sissy. He always plays with the girls.	She is about my size, and my age. I like to walk with her 'cause I think we look nice together. I'm fat . . . Barbara is fat too and I like her.	He's the same nationality as me, too.
	I keep tropical fish . . . and he seems to be interested. I don't speak very good English yet and he helps me with it. We like to help each other. We play actresses together.	

He doesn't brag about
the pictures he makes.
She doesn't say things to
hurt you.

He has big ears and
. . . a big mouth . . .
He is smart . . . but I
don't care for him.
She considers herself
higher than anyone else
. . .
He always plays with one
fellow and then another.
He doesn't keep up a
friendship right.

Conclusions, 6th Grade

The complete dominance of homosexual choice reaches a climax in this grade. A trend towards intra-racial choice continues to be evident. Motivations for the choices are expressed with greater sureness and distinction on the similarity of traits and common interests in the same activities. Motivations for rejecting members of different nationality and racial groups are present (omitted in this text).

7th GRADE (Ages 12-13 Yrs.)

Jean chooses Henrietta:

"I think I like her because she has the same ideas I have. We both love to write. And she isn't silly about boys like Pauline and Eileen and Winifred are. We like boys all right but we don't like to be silly about them. Everybody used to snub me because I was from Sight Observation class but since Henrietta goes with me they stopped. She helps me read small print and is the only one who comes over and does it of her own free will before the teacher asks them to. We are both quite serious."

Jean rejects Lillian:

"She always moves away from me when she's supposed to sit beside me. I think it's because she's prejudiced against me on account of my nationality."

William chooses John:

"We play handball together. He's a fair dealer, not like some wise guys, picking fights and cursing. He's something like me. We're Irish and his mother is dead and my father is dead. He's a good guy. If we could sit together in class I think we could get along and wouldn't quarrel. He ain't sneaky, don't say he likes you one minute and don't the next. You can tell him a secret and he won't go around and tell everybody. He'd give you anything, even his last cent. Most of the time he's jolly."

William chooses Eileen:

"She suits my taste. She's got more sense than other girls. She's not bashful, though she is a year younger than me. She dresses nicely. A kid in class knew her and we started jumping rope with her for fun. She just says 'Hello' when she sees you on the street and doesn't make you feel funny in front of other boys by making fun of the way they talk when they know a boy likes them. Now it's basketball time so I don't have time to see her. She is about my size and she has blonde hair and blue eyes. That's my taste, it's what I like."

Eileen chooses William:

"Most of the girls in the class like his eyes. I think he's the best boy in our class. He's smart. I think he is handsome. I'm the only girl he speaks to because most of the girls are babyish and he doesn't like that. I'm allowed to go to the movies with him and once I had him to my house for supper."

Sadie rejects Eileen:

"She puts on her red beret and pulls her curly hair out and makes up to some boys and says she just wanted to look nice for herself and we don't believe it. She acts dippy sometimes. One minute she will like you and the next she is sore. She has certain moods."

William rejects Viola:

"I don't like her. She's colored. I haven't got anything against her but I don't want you to put her next to me."

Eileen rejects Viola:

"If anything should happen to a kid, like he is put back, she is right there to radio it with her big mouth."

BREAKING UP OF THE EXPRESSIONS

<i>In Regard to Sex</i>	<i>In Regard to Level of Motivation</i>	<i>In Regard to Race</i>
Most of the girls in the class like his eyes.	She has the same ideas I have. We both love to write . . . We are both quite serious.	We're Irish. I think . . . she's prejudiced . . . my nationality.
She is about my size and she has blonde hair and blue eyes. That's my taste, it's what I like.	He's something like me . . . his mother is dead and my father's dead.	I don't like her. She's colored. I haven't got anything against her.

Conclusions, 7th Grade

The motivations at this age level have become more penetrating and occasionally choices are made motivated by complementary attributes. Intersexual choices begin to reappear. The motiva-

tions for them have near-adult characteristics of sophistication. Intra-racial motivations are again present (in general omitted from this text).

8th GRADE
(Ages 13-14 Yrs.)

Evelyn chooses Ruth:

"At first I thought she was fresh and was trying to snub me. But gradually I found that she is neither fresh nor high-hatted but sweet and not stubborn. She has a nice personality, just draws you to her. None of us three (Evelyn, Ruth, Elinor) have boy friends but we talk with boys. I prefer a girl to a boy as a friend and so do Ruth and Elinor. I'll try to be her friend all my life, even when I'm grown up."

Evelyn chooses Elinor:

"I like her less than I do Ruth. She is very stubborn and fresh. If she wants to go to a certain show she won't give in. We have to follow her. But I like her very much though. She is also Jewish as I am and my mother wants me to go with Jewish girls. She is very sympathetic, too. She has funny ways about her. She thinks sometimes she is not wanted. I have a pity for her a little bit. She is so tall and thin and she is not so smart as Ruth is in school. She's bashful and it takes long for her to get chummy with people. She will express her opinion about people to us but not to their face. If she doesn't get what she wants she will insist on it and she is willing to spoil us from having a good time if she gets annoyed. But she is very fair and I am very fond of her. She bites her nails and Ruth doesn't do that. She is more shy with the boys than I am because she thinks they don't like her as she is too tall and not pretty."

David chooses Marie:

"About the 3A I noticed her and she seemed to be the highest of the girls. We talked to each other then. In the 4B she got skipped and left the school and just came back the beginning of 8B. I hardly ever see her as she's not in my room. She's better looking than the majority. Curly brown hair at the ends, blue eyes, same height as I am. I'm interested to become friends with her. I don't know her well yet. I used to in the lower grade but she seems to have forgotten. She's my idea of what a girl should be like."

Stanley chooses David:

"I was in 7B4 with him; I was new and he treated me better than all the other fellows did. I like the things he does. So do the teacher and the other pupils. Now he is my best friend. He has a very nice nature about him. Sociable. He is sort of like me. He wants to know everything and to talk out enthusiastic. He has a handsome face for a boy of his age. Only thing is he walks with his head bent down to the left as he can't see very much out of the right eye."

Dorothy chooses Peter:

"I met him while he was head monitor. At first I didn't like him at all and all the other girls liked him. I thought he had too many friends. I

was taken out of line one day for talking and brought up to him. He walked me home that day and from then on I began to like him. I see him a lot in school. He has asked to take me out. I like him a great deal. It's mostly his looks that I like. He has a nice disposition and he's not fresh to girls."

Richard chooses Roger:

"I admired him at first because he played for the best team. In some ways he isn't so good a sport. Like if you hit him he gets mad. I just took a sudden liking to him. Every time you see him he has a smile on his face and if you see him often you just get to like him. I like his gameness. Like when the circus was in town he suggested we sneak in."

Albert chooses Rose:

"She once sat next to me in class. She just appeals to me. For these last two weeks I don't walk home with her because we had kind of an argument. I dropped my baseball glove and she kicked it and the boys kidded me. She doesn't pay very much attention to me."

Shirley chooses Florence:

"I like her company. She's a little more intelligent than I am. She's most agreeable. I've never disputed with her yet. She seems to me a little more mature than I am because she worries about what her friends will say about her and I couldn't be bothered about that. She is a leader. I am a leader, too, and we never try to boss each other and that's why we agree. We both like dramatics very much. We both want to be at the head in studies too. She's much better looking than I am and she's not conceited about it. She's interested in Olga who lives with all grown-ups and that's why she acts so grown-up. She's good in dramatics but I think I'm still a little bit better, though, in that."

Albert rejects Alexander:

(Irish)

"Most people don't like him. He is more Irish in his ways and our class don't like that. He talks a lot, argues, and fights, and is awful loud in gym when something happens."

Richard rejects Clara:

(colored)

"She's one of the worst, sloppy, and when she gets mad you know it."

Stanley rejects Erma:

(Jewish)

"I disliked her from the first time I saw her. It was just her manner; she thinks a lot of herself. She's Jewish. She isn't very clean either."

Patricia rejects Carmela:

(Italian)

"I'd get Hail Columbia if my mother saw me going with any of them Italians."

Norman rejects Anna:

(Jewish)

"I think it's her face. Her nose is the most prominent part of her face. I felt a little disgusted the first day I saw her, the beginning of this term. Her face is typically Jewish and my family doesn't like Jews. I was brought up that way. I was sort of conscious of it for the last three or four years. Her hair is long and stringy. She talks with a Jewish accent. She's a pain in the neck. I think boys don't like her at all. I have never spoken to her. She never did anything to me and I never heard anything about her from anyone but that's how I feel about her."

Blossom rejects Eva:

(colored)

"She doesn't make friends with white girls. She has a horrid body odor."

Ira rejects Tony:

(Jewish) (Italian)

"I don't want to be his friend. I don't take to Italians. I get antagonistic. I'm usually on the outs with him."

Ruth says of Waldo:

(colored)

"He's good. He's so polite and humorous, willing to do anything. Doesn't get sore if he is scolded. He knows if he's wrong he's wrong. Also he is brilliant. Everybody likes him. The girls like him too, even if he is colored. I wouldn't mind to sit by him but I chose my best girl friends first."

Ruth rejects Eva:

(colored)

"Nobody cares for her. She's not clean. Even other negroes ignore her. She is conceited too. Thinks she has a beautiful voice. She sings loud as she can. I asked Waldo why they don't like her and he said she was a Western negro. I know she works after school. She has no father or mother."

Edward says of Kate:

(colored)

"She hangs out with two other colored girls and if she didn't do that I'd think she was better, but still I can't say I'd like her because she'd still be colored. The other two girls like to fist-fight. You'd think they were boys to watch them. And Kate tries to get them to stop so they are always trying to get rid of her but she hangs on to them. She's neat as any white girl but dumb to go with people nobody likes."

Harriet rejects Marie:

"I would like her but her manner of speech annoys me. She lisps. She also has funny little habits which annoy,—shaking her head and snapping her fingers."

Paul rejects Charles:

"I guess he'll be flunked. He hands in dirty, sloppy papers. He's not low or rowdy but just dumb. He isn't right in the brain. Plays with pencils and makes believe they represent something."

David rejects Arlene:

“She calls me ‘Steeplechase’ and that gets me sore. I run a lot.”

Stanley rejects Augusta:

“She always comes up and says ‘Hello, Blondie,’ and makes me feel funny.”

Stanley rejects Andrew:

“I like to make things, machinery and wagons and little furniture and he is so clumsy he breaks them when you’re showing him how to do something. Only thing I like about him is his way to talk. He’s a Southerner.”

Augusta rejects Arlene:

“I can’t tell what it is about her but it gives me the shivers. She walks as if she hadn’t any backbone.”

Ruth rejects Sally:

“Nobody likes her in our class. She’s a nosey-body. Not smart at all, not good for athletics even. Doesn’t like to read or sew or do anything. Really, she’s useless. There’s no life in her. She looks at newspaper comics and she bounces her ball and she’s sixteen.”

Ruth rejects Susan:

“She is a little evil-minded. She curses and has the boys chasing after her. Her mind is never off the boys. She is always talking about them.”

Ruth is indifferent to Constance:

“She can’t do much because she’s crippled. She’s so quiet you wouldn’t know she was in the class but she is sociable sometimes. She reads serious books and is always planting her garden with flowers. But when she talks she isn’t interesting. It is always an awkward silence if you are talking to her.”

Conclusions, 8th Grade

The rise in the number of intersexual attractions in the 8th grade results from the fact that a number of boys and a number of girls transfer the dominant part of their affection from their respective homosexual group to which they had been previously attached. More or less loosely knit chain relations break in between the large homosexual units towards which the majority of the members continue to gravitate. However loosely knit these chain relations between boys and girls may be at this age, they present the potential organic basis for sexual or non-sexual boy-girl gangs. The group organization discloses that at this developmental level the group is organically predisposed to develop mixed gangs of boys and girls without the need of older individuals to initiate and direct them.

Compared with earlier age levels (except for the incipient signs found in the 7th grade), this is a novelty. These inter-sexual structures appear from a static point of view to be similar to the intersexual structures in the 1st and 2nd grades. But from a dynamic, developmental point of view they have a different meaning because they appear *after* the homosexual cleavage from the 3rd to the 8th grade has affected and shaped group organization. The new heterosexual attractions had to overcome the resistances coming from the homosexual bondage individually and collectively developed. The cooperative gangs in the 4th-5th grade age levels are uni-sexed, and heterosexual attachment or collaboration in earlier grades is usually a person-to-person relation predominantly and not a group relation. The recurrence of heterosexual gravitation in the 8th grade is prophetic of a renewed and more persistent attack of the heterosexual tendencies against the homosexual tendencies in group organization which throughout adolescence marks the group life of the individual up to maturation.

The motivations of the children at this age level appear exceedingly mature. They can well compare with motivations we have secured from high school children.

To the summary given after each grade, we may here especially emphasize the technique through which the interracial attractions have been ascertained. The sociometric test had been given to all individuals of a community or school in respect to such criteria as are of practical significance to these individuals, to live in proximity, to work in proximity, or to study in proximity. In respect to each of these three criteria, three different structures of the given community result. The evidence thus gained through the sociometric test can now be used for the uncovering and interpreting of affinities and disaffinities which may underlie these spontaneous choices.

The evidence has been used to uncover, for instance, whether any intersexual frequencies dominate the interrelations. These frequencies were then studied in respect to the three different criteria to reveal what modifications sexual attraction undergoes when the function of the group and the position of the member in the group have changed. Throughout the testing the subjects are unaware that their intersexual choices may undergo analysis.

The findings have been used also to uncover and interpret whether any frequencies in respect to nationality or race dominate the interrelations. Again, the subjects are throughout the testing unaware that their interracial or intraracial choices may be used to study racial tensions in groups. This fact of the populations tested being taken by surprise gives the findings a great spontaneity value. There was never such a question asked as, "Do you like negroes?" or "Do you like this colored boy or that Italian girl?" Nothing of this kind entered or needs to enter into the sociometric test. *All expressions indicating racial feeling were given by the children spontaneously; not the slightest provocation by the tester was allowed. The only criterion of the interview was: Why do you want to sit beside the pupils you have chosen?* In the course of the interview it is also disclosed what reasons they have for not having chosen their present neighbors and what reasons they have for not having chosen certain other individuals about whom we know that they have chosen them. The tester simply charts the relations between the individuals as members of two sexes or as members of particular nationalities, just as he charts their relations as members of a home group, a classroom group, or a work group. The sociograms and the analysis of the motivations given by the members of contrasting nationalities offer a growing insight into the processes which underlie the development of racial cleavages.

INTERPRETATIONS

The three directions or tendencies of structure we have described for baby groups, organic isolation, horizontal differentiation, and vertical differentiation, are fundamental features in the development of groups. We find them appearing again and again, however extensive and complex the groups become. But the earliest developmental points at which sex, nationality, or other specific factors begin to affect group organization is in need of further investigation.

In the groups from 4 years on (through 15) the attraction of the sexes for each other appears highest in the kindergarten, 1st and 2nd grades, declines sharply after the 3rd grade, not to show any appreciably marked increase again until the 8th grade. This indicates the restraint of both sexes up to the age of puberty and

the significance of the restraint upon group organization. The lowest number of mutual pairs and the highest number of isolated children in the public school are found in the kindergarten, 1st and 2nd grades, indicating that children of this age are seldom sufficiently certain whom to choose. This suggests the need of more protection for them than in later years. The high increase, on the other hand, of mutual pairs and more complex structures from the 4th grade on suggests that children of this age exchange emotions readily and freely form partnerships and secret associations. It suggests that the organization which young children and adolescents form among themselves comes more and more to compete in influence with organizations which adolescents form in relationship to adults. Proportionately, the influence of adults upon children, compared to the influence of children upon children, may be beginning to wane. This may account for the fact that the teacher's ability to recognize the position of the most desired and of the least desired boy or girl in her class is to a large extent inaccurate. The teacher-judgments concerned only the extremes in position. The average positions of individuals are, it is evident, far more difficult to estimate accurately. The intricacies of the children's own associations prevent the teacher from having a true insight. This fact appears as one of the great handicaps in the development of teacher-child relationships.

The further increase in pairs and more complex structures for the age levels 14 to 18 years compared with the findings of the grammar school group indicates a still growing differentiation of group organization with increase in chronological age. But parallel is also an increase in the number of the isolated. This is still greater than the highest number found in the first grades of grammar school. At the 4-7 year level the unchosen child appears to be "left out," forgotten. It does not appear, in general, left out because of being disliked or rejected by the members of the group. The unchosen children as they are found at later age levels, particularly after 13 years, appear so not only because they are left out by the others but in numerous cases due to the attitudes members have formed in respect to each other.

The periodical recurrence of heterosexual and homosexual tendencies among the members of a group produces an effect

upon group organization. The heterosexual cycle between the ages of 4 and 8 is displaced by a homosexual cycle between the ages of 8 and 13. Then a new heterosexual cycle begins apparently overlapping a second homosexual cycle. The homosexual tendency which can be deduced from the high number of mutual pairs among the boys of ages 14 to 18 would probably appear to be curtailed and sharply displaced by a high number of pairs between boys and girls if they would have been participants in mixed groups. Among adult groups a further greatly increased complexity is probable and that these structures break down into simpler ones in the period of senescence.

The organization of a class group in the early school grades presents the initial beginnings of structures which become increasingly numerous in the next succeeding grades and, *vice versa*, an organization of a higher grade still retains scant remnants of structures which have been numerous in the lower grades. For instance, 30 pupils of kindergarten B formed 3 pairs. In the 2nd grade B1, the same number of pupils formed 15 pairs. Structures of attraction between the sexes were formed by 25% of the pupils in this kindergarten. In 4th grade B1 only 2% took part in such structures. This interdevelopmental growth of group distinctions can also be observed through the study of the development of the same group from year to year.

The organization of groups in which mentally retarded prevail reveals numerous unreciprocated choices, a low number of mutual pairs, and many isolates. It resembles the organization produced by children of pre-school ages and in the early grades of grammar school.

The evolution of social groups opens the way to a classification of individuals according to their development within them which in turn makes possible the construction of social groups. We have demonstrated that chronological age or mental age does not point out to what social group an individual belongs or should belong. A sociometric test is necessary to determine his position in this respect. Our public school classes are at present formed according to chronological age, mental age, scholastic progress, or, occasionally, according to a combination of these. The sociometric position of the pupil within the school and within the groups in which he moves is neglected. A grouping of individuals

may not become desirable as a social grouping although the members have studied or worked or lived together for a time, or although they appear to have a similar intelligence level, are of the same religious or nationality affiliations, and so on. The subjects themselves, in this case, the pupils, have attitudes towards one another which are crucial for them and for the social grouping. Their own feelings have to be considered in the forming of social groupings to which they must belong. And this leads, when systematically carried out, to sociometric testing.

If the sociometric test is performed on a large scale and the findings studied in relation to behavior, our knowledge of the more desirable organization for children at various age levels will become more accurate. At the end of the school term the sociometric test can reveal what organization the pupils within the classes have developed. Certain patterns of organization discovered through continuous sociometric testing may indicate undesirable prognosis for the future development of a group or of certain individuals within it notwithstanding that the scholastic progress of each individual and his conduct is satisfactory. It can be predicted that the study opens a way to the recognition of delinquency in its initial stage and provides a scientific method of diagnosing its predisposing causes and of developing preventive measures. It locates for us the time points in the child's group development at which preventive measures are offered the possibility of successful application. The sociometric testing of the population of so-called delinquency areas (home, school and neighborhood groups are among its various components) in cities may furnish the psychogeographical evidence upon which constructive measures can be based.

CRITICAL REMARKS

When the first public school test was given the majority of the pupils had been together in the same class for three months. The test ought to have been given to the same class group in regular periods from the time of their initial formation into a class. As this was not done we do not know how persistently the same pattern would have appeared from month to month or over a longer period. The test was administered to all the pupils of the

school at the same time in the school year, more than three months after they had entered. Thus the period of time of their being together was equal at least for the majority of the pupils. Many of the pupils had been together in the same class for one, two or more previous grades. This may reflect upon the position of such pupils within their class organization only and may not interfere essentially with the general trend of the structures we have found. From this point of view the most accurate conditions have been in the kindergarten groups.

Whereas the population of a class in the Riverdale Country School remains relatively unchanged throughout the year, the population of a class in Public School 181, Brooklyn, is in continuous flux. Up to 25% or more of its population changes during one school year. Out of this results the fact that a number of pupils have been a shorter period of time together with their classmates than the majority. This, moreover, may affect the sociometric position of the relatively new comers into the groups. But the general trend of the structure may be little or not at all affected by it if the differentiation of the structure depends upon the developmental level of the participants of the group and if they are of the same or of approximately the same developmental level. And just the latter appears to be true.

From the interviews of the children it appears that their motivations for liking or disliking each other in respect to the criterion of studying together are derived in part from former experiences they had had in common in the neighborhood. Or even if their acquaintance had begun in school, that their more intimate acquaintance developed outside. This indicates the criss-cross currents which connect the school with the surrounding neighborhoods as parts of a wider social unit.

In many cases we can see how acquaintances which began in school lead to the organization of gangs outside in the neighborhood. We see how these formations take place without teachers or parents being aware of their ramifications. It may well be that such associations have a bearing upon the structures of the class organization to which these children belong and that it can be traced through the test.

PERIODS OF GROUP DEVELOPMENT

The effect which the maturing sociability of individuals has upon the structure and differentiation of groups and what influence this organization once established exerts in return upon them have led us to distinguish the following periods:

Up to 7-9 years :	Pre-Socialized Period
7-9 years to 13-14 years :	First Socialized Period
13-14 years on :	Second Socialized Period

PRE-SOCIALIZED PERIOD

The groups formed by children during the different phases of this period are less constant and less differentiated than later on. In the "younger" groups a high number of unchosen and isolated and a low number of mutual pairs appear. As the spontaneous ability to choose a partner who in return chooses the chooser is apparently little developed, groups formed by individuals in this period show a diffuse pattern which does not predispose for independent cooperative actions. Partnerships and gangs, when they develop in this pre-socialized period, are instantaneous, too inconstant and undifferentiated to produce cooperative action or cooperative goals. If gangs are uncovered showing any determination in the pursuit of a goal, one or two children who are older and who act as their leaders are usually found.

FIRST SOCIALIZED PERIOD

From about 7-8 years on children themselves become able to form groups which are independent of adults and which show cooperative action and the pursuit of a common goal. From this age level on throughout adolescence the desire to have a function in association with individuals of the same level of differentiation can be detected and, if this is not satisfied openly, the individual may secretly join an available group. In the first socialized period children form independent social groups among themselves. Older individuals may be present but they are not necessary. The organization of children's groups in this period indicates that interrelationships of the members are sufficiently differentiated to understand certain codes and to pursue a common aim.

The sex attitude characteristic for this age level is suggested in the organization of the groups developing in this period, the homosexual tendency beginning to be more marked at about 8 years of age and commencing to decline after the age of 13. The homosexual tendency in group organization continues, although in lesser degree, throughout the whole period of adolescence. Besides these homosexual or uni-sexed gangs, there are found mixed groups of boys and girls with a definite interest in sex. It is reported that the majority of the members are usually of ages from 12 up. This coincides with the forming of group structures which indicate the gradual increase of inter-sexual choice from 13 years of age up. In this sense, one or another partner in the group may be several years younger than 13 if there are boys or girls of the mentioned age level present who initiate the younger. In other words, children between 6 and 12 years do not develop a gang for sexual purposes spontaneously. From about 7 to 8 years on they are able to form a non-sexual gang; from 12-13 years on the sexual factor can enter into it and differentiate it further. Even children of the pre-socialized level can be led by older leaders into belonging to a gang, but there is no genuine spontaneous participation on their part before their socialized growth begins at 7 to 8 years of age or their social sexual period begins at 13 years. The effect which the maturing sexual function of individuals has upon the structure of groups led us therefore to distinguish the following stages:

Up to 6-8 years :	First Inter-Sexual Stage
8 years to 13 years :	First Homosexual Stage
13-15 years on :	Second Inter-Sexual Stage
13-17 years on :	Second Homosexual Stage

Our experience with children's societies consisting of many hundreds of members may throw a further light upon the problem. We found that children, boys and girls, who had reached the 8 year age level or were nearing it were able to run a society of their own without the aid of any older individuals. Usually they formed societies with one leader as the head. If growth had been stopped at this age level and if no more highly differentiated societies would exist these children's societies would persist and develop an orderly organization as they attain the minimum of constancy and differentiation necessary for common pursuits.

These tests could not be developed beyond a certain limit as in actuality the adolescent and adult groups press upon child groups when they are in spontaneous formation and they have no chance to overcome this pressure and to develop beyond neighborhood gangs and local groups.

CLEAVAGES IN GROUPS

Gradually from the 1st grade on the group develops a more differentiated organization; the number of unchosen decreases, the number of pairs increases, from about the 3rd grade on chains and triangles appear. The organization becomes more and more ready and mature to function for the group. Cooperative group action which begins to flourish from the 3rd and 4th grades on is potentially inherent in the organization of this age level before the functioning in this direction may become apparent to outsiders. The increased differentiation of groups formed by the children from about the 2nd grade on and the declining insight of adults into the role and the position of a particular child in the group mark the beginning of a "*social*" cleavage, a cleavage between adult groups and child groups.

From the 4th grade on the percentage of heterosexual attractions drops very low. There is indicated the beginning of a *sexual cleavage* which characterizes the organization from then up to the 8th grade. Parallel with this the number of pairs and of other social structures increases rapidly. It appears as if the sexual cleavage is accelerating the process of socialization, deepening the emotional bonds between the members of the fraternity and sisterhood into which the class is now broken up.

From about the 5th grade another phenomenon can be observed in the sociograms. A greater number of Italian children begin to choose Italian neighbors; a greater number of Jewish children begin to choose Jewish neighbors; a greater number of German children begin to choose German neighbors, etc.; and a larger number of Italian children reject Jewish children, of Jewish children reject Italian, of German children reject Jewish, and of white children reject colored children, and so on, than before. This phenomenon could not be observed in the pre-school groups and rarely in the 1st, 2nd and 3rd grades

although the percentage of members of the different nationalities was about the same. It indicates the beginning of a *racial cleavage*. The organization which was already broken up into two homosexual groups, into two halves, tends to break up further into a number of sub-groups, more or less distinct, each consisting of boys or girls of the same or similar nationality. Whether this is characteristic only for the particular sample of child population studied or is a general phenomenon will become clear as soon as a great variety of child populations in urban and rural sections is studied. However, it is evident that children have no *spontaneous* aversion in respect to nationality differences. Where a cleavage appears it is largely the projection of adult influence. At this age level another phenomenon begins to reflect in the sociograms, the socio-economic status, precipitating a "socio-economic" cleavage.

The four phenomena just mentioned are related to several factors. One is the physical and mental difference between adults and children. Children are becoming aware of the differences between themselves and the adults and of the similarities between themselves and other children. The psychological distance between adults and children increases, the psychological nearness between children and children increases. This is one basis for the development of child associations independent of adult associations. As the networks among the children have become finer and stronger, the collaborative activities of children which up to this point were relatively an open vista, are now difficult for the adults to detect. However, the child associations inherent in the social structure never actually develop beyond an embryonic stage. Up to a certain age this is due to their insufficiency in the forming of groups. But from the 2nd and 3rd grades on this failure is largely due to the pressure coming from adult groups which bear down upon them and do not permit of their full expression.

Soon after the difference between adults and children begins to affect group organization there follows the effect of the differences between the sexes. The distinction between boy and girl occupies the mind of children long before this period but up to this point it rather enhances their curiosity for each other and drives towards attraction rather than towards separation. Yet

once the period of the free mixing of the sexes is over, the distance between the two sexes increases and leads to a new cleavage. The break-up of the group into fraternal homosexual associations and homosexual sister associations begins. This sexual cleavage may be said to have a counterpart in certain imageries of primitive societies. In an African legend related by Frobenius men and women lived apart in different villages. Each village was governed by the one sex alone which comprised it and Frobenius describes periodic hostilities occurring between the two communities. The cause for this real or imagined outcome may be traced symbolically, to the first homosexual cleavage in which the warfare between the sexes is able to assume group form. This cleavage, although it does not develop beyond an embryonic stage, is never entirely overcome. The oncoming increase of heterosexual gravitation itself is not able to repair completely the rift in which all future tendencies towards homosexual groupings are inherent.

When the homosexual tendency in group formation becomes an impelling force it aids to knit the individuals into a group which is more finely integrated than before and through emotional bondage gives an impetus for achievement. It may appear more economical and more secure to look for identity or similarity in fellowships, a lesser risk in a period in which the development of collective feeling is in an experimental stage. Aims are more easily achieved if resistances within the groups are abolished. Slight differences in color of the skin, size, figure, facial expression, or mental traits, gain in significance as they appear to resist the transfer of feeling. The effect of the suggestion coming from parents or from other older individuals whose opinion is respected by the child is immense. But why such suggestion does not leave a more lasting impression upon the child before this age level can be perhaps explained. It may be that the emotional bondage in child groups during the phase of sexual cleavage prepared the soil so that such suggestion may be comprehended, found useful, and so take root more easily. But these factors alone would not suffice to entrench these feelings, to transform them from individual into collective expression. A retaining and conserving factor is needed. This is supplied by the networks whose significance we describe elsewhere and which

begin to develop at this age level. It is through these networks that verbal and non-verbal opinion can travel.

There appears clearly to be a parallel between intersexual and interracial attraction. Curiosity in respect to the other sex and curiosity in respect to another race both presuppose an expansive mood. When heterosexual attraction gives way to homosexual attraction, just as curiosity for the other sex fatigues and indifference or antagonism towards it develops, also the curiosity for members of another race fatigues and indifference or antagonism towards it develops. When children are intelligent enough to form more finely integrated interrelations they feel out for the first time the two great hindrances in the pursuit of closed and aggressive group action: the other sex and the other race. In the first schemes to conquer the world it seems so much easier and safer for boy groups to leave out girls and to leave out nationalities contrasting to their own.

While sexual cleavage was found in all the nationalities among the groups studied, what appears to be a longer duration of this phenomenon in certain nationality groups may be related to the later coming-on of puberty or to cultural mores. It may also be that in nationality groups in which homosexual groupings are more emphatic and have a longer duration it provides a better soil for male groups to develop as cohesive units later and with hostile, aggressive attitudes towards the rest of society from which they deviate to a greater or slighter degree. On the other hand, the very long duration of the sexual cleavage in girl groups and the emotional bondage resulting from it may, when this takes place, facilitate an increased sense for independence. The situation in the sexual cleavage has a tendency towards recapitulation. It will probably be found that with the rising to power of homosexual aggressive male groups there goes hand in hand their suppression of cohesive female groups and their claims for emancipation and equal opportunity.

CONCEPT OF AGE

The fundamental mark in the process of socialization appears to be reached at 7-9 years. This does not mean that this process is finished at that age but that children reach at that age the point when they can form and direct a society. The next mark

in the process of socialization is the age of 13-15 years, when the sexual development begins to reflect upon it. A third mark is 16-17 years, when the maturing of mental development begins to reflect upon it.

An individual appears to reach the different marks in his general development at different times. An individual whose mental development may appear average normal may appear socially retarded and emotionally advanced. These differences in the growth of mental, emotional, and social characteristics of an individual suggest that the hypothesis of *age* be either discarded or redefined. Instead of using different tests for the different aspects of personality development, for the abstract level of intelligence, intelligence tests, for the performance level of intelligence, performance tests, for the emotional level of the individual, psychoanalytic inquiry, there is need of a test of the individual which evaluates all these factors in their interrelations and when they appear in conjunction, that is, when the individual is acting. The Spontaneity Test is devised to accomplish this objective and it demonstrates that the unity of personality organization is the primary fact to be considered. It appears that this unity functions as an active principle in the evolution of personality. We cannot well differentiate one part of this unity, for instance, the intellectual development, and say it is "retarded" and differentiate another part of this unity, the emotional development, and say it is "accelerated." We need to consider the organization of personality above any of its various aspects, as a unity which, just like the physical organism, cannot escape from functioning as a unity all the time. As a unity it moves forward from year to year. It is interesting to note here that the sociometric test of groups has demonstrated a similar principle operating in group evolution. In groups of children and adolescents with the increasing age of the members—whatever the position of individual members may be—the group organization as a whole moves forward from year to year.

SOCIOGENETIC LAW

The finding that with the maturing of the intelligence and the emotions also the sociability of an individual matures was to be expected. But it is unexpected to find that a group of indi-

viduals "grows," that the organization of their interrelations crystallizes, that the clashes between the different intelligences, emotionabilities and sociabilities of the individuals within the group do not destroy the process of maturation nor prohibit the existence and recurrence of regular tendencies within it. The criss-cross currents in a group come to a synthesis, they produce organizations which have a "sense" and invite interpretation.

Our survey of the development of spontaneous group organizations from year to year of age among children and adolescents appears to indicate the presence of a fundamental "sociogenetic" law which may well be said to supplement the biogenetic law. Just as the higher animals have evolved from the simplest forms of life, so, it seems, the highest forms of group organization have evolved from the simple ones. If children were given the freedom to use their spontaneous groups as permanent associations, as children-societies, then similarities in structure and conduct with primitive human societies become apparent.

It is well known that primitive family association regulated more functions than does the modern family. Within its organization the function of education and labor as well as numerous other objectives were executed. Children's societies might give us an indication how primitive societies would develop if we could recapitulate them today. We will see in the next section that the girls in Hudson, when given the opportunity to choose associates for home, work, etc., chose frequently, and more often at the younger age levels, the *same* persons for all the different functions,—with whom they wanted to live, to work, to play, etc. Whenever it was put into practice it led to an overlapping of functions within the same organization of individuals. This is an expression of society similar to that found in certain primitive family associations. The fact that other girls made distinct choices for different functional groups suggests that within the same community different patterns of society organization are desired by different individuals. The fact that all these individuals have been brought up in a similar industrial environment and still have tendencies toward producing contrasting society organizations may argue that the machine is not the sole factor in producing specialization of function and social differentiation.

Our findings suggest the notion that group organization is in its

ontogenetic development to a great extent an epitome of the form-modifications which successive ancestral societies of the species underwent in the course of their historic evolution. It may be called the *group theory of evolution*. This hypothesis is supported by:

(a) Spontaneous organization of groupings among children and adolescents develop year by year from simple to more complex stages of integration.

(b) These groups reveal that a remainder of lower organization can always be traced in the next higher stage and that indicators of a beginning towards higher organization can be traced in the next lower stage.

(c) Similarities have been noted between spontaneous group organizations among classes of children in the early grades and spontaneous group organizations among mentally retarded adolescents.

(d) Similarities of tendencies in social organization are suggested between children's societies and those of primitives.

BOOK III

SOCIOMETRY OF A COMMUNITY

SOCIOMETRY OF GROUPS

EXTERNAL STRUCTURE OF A COMMUNITY

The project to determine the psychological process comprising a whole community seems like an unsurmountable task. A duplicate of this process to be accurate has to take into account more than the trends in the population. The process is broken up in numerous individual processes, each of which contributes something to the total picture. The detailed combination of these individual processes again are very numerous. All the lights and shades need to be integrated in the presentation or else a form of fiction will take the place of scientific truth. The first task, therefore, which we set ourselves was to analyze all individuals of a given community in their interrelations. We were encouraged in the difficult undertaking by the experiences in other sciences—a few carefully thought out breeding-experiments led to the foundation of biogenetics—from the careful psychological study of few individuals a good knowledge of men in general resulted. So we counted that from the careful study of *one* community a better knowledge of the structure of *any* community may develop also. Finally, we thought, however unique a certain concrete sample of population may be, the methods and techniques gained in the course of investigation will be universal.

The community in which the study was made is near Hudson, New York; it is the size of a small village, between 500 and 600 persons; it is a closed community; it has a uni-sexed population; the girls are still in their formative age and remain in Hudson for several years until their training has been completed; they are sent in from every part of New York State by the courts.

The organization is dual, consisting of two groups, staff members and students. There are 16 cottages for housing purposes, a chapel, a school, a hospital, an industrial building, a steam laundry, a store, an administration building, and a farm. The house-

mother has the function of the parent; all meals are cooked in the house under the direction of a kitchen officer; the girls participate in the household in different functions, as waitresses, kitchen helpers, cooks, laundresses, corridor girls.

The colored population is housed in cottages separate from the white. But in educational and social activities white and colored mix freely. These and similar aspects can be termed the "social organization of the community." And whatever the "social structure" of a particular cottage may be it is necessary to ascertain the psychological function of each of its members and the "psychological organization" of the cottage group. The social function of a girl, for instance, may be that of supervising the dormitory, but her psychological function may be that of a housemother pet who is rejected by the members of her group and isolated in it. These emotional reactions and responses among the girls of the group must result in a dynamic situation, its "psychological organization."

The social organization of the total community has beneath its outer appearance another aspect. Although separately housed, there are attractions and repulsions between white and colored girls which gravely affect the social conduct in this community. The "emotional currents" radiating from the white and colored girls, and *vice versa*, have to be ascertained in detail, their causes determined, and their effects estimated. Similarly emotional currents radiate among the white population irrespective of their housing and other distinctions from one cottage to another. Such psychological currents flow finally between officers and students and within the group of officers themselves in its sum total affecting and shaping the character and the conduct of each person and of each group in the community.

The experimental sociologist who enters a new community with the plan of starting a social revolution within it has to prepare himself, his staff of co-workers and the people in this community, for the task. When I entered Hudson I had the enthusiastic and undivided support of the superintendent, but very soon I had to face with her several bottlenecks standing in the way of the realization of the project: the Board of Trustees, the Associate Superintendents and Directors, the staff of housemothers, work supervisors and teachers, the ramifications leading to the

Department of Social Welfare and the repercussions coming from the City of Hudson, a few miles away from our own community. Last not least, we had to reckon with the population of the girls themselves.

I realized already after the first few days that the project and I had friends and enemies in all sections of the population. I tried to encompass with my best social imagination the pros and cons taking place within more than a thousand people in reference to myself. In the beginning they hardly differentiated between the plan, myself and the team of my co-workers. In this dilemma I invented a sociometric technique devised to x-ray my own situation, a technique which I later called "sociometric self-rating" and projection. It was based on the assumption that every individual intuitively has some intimation of the position he holds in the group. By empathy he comes to know approximately whether the flow of affection or antipathy for him is rising or falling. I began to map out in my own mind, often two or three times a day, the sociograms of the key groups upon whom the success or failure of the project depended. I began to sketch all the situations in which my co-workers and I were involved at the time and in which role. Then I tried to clarify how we felt towards each of these people. It was comparatively easy to state my own preferences, choices or rejections, towards the key individuals in the community. It was more difficult to "guess" what everyone of these people felt towards me and my plan and what reasons they might have. More difficult, but of the greatest importance, was to guess how these people felt towards each other. By a sort of highly trained empathy I succeeded in picturing my own sociograms; they were a great aid in preventing and countering attacks before they became detrimental. This technique was particularly important, as it trained my social intuition. Later on, once large parts of the population were warmed up to the plan and understood its significance, helpers and friends arose among them, unknown to me. Finally, once the sociometric community test was put into operation, the sociograms of the houses gave us more accurate insight and corroborated many of my guesses.

Another problem was to develop a team of co-workers. When I started the scientific team consisted only of two, myself and an

assistant; to find workers and to establish a working team around an idea which is new, not universally accepted or even controversial, is extremely difficult. When ideas and methods are in the stage of "primary" productivity the team workers have to accept a certain individual as the scientific leader and his inspirations and hypotheses as the guide for their own thinking. The problem as to how to "share" in primary productivity in scientific and artistic pursuits is still unsolved. The value of team work begins to come forth after the primary productivity phase is over, when the stage of technical and analytical considerations is reached. This has been my experience with the Hudson experiment. Notwithstanding, we succeeded in finding a large number of workers among the social workers and teachers in the community.

SOCIOMETRIC TEST OF HOME GROUPS

The cell of the social organization in the community at large is missing in Hudson: the natural family. These girls are separated from their parents; instead of to the latter they are assigned to a housemother; they are also separated from their siblings and are placed into groups of girls who are unrelated to them and to each other. The opinion is held by many that it is the parental instinct and affinity of blood relation that makes the association of parents with their own children desirable. But here in Hudson the natural affinities are missing. For the natural parent a "social" parent has been substituted, for the natural child, a "social" child. A device, therefore, has been invented to determine the "drawing power" one girl has for another, one girl has for a housemother, and in return one housemother has for a girl. Through such device we may find out to whom each girl is attracted and by whom each girl is repelled. The study of the sum total of these attractions and repulsions may give us an insight into the distribution of emotions in this community and the position of each individual and group in relation to its currents.

The sociometric test provides such a device. The *criterion* towards which the attention of the children has been directed is their liking or dislikes for the individuals in a given community in respect to living together in the same home with them. The

size of the population from which the child could select her home associates was five hundred and five. It was estimated by us on the basis of similar try-outs that it would be sufficient if five choices were allowed to every girl. The test was then given to the whole population at the same time in the manner described on page 104. We were then able to classify each girl according to the choices she had made and the choices she had received. An illustration of a typical choice slip follows:

WL, Cottage 7

Choices made

1. ME, C16 2. KT, C7 3. GE, C7 4. CN, C16 5. SV, C6

Choices received

1. ME, C16 2. 3. PR, C7 4. SV, C6 5. EH, C10

The choice findings indicate the amount of interest WL in C7 has for the 34 girls with whom she lives compared with the amount of interest she has for girls outside her cottage; it indicates also the amount of interest girls of her own cottage have for her compared with the amount of interest girls of other cottages have for her. It shows her interlocked with members of four cottages. The first choice of WL was ME from another cottage, C16, who also chose her first. Altogether she chooses 2 (KT and GE) from her own cottage and 3 (ME, CN, and SV) from other cottages. She is chosen by 1 (PR) from her cottage and by 3 (ME, SV, and EH) from other cottages. See sociograms of WL, p. 299-300.*

When, then, each girl of cottage 7 is classified as above illustrated in the case of WL, the actual composition of cottage 7 can be compared with the composition desired by its members, whom they would like to have in and whom out of the cottage. See sociogram of C7, p. 271. Looking within the cottage we discover girls who, like stars, capture most of the choices, others forming mutual pairs, sometimes linked into long mutual chains or into triangles, squares, or circles, and then an unlooked-for number of unchosen children. Looking over the total community, we observe that the choices run criss-cross throughout, uncovering the invisible dynamic organization which actually exists below the official one. Suddenly what has seemed blank or impenetrable opens up as a great vista. We see the choices running in streams

* Some of the inconsistencies between the sociogram of a cottage and the sociometric classification of that individual are due to the fact that the groups depicted are subject to frequent changes.

to one or to another cottage. And we see other cottages practically isolated. We see cottages concentrating their choices within their own groups and then we see another sending so many choices to other cottages that seemingly its own group desires to disband.

LIMITS OF EMOTIONAL INTEREST

Instead of the 2,525 choices expected, only 2,285 choices were actually made. Two hundred and forty choices, *i.e.*, 9½%, remained unused. Nine and one-half per cent indicates to what extent the emotional interest of the whole Hudson population is limited when five choices are allowed in respect to the criterion of living in proximity.

If we analyze one group from this aspect, cottage 1, we find that it left 26 choices unused. Two individuals from C3, we find, made no choices during the stage of the first choice; 4, during the second; 4, during the third; 5, during the fourth; 11, during the fifth. Obviously the girls were fresh at the start, only 2 made no choice then. But from choice to choice the amplitude of their interest declined. During the last phase, when the fifth choice was made, the number of unused choices rose from 8% (1st choice) to 16% (2nd choice) remained at 16% (3rd choice) rose to 20% (4th choice) to 44% (5th choice). Table 8 presents the percentage of unused choices from 1st to 5th choice for each cottage group.

TABLE 8
PERCENTAGE OF UNUSED CHOICES FROM 1ST TO 5TH CHOICE

	<i>First Choice</i>	<i>Second Choice</i>	<i>Third Choice</i>	<i>Fourth Choice</i>	<i>Fifth Choice</i>
Cottage 2.....	0%	0%	0%	0%	0%
Cottage 11.....	0%	0%	0%	0%	8%
Cottage 1.....	0%	0%	0%	5%	25%
Cottage 14.....	0%	0%	4%	4%	28%
Cottage 7.....	3%	6%	6%	9%	12%
Cottage 16.....	3%	3%	3%	7%	27%
Cottage 10.....	4%	8%	8%	12%	12%
Cottage 15.....	3%	3%	9%	9%	35%
Cottage 6.....	4%	4%	4%	8%	44%
Cottage 12.....	12%	12%	12%	15%	15%
Cottage 13.....	11%	9%	9%	20%	24%
Cottage 8.....	3%	3%	12%	27%	48%
Cottage 3.....	8%	16%	16%	20%	44%
Cottage 9.....	20%	20%	20%	24%	36%
Cottage 4.....	12%	15%	20%	35%	60%

With almost clock-like regularity the interest declines. It is interesting how rapidly their interest starts to weaken. Usually after the 3rd choice a crisis is evident. Only three cottages, C1, C2 and C11 passed through the first three choices without losing one, and only cottage 2 reached the final 5th choice still unbeaten. Cottage 4 left 60% unused in the 5th choice and three other cottages left little less than 50% unused in that choice. One choice more, perhaps, or two, and the girls of most of the groups would have reached the limit of their interest.

The gradual decline of *emotional expansiveness* can be illustrated in still another way. From the 505 girls, 500 participate in the 1st choice; 460 are still marching in the 2nd choice; 420 girls, in the 3rd choice; 375, in the 4th choice. To make the 5th choice only 300 girls have a sufficient amount of interest left. A 6th, 7th, or 8th choice may have furnished us with a picture exemplifying a slow approximation to the freezing point.

This demonstrates what we may call the process of slowing down of interest, the cooling off of emotional expansiveness, the *sociodynamic decline* of interest. After a certain number of efforts the interest grows fatigued. It reaches extinction of interest in respect to a certain criterion, the sociodynamic limit of a person's expansion, its *social entropy*.

SOCIODYNAMIC EFFECT

Another process was observed to recur with a peculiar regularity. The number of choices was not equally divided among the girls. Some attracted more attention, they received more choices; some attracted less attention, they received fewer choices or remained unchosen. Some girls accumulated more choices the further we progressed from the 1st to the 5th choice. There were cases where a girl received more than 40 choices, contributed from girls from all parts of the community. On the other hand, many of the girls seemed to be entirely cut off from the circuit of attention. The number of unchosen after the 1st choice oscillated between 35% and 15% of the members of the cottages.

We had good reasons to hope that with the progressing choices everyone would catch something for herself. The number of the unchosen became smaller in the second and still smaller in the third choice. But after the 3rd choice the progress started to

slacken. The number of the unchosen did not fall as rapidly as before the 3rd choice: the figures tended to stand still. The number of the unchosen in cottage 1 after the 1st choice was 13 girls; it fell down to 9 in the 2nd choice, to 7 in the 3rd choice, to 6 in the 4th choice and remained at 6 in the 5th choice. Cottage 15 started with 11 unchosen and finished with 2. Cottage 16 started with 20 unchosen girls and reduced them to 12 in the end. Cottage 8 started with 22 unchosen girls and had 6 at the end. Of course the surplus of choices went somewhere. It went to the girls who attracted more attention from the start. Their greater attraction seemed to be responsible for the fact that 75 girls from 505 (15%) remained unchosen, isolated in the community after all the choices were counted.

It might be speculated that if the girls had chosen each other at a rate of more than 5 choices per person finally every girl of the population would have received a choice. But all indications in our research support the conclusion that a higher rate than 5 choices would have increased the number of choices for those who have been "stars" under 5 choice conditions and would stubbornly have continued to leave out the unchosen ones. We call this process of persistently leaving out a number of persons of a group the *sociodynamic effect*.

TABLE 9
NUMBER OF UNCHOSEN FROM 1ST TO 5TH CHOICE*

<i>Cottages</i>	<i>1st Choice</i>	<i>2nd Choice</i>	<i>3rd Choice</i>	<i>4th Choice</i>	<i>5th Choice</i>
C 1.....	13	9	7	6	6
C 2.....	9	6	4	3	2
C 3.....	13	8	6	4	3
C 4.....	13	10	6	5	5
C 6.....	12	9	6	4	1
C 7.....	18	14	12	10	9
C 8.....	22	15	9	7	6
C 9.....	18	11	7	7	6
C10.....	22	19	17	14	14
C11.....	11	5	2	2	2
C12.....	14	9	7	6	5
C13.....	12	7	6	5	4
C14.....	16	7	6	6	4
C15.....	11	7	3	3	2
C16.....	20	16	14	12	12
Totals.....	224	152	112	94	81

* C5 is not included here.

LOCATION OF CHOICES

The location of the choices, whether inside or outside the group has a definite effect upon the organization of the group. Their distribution changes from the 1st to the 5th choice. The following three samples illustrate the most characteristic patterns of organization resulting from this factor :

COTTAGE 9, LOCATION OF CHOICES

	<i>Inside</i>	<i>Outside</i>
1st choice	14	7
2nd choice	15	6
3rd choice	14	7
4th choice	13	7
5th choice	10	7
	—	—
Totals	66	34

The same trend is repeated through all the phases from 1st to 5th choice: the majority of choices go inside, the minority of choices go outside the group. It is a sample of an *introverted* organization.

COTTAGE 10, LOCATION OF CHOICES

	<i>Inside</i>	<i>Outside</i>
1st choice	10	15
2nd choice	9	16
3rd choice	6	18
4th choice	8	15
5th choice	9	14
	—	—
Totals	42	78

Cottage 10 gives a sample of an *extroverted* organization. The majority of choices go persistently in each phase outside, the minority in each phase inside.

COTTAGE 7, LOCATION OF CHOICES

	<i>Inside</i>	<i>Outside</i>
1st choice	13	11
2nd choice	12	14
3rd choice	17	12
4th choice	11	13
5th choice	10	11
	—	—
Totals	63	61

Cottage 7 is a sample in which the majority of choices swings between inside and outside the group without any decided trend; in three phases, 2nd, 4th and 5th choice, the majority goes outside; in the remaining two phases, 1st and 3rd choice, it goes inside. This can be called a *balanced* organization.

ATTRACTIONS, REPULSIONS AND INDIFFERENCES

Human relations can be compared to a stick with two ends. The emotions going out from persons are only one half of the stick. The emotions coming back are the other half.

A neglected aspect in sociometric research is the import of indifferences. We have found in this community, besides the considerable number of unused choices (9½%), a large volume of indifferences. What does this indifference to change mean and what are the factors behind, as I have frequently called it, the "dynamics of neutrality?" A man is, or at least declares himself indifferent as to whether he works in proximity to A or to B, or to any other individual; whether he sits in a classroom near A, B, or any other individual; whether he marries A, B, or any other individual. Or, an individual starts with being attracted to A, B, C, but becomes indifferent towards them in the course of time; he does not care whether they stay with him or leave him, he does not care to replace them. Or, again, an individual A has been indifferent to with whom he works, plays and lives but in the course of time he begins to like these individuals and he does not care to have them replaced by anyone. It can be assumed that this social inertia is particularly due to cultural factors. In certain cultures it may be an ethical imperative to manifest indifference to change, because he is supposed to love everyone; that is why it should not make any difference to him with whom he works or lives, it will come out well in the end. In other cultures the parents choose the marital partner for their sons or daughters; they do not marry someone whom they love, but a person who, for instance, has a good ancestry; the assumption is that they will learn to love each other although they may feel indifferent in the beginning; if the symbolically and axiologically right partner is selected, all other individual or social considerations are secondary. In a cohesive culture more excitable or more

submissive individuals are equally coerced to conform with the mores. The sociometrist has no premium for individuals who show preferences and choose, against individuals who show indifferences; he is primarily interested in the facts. However, he is most interested to know what factors operate in specific situations to produce a high degree of indifferences as compared with others which produce a low degree of indifferences. He is particularly interested to know of the relationship between an excessively spontaneous, a manically and aggressively oriented culture and the trends in the sociometric index of its members. Is there a "hypomanic choice-making" prevailing in hypomanic cultures towards which even its more submissive individuals are swayed? Do we tend towards a culture with a high or a low "preference" index? On the other hand, we have to watch the depressive effect which certain cultural norms might exert upon its more expansive members. The most important long range question, however, is to study whether the indifference to change exists only in situations determined by "weak" criteria or whether it is deeply frustrating in social situations determined by vital and "strong" criteria, regardless of culture. However profound the differences in structure, therefore, from the sociometric geography of one culture to another may be, some deep slice—a "sociometric constant"—may exist which they all share.

Here were 505 girls who at the rate of 5 choices each had the opportunity to make 2,525 choices. To secure the other half meant to ascertain the responses to these choices. As every girl was in the center of a varying number of reciprocated or unreciprocated choices, every girl belonging to such an atomic structure, a form of interrogation had to be applied in which all the individuals related to each other in respect to the criterion of wanting to live in proximity could participate. *In each case all the girls revolving around each girl and she herself had to be interviewed separately and still in relation to each other. This was accomplished by "a group of interviewers" who attempted through cooperative action, each from another individual's angle, to secure the structure existing in relation to any individual in this community.* In the case of WL before mentioned, 8 persons were interviewed, including WL. WL was asked: 1, "How do you feel about living with ME, KT, GE, CN, SV, PR, or EM in the same cottage? Answer 'Yes, No,

or Indifferent’;” 2, “What motives have you for accepting or rejecting her?” And then ME, KT, GE, CN, SV, PR, and EH were asked to return: “How do you feel about living in the same cottage with WL? Say ‘Yes, No, or Indifferent.’ What *motives* have you for accepting or rejecting her?”

The findings reveal WL is attracted to 5, 2 of whom are in her own cottage and the other 3 in other cottages. She rejects 2, one from her own cottage and one from another. She attracts 7,* 3 of whom are in her own cottage and 4 outside in other cottages. She is rejected by none. Attractions are mutual in 5 instances. The most intensive mutual attraction as shown by first choice and motivations is towards a girl in another cottage. See sociogram of WL, second phase. See also Motivations Table of WL, p. 231-233. This inquiry ascertained in the same manner for each individual of the population the number of attractions or repulsions going out from her towards other members and the attractions and repulsions going back to her from them.

The seven individuals interlocked with WL delineate the border-lines of what may be called a *social atom* with WL as its nucleus. In relation to every other individual another group of persons were found interlocked in respect to the same criterion. It can be said that the sociometric test in its first phase (spontaneous choice) attempted to detect these atoms. In its second phase, the motivational phase, it will begin to penetrate beneath their surface, as it were, to crush the social atom.

Through the study of the 505 atomic structures it was found that they oftentimes differed widely from the position of the respective individuals in their actual home groups, that these atomic structures frequently overlap one another, many individuals being parts of diverse structures at the same time with, however, a varying degree of interest. First we classified, as expressed from the 1st to the 5th choice, the Yes attitude, attraction, in respect to living in proximity, the No attitude, repulsion, and the Neutral attitude, indifference, irrespective of the motivations expressed for these attitudes. Then we secured from the individuals themselves what motivations they considered as underlying their

* Three more positive responses were uncovered when WL's choice partners were interviewed.

attractions and repulsions. It was found that one emotion rarely seemed to motivate them; usually it was a complex of emotions. These emotions appeared like a "current" centering in and moving two or more persons at the same time. The study of the motivations (see Table of Motivations below) gave, if pieced together and weighed for each individual of the same group, a deeper insight into the forces regulating or disturbing group organization.

TABLE OF MOTIVATIONS OF WL

1st Choice, ME, C16:

We seem to understand each other although we are very different. I am excitable and moody and she is always calm and cheerful. We are both going to do the same kind of work in the future, stenography and office work. She has a calming effect upon me and I always wanted to live with her.

1st Choice, ME, C16:

WL is so interesting. She seems to feel things so deeply. The slightest happenings and she is tearful or else ecstatic about it. I don't get this way very much and so I like to share things with her. I think she is colorful.

2nd Choice, KT, C7:

KT is just the opposite of ME. She is Hungarian and sometimes teaches me a few words. She is wonderful in sports and the star in baseball. I am not such a good player but a fast runner and KT makes the others have patience with me. She is determined she will make a star of me too. She is slow about some things, like sewing, and so I often help her with it. It's good to be around her. I like her next after ME.

Interview Response, KT, C7:

Yes, I would like to have WL in my cottage because of her spirit. She wasn't very good in sports when she was new and she was so persistent, I just admire her for that. She is sensitive and although the girls like her she feels hurt if they criticize her, like in games, I mean.

3rd Choice, GE, C7 :

GE I want in my cottage because I feel towards her like she was my little sister. I never had any and I like to take care of her. It is just too sweet for anything the way she appreciates if you do the tiniest thing for her. I always give her all the things I can't use and she makes things out of them for herself. She is clever that way. Mostly she is just a lonesome little child you just have to be fond of.

4th Choice, CN, C16 :

I chose CN fourth because she isn't so necessary to me as the others. She is more a luxury. She is amusing and just naturally comical.

5th Choice, SV, C6 :

I try to model myself after SV. She is highly intelligent I think, much more than I am, farther in reading books and knowing things. She is delicate and I have some influence over her in making her rest afternoons. She comes from the same part of New York State I do and sometimes we talk about how it is there.

Interview Response, PR, C7 :

No. It's only because she has a way of edging up to you and

Interview Response, GE, C7 :

Yes, oh yes, I want WL. She is the kindest girl in our whole cottage. She is always thinking of the nicest thing to do for someone. I didn't choose her because I chose all girls I play around with who aren't so busy as WL. She has to study more and is older than the girls I go with.

Interview Response, CN, C16 :

Yes, we are very companionable. She always understands my jokes and doesn't get angry like most girls do when I make sharp remarks.

4th Choice, SV, C6 :

WL keeps me from being homesick. She always has something to talk about and although she is moody she never acts bored; is always interesting. I think she has a beautiful way of acting, like when she greets you on the walk. You feel she is really happy to be talking to you in particular.

3rd Choice, PR, C7 :

I like WL very, very much. She doesn't talk to me much,

standing so close when she talks to you. There is something about her that is repulsive to me. I have a hard time to be nice to her when she comes near to me. I felt this way about her even before I found out about her having secret meetings most every day with colored girls. It seems she just can't live without them. She doesn't just go with them herself but she tries to get new girls to carry her notes so they'll get interested too. I think it's just too bad about her. If she came out in the open with it you wouldn't get so disgusted with her. But she gets the new girls on the sly. She promises them all kinds of things if they will do it for her and then she forgets all about her promises.

though, always says she is busy, has to read, or something. I don't know if it is true or not. She is the most attractive girl in the cottage I think; has such a nice complexion and keeps her hair all curled. She is just lovely.

Interview Response, EH, C10:

No. She's twofaced. You never know when she's your friend or your enemy, she always talks about people behind their backs and is sweet to their face. I wish she'd leave me alone, I can't stand her when she tries to make up to me.

5th Choice, EH, C10:

I'd like to have WL in my cottage, she's refined and superior to a lot of the other girls. I could learn from her and look up to her.

SOCIOMETRIC CLASSIFICATION

On this basis we were able to classify each individual and each group of the given community according to its position within it. We were aware that we had to approach the classification problem from an angle which is in sharp contrast with the current

methodologies. Classification methods according to type, as Jung's, Kretschmer's, and others, have in common with psychometric classification methods which measure an individual's intelligence, aptitudes, and abilities, that their attitude of classification is centered upon *one* individual singly, whereas the individuals and groups around him are only summarily considered. In contrast, we do not deal with an individual separated from the socio-dynamic situation in which he lives, within which he appears continuously, attracted to and rejected by other individuals. The crucial point of our classification is to define *an individual in relation to others*, and in the case of groups, always *a group in relation to other groups*. This is sociometric classification. The approach was not a theoretical scheme but the product of empirical induction growing logically out of our initial precept to discover and control the psychological currents in a given community.

The following sample demonstrates the sociometric classification of one individual and the methods employed to develop an increasing degree of precision in the formula.

The individual WL chooses 2 inside and 3 outside her group in respect to living in proximity. She is chosen by 1 inside and 3 outside her group. "L" designates the criterion, living in proximity. The figures above the horizontal line signify choices made by the subject; those below it, the choices received by the subject. The figures to the left of the vertical line are related to choices made or received by the subject inside her group; those to the right, outside her group, as follows :

Formula I

	in	L	out
sent	2		3
WL			
received	1		3

Through the process of interrogation rejections and additional attractions were revealed. (See p. 230.) The following formula gives the total number of attractions and rejections made or received by WL inside and outside her group. Formula I changes accordingly as the number of rejections are indicated by a figure immediately following the figure indicating attractions (and is separated from it by a dash), as follows :

Formula II

	in	L	out
sent	2 — 1		3 — 1
WL received	3 — 0		4 — 0

These formulas express left from the vertical line the position WL occupies within the group in which she actually lives; right from the vertical line, her position within the community in respect to the criterion of living in proximity. They thus define her status in respect to the eight factors given below in the Table of Terms of Sociometric Classification.

TABLE OF TERMS OF SOCIOMETRIC CLASSIFICATION

- Positive or Negative : Positive, the subject chooses others;
Negative, the subject does not choose others.
- Isolated : The subject is not chosen and does not choose.
- Extroverted Position : The subject sends the majority of her choices to individuals outside her own group.
- Introverted Position : The subject sends the majority of her choices to individuals insider her own group.
- Attracted : The subject uses more than one half of the choices permitted.
- Attractive : The subject receives more than one half of the choices permitted. (In or Out is added to indicate if the choices are inside the subject's group or outside respectively. When this is not added the choices are understood to relate to both inside and outside the group.)
- Rejecting : The subject uses more than one half of the rejections permitted.
- Rejected : The subject receives more than one half of the rejections permitted.

Indifference: The subject is indifferent to the individuals who are attracted to her or who reject her.

The classification of WL is, according to these eight factors: Positive, Not Isolated, Extroverted Position, Attracted, Attractive, Not Rejected or Rejecting.

In another instance, that of TL, the formulas are differentiated as follows into three phases:

TL. Formula I.	in	L	out	
sent	4		1	
received	0		0	

TL. Formula II.	in	L	out	
sent	4—1		1—3	
received	0—16		0—15	

TL. Formula III.	in				L	out	
sent	ch 1	ch 2	ch 3	ch 4—1		ch 5—3	
received			0	—16		0—15	

In contrast to WL, TL is an individual whose classification expresses an unfavorable position: Positive, Isolated, Introverted Position, Attracted, Not Attractive, Rejected and Rejecting.

The twelve cases in Table 10 illustrate how prolific sociometric classification is in being able to differentiate the position of any individual according to sociodynamic circumstances. It informs us that an individual, RU, is negatively situated. She is not particularly interested in anyone and no one is particularly interested in her. It tells us that an individual is isolated in her own group. It discloses if an individual is in an extroverted position and whether she is wanted within her own group but sends her choices outside. It, again, reveals if an individual rejects or is rejected in her group or outside of it.

Such sociometric classification is the embryo of the later "sociomatrix" as it is used by sociometrists in recent years. It is the sociomatrix of a *single* individual. As soon as several individuals are placed into the matrix with all their present relationships the sociomatrix of a group results (see page 147).

TABLE 10
TWELVE EXAMPLES OF SOCIOMETRIC CLASSIFICATION (CRITERION L, LIVING IN PROXIMITY)

Name		Formula I	Formula II	Positive or Negative	Extroverted, Introverted or Balanced			Attracted	Attractive	Rejecting	Rejected	Indifferent
					Isolated							
Elsa TL	sent	4	1	4 — 1	1 — 3	Pos.	×	Intro.	×	×	×	
	rec.	0	0	0 — 16	0 — 15							
HW	sent	4	1	4 — 1	1 — 0	Pos.		Intro.	×	×		×
	rec.	4	1	4 — 3	1 — 0							
UQ	sent	3	2	3 — 8	2 — 1	Pos.	×	Intro.	×		×	×
	rec.	1	0	0 — 3	0 — 1							
GL	sent	2	3	5 — 2	12 — 2	Pos.		Extro.	×	×	×	
	rec.	5	12	5 — 0	12 — 0							
GB	sent	3	2	6 — 7	1 — 2	Pos.		Intro.	×	×	×	×
	rec.	6	1	6 — 2	0 — 1							
AA	sent	3	2	3 — 0	2 — 0	Pos.		Intro.	×	×		
	rec.	3	2	3 — 0	2 — 0							
LS	sent	0	5	1 — 0	5 — 2	Pos.	×	Extro.	×			×
	rec.	0	2	0 — 9	1 — 5							
RU	sent	0	0	0 — 0	0 — 0	Neg.	×	Neg.				×
	rec.	0	0	0 — 0	0 — 0							
PT	sent	2	3	2 — 4	5 — 0	Pos.		Extro.	×	×	×	
	rec.	1	2	1 — 0	4 — 1							
SR	sent	1	3	2 — 4	1 — 3	Pos.		Extro.	×	×	×	
	rec.	3	6	4 — 0	7 — 0							
AI	sent	5	0	5 — 1	1 — 1	Pos.		Intro.	×	×		×
	rec.	4	2	3 — 3	0 — 13							
BA	sent	3	2	3 — 0	2 — 0	Pos.		Intro.	×	×		
	rec.	3	2	3 — 0	2 — 0							

Without considering in detail the motivations behind these attractions and repulsions, fear, dissatisfaction or whatever, a study of these cases, without a knowledge of anything about their history or conduct, intelligence or abilities, except the knowledge that these positions continued during the period of *one* year, indicates that five, TL, UQ, LS, RU, AI, of the twelve cases are unadjusted within their living group. But the sociometrist should never rely upon the sociogram alone; he may read into it more than is there, he may project into it some biases of our culture.

The classification of Elsa TL as isolated, rejected and rejecting, is comprehensively corroborated by an intensive study of her conduct. See p. 342. The negative and isolated situation of RU in the community is verified by her lack of sociability. In each case the classification was sustained by clinical evidence and further testing. See p. 344. Any change in conduct was found also to be traced immediately through the sociometric test. When the sociometric test showed a change in classification, a change in conduct was evidenced.

When there is identical sociometric classification of two different individuals this does not indicate that the same motivations have necessarily led to it; it indicates only the same *social setting* in the home group (L). Yet even in these cases of identical classification further analysis leads to further differentiation of the formulas showing that the social setting of two individuals which appeared identical at the start may look very different from a microscopic point of view. This can be illustrated in the cases of AA and BA.

A comparison of the social setting of these two individuals who appear sociometrically equated show sharp contrasts. AA is attracted to and attracts individuals who seem well adjusted. In the sociometric test she received a 3rd and a 5th choice from two girls who command a great influence in the community. The I.Q.'s of the individuals in the social atom of AA are: AA, 114; BT, 116; SA, 103; TT, 75; and MT, 87. In all but one case (TT) the girls are doing high school work. On the other hand, in the sociometric test of BA the choices she receives come from individuals who are practically cut off from the rest of the community. In addition, the I.Q.'s of the individuals in the social atom of BA are: BA, 53; AE, 68; CT, 58; YA, 70. In all but one

instance (YA), they are failing to progress appreciably either in school work or vocational training. Nevertheless the actual position in the respective home group of AA and BA corroborates the precision of the sociometric classification. The contrast shows that AA is placed in an upgrade social setting which may mature her best potentialities, whereas BA is in a downgrade social setting with individuals among whom she herself has the best classification. We may state here our observation that if two individuals have the same or similar sociometric classification, the social setting around them indicates a favorable or unfavorable prognosis in their problem of social adjustment.

This supports my claim that the sociometric position of the individual is not sufficiently defined unless the sociometric test is given to the whole community to which that individual belongs. The surrounding structures may throw new light upon the position of that individual and revise premature interpretations. A further differentiation between two individuals was ascertained through study of the relation to their respective housemother and their classification in their respective work group.

Such analysis of the social setting of individuals indicates that the classification status in a social atom is relative, that it changes in significance depending upon the social atoms with which it is interrelated. This also brings up the question of the relative influence of one or the other choice or attraction between two individuals (not only in respect to themselves) in respect to their home group and to the community. We have seen that the influence of one choice differs widely from the influence of another if the network of the whole community is taken into consideration. From this point of view the individual BL, who is, according to her classification, a popular individual, being chosen by 18 persons inside and 2 outside her group, compares poorly with an individual like LP, who is chosen by only 4 individuals. But LP is the first choice of these 4, however, and 3 of these 4 command directly or by indirection about 100 choices, whereas in the case of BL the choices come from individuals who are poorly adjusted in the main and are singly almost cut off from the chief currents of the community. If it comes to estimating, therefore, which individual wields more power in the community, the number of attractions and rejections an individual has does not alone figure,

but who are the choosing and rejecting ones and what expansion range their networks have. In other words, we arrive here to the problem of classifying leadership.

The sociogram on p. 322 illustrates the social setting of a very popular individual in the given community and the one on page 323 that of a very powerful individual in this community.

DIMENSIONS OF RESEARCH AND THE VALIDITY OF FINDINGS

The objective was to test a community as a whole and to reconstruct it purely on the basis of findings yielded by the test. *Our guiding principle in the research has been from the start, after we had decided on working in an unexplored territory, to let the direction and the expansion of the research grow out of the situation. Therefore our procedure was not fixed in advance.*

However, this is not to say that I worked without a well calculated blueprint, in fact, I had more than one. But I did not permit them to hold me down rigidly to a preordained path. I changed my blueprint several times as the building went up. I felt that I could not err as long as I had a clear goal and the genuine cooperation of the inhabitants. Before we started I visualized five dimensions of research: 1) the dimension of acquaintances and of simplest social contacts; 2) the dimension of choices and refusals of contact, which I thought to be due to the like-dislike-indifference or the attraction-repulsion-indifference patterns. I defined an attraction or repulsion as the resultant of a "parallelogram of forces" which binds individuals or separates them; the forces may be physical, psychological, social or cultural; 3) the dimension of motivations; 4) the dimension of social interaction, and 5) the dimension of role playing and role reversal. I assumed that the depth productivity of a group required a depth analysis of it along these five levels of research. Accordingly, I constructed several instruments to accomplish the deed: the acquaintance test, the sociometric test, the test of emotional expansiveness, the spontaneity test and the role playing test.

After the test was given each time we analyzed the findings and developed out of them the next logical move in the sense of the inquiry. The first step in the test was so simply constructed in order that we might get an immediate foothold into the spon-

taneous evolution of community machinery: we let every member choose his associates in respect to the criterion of living in the same home, irrespective of age, nationality, or whatever. But in the course of analyzing these choices we found the outcome so contradicting that we could not reconstruct the home groups in the community upon their basis. A minority only "clicked," that is, chose each other mutually, and a still smaller minority clicked by first choice. The large majority "passed by" or neglected each other for unknown reasons. At the same time the choices "broke" all the racial, religious and I.Q. lines, colored choosing white, white choosing colored, Catholics choosing Protestants, high I.Q. choosing low I.Q., and *vice versa*.

Further, we had discovered that instead of the 2,525 choices expected (on the basis of 505 persons choosing at a rate of 5 choices each), only 2,285 choices were actually made. The fact of 240 choices being missing had compelled us to make a special investigation. (See chapters, Limit of Emotional Interest and Sociodynamic Effect.) But the discovery of choices being missing brought about another critical speculation regarding our procedure. Besides the two factors, limit of emotional interest and sociodynamic effect, whether or not any individual has made her 5 choices in full, may have a relation to the number of acquaintances she has had the opportunity to make and a relation to the period of time she has spent in the given community up to the moment of the test. As the Hudson school is a closed community, we had the possibility of tracing these factors accurately as every individual who arrived into it faced the population equally strange to her with the exception of rare instances wherein a new girl had previously met one or two of the population outside.

After having treated these two side problems we returned to the primary stage of our research. The great number of unreciprocated choices suggested to us the idea that perhaps an inquiry at the other end, from the unresponding individuals, may adjust many one-sided situations and transform them into reciprocated ones. Also, as we had found in certain cases that the mutual choice was undesirable for one or the other party, we considered more information about both ends of the relationship necessary. Therefore we began an investigation into the *motivations* underlying these choices.

It is the place, here, perhaps, to ponder upon methodical errors which we may have made up to the present point. First comes the validity of subjective choice. Subjective choice to be valid requires the total absence of such factors as threat and fear and the operation of such factors as confidence in the *realization* of their choices. It is obvious that the girls in Hudson, if they wanted a desire to be carried out, would try to make their choices as sincere as they were able. Furthermore, the meaning of the test was explained to the girls by the superintendent in person, whom the girls realized had full authority and whose great desire to aid each girl was often experienced by them. The recklessness of the choices made, as presented in the sociograms, is evidence that no doubt need exist as to the sincerity of the choices except in occasional cases.

They knew that they would not be punished for being honest, but rewarded, if in any way possible, by being moved into the cottage in which they liked to live. It came out in the interviews that the choice was at times not only directed towards an individual but towards the cottage as a whole.

Second, after the validity or invalidity of subjective choice was considered, we estimated the validity of choice and response for the purpose of classification. The range of choices and responses fell between 5 and 41. Every single statement about an individual was thus checked by 5 to 41 other statements and hence appeared well supported. Third we considered the fluctuation of opinions, the problem that the opinions of individuals, especially of adolescents, might be found to change rapidly. Therefore the girls were allowed a period of 90 days in which to change their choices or responses. However, they maintained their original choices and responses to the extent of 95%. Fourth came the accuracy of the girls' statements and motivations for their choices. These are, indeed, frequently inaccurate. Notwithstanding comprehensive study of each child's statements of motivations, they are sometimes, as in the cases of backward children, little more than naive utterances. Yet in one respect the most inarticulate motivation does not differ one iota from the most articulate one. It expresses this or that individual's desire or protest regarding living in the same cottage with this or that other individual at the time of interrogation. The fact that the more intelligent person motivates her

likes, dislikes and indifferences more fully does not change the fact that she also only expresses a preference. Thus the real test of the situation is not how accurate statements are, but again, how spontaneous and subjectively true they are.

A further restrictive argument is that the preference of 5 persons outside your group does not exclude your liking the persons of your own group, if only in lesser degree. But to resign from being together with persons whom you know to be of greater inspirational value for you and your progress is difficult.

Last not least, it was hard to determine the "weight" of a choice and the difference between a first and a second choice. This is why I later introduced *the time index, measuring the intensity of choice by the amount of time individuals spend together*.

Our attempt to reevaluate the accuracy of the far-reaching conclusions concerning the limit of emotional interest of individuals in respect to different criteria and the sociodynamic effect which results from the psychological pressure bearing upon each individual in large populations suggested to us to consider another source of possible error in our calculation. The members of the Hudson population, before they became a part of it, had been members of a community outside. Many of their emotional interests may reside, and certainly must have at one time resided, in the community from which they came. However, the girls have not been asked to choose for living in proximity individuals who lived at the time of the interrogation in some outside community. It is possible that such emotional attachments to parents, siblings, friends, men or women, do not decrease in intensity even after a long stay in the training school. This may account for the indifference some individuals have demonstrated in making use of the five allotted choices. If the test had been carried out in a manner *not* limiting the choices to the population within the Hudson school and had allowed the girls to choose *any* acquaintance anywhere, the result of the test might have been, and we can assume it almost to a certainty, far more prolific than the picture we have obtained. Many more communities than Hudson would have become subject to our test. Each of these communities may have appeared in our "Psychological Geography" map as a cottage now appears. An inclusion of individuals outside of the school would have made the whole procedure ridiculous, as it would have been

apparent to the girls that the test was not sincerely meant but purely academic. This might have interfered gravely with the prospect of releasing from them spontaneous and sincere expressions. Further, the fact that no individual outside of Hudson was available for the girls made the conditions equal for all. Still further, we have found that with the exception of men friends, most of the purely social acquaintances the girls have made outside are replaced by girls whose friendship they have won in Hudson. But we realize that *the ideal conditions for this experimental study should provide for "unrestrained" exercise of choice.*

The question also can be raised if the sociometric test is a necessary procedure in the determining of group and community organization. Is it not possible to determine the organization of a group through careful observation of each member, through interrogating one about the other, finding the indifferences, attractions and repulsions existing and the motivations underlying them? Would classification made upon this basis and the sociogram charted approximate classification and sociograms as arrived at by the sociometric test itself?

Such a "sociometrically oriented observational method" is of considerable value whenever the real test cannot be carried out; with the aid of an "observer" sociogram it may give a rough picture of the situation.

But such a procedure is still inadequate and its classification would be false, however accurate the gathered information may be, because it limits the investigation to the individuals of which the group *actually* consists. This group is not fully isolated from the rest of the community. The individuals of this group are in contact with many other persons in the community: the field of investigation has necessarily to be expanded to all individuals who may have been in contact with any member of this group. To ascertain these we should have to engage a great number of field workers watching every member of the given cottage over a sufficient period of time, and, to be accurate, every member of the community, because it is just as significant to know how many other individuals feel indifferent, attracted or repulsed towards some individual of the community being investigated. This would mean unsurmountable labor. But even then we would get a confusing picture of the situation, little more than an acquaintance

index subjectively undifferentiated,—imitating piecemeal the sociometric test.

In fact, what such a point of view fails to convey is an understanding of two important items the test has brought to clarity. One is that *the actual setting in which an individual lives and which is imposed upon him by whatever authority and the setting which he would like to have need not be and seldom are identical.*

It does not recognize the social atom of an individual, that configuration of emotional currents running from this individual to others in various localities of the community and that of the emotional currents running from each of them back to him. The second factor which this point of view fails to take into recognition is that *every collective is organized more or less successfully around a definite criterion.* This holds however inarticulate it may be in the mind of its members. It may, for instance, be the criterion of wanting to live in proximity with certain individuals which produces a configuration of emotional currents between one and a number of persons. Without this criterion we would have a configuration of likes and dislikes between one individual and a number of others without knowing to which criterion these likes and dislikes are related. A further investigation always reveals, as we ourselves have found through experimenting with the test in this indefinite fashion, that various criteria mingle and condition this configuration,—the wanting to work in proximity, to study in proximity, sexual criteria, cultural criteria, or whatever. Therefore, the observational procedure has from a sociometric point of view the value of an auxiliary. The sociometric test, instead, is a useful *methodical guide.* It helps to draw, organically and progressively, information from every possible source bearing upon the social atoms of which the community consists.

COMMUNITY ORGANIZATION

TYPES OF GROUP ORGANIZATION

Electrons have the same weight and quantity of electricity when they are alone, but if they are attached together to make up an atom they begin to exhibit individuality. Similarly with

men. If they are attached together to make up a group they begin to exhibit individual "differences" which did not seem to exist before.

It is one thing to ask what *causes* brought about these differences and the forming of a group. This question has been asked and many answers offered. But it is another thing to ask how is a group or a society organized. The former question is hypothetical and deals with causes; the latter is descriptive and analytical and deals with facts.

The sociometric approach of group organization is free from preconception of the contrast between individualism and collectives or corporate bodies. It takes the attitude that beyond this contrast there is a common plane, as no individual is entirely unrelated to some other individuals and no individual is entirely absorbed by a collective. The position of each individual within his kind, however apparently isolated, is one thing and cooperative acts of such individuals at certain times is another.

We have learned that groups of individuals have a tendency to develop definite organization which can be accurately ascertained and that the patterns of this organization change. (a) According to the age level of its members. (See pp. 150-152.) (b) According to the interest of the members for one another. (See p. 249). If the group is a home group and if the majority of its members prefers to remain within it, this *organization tends to be introverted* (see p. 270); but if the majority of its members wants to live with outsiders, this *organization tends to be extroverted* (see p. 265). An introverted group organization tends to be warm, over-filled with emotion. An extroverted group organization tends to be cold, as little emotion is spent within it. When the members are not interested in with whom they live, either with each other or with outsiders, the *organization is one of solitaires* (see p. 139, Fig. 1). If the introverted and extroverted tendencies reach an equilibrium, the *organization is balanced*.

"Extroverted" and "introverted" are psychological concepts introduced by Carl Jung which are widely used to connote specific individual reaction patterns. But *extroverted* and *introverted group organization* are sociometric concepts and have no relation to *introverted* and *extroverted* as used in the psychological sense. For instance, many members of an introverted group organization

may be extroverts and many members of an extroverted group organization may be introverts. Further, they are not subjective notions but exactly measurable expressions. The sociometric notions which correspond to *extrovert* and *introvert* in the psychological sense are *emotional expansiveness* and *emotional shrinkage*. But they, too, have been developed in regard to the functioning of the individual within a group and can be presented in a metric fashion.

A similar problem arises when we consider the theory of instincts. The dichotomy of instinct in the form of the sexual and the aggressive components may satisfy the psychoanalyst and the needs of individualistically oriented psychiatry. From their point of view it may appear that we should identify all emotions expressing attraction with the sexual component and all emotions expressing repulsion with the aggressive component. But this division, even if considered true for the individual organism, meets with methodological difficulties when applied to groups. The origin of a certain emotion, love or hate, rising from an individual, whatever the analytic definition of the end-product may be, is in its psychogeographical unfoldment interlocked with emotions rising from other individuals. Often we can see how they grow together, in symbiosis, dependent upon one another. When we say *attraction*, we indicate that a certain emotion spreads through a certain geographical area in respect to a certain criterion to *join* with a certain individual. When we say *repulsion*, we indicate that a certain emotion spreads through a geographical area in respect to a certain criterion to *separate* from a certain individual. A sexual current is not necessarily the accumulation of sexual impulses; it is often the product of many contrasting and even contradicting factors. If we should say, instead of attraction, *love* or *libido*, we would say more than we can say; we would confuse the sexual component which has an individual origin with the sexual current which has a sociometric origin. It appears, therefore, more useful to consider the sociometric area of investigation as having laws of its own and not to mix its interpretations with those coming from other fields.

(c) If the group as a whole—or the majority of its members—(sometimes through the influence of a key-individual) develops a hostile attitude towards one or more outside groups, its *organiza-*

tion can be called *outward aggressive*. (See sociogram of C7, p. 271). On the other hand, if this tendency is dominant *inside* the group, as in C12, the organization can be called *inward aggressive*. (See sociogram of C12, p. 274). (d) According to the function or the criterion of the group, as a *home* group, a *work* group, or whatever, a different organization may result in each instance, even if the members are the same in both instances. The work group may be harmonious, the home group disharmonious, in both groups the same girls function. Later we will come also to consider complex organization differences due to (e) *conflicting functions within the same group*. An example is the natural family where the conflict arises between the function of the sexual grouping, the man and woman, and the function of the social grouping between father, mother, and children. Group organization changes are also found to be due to (f) *overlapping of functions*. An example is the primitive family association such as the Chinese, which includes functions which otherwise would be exercised by other units, as a school unit, a work unit, etc.

Organization and function of a group appear to be closely related. If a home group has an organization which is extremely extroverted, that is, a majority of its members would prefer to live in other groups, the functioning of this home group suffers in its different aspects proportionately and characteristically. We studied the various types of disturbances developing in home groups and ascertained to what definite form of group organization a definite aberration in function is potentially related. The same function in a cottage group, for instance, the executing of the necessary housework, is performed with differing efficiency according to the organization of the group, besides other factors. If the majority of the members attach their emotional interest mainly to individuals outside their group, this extroverted organization is a potential condition which may easily release disturbances of this function through lack of precision in work, superficiality of performance, tardiness, etc. If the organization is of the reverse type, introverted, and in addition many of the members reject each other, the same function may show a disturbance of a different nature, as friction and conflict between the members over its execution. On the other hand, an organization in which many members reject the housemother and at the same

time attract one another, forming a network against the house-mother, may release a different disturbance of the given function. As the accepting of directions from the housemother is essential to the work, out of this last mentioned type of organization regression in the work executed frequently results, accompanied by open rebellion.

QUANTITATIVE ANALYSIS OF GROUP ORGANIZATION

The first problem which we faced in the quantitative analysis of home groups was to ascertain the amount of interest its members showed for their own group. This is what we call, briefly, Ratio of Interest for Home Group. We used the following technique. Cottage 10 has 33 members. Each member is allowed 5 choices. If every member of C10 used her 5 choices within the group, 165 choices would be distributed within it, or 100%. But the members of C10 have attached only 53 choices to their own group. Computing the ratio of 53 choices to 165 possible choices, we have 32.12%, the Ratio of Interest for Home Group in C10.

TABLE 11

RANKING OF COTTAGES ACCORDING TO RATIO OF INTEREST FOR OWN GROUP

C 6.....	71.20%
C13.....	71.03%
C15.....	69.63%
C 9.....	59.00%
C12.....	56.36%
C 8.....	56.10%
C 2.....	55.45%
C11.....	53.57%
C 1.....	47.00%
C 4.....	46.67%
C16.....	46.00%
C 7.....	44.57%
C 3.....	39.17%
C14.....	37.93%
C10.....	32.12%
C 5.....	31.00%

Subsequent comparison of these ratios with the conduct of the respective cottage group revealed that with the trend of the ratios towards lower percentages, as below 35% (C10 and C5), the standard of conduct of the groups in this category was lower

than the average standard in various respects: lack of interest of the majority of members to raise the standard of house morale, greater interest in members of other cottages, an almost total lack of *esprit de corps* in respect to forms of malbehavior which are related to lack of unity in the house group, as runaways, and a high number of members who apply for assignment to other cottages. With the trend of the ratios of interest towards the higher percentages, 35% and over, cottages appear on the table which have shown a comparatively better standard of conduct. Eleven of these cottages (all except C7, C11, and C12) had no runaways for a period of nine months, while those cottages with percentages below 35% had several. However, a high ratio of interest was not always correlated to a high standard of conduct if other factors existed in the organization of the group to counter this. For instance, in the case of C12 (a colored group) the high ratio of interest shown for its own group was a disadvantage: the members did not look for other outlets and at the same time there were numerous rejections among themselves.

The amount of interest members of a family group or of any together-living group have for it cannot go below a certain minimum if this group is to be considered a moral force in the shaping of the personalities belonging to it. What is this minimum? It seems to us axiomatic to assume that if out of 2 at least 1, out of 4 at least 2, out of 6 at least 3, if at least 50% of a cottage group do not want to keep the group up and desire its continuation, then this group has to be ranked as below the minimum standard. Of course, 50% is an arbitrary estimate.

We see that frequently a family or a business is held together by one dominant individual; as soon as that individual dies, it collapses.

It may one day be found that the minimum is higher than 50% and not lower. But it can be speculated that the minimum of interest for the group, if the group is to continue as a constructive unit, can probably be lower the larger the group is. It is obvious that a pair relation is difficult if one of the partners is more interested in a relation to a third person. But if a group consists, for instance, of 2,000 persons, and if 500 of them want to preserve the group, this group may have a better prognosis than a pair relation in which one-half is disinterested. In large groups

the factor of function has greater opportunities for flexibility and specialization. For instance, in a pair relation one cannot have towards the other person but one function at a time and exchange of function is only possible at different times. But in large groups one person may have a number of different functions at the same time towards a number of different persons. Yet another factor is significant: the influence which leader-individuals are able to exert in large groups. The distribution of power in large groups depends upon the intricate distribution of emotional currents. An individual who is in control and can steer the course of one of these currents can wield an immense potential influence out of all proportion to his immediate following.

The love and hatred which members of the same home group have for each other will have an effect upon the organization and conduct of the group as a whole. We attempted to follow up this factor technically through ascertaining the distribution of attractions and repulsions among the members of each cottage group separately. We followed the technique of summing up the number of attractions and repulsions in the same group and calculated the respective percentages. If the members of a group expressed 75 attractions and 25 repulsions, the ratio of attractions would be 75% and the ratio of repulsions 25%. Table 12 presents the percentages of attractions and repulsions within each cottage group.

TABLE 12
RANKING OF COTTAGES ACCORDING TO THE SUM OF ATTRACTIONS AND
REPULSIONS IN PERCENTAGES

	<i>Attractions</i>	<i>Repulsions</i>
C 2.....	85.36%	14.64%
C13.....	84.43%	15.57%
C 1.....	83.93%	16.07%
C 7.....	78.79%	21.21%
C15.....	76.23%	23.77%
C 6.....	75.42%	24.58%
C11.....	68.47%	31.53%
C16.....	67.30%	32.70%
C12.....	66.67%	33.33%
C 9.....	65.49%	34.51%
C14.....	59.14%	40.86%
C 8.....	58.48%	41.52%
C 3.....	55.81%	44.19%
C10.....	49.20%	50.80%
C 4.....	48.41%	51.59%

The percentage of attraction among the members of C10 is 49.20 and the percentage of repulsion is 50.80. The percentage of attraction among members of C6 is 75.42 and the percentage of repulsion is 24.58. In C10 it is not only the ratio of interest which is low but the number of repulsions exceeds the number of attractions and indicates a low standard of group organization. In C6 the ratio of interest is 71.2%; in C10 it is 32.12%. This illustrates how widely two home groups can differ.

Besides the summing up of the number of attractions and rejections we considered another aspect, a qualitative factor: that often a single affection of one individual for another may have in its repercussions an effect upon the group or upon the community which exceeds by far the small part it contributes quantitatively. It is a sociodynamic growth of affection, not only a numerical one. We have tried to find for this qualitative factor a quantitative expression (see p. 324).

In estimating the popularity of a cottage group within the community compared to all the other cottage groups, we hypothesized that the greater the number of individuals in the community who desire to live in a specific cottage the greater is that cottage's ratio of attraction. To secure this ratio of attraction we used the following technique. We divided the number of choices its members actually received by the maximum number of choices they might have received if all the girls in the various other cottage groups at the time of choosing had sent all their choices into that cottage. An example is C5. The total population of the community at the time of the test was 505. The total population of the 16 cottages was 435. The 70 individuals unaccounted for were at that time residing chiefly in the hospital or on the farm attached to the school. As both these groups were formed on criteria other than living in proximity—as was the case of the cottage groups—(in the one instance, the criterion to be treated for illness, in the other a vocational criterion) we excluded the findings in reference to these groups from those relating to the 16 cottage groups. At the time of the test the population of C5 was 17. Hence the number of girls in other cottages was 435 less 17, or 418. The maximum number of choices these 418 girls might have sent into C5 is 418 multiplied by 5, the number of choices allowed, or 2,090 choices. The number of choices C5

actually received from other cottage groups was 25. Dividing 25 by 2,090, C5's ratio of attraction is found to be 1.2%. The ranking of the cottage groups according to their respective ratio of group attraction is presented in Table 13.

TABLE 13
RANKING OF THE COTTAGES ACCORDING TO RATIO OF GROUP ATTRACTION
(An Index of Relative Popularity)

<i>Cottages</i>	<i>Ratio of Attraction</i>
C 2.....	4.0%
C 1.....	3.8%
C 7.....	3.3%
C 6.....	3.0%
C 4.....	3.0%
C13.....	3.0%
C14.....	3.0%
C10.....	2.9%
C11.....	2.6%
C16.....	2.5%
C15.....	2.5%
C 8.....	2.0%
C 3.....	1.7%
C12.....	1.6%
C 5.....	1.2%
C 9.....	0.9%
Total.....	41.0%

It appears, therefore, that the sum of all the ratios of attraction is 41%. We had found that the desire to remain in the present cottages, the ratio of interest summed up for all the cottages—arrived at by adding all the percentages listed in Table 11 and dividing by 16—is 51%. Hence it is evident that the *cohesive forces at work in this community were stronger than the forces drawing the girls away from their cottage groupings*. The difference between these two ratios, or 10%, indicates that the introverted trend is still greater than the extroverted and offers objective evidence of the balance existing in the groups of the Hudson community. The percentage unaccounted for when the ratio of interest, 51%, and the ratio of attraction, 41%, are added together, is 8%. This 8% represents the number of unused choices among the population, 435, of the 16 cottage groups at that time. The percentage of unused choices previously mentioned, 9½% (see *Limits of Emotional Interest*, p. 224) was reduced to 8% when the population charted was reduced from 505 to 435.

On the basis of the ratios of interest for their own and for outside groups, of the distribution of attraction and repulsion within a group and toward outside groups, of the ratio of attraction, a group has for other groups, and other statistical calculations, a *social quotient* of a group can be developed.

STRUCTURAL ANALYSIS OF GROUP ORGANIZATION

In Greek mythology Eros is the god of love and Eris is the god of discord. Less well known is the interesting brother of Eros, Anteros, the god of mutual love. That is how the Greeks accounted for the forces of attraction and repulsion among men. It is most beautiful Greek poetry which states that when love begins an arrow flies to the chosen. The symbol of the arrow has its counterpart in our symbol for attraction, the "red line." The Greeks held that all the red lines are projected by Eros, all the black lines by Eris, and all the mutual red ones by Anteros, and that men had nothing to say about them. Instead of searching with a torch into the labyrinth of love and hatred, they had a mythical formula. We have tried to analyze this network.

The forms taken by the interrelation of individuals is a structure and the complete pattern of these structures within a group is its organization. The expression of an individual position can be better visualized through a sociogram than through a sociometric equation.

A minute research of sociograms C1 to C16, pp. 265-278, has opened the way towards a quantitative study of home (cottage) organization and their relation to behavior. One of the microscopic techniques to estimate the status of a group in regard to structure consists in calculating the number of each specific structure, as isolated structures, pair structures of mutual attraction or of mutual rejection, triangle structures of attraction, etc. See Table 14, Classification of Cottage Groups According to Structural Analysis, p. 258.

Cottages 10 and 6, whose quantitative analyses of forms of isolation are given in Table 14, showed the following contrasts in structure: Cottage 6 has no isolated individuals against 14 in C10; it has 28 pairs of mutual attraction against 10 in C10; it has no pairs of mutual rejection against 6 in C10; it has 8 red-black or incom-

patible pairs against 9 in C10; it has 5 chains of mutual attraction against 2 in C10; it has 4 triangles of mutual attraction against 0 in C10; it has 5 squares of mutual attraction against 0 in C10; it has 6 circles of mutual attraction against 0 in C10; it has 1 star of rejection against 2 in C10. From the point of view of structure, C6 is better integrated than C10.

Whether the isolated position of the 14 individuals in C10 is beneficial for them or not does not alter the fact that it is detrimental for the group as a whole if 14 out of a population of 33 are not wanted in that home. Also, a high standard of integration within a group does not by any means imply that that group itself is well integrated within the community. The structural position of a group in the community is a different aspect and problem. It can be concluded that the larger the number of isolated structures in a group organization, the lower is the standard of its integration; that the larger the number of mutual attractions, the higher is the standard of the group's integration; that a large number of mutual attractions is a soil for the finer harmonies; that these harmonies become evident as more complex structures, as chains, triangles, squares, etc.; that, on the other hand, disorganization and disharmony are indicated by a great number of mutual repulsions and of attractions which are rejected.

READING OF SOCIOGRAMS

In the course of reading sociograms it became evident that certain structures recur with regularity. We have lifted some of the most characteristic structures from the sociograms and present them on pp. 137-139.

Typical Structures in Groups, I

A. Red Pair. Two individuals form a mutual attraction, a red pair.

B. Black Pair. Two individuals reject each other; they mutually desire to live apart.

C. Incompatible Pair. Two individuals are not compatible. One sends a red line which is answered by a black line; one sends a red line which is answered to by a dotted line; two individuals send dotted lines to each other.

D. Black Chain. This structure is formed if two individuals mutually reject each other, and one of them forms a mutual rejection with a third, the third forming a mutual rejection with a fourth, the fourth with a fifth, etc. The incompatible chain mirrors the number of persons in a group who are sensitized to find fault with others; the longer the black chain the more are they so sensitized. The emotional attitude of those who enter into a black chain is in danger of becoming more and more absorbed by critical, suspicious, and hostile interests, especially if they are isolated in the group. The newcomer into a group, particularly into the groups which have a highly disintegrated organization, develops often a reputation which is unmerited and reflects the interrelation with a group which is itself maladjusted.

E. Red Chain. This structure results when two are mutually attracted and one of them forms a mutual attraction with a third, the third forming a mutual attraction with a fourth, the fourth with a fifth, etc. The compatible chain represents an uninterrupted flow of emotional contacts within the group. It is the natural route for indirect imitation, suggestion, gossip, etc., and is influential in the forming of group attitudes. It is the social telephone wire.

F. Black Triangle. Three individuals incompatible with each other form a black triangle. This structure at times accompanies widely different conduct. In one instance, the black lines each of the three sent to the other two persons were found to be due largely to jealousy and protest against the other two, as each sought to dominate the group, unrestricted and single-handed.

G. Red Triangle. Three individuals compatible with each other form through mutual attraction a red triangle.

H. Black Square. A black square (and also a black circle) are structures which are so rare that we have not encountered any in this research. This is probably due to their being reflections of such concentrated rejection that the situation in the group in which they develop has to be relieved soon after they come into formation.

I. Red Square. Four individuals who are mutually attracted to at least two of the four form a red square. Every closed structure as this has to be looked upon suspiciously as it may signify the beginning of a gang cut off from the larger group. But when the

four persons are interrelated by attractions to others in the group, it is an offshoot of a superstructure well integrated into the organization of the group.

J. Red Circle. A red circle is formed similarly as a red chain except that in addition the structure is closed.

K. Red Star. This structure is formed if 5 or more individuals are attracted to the same individual; the latter is the center of the red star. Many such structures can be noted in the sociograms.

L. Black Star. This structure is formed if 5 or more individuals reject the same individual; the latter is the center of the black star. Many such structures can be noted in the sociograms.

M. Red Star rejecting the Group. This structure is formed if the center of the red star rejects the majority of those who are attracted to her.

*Typical Structures in Groups, II. Forms of Isolation.**

A. Simple Isolation. This structure represents isolation of an individual not only within her own group but within the community. The individual is not chosen or rejected and does not choose or reject. No one is anxious to live with her and she in turn does not care with whom she lives. It is a structure of simple isolation.

B. In the second type of isolation represented, the individual chooses individuals outside her group but is not chosen by them or by individuals within her group.

C. In the third type of isolation represented, the individual is chosen by individuals outside her group, but herself chooses individuals other than those who choose her. She neither chooses nor is she chosen within her group; or she may be chosen by individuals within her group but makes no choices either within or outside of her group.

D. In the fourth type of isolation represented, the individual chooses only individuals within her group but these individuals are indifferent to her.

E. Isolated Triangle. In the fifth type of isolation represented, the three individuals form a mutually compatible triangle but each of the three individuals receive black lines from the group. It is a structure of an isolated and rejected triangle.

* See charts on p. 139.

F. In the sixth type of isolation represented, five individuals, each isolated and rejected in their group, reject one or another of these five. This structure, it was found, developed from a rejected gang which was breaking up.

G. Isolated Pair. Two individuals form a mutually compatible pair but both of them are unchosen. In this instance, one of the pair rejects the group and the other is attracted to members within it.

H. Isolated, Rejected and Rejecting. The individual is not only unchosen but rejected and she in return rejects the group.

TABLE 14
CLASSIFICATION OF COTTAGE GROUPS ACCORDING TO STRUCTURAL FORMS OF ISOLATION

	<i>No. of Persons</i>	<i>Un- chosen</i>	<i>Unchosen and Rejected</i>	<i>Unchosen, and/or Rejected and Rejecting</i>	<i>Isolated</i>	<i>Isolated and Rejected</i>	<i>Chosen but not Choosing</i>
C 1	20		3		3		
C 2	22				2		2
C 3	24	2	4	1	1		3
C 4	26	1	3	2			1
C 5*	17	2			3		
C 6	25						2
C 7	35	3	3		2	1	3
C 8	31	2	2		1	2	
C 9	28	3					
C10	33	6	7		1		2
C11	28	1	1				
C12	33	1	4				
C13	29	2	2				2
C14	29	3				1	1
C15	27	2					2
C16	30	6	5		1		1
Total:	437**	34	34	3	14	4	19

Similar tables of classification can be made for all categories of social structures found in a community; they are not included here.

* The analysis of C5 is made only in respect to the first phase, the choices.

** Total population at the time of this counting of the population was 435 plus 2 new admissions.

Organization of Social Atom (page 302)

Fig. 1, Person 1, HT. HT is the center of 16 attractions. Six girls are attracted to her from outside cottage groups and 10 are

attracted to her from her own cottage. She rejects 3 of those attracted to her within her group and one other within her group who is neutral towards her. To another she is indifferent. Of those from outside groups she rejects 3. The clinical picture of those whom she rejects reveals that they lower the general conduct level of the community. She is selective in her friendship and definite in her rejections.

Fig. 2, Person 2, EM. EM is the center of 22 attractions, 3 from girls within her group and 19 from girls outside her group. She has enough followers to occupy with them a whole cottage and to be treated like a queen bee, but she is indifferent to all but two (MM and CO), one of whom is her sister. She rejects 3 others. EM is an artistic, self-centered child whose emotional energy is largely absorbed by creative endeavor.

Fig. 3, Person 3, LE. LE is the center of 14 rejections and 1 attraction. The 1 attraction is from a colored girl (HL) but the colored girl whom LE is attracted to (MS) rejects her, as do the three others to whom LE is drawn. The remaining two chosen by LE do not respond. This structure reflects the position of a rejected individual who still endeavors to find a reciprocating attraction. Such a status did not develop at once. It is an end phase of a long process.

Fig. 4, Person 4, BU. BU is the center of 6 attractions, all of which are reciprocated, 5 from girls within her group and 1 from a girl in an outside group. BU rejects 3 individuals within the group. BU is in the position of a leader-individual within her group and in a position to reject. She can afford to be independent.

ORGANIZATION OF WORK GROUPS

Up to this point the research was concerned with home groups. It gave attention only to the relations between persons. But when we applied the sociometric test to the work groups in the community an additional factor had to be considered: materials, tools, machines. Therefore two aspects entered the test: (a) the relations of the workers to each other and the foreman and (b) the relation of the workers to the particular technological process. A third aspect, the economic, was not evaluated in the test as in Hudson monetary compensation is excluded. It was an advan-

tage to approach simpler, less differentiated work units before more highly differentiated ones. The machine devices were primitive and the factor of wages was discounted.

The sociometric test was varied to fit the new situation and given in the following manner. The tester entered the work room and tried to get into rapport with the group by explaining that sincere answering of the questions about to be put to them might lead to a better adjustment of their work situation to their wishes. Each individual was asked:

1. Did you choose the work you are doing now? If not, name the work you would prefer to do.

2. Choose five girls from the whole community whom you would like best of all as coworkers and name them in order of preference, first choice, second choice, third, fourth, and fifth. The individuals you choose may at present be in your home group or in this work group or in other groups. Choose without restraint whomever you prefer to work with.

3. Choose three coworkers from this group in which you are now participating whom you prefer to work with. Name them in order of preference: first choice, second choice, and third choice. Consider in choosing that some parts of the work are done by you in association with a second or third person and you may wish other associates instead of the ones you have now.

The test was given to all the work groups in the community. See p. 281 Steam Laundry. A second example is one of the handicraft groups herewith presented.

Handicraft Group. The group consisted of nine members. Its organization was considered from two angles: the members as individuals and the members as workers.

The work process consisted in renovating household furniture. The materials used were: paint, varnish, sandpaper, cane, etc. The first process consists of removing old paint from furniture; the second, repairing and painting. The work could be carried on so that each girl could execute a process alone. But it was found by experience that to break the monotony of the work the girls conversed aloud to make themselves heard over the noise made by the scraping of the wood. Therefore they were put at the task in pairs, which had the effect that the partners talked to each other instead of to girls at a distance.

Sociometric test findings were: 6 of the 9 workers (or 66%) gave as first choice the *same* girls in the community choice as in their choice from the immediate work group. Three workers (or 33%) preferred a girl outside the work group but named one of their coworkers as second choice. One worker, May (L), was rejected by 4 of the 9; another worker, Ella (GR) by 3 of the 9, among whom May and Ella rejected each other. Only 1, May, said she did not choose the work and did not like it.

Analysis. As indicated by the sociogram, p. 279, G and R are mutual first choices; likewise are P and T. GR and B are mutual choices, first choice from B and second choice from GR. L is rejected by G and also by three other workers, including GR—whom she rejects in turn—*i.e.*, she is a “black” star of the group. S, C and L are isolated. The latter two send their first choice outside the group. S sends her choice to G and is unreciprocated. Comparison of the work choices with the home choices of the same individuals disclosed that 22 work choices are identical with the living choices, that is, 50%. (The number of possible choices in the work test and in the home test is the same, 5 choices for 9 persons, 45.) On the basis of first choices, the percentage is still higher, 66%. There is evident a trend to differentiate between the choices of the girls in respect to the collective and its function, *i.e.*, between those with whom an individual prefers to live and those with whom she prefers to work.

The importance of interaction between groups and the counter-effect the position of an individual in one group has upon his position within another group became apparent. T, who is isolated in her home group, is chosen by 2 in her work group. Thus her position within one group is compensated for or counter-balanced by her position within another group. L is isolated and rejected in both her work group and her home group. C is also isolated in both groups. Their positions in both collectives are equally unsatisfactory. S is isolated in her work group but chosen by two in her home group. B is the center of 4 attractions in her home group and receives 2 choices in the handicraft unit. Thus the position of this individual is strengthened in each group by her adjustment within the other group.

On the other hand, we see the dynamic interplay of relationships developed in one group affecting the position of the indi-

vidual within a different group. When the testing of the home groups began G was found to be isolated, rejecting R and the group; R was found to be isolated, rejected and rejecting. One month later, when the test was extended to the work units, G and R were isolated and rejected each other in their work group. But when the sociometric test of the handicraft unit was repeated three months later, it disclosed G in a leader-position and mutual first choice with R, whereas they were still isolated within their home group. Figures 1 and 2 on pp. 279-280 of *A Handicraft Group*, show this stage in the development of the work group structure. Five months later retesting of the cottage revealed mutual attraction between G and R and the favorably adjusted position of both within the cottage group.

According to the ratings of the instructor, the two mutually attracted pairs, R—G and P—T, are the most efficient of the workers. L received the lowest rating because of unsatisfactory work and wasting of materials. It appeared that if an operation required the working in pairs, two persons should, for the proper execution of the work be sufficiently compatible to respect each other's work efficiency.

HOME AND WORK GROUPS DIFFERENTIATED

The organization of a group and the function allied with it are closely related, as we have shown previously. Definite disturbance of a function within a household is accompanied by a characteristic pattern of organization. The functions in a household are largely social, behaving according to a certain standard, dining together, exchanging innumerable little courtesies, tolerating one another in intimate group life. But in a work group these functions are to a large extent absent. They are reduced to a minimum. It is from technological changes that new functions develop and are imposed upon the group. The same group of persons with a certain family organization placed into a technological situation develop a different type of organization.

A structure occurring in the organization of a home group which may express little or no disturbance in the functions of this group can express a very severe disturbance in the functioning of

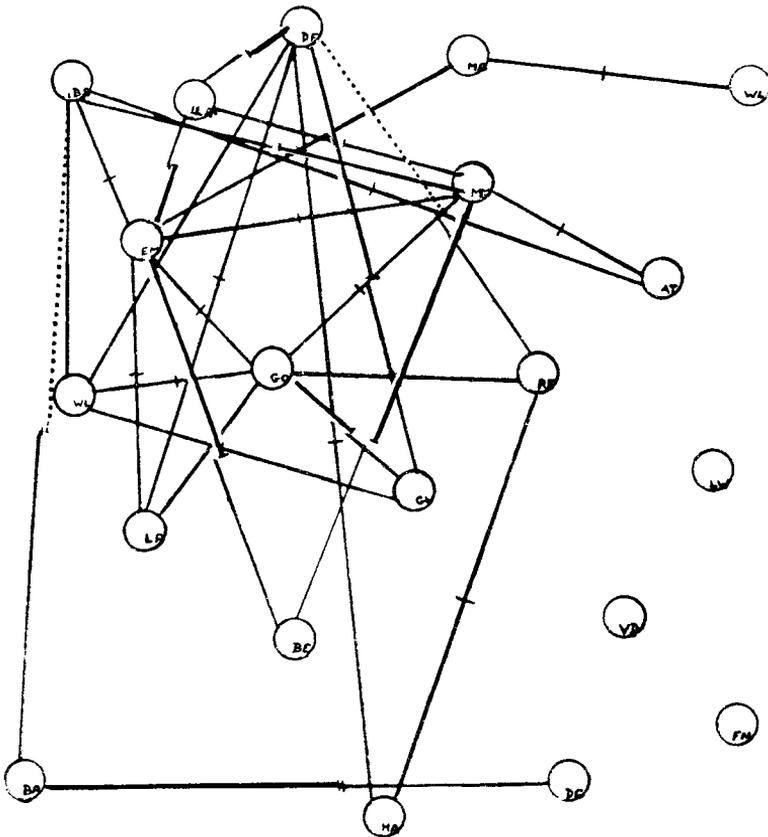
a work group, even if the same individuals are concerned in both instances. Such an instance is the relationship between DR and LR. See sociograms of a Steam Laundry, pp. 281-282. In the home group, C12, they reject each other, but this structure had no appreciable effect upon the group as a whole as far as could be observed for over nine months. They reject each other also in the steam laundry, their work assignment. But in this situation their hostile interaction towards each other had the most upsetting effect upon the work process and the cooperation of the group as a whole, a few times bringing the work to a standstill. This has a simple explanation. DR and LR were the feeders of the steam roller. If they quarreled with each other they failed to feed the machine evenly or delayed the feeding. A delay or disturbance in the feeding disturbed or delayed the catchers who temporarily had no work to do. At other times, when the two enemies did not want even to look at each other, one fed the machine too hastily, the other too slowly. One catcher was then so overcrowded with work that she could not meet the demand fully and pieces caught in the machine necessitating the forewoman to halt the steam roller in order to remove them.

Again, while an extroverted organization in a home group may predispose towards severe disturbances in function, an extroverted organization in a work group may predispose but very slightly towards disturbance. The sociogram of the rug-making group demonstrates an extroverted group organization. The efficiency of the work process was, however, not interfered with to any appreciable degree. The reason for this is apparently related to the technological process itself. Each worker works with her individual crochet hook at a speed she herself dictates. Her actions do not depend upon the actions of her associates. On the other hand, *the workers, although they did not choose or like each other, had chosen the work. Interest in the work to be executed can provide compensation for lack of interest in coworkers.*

The test had also been given to mentally retarded groups as well as to groups in the community outside. It appeared that the trend of differentiation between home and work choices as observed for many groups in Hudson *decreases* in groups of mentally retarded individuals. The same group for home and work was chosen more often. Attachment to the same persons for all

social needs may have psychologically an economic advantage. Overlapping of the two functions in one group may be less demanding than their specialization into two groups for performance. It appears like a regression to forms which were prevalent in more primitive societies (Chinese family association). The trend towards differentiation seemed to *increase* for mentally superior groups in the community outside. But there were exceptions: there were a small number of groups consisting of mentally retarded individuals who favored the differentiation of groups and there were a small number of groups consisting of mentally superior individuals who favored the one group set-up. But the general trend as found is another demonstration of the *sociogenetic law* that social groups grow through a process of differentiation from simpler to more complex units.

ORGANIZATION OF GROUPS—HOMES



STRUCTURE OF A COTTAGE FAMILY—C1

Criterion: Living in proximity, sharing the same house; 5 choices; no limit placed on rejections.

20 girls. *Isolated* 3, VD, LW, FN; *Unchosen and Rejected* 3, DC, BE, LA; *Pairs* (of attraction) 18; *Incompatible Pairs* 11; *Chains* 5; *Triangles* 2, EM-MM-GO, EM-GO-LP; *Squares* 3, DF-WL-GO-LP-DF, EM-MM-GO-LP-EM, EM-GO-WL-BS-EM; *Circles* 2, BS-EM-MM-GO-WL-BS, EM-GO-MM-AT-BS-EM; *Stars* (of attraction) 3, DF, GO, EM.

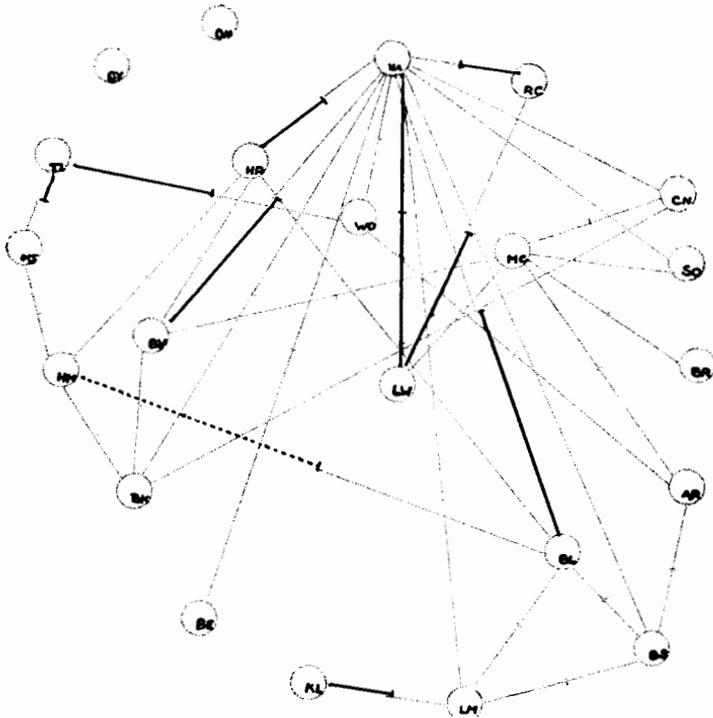
The chains are the local links of the psychosocial networks of the entire community. Triangles, quadrangles, circles, provide the basis for subgroup formation.

Classification: Extroverted Group Organization.

Clues for Group Psychotherapy in Situ:

Of the 100 choices, 47 go inside, 25 are not used, and 28 go outside the group. The problem is 1) how to draw the emotions of the members back to their own group; 2) working with the isolates; 3) probing into the rejections; note that they come from the stars, DF, GO, EM.

ORGANIZATION OF GROUPS—HOMES



STRUCTURE OF A COTTAGE FAMILY—C2

Criterion: Living in proximity, sharing the same house; 5 choices; no limit placed on rejections.

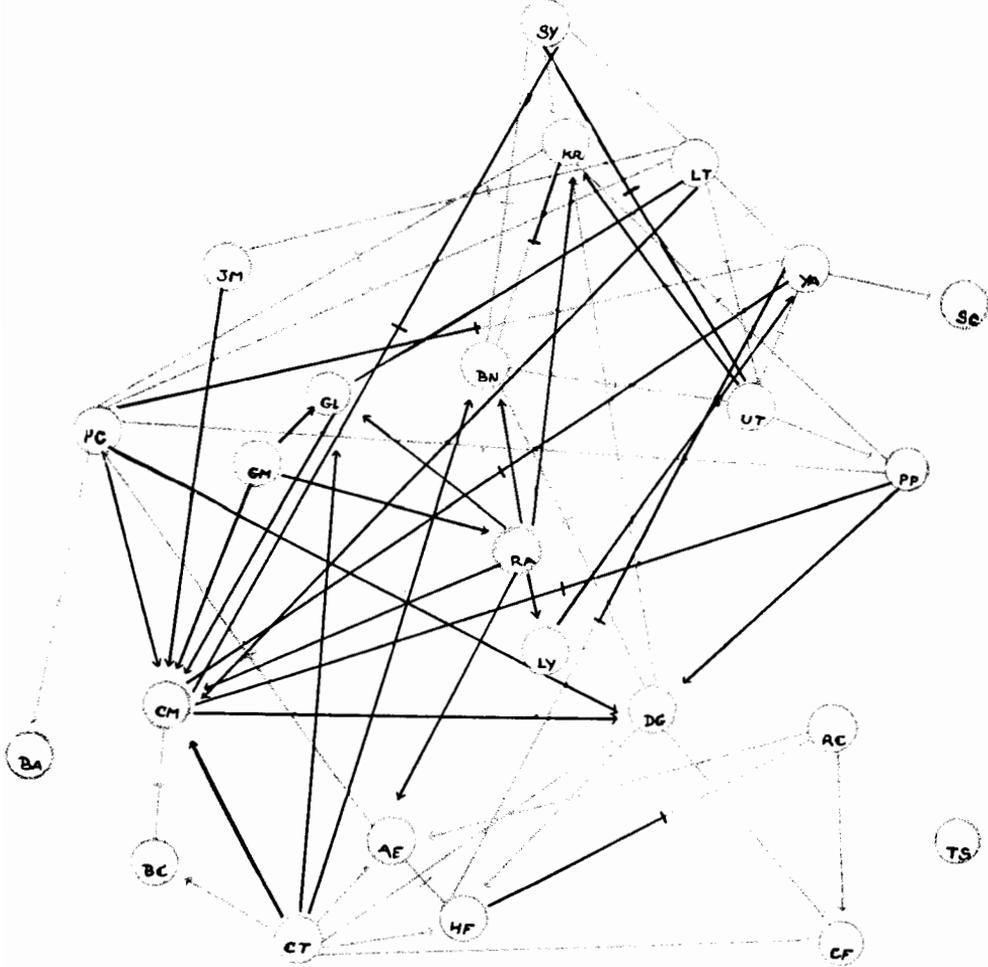
22 girls. *Isolated* 2; *Not Choosing* 2; *Pairs* 23; *Mutual Rejections* 1; *Incompatible Pairs* 9; *Chains* 2; *Triangles* 2; *Squares* 2; *Stars* (of attraction) 2; *Stars* (of rejection) 1. Note: Star of attraction MA is also a star of rejection.

Classification: Extroverted Group Organization.

Note for the Group Psychotherapist: The star MA is rejected by four individuals who are, next to her, in the most powerful sociometric positions of the group.

Note the close relation between the individuals who reject MA. Watch the newcomers in the cottage as to the camp with which they associate.

ORGANIZATION OF GROUPS—HOMES



STRUCTURE OF A COTTAGE FAMILY—C3, BEFORE RECONSTRUCTION

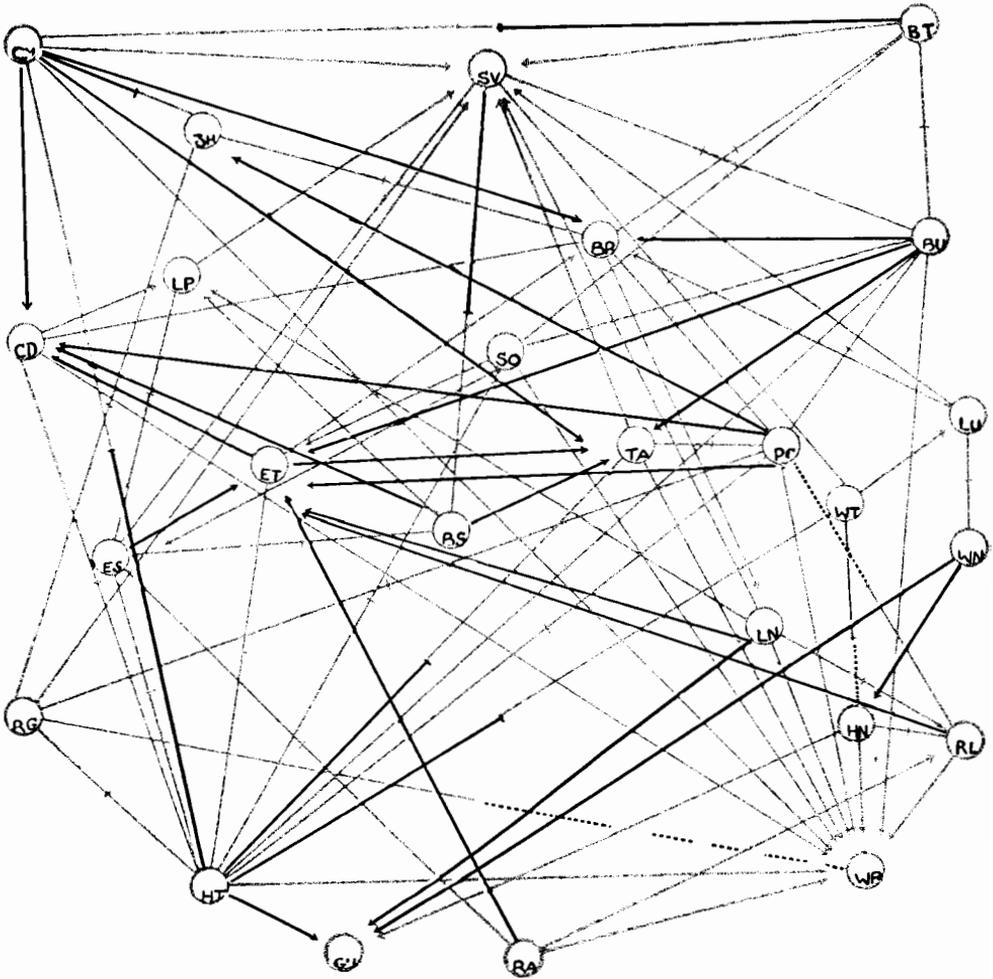
24 girls. *Isolated* 1; *Unchosen* 2; *Unchosen and Rejecting* 1; *Unchosen and Rejected* 4; *Not Choosing* 3; *Pairs* 15; *Mutual Rejections* 5; *Incompatible Pairs* 4; *Chains* 2; *Triangles* 2; *Squares* 1; *Circles* 1; *Stars (of attractions)* 1; *Stars (of rejections)* 1.

Classification: Extroverted Group Organization; Inward Aggressive.

Since the first test was given the population changed from 23 to 24. Note that 4 girls do not use their choices at all, they only express rejections. The structure has changed considerably since the entrance of the 24th girl, CT. LT, for instance, who was an Isolated Star before, now has mutual relations with all those who choose her and a mutual rejection with GL who formerly chose her.

Note for the Group Psychotherapist: A psychodrama around the star of rejection CM might disclose the forces producing the inward aggressive organization of the group.

ORGANIZATION OF GROUPS—HOMES



STRUCTURE OF A COTTAGE FAMILY—C6

Criterion: Living in proximity, sharing the same house; 5 choices; no limit placed on rejections.

25 girls. Pairs 28; Not Choosing 2; Mutual Rejections 0; Incompatible Pairs 8; Chains 5; Triangles 4; Squares 5; Circles 6; Stars (of attraction) 6, ES, WR, SV, HT, BU, BR; Stars (of rejection) 1, ET. (Note "Isolated Star" WR.)

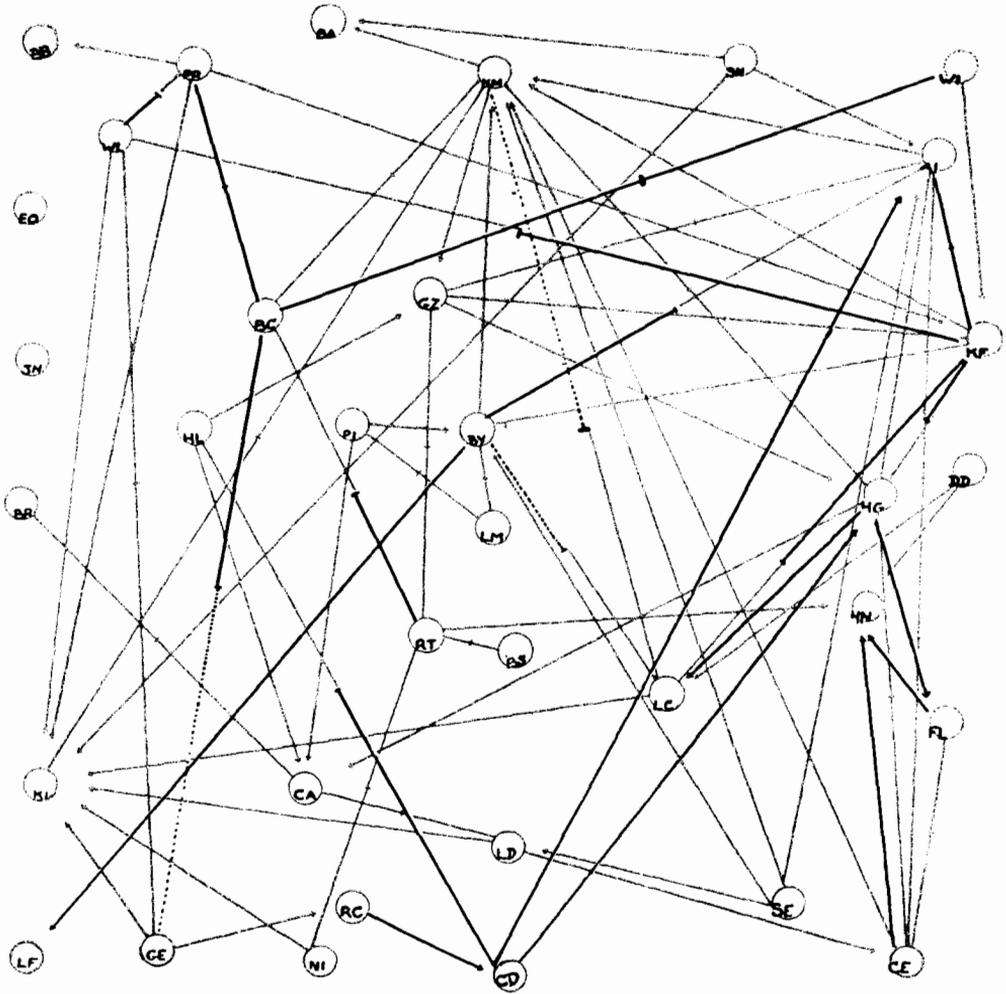
Classification: Introverted. In comparison with Cottages 1, 2, 3 and 4 which are classified as Extroverted, as more than 50% of the choices given either are not used or go outside of the cottage to members of other groups, in the cottage above more than 50% of the choices given go to members inside of the group. This group behavior is classified, according to sociometric convention, as an *Introverted Group Organization*.

Special Feature—High Degree of Differentiation.

Note near-isolated individual GU at bottom of chart; her transfer to another cottage is described on p. 505-507.

Note for the Group Psychotherapist: A psychodrama placing the isolated star WR versus the integrated star SV may reveal two different value systems.

ORGANIZATION OF GROUPS—HOMES



STRUCTURE OF A COTTAGE FAMILY—C7

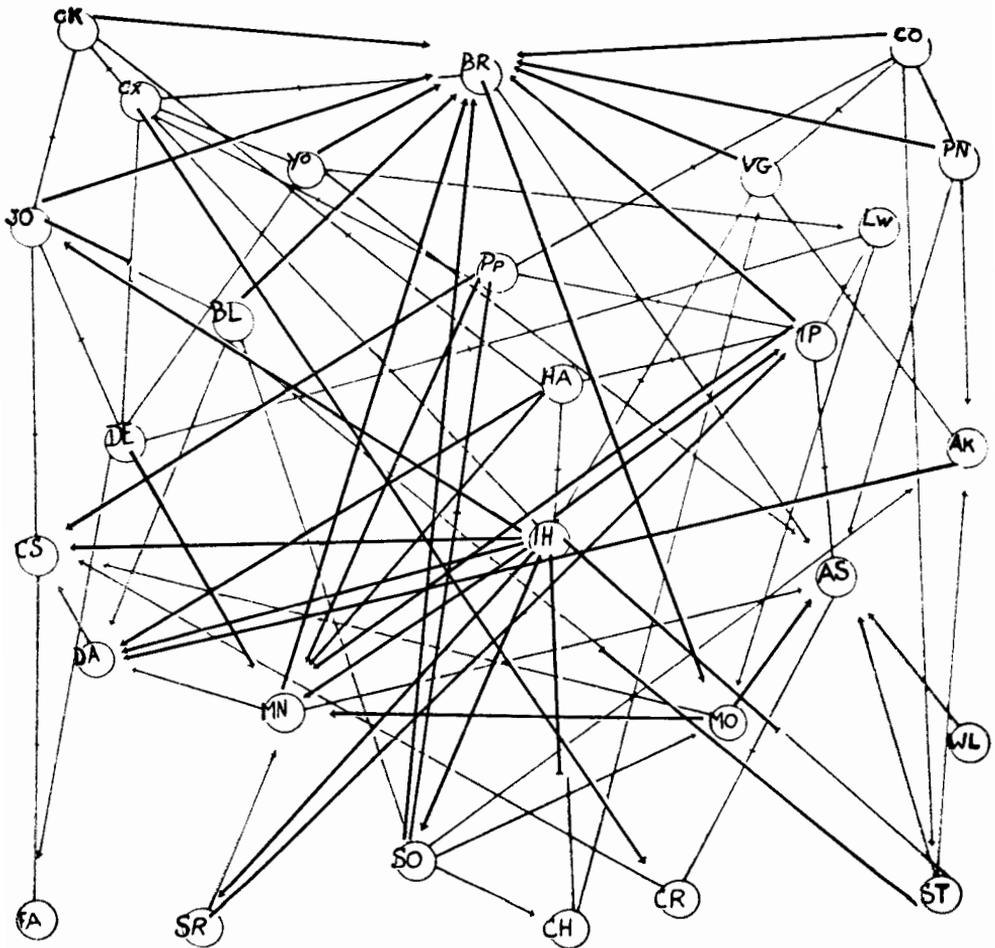
Criterion: Living in proximity, sharing the same house; 5 choices; no limit placed on rejections.

35 girls. *Isolated* 2; *Unchosen and Rejected* 3; *Isolated and Rejected* 1; *Unchosen* 3; *Not Choosing* 6; *Pairs* 19; *Mutual Rejections* 3; *Incompatible Pairs* 9; *Chains* 5; *Triangles* 1; *Squares* 0; *Circles* 0; *Stars* (of attraction) 4.

Classification: Extroverted Group Organization; Outward Aggressive. Special Feature—Large Number of Isolated and Unchosen.

Note for the Group Psychotherapist: Approximately 20% of the group members do not choose; a special group session of the non-choosers is indicated. Is it due to indifference or are there latent choices?

ORGANIZATION OF GROUPS—HOMES



STRUCTURE OF A COTTAGE FAMILY—C11

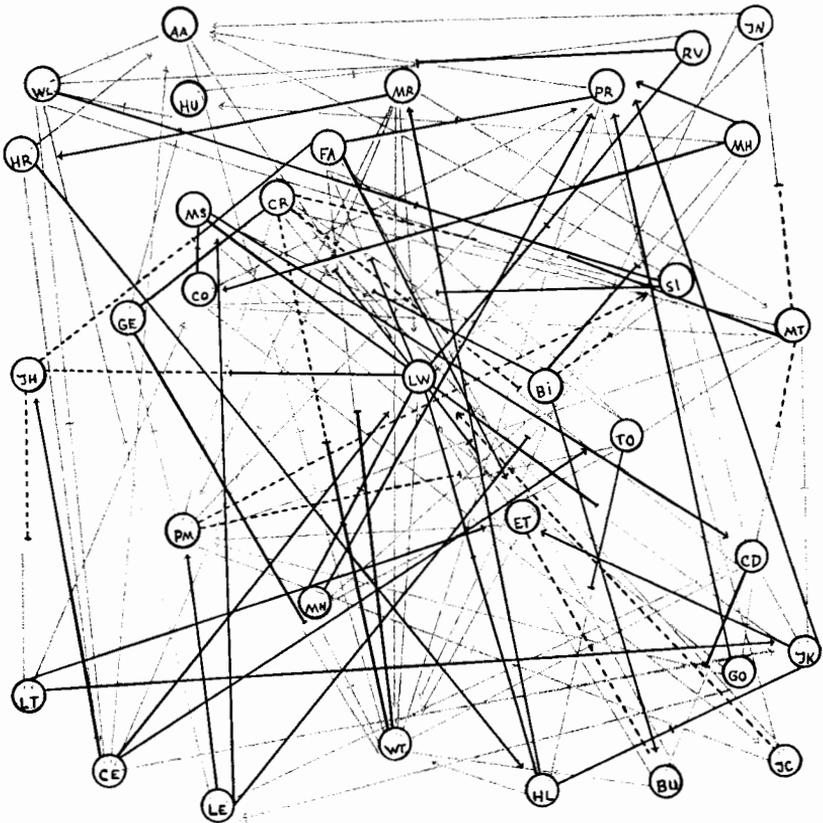
Criterion: Living in proximity, sharing the same house; 5 choices; no limit placed on rejections.

28 girls. *Unchosen* 1; *Unchosen and Rejected* 1; *Pairs* 24; *Mutual Rejections* 1; *Incompatible Pairs* 4; *Chains* 12; *Triangles* 1; *Squares* 2; *Circles* 2; *Stars (of attraction)* 2; *Stars (of rejection)* 2.

Classification: Introverted Group Organization; Inward Aggressive.

Note for the Group Psychotherapist: Expose the entire group to a sociodrama and explore whether the large amount of aggression has a cohesive or a dissociative effect. Is rejection sent into a group preferable to indifference?

ORGANIZATION OF GROUPS—HOMES



STRUCTURE OF A COTTAGE FAMILY—C12

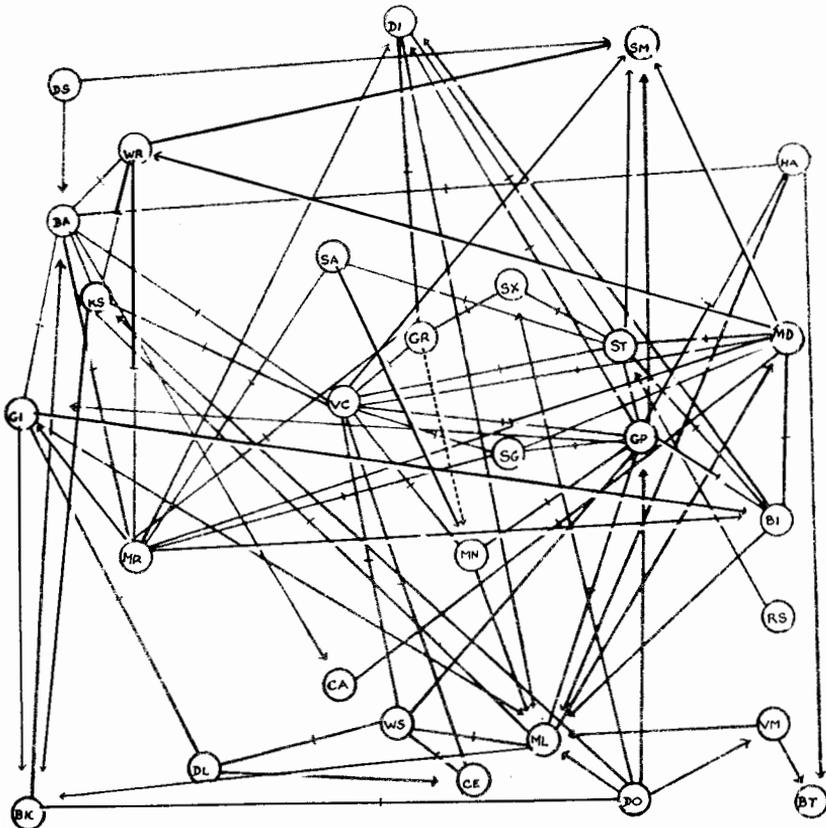
Criterion: Living in proximity, sharing the same house; 5 choices; no limit placed on rejections.

33 girls. *Unchosen* 1; *Unchosen and Rejected* 4; *Mutual Pairs* 31; *Mutual Rejections* 7; *Incompatible Pairs* 21; *Chains* 2; *Triangles* 2; *Stars* (of attraction) 4; *Stars* (of rejection) 1.

Classification: Introverted Group Organization; Inward Aggressive. Special Feature—Out of 33 individuals there are 31 who are either rejected or who reject some member of the group; only two are free from this pattern of aggression. It is interesting that this cottage is one of the two colored houses within the community, which is overwhelmingly white. The girls project most of their attractions as well as rejections upon the girls of their own race, producing an excess of love as well as of hate within a small social area.

Note for the Group Psychotherapist: Start a sociodrama and break the group into two opposing camps, the one unit consisting of individuals who indicate self preference, the other consisting of individuals who indicate self rejection. The problem to be explored will be whether self preference means here love for one's own race and self rejection hostility against one's own race.

ORGANIZATION OF GROUPS—HOMES



STRUCTURE OF A COTTAGE FAMILY—C13

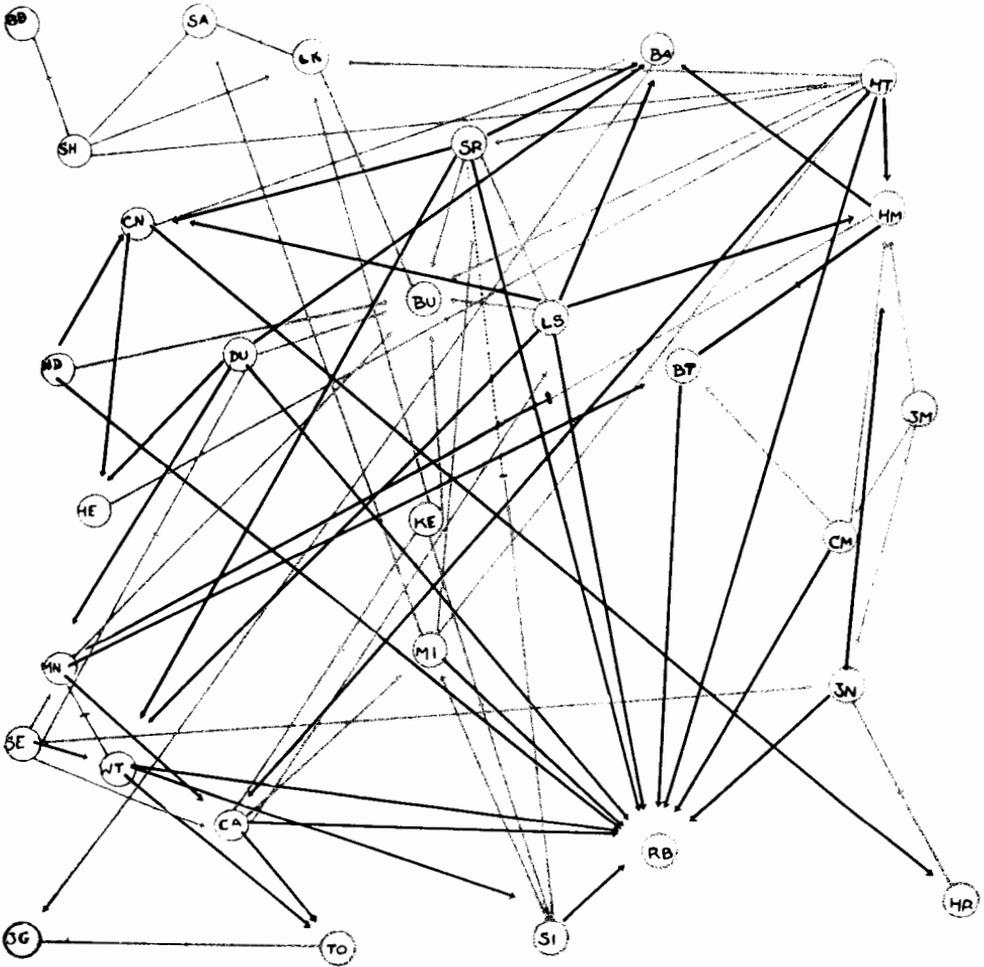
Criterion: Living in proximity, sharing the same house; 5 choices; no limit placed on rejections.

29 girls. *Unchosen* 2; *Unchosen and Rejected* 2; *Not Choosing* 2; *Pairs* 40; *Mutual Rejections* 1; *Incompatible Pairs* 5; *Chains* 6; *Triangles* 8; *Squares* 6; *Circles* 3; *Stars* 8. The Housemother is not represented on the chart. All 29 girls are attracted to her.

Classification: Introverted Group Organization. Special Feature—High Degree of Differentiation and High Cohesion.

Note for the Group Psychotherapist: How many newcomers can the group absorb and integrate without losing its present level of cohesion? This question can be answered by testing the emotional expansiveness of the stars in role-playing situations in which the newcomers participate.

ORGANIZATION OF GROUPS—HOMES



STRUCTURE OF A COTTAGE FAMILY—C14

Criterion: Living in proximity, sharing the same house; 5 choices; no limit placed on rejections.

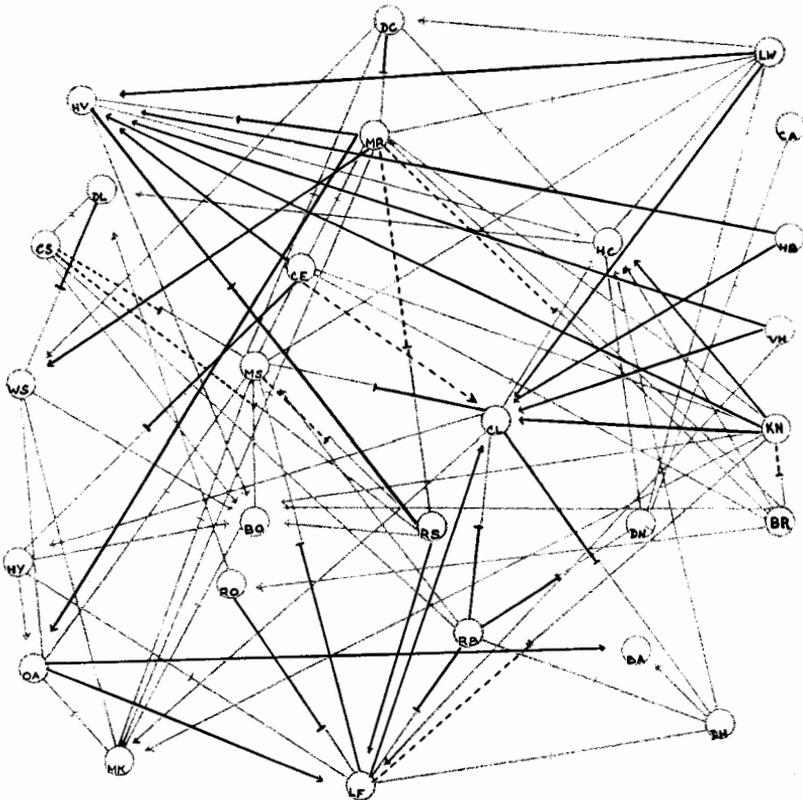
29 girls. *Isolated and Rejected* 1; *Unchosen* 3; *Not Choosing* 1; *Pairs* 13; *Mutual Rejections* 1; *Incompatible Pairs* 2; *Chains* 1; *Triangles* 0; *Stars* (of attraction) 1; *Stars* (of rejection) 1.

Classification: Extroverted, Inward Aggressive.

Compare the pair SR-LS above with their Runaway Sociogram, p. 396, and text on p. 398-400.

Note for the Group Psychotherapist: When potential runaways are indicated by the sociogram as above, a sociodrama can be set up in which the runaway plans are acted out, thus "preventing" them from occurring in actuality.

ORGANIZATION OF GROUPS—HOMES



STRUCTURE OF A COTTAGE FAMILY—C15

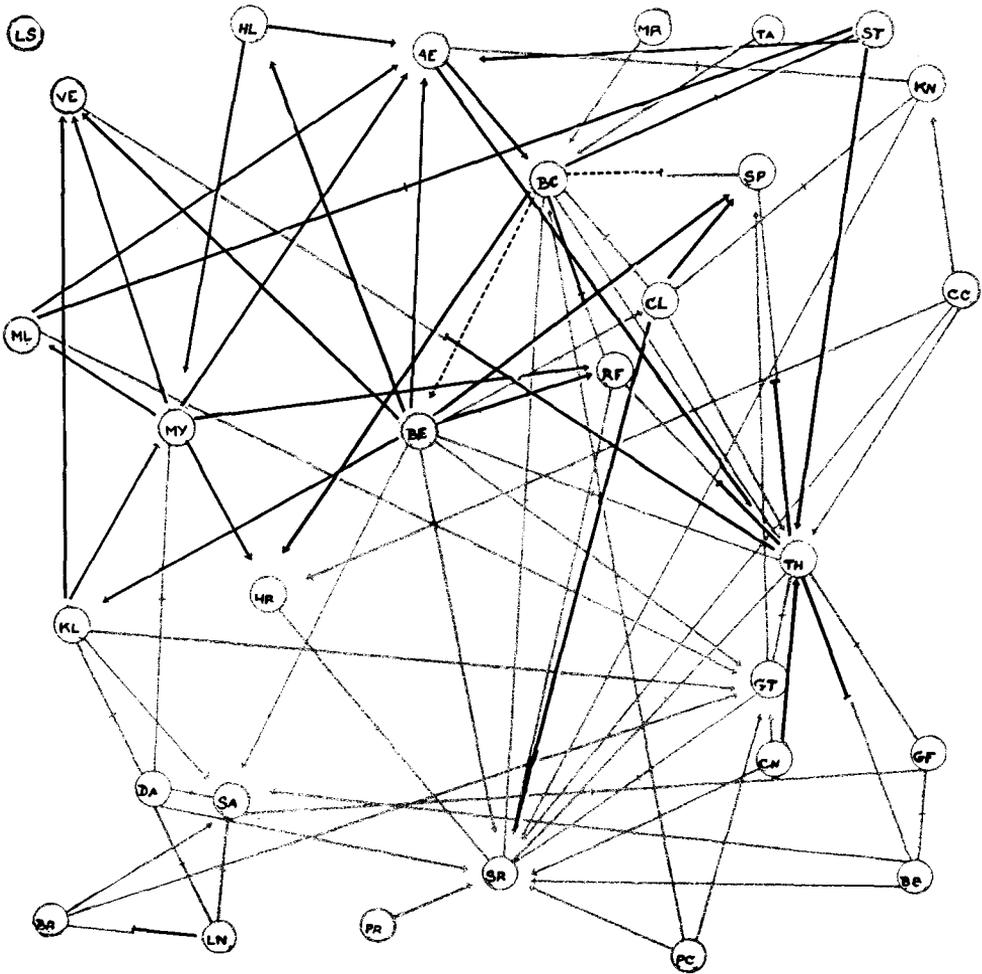
Criterion: Living in proximity, sharing the same house; 5 choices; no limit placed on rejections.

27 girls. *Unchosen* 2; *Not Choosing* 2; *Pairs* 27; *Mutual Rejections* 1; *Incompatible Pairs* 18; *Chains* 5; *Triangles* 6; *Squares* 4; *Circles* 1; *Stars* (of attraction) 5; *Stars* (of rejection) 2.

Classification: Introverted, Inward Aggressive. Special Feature—High Degree of Differentiation.

Note for the Group Psychotherapist: The triangle DA-MS-MK has been found to recur in a successive number of tests. A sociodrama may explore whether it represents a constructive or a destructive element to the entire group.

ORGANIZATION OF GROUPS—HOMES



STRUCTURE OF A COTTAGE FAMILY—C16

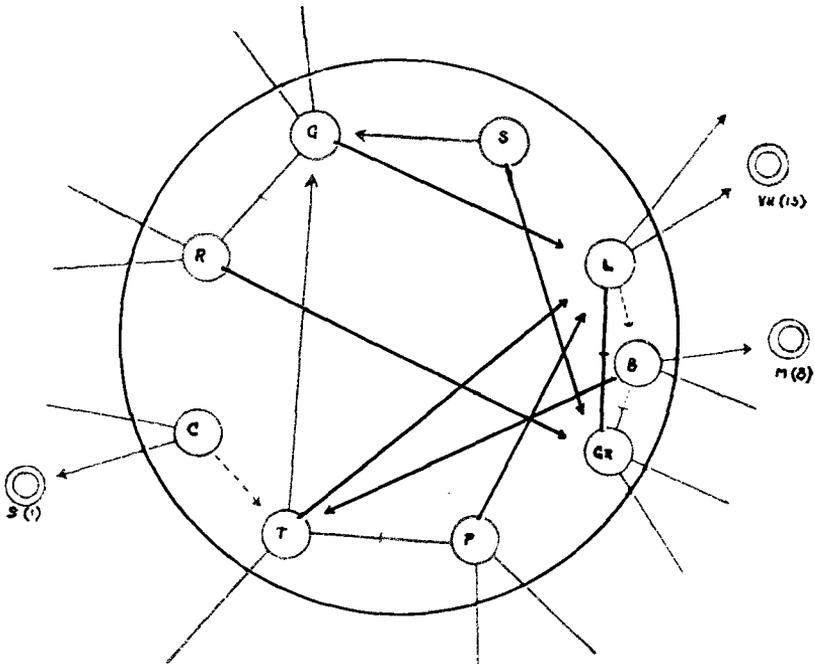
Criterion: Living in proximity, sharing the same house; 5 choices; no limit placed on rejections.

30 girls. *Isolated* 1; *Unchosen* 6; *Unchosen and Rejected* 5; *Not Choosing* 1; *Pairs* 18; *Mutual Rejections* 2; *Incompatible Pairs* 7; *Chains* 6; *Triangles* 2; *Squares* 0; *Circles* 0; *Stars* (of attraction) 5; *Stars* (of rejection) 1.

Classification: Extroverted. *Special Feature*—Large Number of Unchosen and Rejected.

Note for the Group Psychotherapist: In a sociodrama let the pro-group (the 19 members who choose and are chosen) face the con-group (the 13 members who neglect the group or are themselves neglected).

ORGANIZATION OF WORK GROUPS



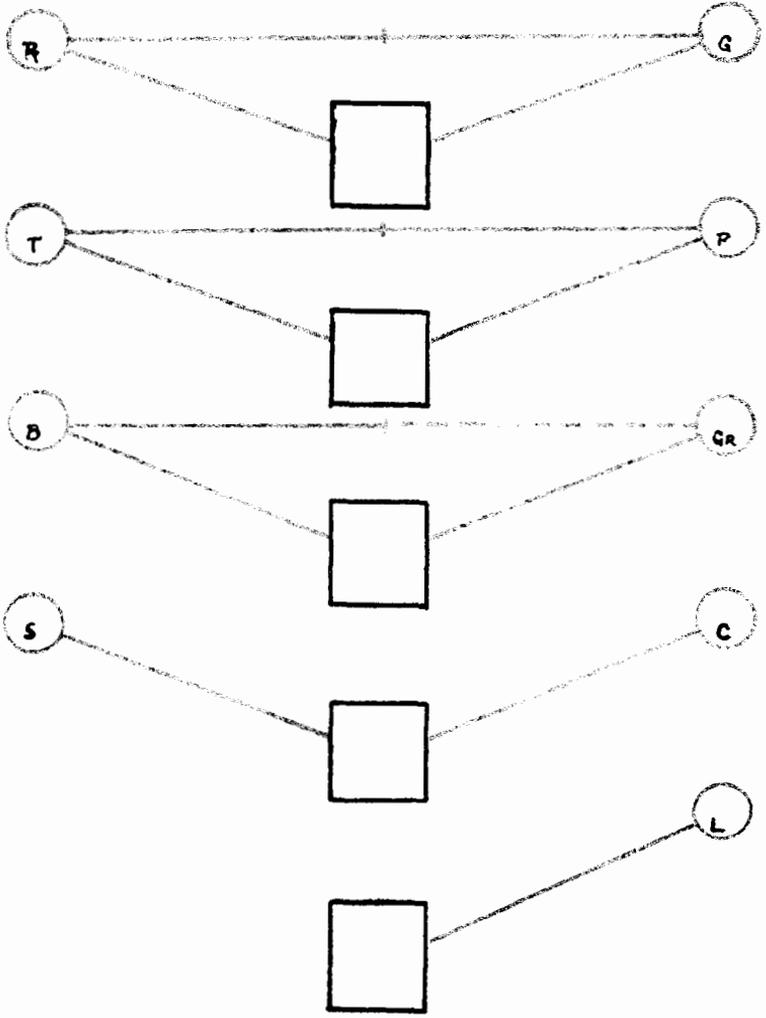
A HANDICRAFT GROUP

Fig. 1. R and G attract each other (mutual first choice). T and P attract each other (mutual first choice). B and GR attract each other (first choice vs. second choice). C, S and L are unchosen in the group. But whereas C and S are simply unchosen, L is rejected by four, C, T, P and GR. Two of these form a strong pair relation; L further rejects GR in turn; GR is also rejected by R and S.

Note for the Group Psychotherapist: In a work situation impersonal factors determine choice as interpersonal affinity, competency for the job and team-productivity.

A technically skilled partner is often preferred to an emotionally attractive partner who is less skilled.

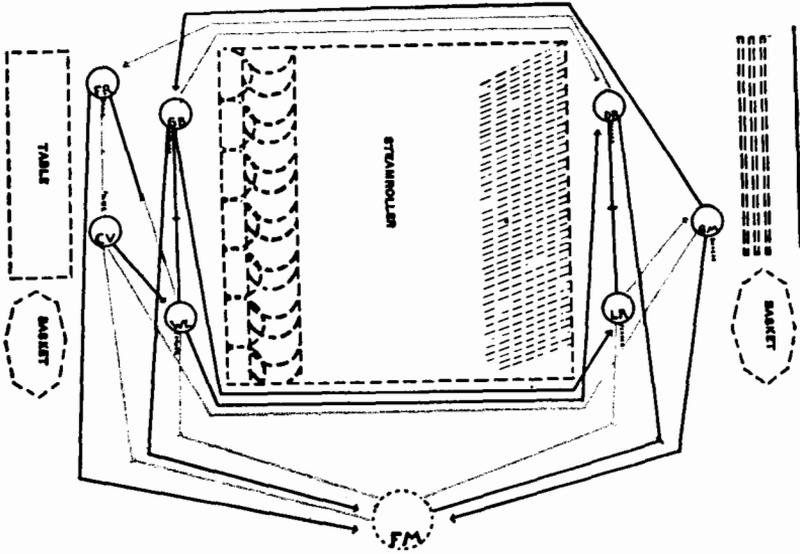
ORGANIZATION OF WORK GROUPS



A HANDICRAFT GROUP

Fig. 2. indicates that the 9 workers from Fig. 1 work in pairs and that they have been paired in accordance with their emotional relations and their work-productivity as dyads: G-R, T-P, B-GR, S with C and L alone.

ORGANIZATION OF WORK GROUPS

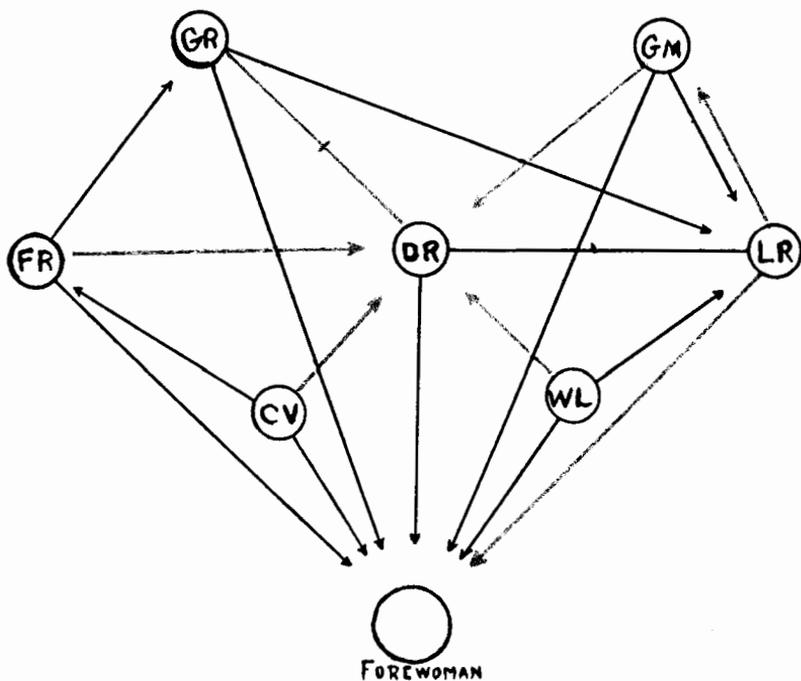


STEAM LAUNDRY
STRUCTURE BEFORE RECONSTRUCTION

Fig. 1. 7 workers and 1 white forewoman. DR and LR, the feeders, reject each other. GR and WL, the catchers, reject each other. WL rejects also the feeder opposite her, LR. FR and CV, the two folders, attract each other. FR and CV reject WL. GM, the shaker, is attracted to CV and rejects GR. GM, DR, GR and FR reject the forewoman (FM) but only DR is rejected by her. LR, WL and CV are attracted to the forewoman. The seven workers live in C12, but only WL is plotted on the sociogram of C12 because most of them came to the community at a later date. WL can be located on the sociogram of C12 on p. 274 at the top left hand corner. It may be noted here that she is a star of considerable attraction (5) in her home group. However, her sociometric position in the steam laundry is of a different order. Here she is rejected by 3 of the workers; the mutual attraction to the white forewoman is a carryover from the home group in which she represents one of the few stabilizing forces and where she has an affectionate relationship with the white housemother.

Note for the Group Psychotherapist: A sociodrama at the psychological moment in which all workers of the laundry and the white management would participate, might have prevented the racial riot which took place a few weeks after this sociogram was made.

ORGANIZATION OF WORK GROUPS



STEAM LAUNDRY (AFTER A RETEST)

Fig. 2. DR has gained a position of greater influence. In Fig. 1 she is the object of one attraction, GR; now she is the center of five attractions: GR, WL, FR, CV, GM and forms a pair with GR. She is rejected by LR whom she rejects in return. In Fig. 1 the forewoman is rejected by four workers, now she is rejected by all but LR. The influence of DR is apparent in the concentrated opposition against the forewoman. (See Chapter on Race.)

The pressure within the work situation has changed the sociometric picture. The growing hostility against the white forewoman has also involved WL. (One must remember that the authority in one of the colored cottages is a colored person, whereas here the authority is a white person. One should also bear in mind that the racial riot in the community started in the steam laundry.)

SOCIAL MICROSCOPY

THE EMOTIONAL EXPANSIVENESS OF MAN

The community of Hudson at the time of testing had a population of 505 persons. If each person should express like or dislike towards every other of the remaining 504 persons, the community would be filled with about 250,000 (precisely, 254,016) feelings of love or hatred. The 250,000 feelings of love or hatred consist of 125,000 pair-relations. Theoretically, at least, every person in Hudson could enjoy so many contacts. Of course, the possibilities of a person in Hudson are still limited compared with those of a person in a city such as New York. A New Yorker living in a community of about seven million inhabitants would have the opportunity to produce about 49 billion different attitudes or $24\frac{1}{2}$ billion pair-relations.

Fortunately, perhaps, our emotions are far more thinly spread and distributed and the quantity of their expansion, as we have proved at Hudson, can be easily measured. We say fortunately because if the expansive power of our emotional life should be so incredibly large as to enable us to produce and sustain billions of friendships or hostilities our social universe would burst from the unendurable heat of too much affection and passion.

We have given every person in Hudson the opportunity to choose 5 persons with whom she would like to live. This means that instead of expecting from each person an extent of interest up to 125,000 pairs of relations, we gave each an opportunity up to a maximum of 505 times 5 choices, that is, 2,525 relations, and if we counted the responses, many more. Incredible as it may appear, a great number of the individuals in Hudson could not make use of the 5 choices. For many girls 3 or 4 choices were fully sufficient to express their needs in respect to the home criterion. A small number did not choose at all. There were also a

number who could have used more than 5 choices to express their interest.

No other social institution is more responsible for man's sociability and the shaping of his emotional expansiveness than the family. The plasticity of the newborn infant is probably far larger than that of the adult man, perhaps potentially infinite. Not only the quality but perhaps also the quantity, the expansiveness of emotional interest has been molded by the family group. A family being a group of *few* persons forces the growing child to limit his attention to the development of few relationships, to parents and to siblings. His thirst to expand is thus early cut and channeled; he gets used to being content with a small number of relations. When grown up he feels that he cannot absorb more than a small number of relations. Indeed, the quantum of his active acquaintances will rarely rise or fall above or below the average. If he makes a number of new friends or enemies an equal number of former friends or enemies will fade out of his attention. He cannot go beyond a certain limit, it seems, to keep a balance.

Many questions can be raised. Why is the emotional expansiveness of some persons so much larger than that of others? Is it constitutional? Does increased expansiveness go together with increased spontaneity? Does reduced expansiveness go together with decreased spontaneity? Is the course of man's development towards restraint and rigidity? Is the retraining of man's social spontaneity desirable, will the future society develop a species of man whose social spontaneity will be infinitely larger than ours? If so, a natural power is here given to man full of potentialities which may enable him to win in the race against the machine: through the expansion of his spontaneous social energy to an extent unknown heretofore.

There is one to whom we always have ascribed the power of infinite expansiveness. It is God. In our religions it is perfectly natural to think that God has a private relation to each person of the universe separately. He has no relationships *en masse*, he does not know us altogether, he knows us each separately. We have figured out before that a New Yorker could have 24½ billion relationships within his commonwealth alone. For God this is not only possible but necessary and true. Will the man of the future be more similar to our image of God?

EMOTIONAL EXPANSIVENESS AND SOCIAL CONTACTS

According to plan we moved from the first dimension of research—the attraction-repulsion-indifference patterns—to the second dimension of research, the range of acquaintances, social contacts and emotional expansiveness. The reader will notice that we reversed the order designated in the book: I did not start with the logically first step, the acquaintances and contacts, but with a step which seemed to be ethically more appropriate for the sociometric research—the choices and decisions of the inhabitants. Had I started with the collection of data which may have appeared insignificant to the inhabitants, they may have felt like guinea pigs of a sort and the social experiment might have been blocked before its inception. After the community was “warmed up” by means of the sociometric test to a fair degree of cooperation, we could afford, without fear of arousing suspicion, to return to the first step and explore their range of contacts and expansiveness.

TEST OF EMOTIONAL EXPANSIVENESS

The test of emotional expansiveness measures the emotional energy of an individual which enables him to “hold” the affection of other individuals for a given period of time, in difference from social expansiveness which is merely the number of individuals with whom he is in social contact regardless of whether he is able to hold them or not. An illustration is the mother who is able to understand, hold and guide three children, with security and poise; when she has a fourth child she begins to have fits of anxiety and agitation from time to time. If the family should increase to seven children, for instance, it would be difficult for her to divide the amount of emotional expansiveness between all the seven. Three would be too much for her and escape her attention. Another illustration is a physician who can hold and counsel within his three office hours ten patients. Should the load increase to twelve or fifteen, his emotional expansiveness begins to decline, fatigue sets in and his judgment becomes poor. The same may be said about social workers, lawyers, clergymen, sales people, indeed, about every type of social service in which the emotional productivity in a task is linked to other individuals,

simultaneously or in succession. The emotional expansiveness is more directly related to behavior and action than the more inclusive sociometric test. It does not matter here how many are chosen, but how many an individual can hold and satisfy in his immediate needs. In the sociometric analysis of behavior it stands between the sociometric test and the spontaneity test.

The Parent Test (see p. 463) and the Family Test (see page 471) are tests of emotional expansiveness. In the course of Parent Tests we observed, aside from the manner a housemother reacted towards the different children around her, that one housemother was able to attract the attention of more children than another, and also that some housemothers fatigued more rapidly in their interviews. After a few tests we could already rank the housemothers roughly according to their emotional expansiveness. We followed the matter up in the respective cottage settings where we found our estimates corroborated by the behavioral responses.

A housemother can embrace with her given emotional energy only a certain number of children. If the number of girls she embraces surpasses a certain limit a process of selectivity sets in. She will develop a one-sided interest towards those to whom she is spontaneously "drawn": the rest will fall on the sideline. This limit of expansiveness has, thus, an effect upon the organization of the group through producing a number of girls isolated from the housemother either because there are too many in the cottage or because of "faulty" assignments. One factor in a "faulty" assignment is that the girl assigned to a certain cottage does not appeal to the housemother. The effort the latter has to make to reach the child is out of proportion to what she has available for her. And if two or three such individuals are assigned to the housemother, problems to her but easily reachable to others, she becomes, if she takes her duty seriously, more exhausted through dealing with them than through efforts made for a dozen other children. Eventually she becomes indifferent and she tries to mask her undoing. But her difficulties can be treated in roleplaying situations.

Emotional expansiveness is subjectible to training. No individual can be pushed beyond what appears to be his organic limit. But in most of the cases we have studied this limitation has been due to a functional inability to make full use of its range within

the organic limit. The housemothers can be taught through an analysis of their *volume* of emotional expansiveness, by showing them, that it is far larger than it appears; frequently it is consumed by many other individuals and objectives outside her actual job. Through the study of this volume and the range of its "consumers" we arrived at the problem of the volume of *all* acquaintances an individual has in the community in which he lives.

ACQUAINTANCE TEST

The acquaintance test measures the volume of "social" expansion of an individual, the range of his social contacts.

Every individual draws his significant relations from his volume of acquaintances. Acquaintances in the larger sense of the word are all the people whom he knows face to face or people whom he knows indirectly, for instance, via another individual or through correspondence. As already pointed out, theoretically at least, the place for an acquaintance test is at the very beginning of an investigation, even ahead of the sociometric test.

We began to study the acquaintance volumes of individuals, and for this purpose Hudson offered an excellent opportunity. The incoming girl arrives into a community in which she is totally without acquaintances, and from the moment of entrance her new acquaintances are limited to the given population. Because of these two conditions it was possible to gauge the relative growth in volume of acquaintances of each individual in Hudson.

We used the following technique: (a) The test was given to unselected groups, to every incoming girl as she arrived. (b) The conditions were the same for every individual tested. (c) The test was repeated every 30 days. (d) The instructions were as follows: "Write the names of all the girls whom you can recall at this moment to have spoken to at any time since you came to Hudson. It does not matter how long ago you made an acquaintance, nor if you spoke to her only once or many times. If you do not recall an acquaintance's full name, write her nickname or her first name or identify the person in some way. Do not include girls with whom you live in your cottage."

In Table 15 is presented an acquaintance index secured through the Acquaintance Test administered over a period of 6 months to 16 girls.

TABLE 15
INDEX OF THE VOLUME OF ACQUAINTANCES OF 16 INDIVIDUALS

Name	I.Q.	Cottage	After 30 days	After 60 days	After 90 days	After 120 days	After 150 days	After 180 days
JN	100	C16	13	18	33	39	41	42
GU	121	C 1	63	65	42	26	29	28
RD	62	C 6	7	8	12	9	9	8
DB	85	C 8	30	43	42	46	73	72
ML	80	C 6	24	27	30	33	27	28
MK	86	C 4	10	12	25	38	29	30
SO	112	C 6	30	44	37	50	62	74
KN	87	C11	21	32	33	52	101	131
IL	116	C 1	42	61	50	28	46	43
DN	85	C 8	22	42	29	32	34	31
HY	102	C 2	15	12	24	31	51	46
HR	65	C16	9	9	10	11	14	13
RZ	88	C16	33	14	22	25	25	26
HF	91	C10	30	44	79	84	75	82
FA	77	C10	14	16	15	32	32	33
NI	82	C11	13	25	41	42	47	49

Analysis

The acquaintance volume of the 16 girls after 30 days ranged between 7, the lowest, and 63, the highest number of acquaintances; after 60 days, between 8 and 65 acquaintances; after 90 days, 10 and 79; after 120 days, 9 and 84; after 150 days, 9 and 101; and after 180 days, 8 and 131. We recognize from a reading of Tables 15 and 16 that the growth in volume of acquaintances varies from individual to individual and from time to time. In 9 instances, it can be noted, the acquaintance volume increased in general *progressively* from month to month (JN, DB, MK, SO, KN, HY, HF, FA, and NI); in 2 instances the acquaintance volume *regressed* in general from month to month (IL and GU); in 5 instances it neither increased nor decreased appreciably but remained practically *stationary* (RD, ML, DN, HR, and RZ). Analysis of the progressive cases shows that the number of new acquaintances made from month to month was in general greater than the number of acquaintances "lost"; in the stationary cases, the new acquaintances are more or less balanced by the number of acquaintances lost; and in the regressive cases the number of new acquaintances is smaller than the number of acquaintances lost; once case appeared uneven (IL) but with a regressive trend.

The acquaintance volume varies from individual to individual to such an extent that 180 days after entering the community of

Hudson, living under the same conditions, and having the same opportunity to meet others, one individual, RD, had an index of 8, while another, KN, had an index of more than sixteen times larger, 131; and RD, who lives in C6, showed her acquaintances to be distributed among 5 units, whereas KN, who lives in C11, had hers distributed among 16 units of the community.

A comparison of the acquaintance indices of these 16 persons with the findings of their sociometric testing after 150 days indicated that the number of individuals any one of the 16 knows is several times larger than the social atom, the number of those who release in her a definite emotional reaction upon any criteria. For instance, RD with an acquaintance index of 9 chose only 2 individuals with whom she preferred to live and to work; KN with an acquaintance index of 101 chose 14 different individuals on several criteria.

Of the 16 individuals, after 180 days 5 are definitely stationary in their volume of acquaintances; 2 are regressive; and 3 of the 9 progressive instances show a tendency towards a halt. This may suggest that after a certain period a person in a closed community reaches his individual *average* acquaintance level.

Numerous factors have apparently a bearing upon the volume of acquaintances. GU, who has an I.Q. of 121, reaches after 150 days an acquaintance index of 29; IL, who has an I.Q. of 116, reaches after 150 days an acquaintance index of 46. GU and IL are the 2 individuals who have the highest intelligence quotients among the 16 girls. But KN, who has an I.Q. of 87 after the same period of time has elapsed, has an acquaintance volume of 101. Many similar cases have been found although our findings do not suggest any definite conclusions yet as to the relation of the I.Q. to the acquaintance index.

TABLE 16

ANALYSIS OF ACQUAINTANCE INDEX OF TWO INDIVIDUAL CASES, RD AND KN

Acquaintance Volume	After 30 days		After 60 days		After 90 days		After 120 days		After 150 days		After 180 days	
	RD	KN	RD	KN	RD	KN	RD	KN	RD	KN	RD	KN
	Lost			1	3	2	10	5	6	3	11	0
Maintained			6	18	6	22	7	24	6	42	7	75
Acquired new	7	21	2	14	6	11	2	28	3	59	1	56
Total volume	7	21	8	32	12	33	9	52	9	101	8	131

Distribution of Volume:

After 30 days	{	RD: C3, C4, C7, C15, C16
	{	KN: RC, Hosp., C1, C2, C4, C6, C10, C14, C16
After 60 days	{	RD: C4, C7, C15, C16
	{	KN: RC, Hosp., C1, C2, C3, C4, C6, C7, C8, C10, C15, C16
After 90 days	{	RD: C3, C4, C7, C11, C15, C16
	{	KN: Hosp., C1, C2, C3, C4, C5, C6, C7, C10, C14, C15, C16
After 120 days	{	RD: C4, C7, C11, C16
	{	KN: RC, Farm, Hosp., C1, C2, C3, C4, C5, C6, C7, C8, C10, C13, C14, C15, C16
After 150 days	{	RD: C4, C7, C11, C15, C16
	{	KN: RC, Farm, Hosp., C1, C2, C3, C4, C5, C6, C7, C8, C10, C13, C14, C15, C16

It can be speculated, however, that an individual whose intelligence is approximately on the same level as that of the major portion of the population in his community will usually have a larger acquaintance volume than an individual whose intelligence is far superior or far inferior to that of the major portion. RD and HR, with I.Q.'s of 62 and 65 respectively, reach after 180 days acquaintance indices of 8 and 13 respectively. The I.Q.'s of the individuals with whom RD and HR are acquainted are in the majority of instances on a similarly low level. It may be that in a population the majority of which are of a similar intelligence as RD and HR, RD and HR might reach a large acquaintance volume during the same period of time; and that in a population the majority of which are of a similar or higher intelligence level than GU and IL, GU and IL might reach a larger acquaintance volume during the same period of time.

However, the emotional and social differentiation of the group to which the individual belongs seems also to have a bearing upon the acquaintance index of any member of that group. The sociometric position GU and IL have in their respective cottages discloses that both are best adjusted to individuals who are far below their level of intelligence. On the other hand, KN, who has a far lower I.Q. than GU and IL, appears in a leader-position with followers, four of whom are superior to her in I.Q. The superior social and emotional equipment of KN seems to be largely responsible for her large acquaintance volume and for her position within her group.

SOCIAL ATOM

When Democritus developed the theory of the atom he opened up the modern conception of the physical universe. To claim the atom as the smallest living particle of which the universe consists he had to close his eyes to the actual configurations of matter and claim impudently that they are composed of other infinitely small units, themselves indivisible, the atoms. Perhaps in an approach of the social universe we can learn from Democritus and close our eyes to the actual configurations social "matter" presents to us: families, factories, schools, nations, etc. Perhaps a mind not distracted by the gross facts in society will be able to discover the smallest living social unit, itself not further divisible, the *social atom*.

When we look at a community without considering its actual structure and whether good or bad, we first become aware of numerous collectives which swim on its surface: families, work groups, racial groups, religious groups, etc. And we recognize that these groupings are not wild formations but that they center around a definite criterion: living in proximity, working in proximity, etc. We recognize also that the position which an individual has in these collectives is often in contradiction with his aspirations. If more than one individual is necessary to realize and satisfy human desires a social situation develops, a social relation, a social need. The sexual desire, the desire for shelter and the desire for nourishment partaken with others are such desires. More than one person is necessary if the aim is to bring about the realization of a home or work group. But, similar to individual A, also individual B, C, D, E and millions of others are in the same position: they need other persons with whom to establish a home relation, a sexual relation, a work relation or a cultural relation. Those interests are shared by millions but differ in detail and degree from individual to individual and from group to group. The differences in detail and degree make the process very complicated. A person needs a number of other persons to accomplish his ends and the other persons need him to help them accomplish theirs. The problem would have a simple solution, then, if all the persons concerned mutually reciprocated. But they do not unanimously "click." One would like to live with this person but this person is attracted to somebody else. One wants to work with this

person but this person rejects him, and so forth. Men differ in the amount of interest they have and in the amount of attention they receive. The same is true of the groups they form and of their relations to other groups. A mass of feelings, attractions, repulsions and indifferences run into every possible direction and from every possible direction, sometimes meeting, often crossing and separating from each other.

But the question is how to ascertain the true position of an individual in the criss-cross of psychological and cultural currents which mold but also transgress the groups in which he lives. Just as the physical atom, also the social atom has no visible outline on the surface of things. It must be uncovered. Through the sociometric test a method for the discovery of the social atom was obtained. (See p. 230). An illustration of a social atom is the following: Person A is attracted to six persons: B, C, D, E, F and G. B, C and D reject A; F is indifferent to A and G is attracted to A. On the other hand, the persons M, N, O, P and Q feel attracted to A but A rejects M, N and O and is indifferent to P and Q. This constellation of forces, attractions, repulsions and indifferences, whatever their motives may be, in which persons A, B, C, D, E, F, G, M, N, O, P and Q are involved in reference to a definite criterion we call a social atom, the social atom of A. Concrete samples of social atoms are presented in sociograms, p. 299-307. These are social atoms depicting a home complex in each of the four instances. For the sexual complex, the work complex, the racial complex, etc., a different social atom in each case can be ascertained through the sociometric test. These social atoms are not constructions: they are actual, living, energy-filled networks, revolving around every man and between men in myriads of forms, different in size, constellation and duration.

Presented below is the classification of the complex of social atoms of an individual, Charles M. It gives a picture of the coteries in which he lives.

Classification of Charles M.

3—0	L	2—1	3—4	W	8—0
0—3		0—3	2—5		7—1
3—0	S	0—1	30—4	C	6—0
1—2		0—1	34—0		6—0

These four parts of a social atom are the living (L) (home), working (W), sexual (S) and cultural (C) atoms of Charles M., comprising in all 65 persons. His highest range of expansiveness is in the "cultural (C) atom"; here he mixes with 40 persons. His lowest range of expansiveness is in the sexual (S) atom; there he is attracted to three persons. He is isolated and rejected in his home (L) atom and he is discordant in his work relations.

We were able to determine through the sociometric test with which individuals a person wants to be in proximity and how many individuals want to be in proximity with him in respect to a given criterion and thus the *outer delineation* of a particular social atom was ascertained. (Classification Formula I, see p. 236.) Following the directions pointed out in Formula I, we were able to determine through group interview and analysis of motivations the attractions, repulsions and indifferences from the center-individual to each of the individuals of his circle and from each of these individuals back to him. And so a first idea of the *inner* constitution of this social atom was ascertained. (Classification Formula II, see p. 236.) Following the directions pointed out in Formula II we could add the intensity of these attractions, repulsions and indifferences in five degree as expressed by the subject. (Classification Formula III, see p. 236.) Following the directions pointed out in Formula II and Formula III, we attempted, through the spontaneity test, to determine the emotions of which the various attractions, repulsions and indifferences actually consist, to record also which emotions direct the currents and which are secondary.

A wider comprehension of the sociodynamic organization of an atom came through the acquaintance test. The acquaintance volume of a person is the first, crude indicator of the expansiveness of an individual in making and retaining contacts in a given community. We secured a finer appreciation of the emotional expansiveness of an individual through the sociometric test. We found, for instance, that individual JN involves, in respect to the home criterion 11 individuals; in respect to the work criterion, 8 individuals; in respect to the recreational criterion, 3 individuals; and in respect to the cultural criterion, 5 individuals. Her acquaintance volume at the time of the test was 102.

Through the acquaintance test we learned if a social atom has a rhythmic growth, reaches a high point, and then sinks to a more or less average level; if it is in a phase of expansion or of shrinkage; if it spreads according to the geographical location of the individual's cottage, from his cottage to the next, within his work groups on to other collectives, or if it grows inconsistently with these and erratically over the entire community; if it becomes stationary after a few weeks; if it becomes regressive after a considerable rise; and finally, with which groups of the community the individual becomes acquainted and whom he can recall when the test is given. It also further advances our knowledge of a social atom if we determine a) the emotional expansiveness of each individual who appears related to the center-individual of the social atom in reference to the criterion of that social atom; b) the emotional expansiveness of the center-individual in reference to *different* criteria. If the emotional expansiveness related to one criterion only is calculated for the center-individual, we receive a false picture of the total range of his interest. An individual may have a low expansiveness in relation to one criterion and compensate this through a high expansiveness in relation to another. Furthermore, *if the emotional expansiveness of the individuals in his social atom is high, this indicates that the center-individual is related to individuals who are in contact with many others; if their expansiveness is low, that the center-individual is of relatively greater need to "them."*

One can look at a social atom from two directions, from an individual towards the community and from the community towards an individual. In the *first* case, the "individual-centered" social atom, one can see how the feelings radiate from him into many directions towards individuals who respond to him by likes, dislikes or indifference and of whom he is aware, or who chose, reject or are neutral towards him without that he is aware of their participation in his social atom. This may be called the psychological aspect of the social atom. In the *second* case, the "collective-centered" social atom, one can look at socioatomic formations from the point of view of the community and it is this way that it has actually been discovered. When one moves from the community into the realm of a particular social atom he is again con-

fronted, as in the psychological version, with the same individuals who are interlocked with a particular, central individual. But he sees now that these individuals are also interlocked with one another and that their feelings also radiate towards individuals who are not directly a part of this particular socioatomic configuration. He is here face to face with a phenomenon which may easily be overlooked in the course of describing an individual-centered social atom. He sees in the new version that the individuals who are interlocked with the central individual A, enter with fragments and portions of their own social atoms, not only into the circle around A, but also into each other's circles. The central social atom appears surrounded with planetary social configurations but each of these planetary social atoms themselves are like the central suns, each surrounded with numerous planetary social atoms, and so forth, *ad infinitum*. Thus, instead of centering our attention upon a key individual with a number of individuals revolving around him, we see an interpenetration of various social atoms, of varying sizes and varying configurations, a visual demonstration that they, which represent the smallest social units of human society, are themselves involved in more and more complex social configurations yet to be studied. (See Map III, "Sociometric Geography of a Community".)

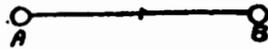
The classification of the social atom illustrates in a dramatic fashion that we live in an ambiguous world, half real and half fiction; that we rarely live with persons with whom we would like to live; that we work with persons who are not chosen by us; that we isolate and reject persons whom we need most and that we throw our lives away for unworthy people and principles. The atom concept gives us an opportunity to bring the immense complexity of forms within the social universe under one common denominator. It is as if a director of a great theater has evolved a succession of most colorful and attractive settings and scenes, masks of heroes and dialogues of eternity to distract our minds from the facts beneath. Similarly, on the stage of the social universe, millions of kinds and varieties of collectives, families, schools, factories, churches, nations, are spread before our eye in most fascinating patterns; we are ourselves actors on this stage and as if by blind necessity, we ceaselessly and indeterminately

continue to bring forth ever new collectives to reign as others fade. Because we are ourselves enmeshed in this network it has been so hard to break the door to the actual world beneath, to recognize the human universe in all its forms as a summation, interpenetration and dynamic multiplication of social atoms.

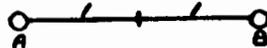
TELE STRUCTURE

Tele Chart I

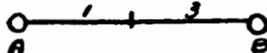
Simple Tele



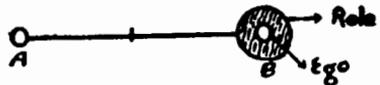
Simple Tele
(Congruous)



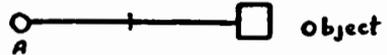
Simple Tele
(Incongruous)



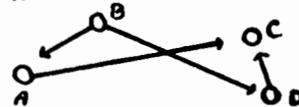
Symbolic Tele



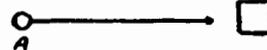
Object Tele



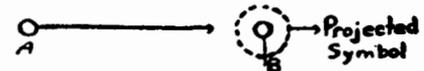
Infra Tele for persons
(Unreciprocated but positive attractions toward a real ego or a real role)



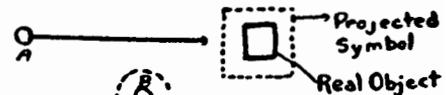
Infra Tele for
an object



Transference to
persons



Transference to
objects



Transference relations among
3 persons, belonging to a
group of insanes



The tele process may show many varieties of tele. Some of them are illustrated in the diagrams above. The attraction of A for B is responded to by an attraction of B for A in the same life situation. This is *simple tele*.

If the attraction between two persons occurs on the same level of preference, then the simple tele can be called *congruous*. A chooses B first; B chooses A first. If the attraction between two persons occurs on different level of preference, then the simple tele can be called *incongruous*. A chooses B first; B chooses A third. The attraction of A for B may not be for B's real ego, but for his alter ego, for some role or symbol which he represents—the role of the physician, the priest, the judge, etc. B, in turn, may not be attracted to A's real ego, but to a role he represents, for instance, the role of the scientist. This is *symbolic tele*.

A is attracted towards an object which, in turn, is useful to him, for instance, any food towards which A reaches spontaneously and which, in turn, satisfies his needs and benefits his health. This is *object tele*.

In all these three cases, the attraction is *positive* from both sides whether the sides are the two egos of two persons, two roles of these two persons, or a person and an object.

A form of attraction can take place which is *positive* for the one person but not shared by the other person. It is unreciprocated. A chooses B. B does not choose A. A chooses B in a certain role. B does not choose A either as an ego or in any role. This is *infra-tele* for persons. There can also be an *infra-tele* for objects. Developments of the tele process are the *Einfühlung* (empathy) of an actor into his part and into his partner. Empathy is one way tele.

There are developments in the tele process which can be classified as psychopathological formations; for instance, a person A, when in relation to a person B, sees B in a role which B does not actually experience, a role which A *projects* into B. It is a delusion of A, a projected symbol. This is *transference*.

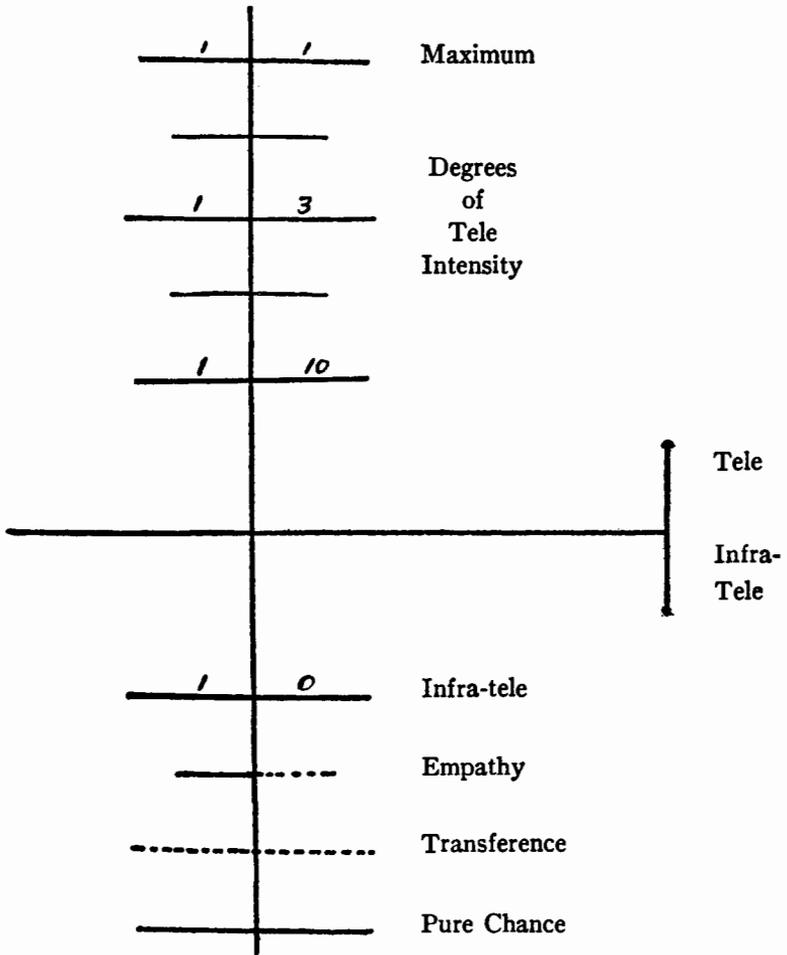
A person A may be attracted to an object, for instance, a food, but not for what it actually is and not for what effect it may have upon his body, but as a symbol. He may attach to it a certain mystical significance which is entirely subjective, a delusion. It is a pathological attraction and may be definitely harmful to him. This is an *object transference*.

The quantitative study of transference effect upon social structure is possible through comparing a group of insane persons with a group of normal persons under the same conditions. Studies of groups of insanes reveal that the sociogram produced by them is neither all transference nor all tele. It is a mixture of both. The structure of an insane group will probably appear below the tele level but above the chance level. As far as it was above chance, it would account for the degree to which true tele processes are mixed in with processes of transference and delusions.

TELE STRUCTURE

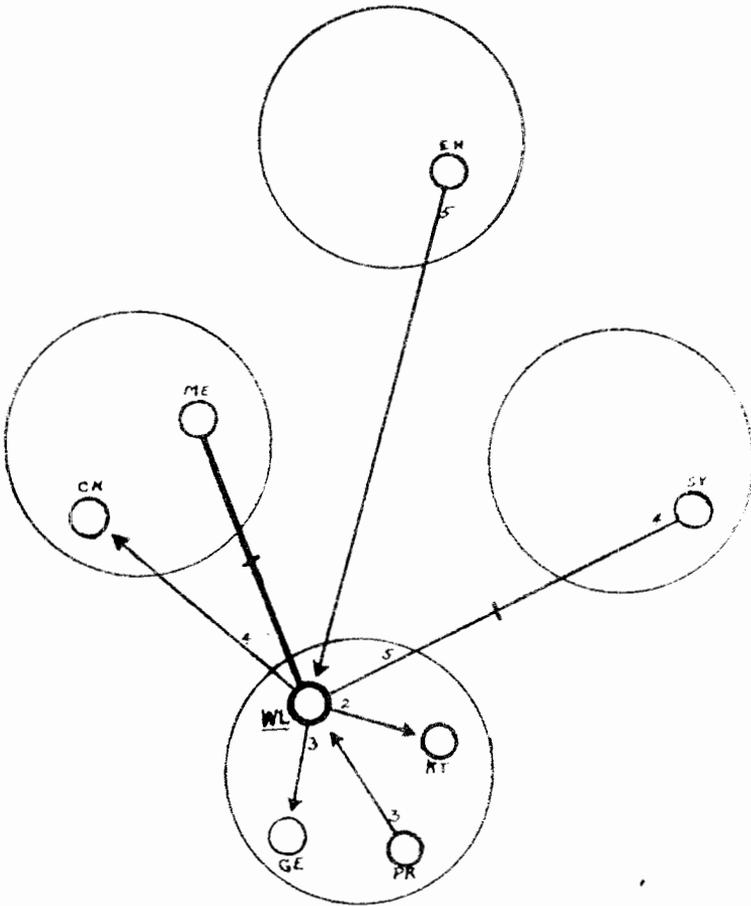
Tele Chart II

The vertical spread of tele in a social structure



This chart shows a scale ranging from maximum tele to pure chance. The area between tele and chance covers a range of incomplete perceptions and pathological interpersonal relationships.

ORGANIZATION OF SOCIAL ATOM



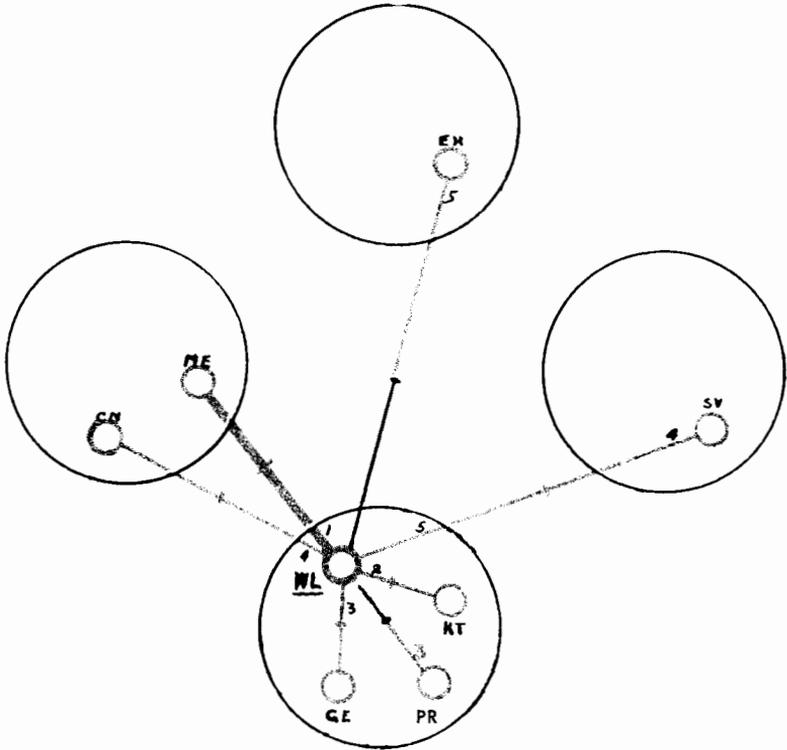
SOCIAL ATOM OF INDIVIDUAL WL

FROM THE POINT OF VIEW OF THE INDIVIDUAL (CENTRIFUGAL ASPECT)

CRITERION: LIVING IN PROXIMITY

WL attracts one and is attracted to two individuals in her house; she is attracted to three individuals outside her house, two of whom in turn are attracted to her. She sends her 2nd and 3rd choices inside, her 1st, 4th, and 5th choices, outside. She is the 3rd choice of an individual inside, the 1st, 4th, and 5th choice of three individuals outside. Two of her choices are reciprocated (WL-ME, WL-SV). Three of her choices are unreciprocated (KT, GE, and CN). She does not reciprocate two choices (PR and EH). She gravitates into two different houses (C6, C16) besides the house (C7) in which she lives. The chart illustrates the method of tracing the social atom of WL in respect to the criterion of living in proximity.

ORGANIZATION OF SOCIAL ATOM



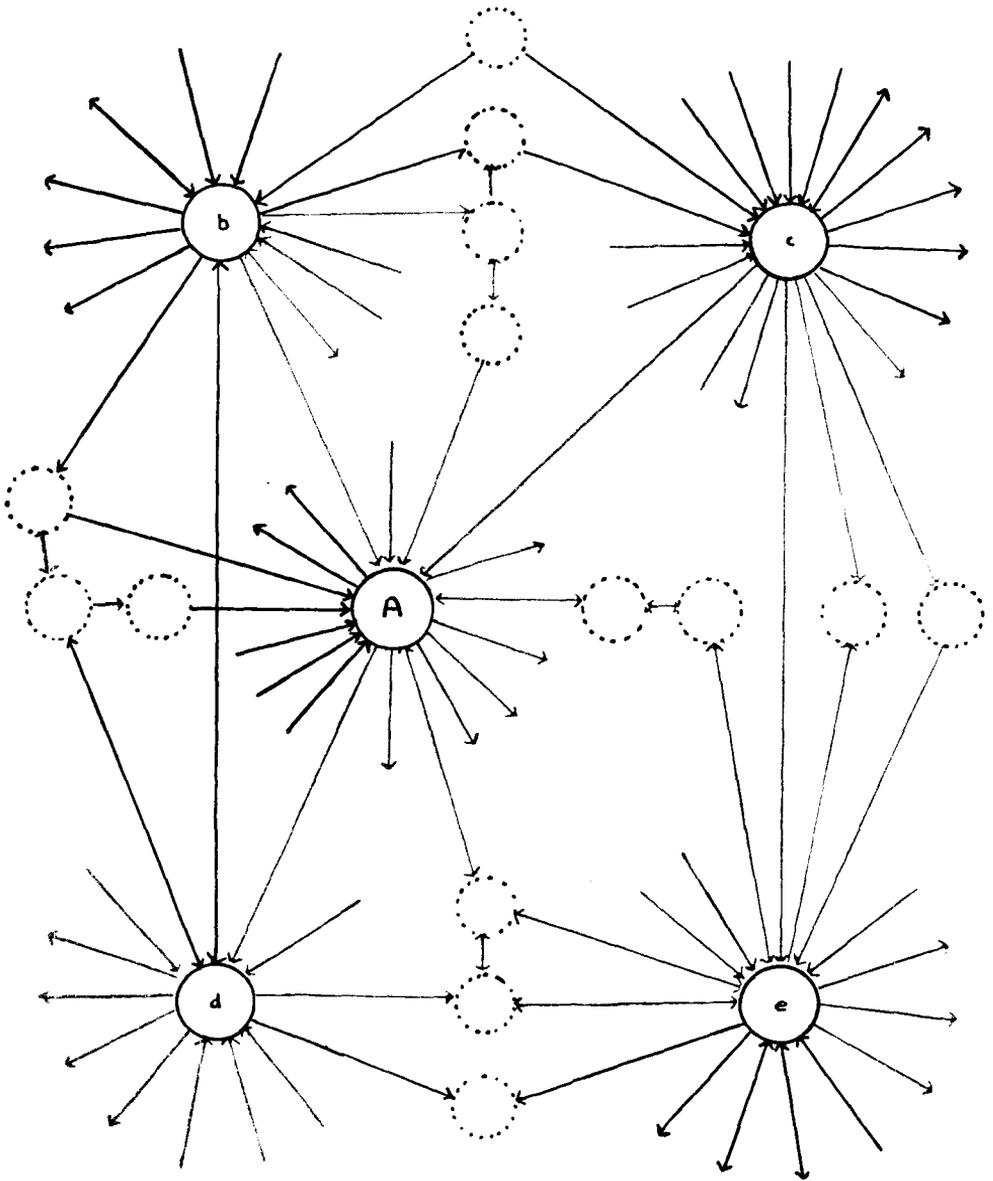
SOCIAL ATOM OF INDIVIDUAL WL

FROM THE POINT OF VIEW OF THE INDIVIDUAL (CENTRIFUGAL ASPECT)

CRITERION: LIVING IN PROXIMITY

The chart illustrates the method of tracing further the social atom of WL in respect to the criterion of living in proximity. The responses to the choices which appeared unreciprocated are ascertained. KT, GE, and CN respond with attraction to WL. WL responds with repulsion to EH and to PR. This sociogram portrays the individual-oriented psychosocial version of the social atom.

ORGANIZATION OF SOCIAL ATOM



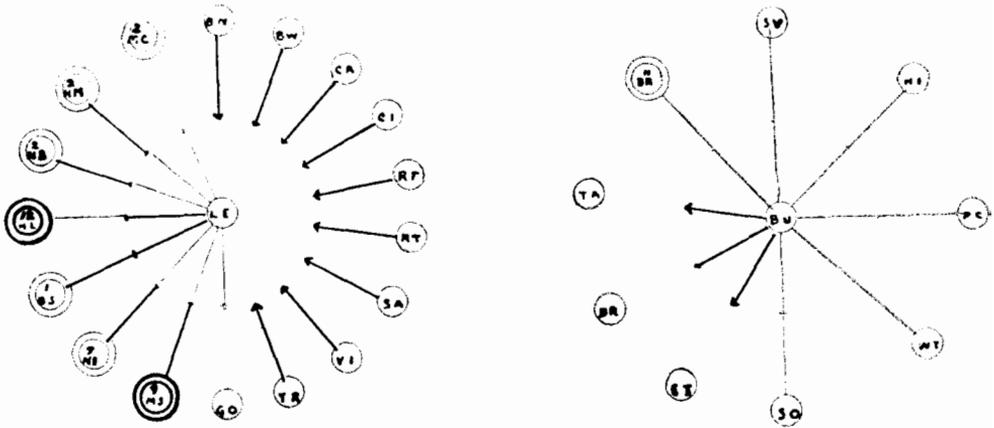
PATTERN OF A SOCIAL ATOM
FROM THE POINT OF VIEW OF THE COMMUNITY (CENTRIPETAL ASPECT)
Analysis:

Social atom A is the focus of attention. The immediate relationships to social atoms b, c, d and e are indicated, showing how some relationships are closed, while others are open. Chains are also in evidence.

The diagram schematically shows the importance of keeping context in mind while analyzing the social atom. The social atom under study is but the complex of social relations as taken from a particular reference point. Any analysis of one social atom implicates an analysis of the networks in which it is embedded.

Moving from all sides of the community towards an individual protagonist before we reach him we encounter on the sociometric map an encirclement of live individuals who are specifically related to him and to whom he is related; who may or may not be related to one another; and who may or may not provide links with other, more distant parts of the community. This version of social atom is the community-oriented, collectivistic form.

ORGANIZATION OF SOCIAL ATOM

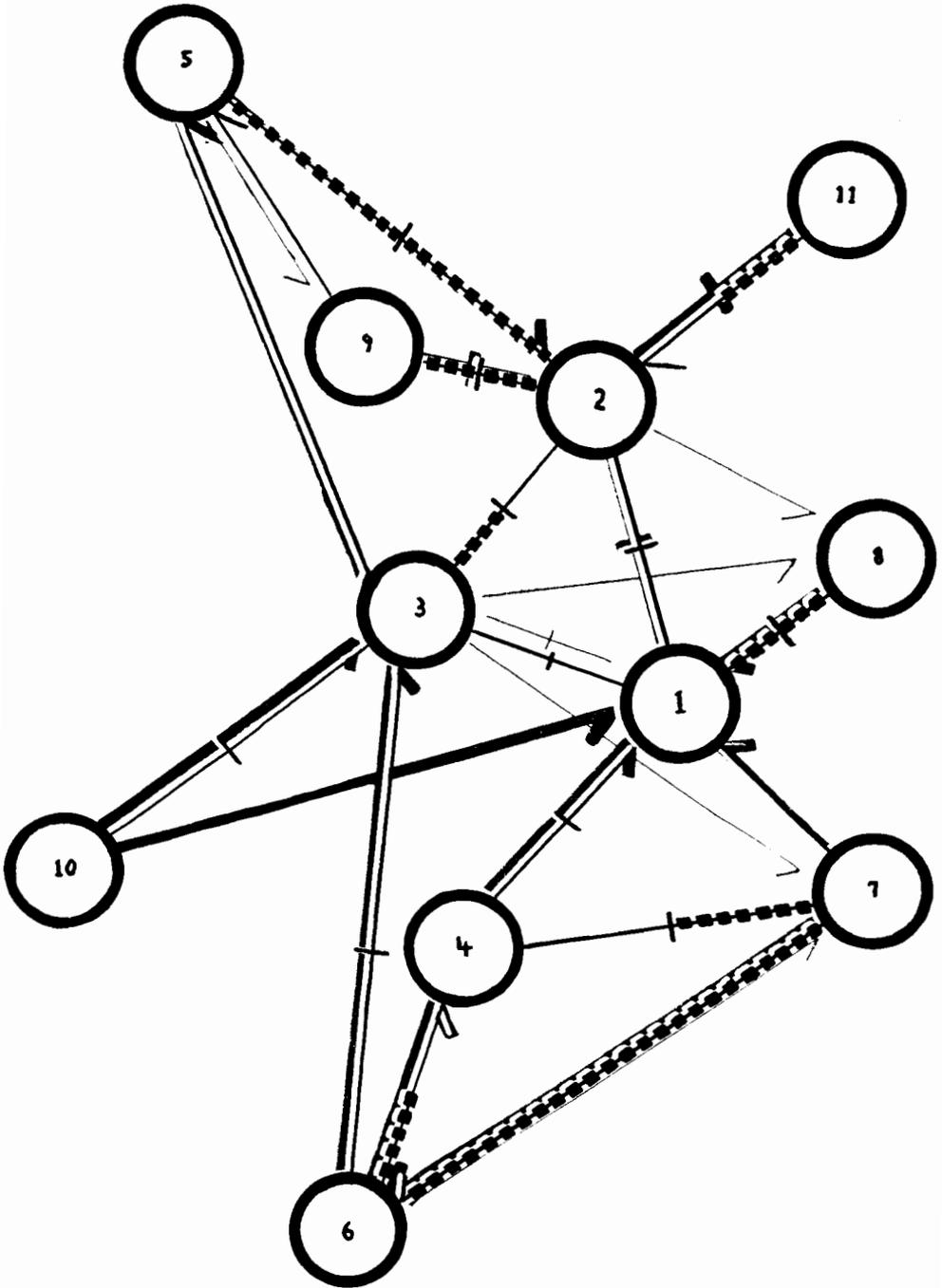


SOCIAL ATOMS: CRITERION—LIVING IN PROXIMITY

LE of C8 is a center of rejections coming from nine individuals of her own cottage and from five individuals of other cottages. She is attracted to one individual, GO, in her own cottage and to five individuals, MC, HM, NB, NI and MS outside her cottage, one of whom is colored (MS). These individuals either reject or ignore her. LE is an individual who is isolated and rejected inside and outside her group. She receives only one choice from HL, a colored girl. Her position in the group has remained almost unchanged in the course of one year. The pressure against her from the group is so persistent and general, her resentment in return so deep, that the prospect of adjustment to her own group is poor. LE is a typical case for re-assignment, but unfortunately, she has also made herself disliked outside of her group.

BU of C6 is attracted to five individuals, SV, HI, PC, WT and SO of her own group with whom she forms mutual pairs. She rejects three individuals, TA, BR and ET within her own group and is mutually attracted to one individual, BR of C11, outside her group. BU is an individual well adjusted in her own group but one who pays little attention to girls of other groups and they in turn pay little attention to her.

ORGANIZATION OF SOCIAL ATOM



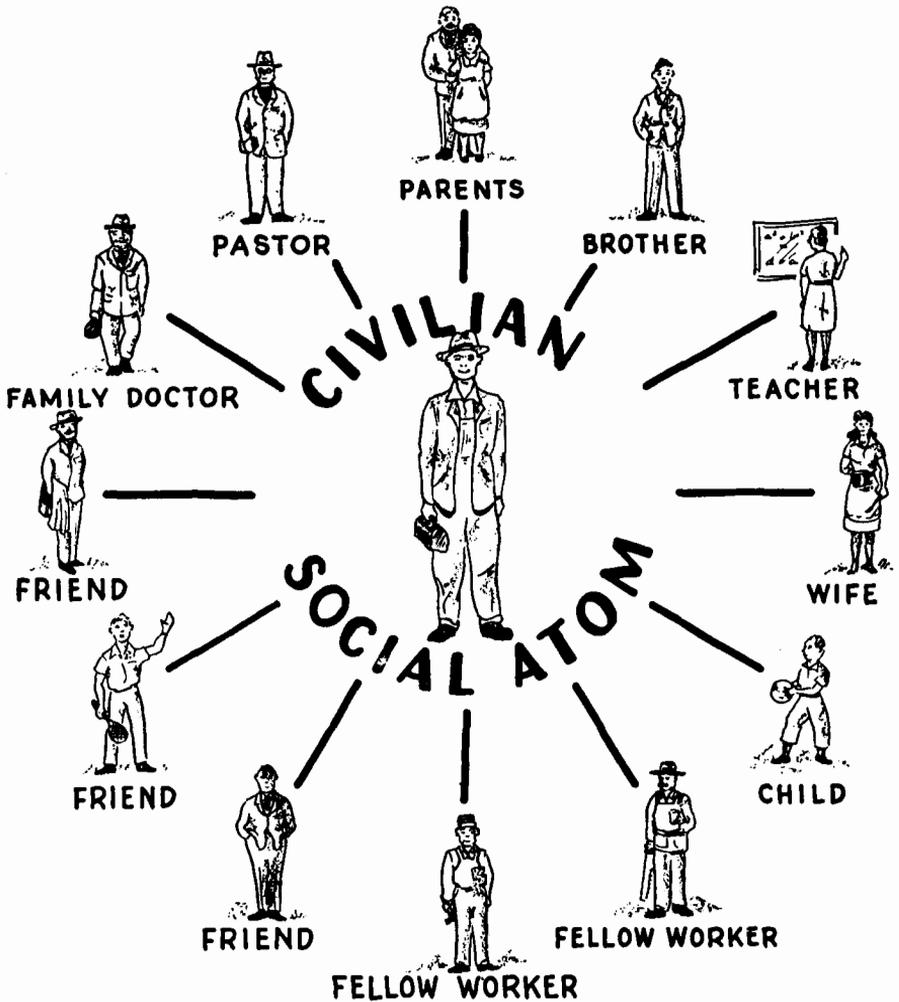
MULTI-CRITERIAL SOCIOGRAM

Key to Sociogram:

Solid black lines indicate *acquaintance* obtained by the question: Please list the names of all persons with whom you are acquainted at your place of work. Heavy interrupted black lines indicate *choice* (attraction) obtained by the criterion: Which person or persons do you enjoy having as guests in your home. Heavy red lines indicate *choice* (attraction) obtained by the criterion: With which person or persons do you like to work when called upon to do a job requiring cooperative effort.

This chart illustrates that the volume of acquaintances is the matrix out of which attractions and rejections between individuals emerge. It also shows, within the same sociogram, the cumulative effect of three different criteria. Single-criterion sociograms give only a fragmentary portrayal of the position of an individual within a social group. The sociometric status of an individual may change from one criterion to another. An individual who is classified as an isolate or a star on one criterion may not be so classified on another criterion, or on the same criterion at a later date.

ORGANIZATION OF SOCIAL ATOM

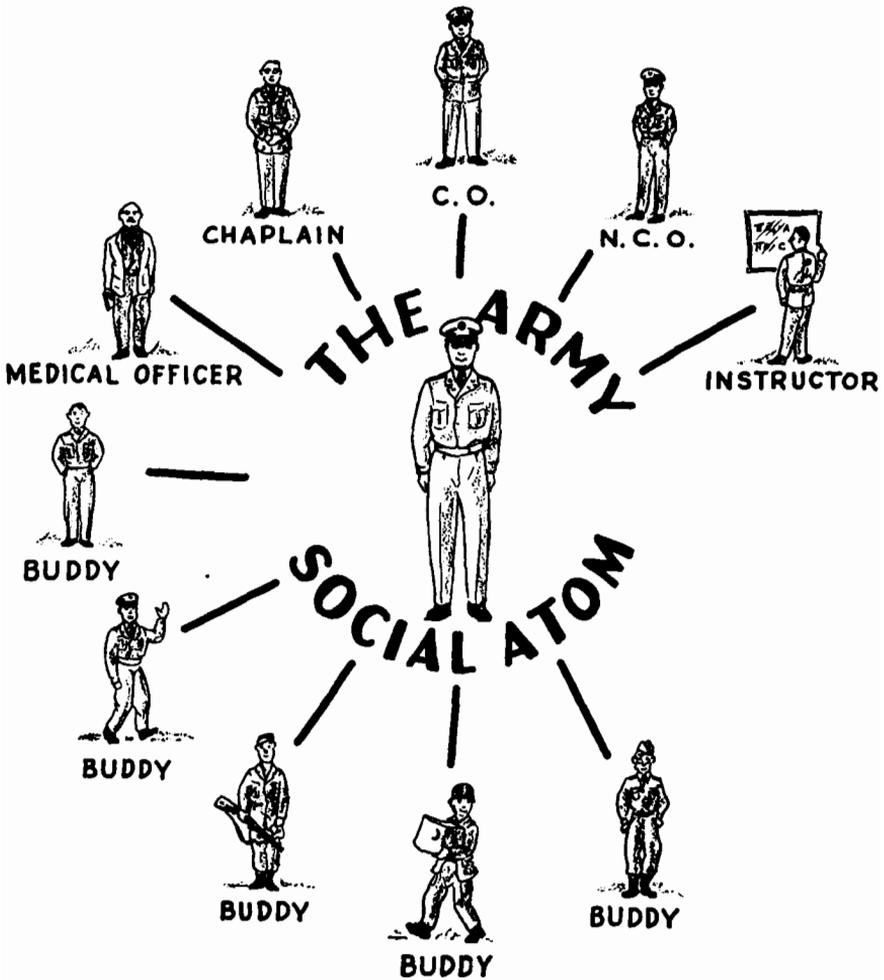


THE CIVILIAN SOCIAL ATOM*

The meaning of these two pictures is simple. They tend to show how the place of the various members of a person's civilian social atom is taken over by persons in the army. The parents are replaced by the Commanding Officer, the brother by the Noncombatant Officer, the teacher by the instructor, the pastor by the chaplain, the family doctor by the medical officer, the friends and fellow workers by buddies. No replacement is made for wife and child.

* From E. Fantel, M.D., "The Civilian and Army Social Atom, Before and After," *Group Psychotherapy*, Vol. IV, No. 1-2, 1951.

ORGANIZATION OF SOCIAL ATOM



THE ARMY SOCIAL ATOM

Often soldiers cling to the members of their army social atom because they have a double meaning for them, and the sudden loss of members of the army social atom, such as when several buddies are lost in action can lead to severe depressive reactions.

The social atom concept is here used in its broader sense; it represents not only the attraction-repulsion-neutrality pattern around an individual (social atom in its narrower sense) but also the cluster of roles around him, the cultural atom.

ORGANIZATION OF CULTURAL ATOM

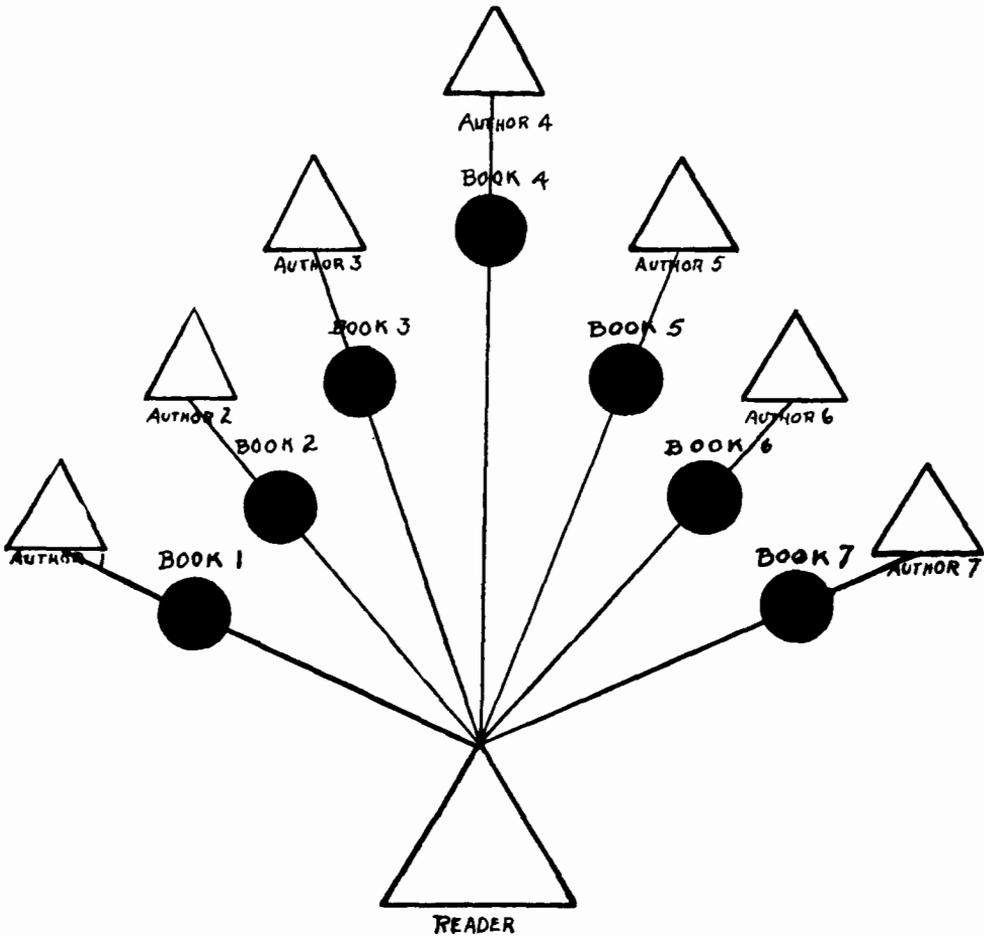


Fig. 1 illustrates the initial stage in the development of a social atom whose criterion is *cultural proximity*. The subject is a reader. Representatives of a techno-cultural process, Books 1-7. Authors 1-7 are a part of the configuration; they are thrown into it because they have written a book; the reader is thrown into it because he has read the books.

At this stage the cultural atom involves eight individuals.

ORGANIZATION OF CULTURAL ATOM

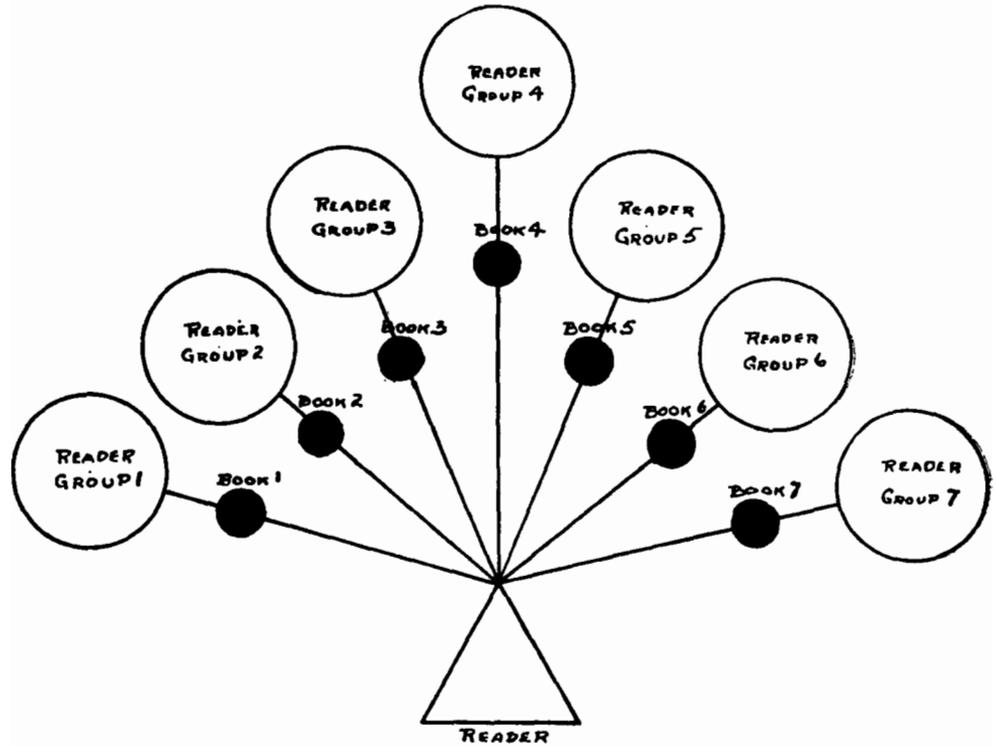


Fig. 2 illustrates another phase of this cultural atom. The subject-reader appears interlocked through Books 1-7 with all other persons who have read one of these books, Reader-Groups 1-7.

At this stage the cultural atom may involve millions of individuals.

ORGANIZATION OF CULTURAL ATOM

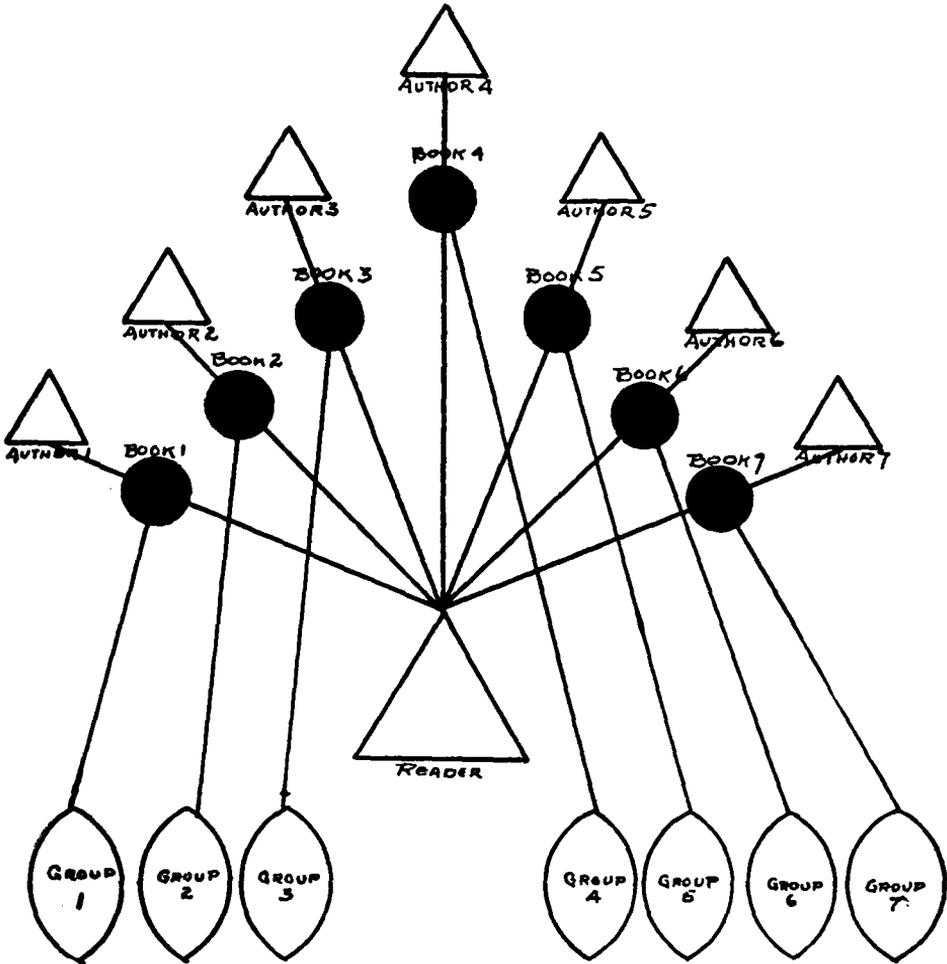


Fig. 3 illustrates a final phase of this cultural atom. The subject-reader appears interlocked with Authors 1-7 through Books 1-7 and also to Reader-Groups 1-7 through Books 1-7. The cultural atom here visualized may be characteristic for this reader only and not for any of the other readers who belong to one of the Reader-Groups 1-7. No other reader may have read all seven of the books as is true of our Subject Reader.

Through the book conserves 1-7 the seven authors warm up millions of individuals to the same ideas, perceptions and actions; in turn the readers may carry them through the psychosocial networks immediately surrounding them. Figures 1-3 illustrate an actual case (see my book *Der Koenigsroman*) and the enormous expansion of a single cultural network.

TELE

Empathy, as defined by Lipps,* is a "one-way" feeling into the private world of another ego and as such a psychological phenomenon; it satisfies the needs of the psychologist. But it does not take care of the "two-way" and multiple feeling into each other's private worlds of several individuals and the socioemotional structures resulting from them. This is, however, a process of greatest importance to sociologists and sociometrists. Parallel with this Freud† developed the concept of transference, which signifies the unconscious projection of fancied experiences upon the person of the physician. Whereas empathy tries to feel into something real, transference feels into something unreal. Transference tries to satisfy the needs of the psychiatrist. Transference, too, is an individual psychodynamic phenomenon, although with a psychopathological connotation.

This is the situation with which I was confronted when I tried to find a theoretical framework for my sociometric and psychodramatic discoveries. Neither transference nor empathy could explain in a satisfactory way the emergent cohesion of a social configuration or the "double" experience in a psychodramatic situation. First, because these represent two or multiple ways of interaction; second, because they are seen as a social whole, from a superior plane, not from the point of view of one particular person A, or B, or C, although they are included in it. It is a sociological phenomenon. I hypothesized therefore, that empathy and transference are parts of a more elementary and more inclusive process, *tele*. This is a concept which satisfies the needs of the psychologist, the psychiatrist, *and* the sociologist; I defined it as "An objective social process functioning with transference as a psychopathological outgrowth and empathy as esthetic outgrowth" and explained further "developments in the tele process are *Einfuehlung*, empathy of an actor into his part; empathy is positive but the process of *reciprocation* does not enter into its meaning"—and transference "The factor responsible for dissociation and disintegration in social groups." I defined tele as the factor

* Theodore Lipps, "Das Wissen von Fremden Ichen," *Psychologische Untersuchungen*, 1, pp. 694, 1907.

† Sigmund Freud, "Vorlesungen zur Einfuehrung in die Psychoanalyse," Vienna, 1926.

responsible for the increased rate of interaction between members of a group, "for the increased mutuality of choices surpassing chance possibility."

If the psychologist insists that the factor responsible for all forms of "interpersonal sensitivity" is empathy or an empathic process, or if psychoanalysts dilute the concept of transference, as many psychoanalytically oriented group psychotherapists are doing, they are stretching the meaning of these concepts beyond recognition; they lose their original and generally accepted meaning. A good scientific term has its own profile. By such playing with words we lose two good concepts and ruin a third. Therefore, I offered a solution which preserved both concepts, transference and empathy in their original profiles and related them logically to a larger concept, the tele hypothesis.

Thales of Miletus is accredited with the knowledge of the attractive power of ferrous material. He attributed to it a "soul." As soon as the physical basis of this phenomenon was recognized, Thales' interpretation was discarded. But more than two thousand years later Mesmer postulated an attractive power, this time coming from "animal" bodies. He thought that in the process of hypnosis a magnetic fluid passes from the operator to the subject, that this fluid is stored up in animal bodies and that through this medium one individual can act upon another. Braid demonstrated later that it cannot be proved that a mysterious fluid passes from one person to the other, that the phenomena emerging in the process of hypnosis are subjective in origin. Charcot, Freud, and others developed from this point the subjective psychology of today.

Perhaps the controversy between Mesmer, Braid and Freud can be settled if we remove our attention from the operator-subject relation in the process of hypnosis, or from the physician-patient relation in the process of suggestion and concentrate upon certain processes of *interaction* between persons which make it doubtful if these are of subjective origin only. In the Stegreif (spontaneity) experiment we could observe that some individuals have a certain *sensitivity* for each other, as if they were chained together by a common soul. When they warm up to a state, they "click". It often was not the language symbol which stimulated them. When the analysis of each individual apart from the other

failed to give adequate clues for this "affinity" we could not avoid considering the possibility of a "social" physiology—*internal tensional maladjustments which corresponding organs in different individuals bring into adjustment*. At a certain point man emancipated from the animal not only as a species but also as a society. And it is within this society that the most important "social" organs of man develop. The degree of attraction and repulsion of one person towards others suggests a point of view by means of which an interpretation of the evolution of the social organs can be given. One example is the functional relation between the two sexes; another example is the functioning of speech. The sexual organization of man is divided functionally between two different individuals. A correspondence of physiological tensions exists to which emotional processes are correlated. The attractions and repulsions, or the derivatives of these, between individuals, can thus be comprehended as surviving reflections, as a distant, a "tele" effect of a socio-physiological mechanism. The origin of speech also cannot be comprehended without the assumption of a socio-physiological basis. Just as we have in the case of sexuality corresponding external and internal organs we have in the case of communication corresponding internal organs, the brain centers of speech in one person relating to the brain centers as well as the external organs of hearing in the other. Speech of one person shaped the hearing and understanding of speech of the other person, and *vice versa*, which became another chief stimulant in the development of man's sociability. It seems to us a valuable working hypothesis to assume that *back of all social and psychological interactions between individuals there must once have been and still are two or more reciprocating physiological organs which interact with each other*. The principle of bisexuality is only a small part of a wider principle: biosociality. The attractions, repulsions and indifferences which we find, therefore, oscillating from one individual to the other, however varying the underlying factors, as fear, anger, sympathy or complex collective representations, it may be assumed, have a socio-physiological anchorage.

The innumerable varieties of attractions, repulsions and indifferences between individuals need a common denominator. A feeling is directed from one individual towards another. It has

to be carried into distance. Just as we use the words teleperceptor, telencephalon, telephone, television, etc., to express action at a distance, so to express *the simplest unit of feeling transmitted from one individual towards another* we use the term *tele*, τηλε, "distant."

The tele concept is introduced by us not for a convenience but due to the pressure of our analytic findings. The subject under investigation is not covered by any of the social and psychological sciences today. Sociology is satisfied with the mass approach of a mass. It may attempt to calculate the *trends* in population through statistical measures, the frequency of characteristic traits, etc. Mass psychology is descriptive of mass reactions, as for instance, loss of individuality in a mass, etc. Psychology of the individual aims at an interpretation of mass situations through projecting to a mass the findings which relate to a single individual, for instance, hysteria, neurosis, etc. But the salient point is to investigate a mass of, for instance, five hundred individuals from the point of view of each individual contribution and of the emotional product which results in the form of mass reactions. Then it becomes evident that the frequencies of the sociologist are the surface expression of deeper structural layers in the make-up of populations; that mass psychological findings, as, for instance, the loss of individuality in mass actions, are an impressionistic description, the comprehension of mass processes from a spectator's point of view and not from that of the participants; that projections of hysteria, neurosis, Oedipus complex, etc., from an individual to a mass are undue generalizations and symbolizations. The actual processes are of a different nature. The microscopic investigations of the organization of this mass, the position each individual has within it, the psychological currents which pervade it, and the forces of attraction or repulsion which it exerts upon other masses, compel us to formulate new concepts and a special terminology better adapted to the new findings. Before the advent of sociometry all findings appeared to indicate that the essential elements of existence are locked within the individual organisms and are recognizable only in respect to the individual. The social impulses also did not seem to present an exception to this rule, however great an influence in shaping them we attributed to the environment; the shape they had attained in the course of their

evolution was bound within the individual organism only, nothing which mattered fundamentally existed outside of the individual organism. This was the position of the psychological schools. The majority of the sociological schools held too rigidly to the concept of collective. What had started under the leadership of Emile Durkheim as a good road developed into a blind alley. There was no vista for a genuine approach to an experimental sociology. But there is in the field outside of the organism a special area, the area *between* organisms where a new outlook was found. Characteristic patterns of interrelation have been found to exist between individuals, definite rules control the development from stage to stage and from place to place; they are of such a regularity of form and have such a continuous effect upon groups near and distant that it appears as if social impulses have been shaped not only in respect to the individual organism but also *between individuals* and that a remainder of this process is always discoverable whenever social groups are analyzed. These relations cannot be comprehended as accidental: they are in want of an explanation as to how this order of relations developed. The simplest solution is to assume that on a more primitive level of society the individuals were physically more closely allied and that this bond weakened gradually with the development of the telencephalon and the teleperceptors.

If we imagine a monistic origin of life from a common unit it is hardly believable that the organisms which have derived from this unit and have developed to different kinds and races have entirely broken off the original bonds existent among them. Some remainder, however scant, however rudimentary, however difficult to discover, must still exist. In analogy, the social and cultural pattern in its initial stage must have consisted of such an intimate bond of interrelations that at first group reactions predominated and that in the course of evolution the emancipation of the individual from the group increased more and more. But the group bond among the individuals never broke off altogether. A remainder of it—and perhaps a safeguard in emergency situations—persists. Indicators of such a remainder are the persistent recurrence of various structures on various levels of differentiation from a psycho-organic level in which expression of feeling is inarticulate up to a psycho-social level in which

expression of feeling is highly articulate. Concepts as reflex, conditioning reflex, instinct, mental syndrome, etc., which have grown out of the approach of the individual organism, are not explanatory of these findings and have no meaning in this area. Fifty individuals who singly are classified as suffering from hysteria may as a group reveal a pattern totally different from a mass hysteria, for instance, an extroverted group organization with a high number of incompatible pairs. Or, again, the sexual character of individual members may be male or female, heterosexual or homosexual. From an individual point of view this is a definable condition, but from the group point of view the intersexual choices, attractions, repulsions and indifferences among such members may result in an organization which has as a totality a different meaning from that of the sexual character of its individual members alone. It may, for instance, show an organization split into two parts, a homosexual and a heterosexual gang which are in a state of warfare because some members of the homosexual gang are objects of the desires of certain members of the heterosexual gang or *vice versa*.

Transference is defined as the psychopathological branch of tele, empathy (Einfuehlung) as its emotional branch. Tele is a social concept, it operates on the social plane; transference and empathy are psychological concepts, they operate on the individual plane. It has been found that tele and empathy can be trained; parallel with the training of tele, transference can be "un"trained.

Every individual man functions in a system which is confined by two boundaries: the emotional expansiveness of his own personality and the socio-emotional pressure exerted upon him by the population. The psychological variations in population pressure affect the individual especially during his formative years. We have shown how deep its effect is even in the apparent vacuum around an isolated person, that the specific molds and boundaries we have created to shelter and shape individuals, the home unit, the school unit, and the work unit are not actual boundaries, that the forces of attraction, repulsion and indifference pass beyond these limits, ceaselessly striving towards exchange of emotional states, that this tendency to reach out and to exchange emotions is stronger than social institutions formed apparently to protect man against the vagaries of his adventurous nature.

The relations treated up to this point may mark the beginning of a measurement of social atoms. The electro-magnetic and physio-chemical analysis of emotions is outside of the sociometric domain. Our problem is the social expansiveness of man and his transmission of social emotion. Social expansiveness, differing from emotional expansiveness, does not infer only how potent an emotion is which is projected towards this or that person, but how *many* persons a person is able to interest, to how *many* persons he can transfer an emotion, and from how *many* persons he can absorb emotion. In other words, it traces the origin of a "psychological current."

Even if one day the feeling complex, tele, should yield to physical measurement, from a sociometric point of view this feeling complex is separated only artificially from a larger whole: it is a part of the smallest living unit of social matter we can comprehend, the social atom. Therefore the sociometric approach of tele is closely linked with our findings in regard to the inner organization of a social atom. The first thing we meet in the social atom is that a feeling complex which goes out from a person does not run wildly into space but goes to a certain other person and that the other person does not accept this passively like a robot but responds actively with another feeling complex in return. One tele may become interlocked with another tele, a pair of relations being formed.

Tele is an abstraction; it has no social existence by itself. It has to be comprehended as a process within a social atom. But it is possible to classify it according to the equation of its social expansion, its social *effect*. This is exemplified in the following illustration:

An individual A is the first and exclusive choice of a second individual B, and B is her first and exclusive choice. Except for the one tele from B, A is fully isolated in the community. However, B is first choice of C, D, E and F. C, D, E and F are the choice of respectively 6, 8, 5 and 5 other individuals. Among these latter 24 individuals are three persons, G, H and I. Each of them is the center of 7 choices. The effect of the one tele from B to A is to connect A with a main psychological current enabling her to reach 43 persons potentially predisposed towards her. On the other hand, another individual may be unable to exert any

considerable effect upon the community as her tele relate her only to individuals who are in a relatively isolated position. Her tele are side-tracked and never reach the main currents. An individual like A, who is as a person comparatively unknown but who exerts through the medium of other individuals a far-reaching effect upon masses of people, is an invisible ruler. The form which the one tele going from the individual A to the individual B takes can be said to be aristocratic, an *aristo-tele*. Such an *aristo-tele* has often turned the cultural and political history of a people, as in the instance of Socrates and Plato, or Nietzsche and Wagner, or Marx and La Salle.

EMPATHY AND TELE

The part which empathy plays in the tele process in the course of sociometric testing can easily be explained; the testee will need some degree of Einfuehlung to judge who among the members of a group like him, dislike him or are indifferent towards him.

It is more difficult to unravel the function of empathy in role playing and psychodramatic situations. I have pointed out the need for a wider concept when I first began to systematize the experimental approach to group formation in *statu nascendi*. "Es gibt Spieler, die durch eine geheime Korrespondenz miteinander verbunden sind. Sie haben eine Art Feingefuehl fuer die *gegenseitigen* inneren Vorgaenge, eine Gebaerde genuegt und oft brauchen sie einander nicht anzusehen. Sie sind fuer einander hellseherisch. Sie haben eine Verstaendigungsseele, eine mediale Verstaendigung."* "There are role players who are linked together by a secret bond. They have a sort of sensitivity for each other's *reciprocal* inner processes, a gesture suffices and frequently they do not have to look at one another. They are clairvoyant for one another. They have a special sense for communication, a medial understanding."*

This hypothesis brought me closer to the essence of the problem. *Just as the transference theory has proved insufficient to explain the phenomena of reality testing and social cohesion on the group*

* "Das Stegreiftheater," 1923, p. 57; transl. "The Theatre of Spontaneity," Beacon House, 1945.

level, the empathy theory is incapable of explaining the phenomena of multiple reciprocity of feelings. It was the empirical test which aided me in the clarification of this riddle.

The "double situation" in psychodrama is a clinical technique in which the client is interacting with his double, portrayed by an alter (auxiliary) ego; it can also be used as an experimental design, it provides an observer with an excellent opportunity for the study of the interweaving of empathy and transference in the tele process. Certain facts stand out and have been identified by many observers.

A) There is the feeling in of the alter (auxiliary) ego into the subject. The alter ego (therapist or counselor) is the active, empathizing agent; the patient, client or subject is the object. This process is empathy. It corresponds to the making of choice going out from A to B in the sociometric realm.

B) There is the return "feeling in" of the subject or client into the alter ego-therapist. It is part and parcel of every double situation.

(From a transcript)

Double: I'm unhappy, I should not have such terrible thoughts.

Subject: Yes, I have thoughts of ending my life; I cannot stop them.

Double: I couldn't stop them, but I will.

Subject: I will. I must forget him.

Such a return feeling can be called "empathy." It corresponds, in the sociometric area, to the response from B to A for a choice or rejection.

C) There is not always agreement between ego and subject. The empathic statements, true or untrue, of the alter ego, are often violently resented by the subject.

(From a transcript)

Double: I love that man.

Subject: Oh no, I don't love him. I hate him!

The challenging of the client is often a part of the technique to bring a feeling to crystallization. After a pause the client extends:

Subject: I loved him once, but now I hate him.

Because of this internal struggle it is useful to differentiate between "positive" and "negative" empathy.

D) One of the most significant phases in the double drama is

when the double and the client reach an almost complete unity of communication; in the acting out of feelings and thoughts, gestures, movements of the subject and alter ego complement each other as if they would originate in one and the same person. It is more than *Einfuehlung* from A to B or B into A; they have the same sorrow and the same pain, or the same ecstasy or the same love. The distinction between double and client is gone; they share in a single "Erlebnis." This phenomenon may be called "omnipathy", a term coined by Max Scheler.*

E) What is real to the patient, especially to the psychotic, is for the alter (auxiliary) ego a play, a skill, an ability. The feeling of grief because of having lost her lover in an air crash, or being fired from a job and without means of support, or hearing voices informing him of his wife's disloyalty and ordering him to act, is an external and internal reality to the patient. But it is unreal to the alter ego. This inequality of status produces profound conflicts, the behavior of the alter ego may appear artificial and contrived and upsets the patient. The solution to this is frequently to have another patient as a double, one with *similar* psychotic experiences, if possible, a psychotic leader in the sociogram of the ward. The patient may trust and admire him, whereas he may distrust and resent a professional ego. Another solution to this conflict is openly to have the ego admit to the patient: Yes, it's so, I am "acting" the part, but it gives me an opportunity to understand you better. Or, finally, and often most effective, what started out in the ego as a skill, an intervention, becomes genuine love, it becomes identity.

F) The patient, as a part of his sickness, feels himself into delusory and hallucinated events and persons. This phenomenon has been called "autotele." The alter ego has to follow the patient in this difficult task.

G) The trichotomy tele-transference-empathy opens up great potentialities for development. "Emotional expansiveness is subjectible to training."** "As a compass of interhuman relations it is primitive, but I believe that our intuition in this direction is trainable."†

* "Wesen und Formen der Sympathie," 1922.

** See p. 463.

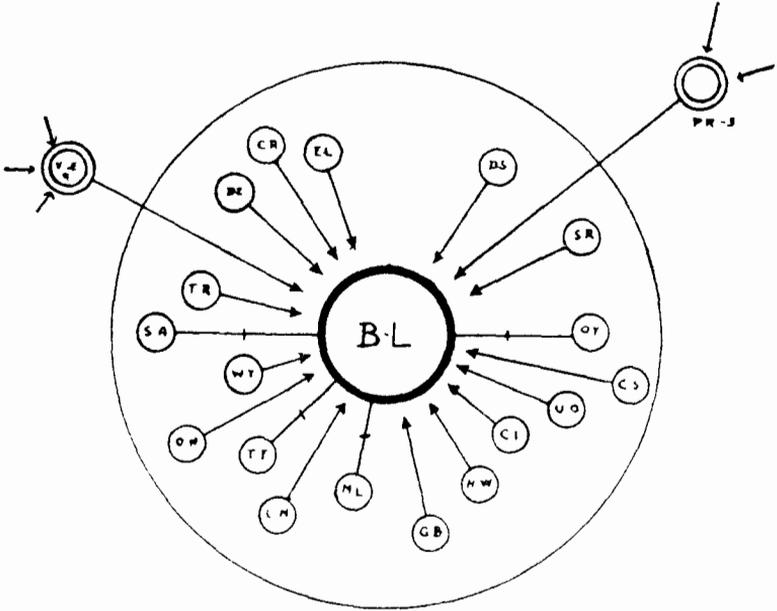
† See "Sociometry in Action," *op. cit.*, p. 302.

H) Quantitative studies of the tele-transference-empathy complex have been on the way since 1937.[‡]

When we study a community, as an interrelated whole, using the trichotomy tele-transference empathy as reference and considering what effect one part of the community has upon the other, we recognize that its totality too, does not grow without direction or chaotically; that, just as the individual organism grows towards a definite end, maturity, also groups grow with a tendency towards a definite organization which guarantees end-forms, survival and a lasting preservation of the whole. Like the inevitability of a pre-conceived plan, the organization unfolds. At first, out of an indefinite status grow a horizontal and a vertical differentiation of structure, the development of a "bottom" and of a "top." Then stage follows stage as gradually the social, sexual and racial cleavages differentiate it further. Examining the membership of this crystallizing organization we observe again that this too, is not a wild distribution of position and function. If we may be allowed to develop the analogy of a bottom and a top of the group still further, we may say that the isolated whom we find at the top of the group are relatively superior, solitaire individuals and the isolated whom we find at the bottom of the group are relatively inferior, unchosen and unwanted individuals. The individuals forming the top of the group may become aggressive towards the members of the middle groups and the individuals forming the bottom of the group may also turn towards the members of the middle groups; between these two groups the middle group attempts to develop a cohesive unity and coördinated strength to keep in check both the top groups and the bottom groups. It appears that the end-forms towards which the sum total strives is one in which the representatives of the creative function (aristo-tele) come to an inter-functioning with the representatives of the social function, the leaders of the group.

[‡] See Tele charts, p. 296-298; *Sociatry*, Vol. I, 1947, p. 446; *Sociometry*, Vol. 9, 1946, p. 178; see also *Psychodrama Monograph* No. 12, 1944, "Role Analysis and Audience Structure."

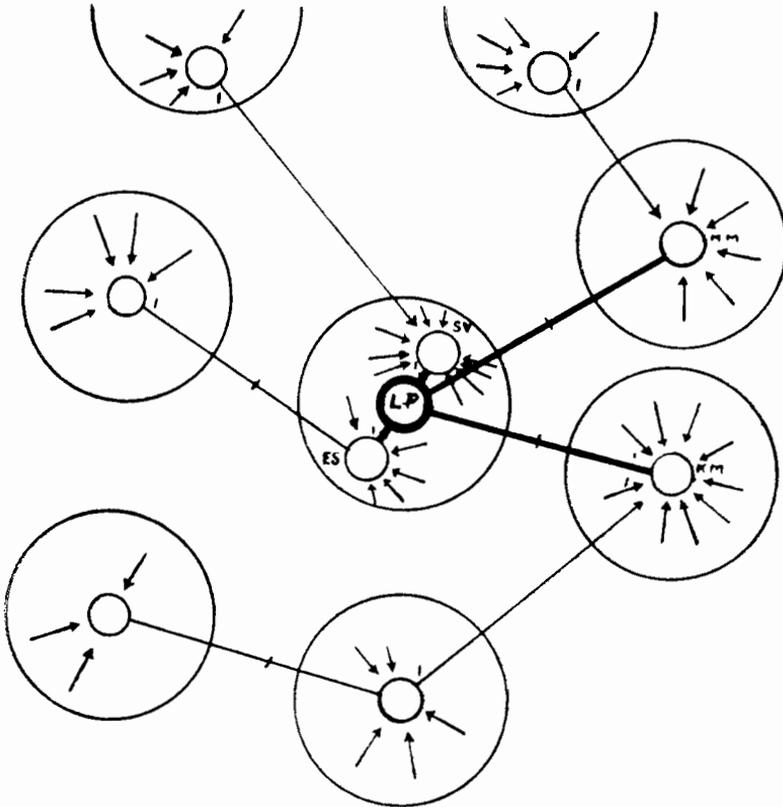
LEADERSHIP STRUCTURES



A POPULAR SOCIOMETRIC LEADER

BL is the center of attraction from twenty individuals. Eighteen of these twenty live with her in the same home group, the total population of which is 25 members at this time. The population of this cottage has fluctuated between 25 and 31 individuals. BL is attracted to four individuals (SA, TT, ML and OY) of her own home group. Thus she would be classified as a popular leader. But the two attractions coming to her from outside her group are from two isolated and rejected individuals, VE of C9 and PR of C3 and the attractions from inside her group come from individuals who are singly almost cut off from the chief currents of the community. Therefore, notwithstanding the fact that BL commands quantitatively a great direct influence, this influence is limited to the area of her own cottage, C8.

LEADERSHIP STRUCTURES

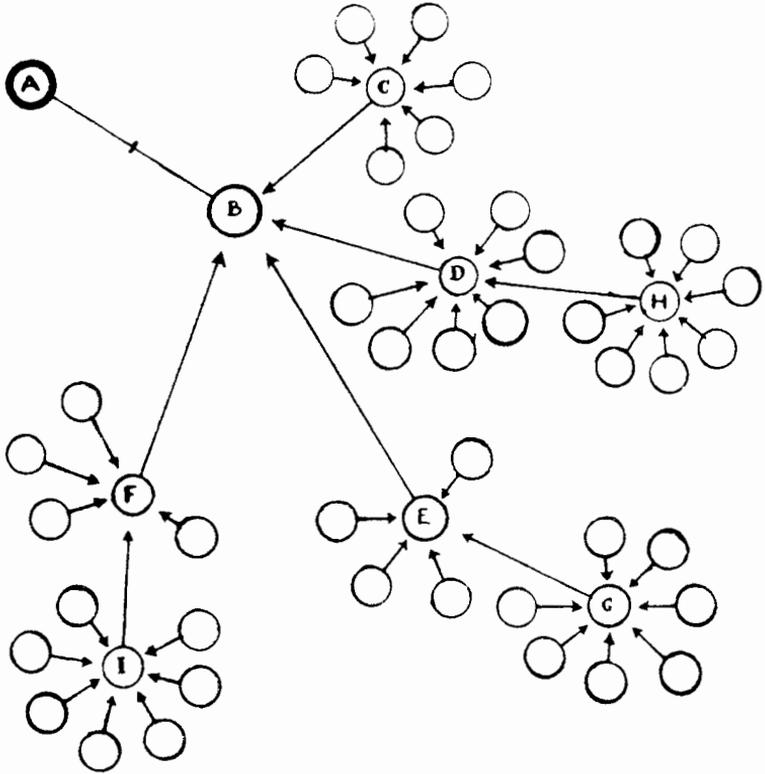


A POWERFUL SOCIOMETRIC LEADER

LP of C6 is the center of attraction from four individuals: SV and ES both of her own cottage, MM of C1 and KM of C7. She is the first choice of these individuals as is indicated by the numeral 1 on the side of the line extending from each of them to her. She makes use of four of her five choices and appears attracted in return to SV, ES, MM and KM with each of whom she forms a pair. Quantitatively she would be classified as an individual of average direct influence, but through SV, ES, MM and KM, she commands by indirection nearly one hundred individuals, of whom fifty-eight are indicated in the chart.

She actually has a powerful position in the community.

LEADERSHIP STRUCTURES



STRUCTURE OF AN ISOLATED SOCIOMETRIC LEADER

A single tele relationship which produces, through indirect links, a large network of influence is called "Aristo-tele."

Individual A is the first and exclusive attraction of B and B is the first and exclusive attraction of A. (Both individuals, A and B, make use of one choice only from the five at their disposal.) Except for the one tele from B, A is *isolated* in the community. But B is also the first choice of C, D, E and F, who in turn, are the centers of attraction of 6, 8, 5 and 5 other individuals respectively. Among these latter 24 individuals are three persons, G, H and I, who are the center of 7 attractions each. The effect of the one tele from B to A is to connect A, like an invisible ruler with a main psychological current, and to enable him to reach 50 persons potentially predisposed towards him.

EXTENSION OF TELE THEORY, ITS POSITION WITHIN THE
SOCIOMETRIC SYSTEM

I described a version of the sociometric test* which was called "sociometric selfrating", but which may better be called a "sociometric perception test." The individual goes through several steps.

First step: the individual "sketches out all the situations in which he is involved at the time and fills in all the individuals who take a part in them and in which role."

Second step: "he tries to clarify for himself how he feels towards each of these people. He pretends that he is taking part in a sociometric test and chooses or rejects them according to preference and rank, giving his reasons."

Third step: "he makes a guess what every one of these people feels towards him and what reasons they might have."

Fourth step: "he guesses how these individuals may be related to each other."

Fifth step: "after he has finished his own selfrating he may ask another person familiar with his situation to rate him independently."

Sixth step: "the validity and reliability of data from sociometric selfrating can be determined by giving to a group of individuals an open sociometric test immediately after they have rated themselves. Thus, the individual's intuition of his sociometric status can be compared with the objective facts of others' expression towards him, e.g., his actual sociometric status."

We have known for some time that tele has, besides a *conative* also a *cognitive* aspect and that both enter into the choices and rejections made. But there never was an instrument which could tap the cognitive factor exclusively. "In young children's groups, . . . after they have developed the *ability* to click with one partner, this partnership does not remain a singular case, but similarly they develop the *sense* to click with other persons who like themselves have developed a similar sense for inter-personal choice."§ In a suggestive article a sociometric investigator¶ came to the fol-

* See Moreno, J. L., "Sociometry in Action," *Sociometry*, Vol. 5, 1942, p. 301, 305. All quotations describing the test are taken from this article.

§ *Sociometry Monograph*, No. 3, p. 21.

¶ Deutschberger, Paul, "The Tele-Factor: Horizon and Awareness," *Sociometry*, Vol. 10, 1947, p. 249.

lowing conclusion: "Tele does not operate equally throughout the totality of an individual's social atom, but consists of an horizon in which awareness is great, level of choice expenditure high, and perception of inter-relationships accurate; and an unstructured region, marked by tentative and token choices to which reciprocation is hit-or-miss. This is the area between the chance level and the tele level wherein drives for acceptance and misperceptions about the role of the recipient may cover a range of pathological interpersonal relationships." In accord with this, therefore, I subdivided the area between the tele level and the pure chance level into the infratele (farthest from chance), empathy and transference levels.*

I frequently encountered in the sociograms individuals who receive a large number of choices but whose own choices remain unreciprocated; as a consequence, they feel isolated and lonely. In the analysis of such cases one finds that they operate in their choice-making with a high feeling of affection for the individuals they are choosing, but with little awareness as to their feelings towards him; they have also little awareness for the individuals who chose them but whom they do not choose. It appears that at the time of making important choices their conative tele is high, their cognitive tele is low. I submitted such individuals to role testing in sociodramatic sessions and discovered that their *perception* of the *social roles* in which the individuals chosen by them performed, was weak, out of proportion with the feeling of admiration and awe they had for these statuses and roles and for the individuals embodying them. In other words, they disclosed a disturbance on the role level, a high level of *role enactment* versus a low level of *role perception*;† parallel to the conflict shown on the interpersonal level, a high conative tele versus a low cognitive tele.

When I introduced the selfrating test I calculated that if the perceptual intuition of such individuals could be awakened and trained, their choices would be more adequate and their sociometric status would improve. I was able to verify this hypothesis in a large number of cases.

My original design may be modified by giving the actual socio-

* *Sociometry Monograph*, No. 3, p. 25-27.

† Moreno, J. L., and Moreno, F. B., "Role Tests and Role Diagrams of Children," *Sociometry*, Vol. 8, 1945.

metric test and the perception test simultaneously and by leaving out sociometric criteria. From the point of view of developing sensitive perceptual responses the simultaneous giving of the test may have certain disadvantages, the "warming up" to two separate foci at the same time may be confusing. The one test is of an autistic, imaginal, autonomous nature, the other is of an objective, realistic and collaborative nature. It is difficult for subjects to switch at the same time from one focus to another; a pause for reorientation is needed. Experience with large samples of individuals should enlighten us which of the original designs is more productive, to give the two tests simultaneously, to give the guess test separately from the real test, one immediately following the other, or to give the perception test alone.*

A pitfall of the sociometric perception test, as in real sociometric tests, is the neglect of giving the subject appropriate material instructions, by not warming him up adequately to the situations he is to evaluate and perceive. I found that if the subjects omit the first step in the instructions outlined above, his responses will be poorly focussed. If he does not visualize the *criteria* of the situations in which he chooses to interact with certain individuals, the meaningfulness of the results threaten to be reduced and a comparison with the results from actual sociometric tests may become inaccurate and, to an extent, pointless.

It can be hypothesized that the greater the sociometric distance of an individual is from other individuals in their common social space, the more inaccurate will be his social evaluation of their relationship to him and to each other; he may guess accurately how A, B, C whom he chooses feels towards him but he may have a vague perception how A feels about B, A feels about C, B feels about C, B feels about A, etc. The day may come when, through

* I have constructed, similar to the sociometric perception test, a *psychodramatic perception test*; it may also be called an "action perception" test. In the first phase the subject is asked to outline a series of crucial situations which he expects to experience in the course of a given time (the next twenty-four hours, a week, etc.), a meeting with his wife, his employer, his child, etc. He is to describe how he expects to act in these situations and how he expects these individuals to act towards him. In the second phase he may be asked to act out the situations *without* auxiliary or alter egos, that is, *acting all the parts himself*, presenting the conflicts which may ensue and the solutions which are offered by himself or by his coprotagonists. Whereas the sociometric perception test focusses on the perception of feelings the psychodramatic perception test focusses on the *perception of action and interaction*.

cultivation and training of many generations in the conation and cognition of tele, in role enactment and role perception, we will be able to penetrate the social universe by standing still, without moving into it, and communicate with individuals at a distance without meeting them physically, attaining the effects of extrasensory perception without an extrasensory function.

It is probable that the material tapped by sociometric and action perception tests can give us important clues as to the development of delusions and hallucinations in the mental patient. The messages and signals which the patient "sends out" and "receives" can draw their inspirations from the tele- and action matrices which have developed since early childhood.

The position of tele within the sociometric system* and its relation to spontaneity and creativity is still open to calculation. Tele is what is measured by sociometric tests; but where do we go from there? *Accumulated findings go so far as suggesting that there is an evolution of sociometric structure, that tele structures are transmitted from earlier to later configurations, in other words, that tele can be "stored" and "conserved".* I am, therefore, inclined to conclude that *tele needs a catalyzer like spontaneity to be mobilized.* The relation of spontaneity to creativity has here a parallel, tele is "creatogenic". Analogous to the biogenetic unit, the gene, the tele can be conceived as the sociogenetic unit, facilitating the transmission of our social heritage.

* See p. 53-54.

MOTIVATIONS

CATEGORIES OF MOTIVATIONS

According to plan we moved to the third dimension of our research—the study of motivations.

The motivations the individuals themselves gave were recorded in their own words for the purpose of articulating in detail and adjusting to the desires and expectations of the individuals with the technical possibilities of the community.

When a girl was so attractive to fifteen others that they all wanted to live with her in the same cottage and she had chosen but two of them to live with her, it was important in the interest of the unreciprocated thirteen to ascertain if they were unchosen

by her for any particular reason and if a rapprochement was possible. It was further necessary to know the motivations when attraction was mutual, as these might reveal attractions which were harmful for one or both parties. Our method was, after the desires of each individual in the community in reference to their different objectives were disclosed, to aid them in reflecting their actions so that they might be able to attain their goals themselves. It was a theory of "the subjects' own actions in development" rather than a theory of our own which we sought to prove. The motivations which we collected were the reflections in their own minds concerning their wishes. The criss-crossing motivations were followed up in detail if for no other reason than to estimate further the position of every child in the community. We were able to guarantee confidence of information and no child was ever informed by whom she had been chosen or rejected or any motivations concerning her. All individuals who belonged to the same social atom in respect to any criterion were interrogated to give their motivations for being attracted to or rejecting any particular individual.

In respect to the criterion of living in proximity, 107 types of chief motivations were given, 58 of which fell under the heading of dislike, 46 under the heading of like and 3 of indifference. They demonstrate a finer discrimination for motivations of dislike than of like. The number of varieties of motivations of dislike or rejection is greater than the number of varieties for like or attraction. It would appear that our subjects were more articulate in giving expression to rejection than to attraction or indifference.

The motivations given, however inarticulate, disclose how individualistic the reactions are. Looking at any sociogram we can recognize the positions of the individuals within it only so far as their classification is charted. We can say so and so many individuals are unchosen, isolated, unchosen-rejected, isolated-rejected or forming mutual pairs, but we could not differentiate one isolated structure from another or one mutual pair from another, etc. But with the expressed motivations we can begin to differentiate between these. One isolate appears as a newcomer whom the group has not yet absorbed. Another isolated individual appears as a former rejected one who is simply neglected

"because she is not intelligent and has bad habits." Similarly we see each isolated structure in a group becoming of living meaning, each different from the other. One mutual pair appears motivated from one side by "She protects me," from the other side "She is like a little sister to me." Another mutual pair appears motivated from one side by "Good companionship" and from the other by "I can confide in her." One structure of rejection appears motivated by "lies," "steals," "is dirty," "is mean" and "quarrels"; and another such structure is motivated by "She is always planning to run away." Each structure appears as a differently motivated dynamic expression.

The motivations give a further basis for comparison of groups. We can compare, for instance, C4, which had received a low ranking through quantitative analysis, with C6, which received a high ranking. The members of C4 produced 26 different motivations for disliking others; C6 produced 15. C4 produced 20 different motivations for liking; C6 produced 25. We can compare the highest figure any motivation of liking or disliking has in C4 with the figure for the same motivation in C6. In C4 the most frequently given motivation was "I want her because she is of my nationality," which was repeated 17 times. This motivation is absent in C6. There were 10 girls in C4 of nationality which contrasted with that of the majority; in C6, 6. We followed up the relation of the girls of contrasting nationality to their housemothers and found that 8 of them in C4 disliked their housemother, whereas in C6 only 3 disliked her. In C4 the housemother's relation to these girls appears as a factor conditioning the reactions. She preferred girls of native American stock and her attitude was also reflected by the girls of American extraction within the group. A split into two factions gradually crystallized, each aspiring to dominate the other. The contrasting minority element was driven into an attitude of defense. Being fewer in number they wanted to strengthen their position by getting girls of their nationality in other cottages to live with them. The most frequently given motivation for rejection in C4 was "She is a nigger-lover," which was given 16 times. This motivation was given but once in C6. The pressure of the group in C6 against friendship with colored girls was so pronounced that no girl who was placed in this group was likely to have such a friendship

secretly, whereas in C4 numerous girls had friendships with colored girls and disclosure of this activity arose from jealousy of one another. Another interesting contrast is between the colored cottages, C9 and C12, and the white cottage groups. As a motivation for rejection the colored girls not once gave "She loves a white girl," but "She's a nigger-lover" was given 99 times by white girls. For a discussion of the relation between colored and white, see pp. 407-409. As in these examples, in like manner further differentiation between all the groups may be traced through motivations.

TABLE 17

RANKING OF TWO COTTAGES ACCORDING TO FREQUENCY OF MOTIVATIONS AS COMPARED TO THEIR SOCIOMETRIC INDICES

	<i>Type of Motivations</i>	<i>Categories of Attractions</i>	<i>Categories of Rejections</i>	<i>Categories of Indifference</i>	<i>Sociometric indices</i>	
					<i>Interest for Ingroup</i>	<i>Quotient of Attraction from Outgroups</i>
Entire Community	107	46	58			
Cottage 4	46	20	26	1	46.67%	3%
Cottage 6	40	25	15	1	77.20%	3%

The cohesion of C6 is more than one and a half times greater than that of C4. Corresponding to their sociometric index for ingroup interest, C6 has a larger number of positive motivations and a smaller number of negative motivations than C4. Both cottages use only a part (40%) of the types of motivations which are used in the entire community. The comparison of the motivation structure with the sociometric structure of groups opens up new insights into their microscopic organization.

The more we studied motivations given by the subjects the more we paid attention to every choice made by an individual, not in the psychoanalytic sense that it had a meaning in the development of the individual, but in the sociometric sense that it had a value in "feeling out" the associations with persons within the realm of her acquaintances which are best suited for them. But the motivations were often insufficient or inconsistent; we found changes of opinion, untruthful statements, statements without foundation given about persons not known personally. We had to develop a method which would reflect and analyze the inter-relations more intimately.

VALIDITY OF MOTIVATIONS

In the course of studying children's groups below the pre-school age level we learned to discriminate between motivations for attraction, rejection or indifference which are the result of indoctrination and motivations which are the result of spontaneous attractions, repulsions and indifferences. During the presocialized period children form groups on a *psycho-organic* level of development and the members are unaffected by or little susceptible to indoctrination, but towards the end of this period they become more susceptible. From then on the *psycho-social* level is in ascendance and the members also become sensitive to the psychological currents; gradually they become participants in the networks in the community. As we realized that the study of inter-racial and inter-nationality attractions at age levels in which individuals are impressionable or susceptible to indoctrination would be difficult, we began with the study of inter-racial choices at the pre-school age level and followed these up in their development from year to year. We found that (a) inter-racial choices show a different pattern in the pre-school period than they do thereafter and that this is partly due to the effect indoctrination has upon the choices made (see p. 210); (b) that the sociogenetic law is applicable also to inter-racial discrimination; the pattern of inter-racial attractions and repulsions develops in the direction of higher differentiation; (c) when indoctrination begins to show its effect upon inter-racial choice, discrimination in children's groups tends to follow the psycho-organic route; the children will try to adjust their doctrines to their spontaneous likes and dislikes; (d) with the weakening of their spontaneity the older the individuals become, the more they are inclined to abandon the organic route and the more they may be swayed by indoctrination simply as it is carried to them through the networks of the community in which they live.

In the course of studying the effect which psychological currents have upon individuals we discovered two other types of motivations: motivations of attraction, repulsion or indifference about a person or a number of persons which are based upon direct acquaintance and motivations which are based upon *symbolic* or collective acquaintance, that is, upon hearsay or mental hallucinations. An illustration of symbolic acquaintance is HU, who

was regarded as a thief by 55 individuals, 10 of whom were not acquainted with her and 26 of whom reiterate a motivation from hearsay. The importance of such symbolic judgments becomes the greater the larger the networks are through which such an opinion can travel. The significance of symbolic acquaintance and symbolic judgment is more far-reaching still when it is related to an individual because he is a member of a collective. For instance, LS is rejected because she is Jewish; 7 of the girls rejecting her had never made her acquaintance.

The basis for these developments are the psychological networks which pervade populations. When mechanical networks as precipitated by the printing press, the radio, etc., are drafted upon psychological networks, the circulation of symbolic judgment may lose some relationship to the natural forms of social communication. Hence the machine and the means of mechanical transmission do not produce—they only multiply and distort a given product.

SOCIAL INTERACTION

SPONTANEITY STATE AND SOCIAL INTERACTION

When we say that person A hates person B, we do not express what is actually going on if we do not indicate what this hating of B means within the whole movement. If, in turn, we say that B is jealous of A, we are failing to express what this jealousy means in the whole movement. The process is a dynamic movement with two poles, A and B. From the point of view of the movement, this hatred of A to B and this jealousy of B to A is interlocked, not static but in flux. At a certain moment it may reach a climax in A as the feeling of panic, for instance, coinciding with the mood in B of rage and desire to dominate. An analysis of the condition in A and of the condition in B separately may lead to our understanding B or A but not A *and* B, that is, the state arising from their *interaction*.

As person A did not want to live with person B and neither did person B want to live with person A, we had to analyze the

emotional movement between them. The problem was to develop a method of studying states binding two or more persons together, to analyze the movements between them in order to secure a finer interpretation of these movements than their expressed motivations afforded.

Emotional states as anger, fear, or liking, and more complex states as reflection, conviction, or curiosity, are limited realities. They do not exist as they appear to the person who is filled with them. They are part of a whole, they belong to the next larger reality, the social atoms. Properly integrated into social atoms individual subjective notions as anger or fear undergo a transformation; they can be described as *group subjective* notions—*clicking* emotions, when two individuals agree spontaneously; *crossing* emotions, when they disagree; *breaking* emotions, when a strong emotion is responded to by a neutral attitude; and *passing-by* emotions, when the object is unaware of their presence. In this manner a phenomenologically correct differentiation is established between the micropsychological and microsociological fields. It is of great methodological importance to delineate the threshold between psychological and sociological phenomena. It is difficult, if not impossible, to do this on the macroscopic plane. It is possible, as we have shown above, to accomplish this task with the assistance of sociometric techniques on the microscopic plane.

In the "Stegreiftheater" I have described the *spontaneity state*: "It is not given, we must warm up to it as we do to climbing up a hill" and "Spontaneity state is not only an expression of a process within a person, but also a relation to the outside through the spontaneity state of another person. It is the meeting of two different states from which the conflict arises." There are actually two poles of one movement reflecting and changing each other. This starting of a spontaneity state through the interaction of two or more individuals has a great theoretical significance. In the analysis of a *single* individual we may be inclined to relate every arising expression to "former" attitudes. We are inclined to think that they may be, at least in part, derivatives of or allied to past performances and there is no end to this search. The genesis must be retraced through symbols. We never come face to face with the *first act*, the *original* situation. *But when we study, as in Hudson,*

two or more individuals who never met before and who from their first meeting on have to live together and to be participants in the same group, we are face to face with the first acts, the original situations of "this" community. We see them when they enter spontaneously into interrelationships which lead to the forming of groups, *sub species momenti*. The first meeting may be the birth of a social seed and lead to a true group formation. But like in the biological sphere where millions of seeds are wasted, also in the social sphere millions of meetings go to waste if they are not brought to a significant continuation.

We study their spontaneous reactions in the initial stage of group formation and the activities developing in the course of such organization. We are present when the relationships are born, at the earliest possible stage in the social relation of the individuals who meet and we can, if necessary, develop the treatment *forward* instead of backward. Our procedure is *socio-creative*. We begin with the *act*, the initial attitude one person shows for the other, and follow up to what fate these interrelations lead, what kind of organization they develop. The Parent and Family Tests (see p. 463) are samples of procedure in the course of which strangers are brought together for the first time. But however unstructured these situations may be and although these individuals meet "as individuals" for the first time, it is obvious that this community is not an island; it is part of a larger society with specific cultural institutions. They are bound to have entered and influenced the structure of this community from the very start, not only through the "cultural" conserves which it has imported, language, books, religious, educational and so forth, but through the very behavior of the individuals themselves. *The community needs, therefore, to be explored and, if necessary, purged from undesirable cultural conserves, on deeper levels than those of acquaintance and attraction-repulsion-indifference.* It is the level of social interaction and more specifically, the level of cultural interaction which now concern the sociometrist on his expedition into the depth of the social microcosmos. *The community must be "deconserved" from the pathological excesses of its own culture, or at least, they must be put under control.* Before we can start with a new cultural experiment we must bring to view and reach the true bottom of the community, its spontaneity-creativity

matrix. But what is spontaneity and creativity? And *what are the instruments which can be used to bring about a new cultural order?*

Spontaneity can be defined as the adequate response to a new situation, or the novel response to an old situation. Without creativity the spontaneity of a universe would run empty and end abortive; without spontaneity the creativity of a universe would become perfectionism and lifeless. *Some of the instruments are spontaneity and role playing tests, psychodrama, sociodrama and ariodrama:* there are many more to be invented.

Spontaneity, Anxiety and the Moment*

Anxiety is a function of spontaneity. Spontaneity is, as defined, the adequate response to a present situation. If the response to the present situation is adequate—"fullness" of spontaneity—*anxiety diminishes and disappears. With decrease of spontaneity anxiety increases. With entire loss of spontaneity anxiety reaches its maximum, the point of panic.* In the "warm up" of an actor to a present situation anxiety may move into two opposite directions; it may start with his striving to move out of an old situation without having enough spontaneity available to do so; or, the anxiety may set in as soon as some "external" force pushes him out of the old situation and leaves him hanging in the air. *The terrifying thing for an actor is this wavering between a situation which he has just abandoned and to which he cannot return and a situation which he must attain in order to get back into balance and feel secure.* The infant, immediately after birth is the illustration par excellence for this phenomenon. He cannot return to the womb, he has to stay within this new world, but he may not have enough spontaneity to cope with its demands. In such moments of complete abandonment it is imperative that he draws upon all his resources or that someone comes to his aid, an auxiliary ego. Another illustration is a soldier who is suddenly attacked by an overwhelming number of enemies, or the protagonist of the psychodramatic situation facing a group of unbelievers, a man in a frenzy, who acts to save his life.

* See "The Sociometric System," p. 42.

Thinking through this process it is dialectically faulty to start with the negative, with anxiety. The problem is to name the dynamic factor provoking anxiety to emerge. *Anxiety sets in because there is spontaneity missing, not because "there is anxiety," and spontaneity dwindles because anxiety rises.*

Function of the Spontaneity Test

The Spontaneity Test is able to uncover feelings in their nascent, initial state. Through it the tester can get a better knowledge of the genuine responses an individual may develop in the course of conduct and perceive acts in the moment of their performance. This is where the various forms of testing, particularly the Binet, Free Word Association, and Gestalt have not accomplished the deed. Let us imagine that three representatives of these doctrines have suggested to a subject under their study to give free play to his ideas and emotions, either through writing or through sketching spontaneously any configurations expressing them. The Binet tester may attempt to estimate approximately the mental age indicated by the content of the writing. The psychoanalyst may attempt to give an interpretation of the conflicts referred to by the subject in the words and to find characteristic symbols which he can follow up in a further Free Association test. The Gestalt analyst may study the configurations of the material. Instead of being satisfied with the cold material the subject leaves behind after his excitement in the state of production has passed, *we* need to see him when he "warms up" to the expression. It may be argued that the subject is present during an intelligence test and also in the psychoanalytic situation. But our point is that the emphasis is laid in both instances upon the material given, instead of upon *the act*, upon the subject matter instead of upon *the actor*. To act means to warm up to a state of feeling, to the "spontaneity" state of an actor, and not only the resulting expression or product separated from him. It is methodically important to treat "acts as parts of an actor" in conjunction with the products of his acting.

The Warming Up Process

The warming up process is the "operational" manifestation of spontaneity. As electricity is measured by its effects spontaneity

can be measured by the dynamics of the warming up process.

The objective was the study of the warming up process involving one or more individuals, regardless whether it results in sensations, perceptions, emotions or acts. Our experimental study of the warming up process as it develops into an act led us first to the observation of *warming up indicators*. These are not social and mental signs only but also physiological signs, altered breathing rate, gasping, crying, smiling, clenching the teeth, etc. The *bodily starters* of any behavior as acting or speaking on the spur of the moment are characterized by physiological signs. In the process of warming up these somatic symbols unfold and release simple emotions, as fear, anger, or more complex and diffused states. It is not necessary for verbal reactions to evolve in the process of warming up; they may or they may not. But some mimic symbols are usually present; they are related to underlying physiological processes and to psychological states.

Warming up indicators have been explored experimentally first. The experiment was so conducted that the subject was unconscious of a goal and had no intention to produce any specific mental state. *It was suggested to him that he throw himself into this or that "bodily" action without thinking what will come of it. The "starting" of these actions was found to be accompanied by a process of "warming up."* We could observe then that if a subject lets go with certain expressions as gasping, accelerating the breathing, etc., without a definite goal certain vague emotional trends nevertheless develop. The latter did not seem to be related to *one* emotion exclusively but rather to a whole group of emotions with similar properties. For instance, the expressions—clenching teeth and fists, piercing eyes, frowning, energetic movements, shrill voice, hitting, scuffling of feet, holding head high, accelerated breathing, and others, tend to release emotional states as anger, will to dominate, hate, or a vague and diffused precursor of these trends of feeling. Another set, accelerated breathing, gasping, trembling, flight, twisting facial muscles, inability to talk, sudden crying out, clasping hands, etc., develops another trend of feeling, anxiety, fear, despair, or a diffused combination of these. Another set, smiling, laughing, chuckling, widening the eyes, kissing, hugging, etc., stimulates a condition of happy excitation.

However undifferentiated the feelings produced may be, it is hypothesized that one set of movements *starts* one trend of feelings, another set of movements *starts* another trend, and so on. Each of these three sets of starters appears to operate as a unit. When one set of starters functioned and the subject was instructed to add a starter belonging to another, opposing set, it was observed that the course of warming up was so disturbed that the state correlated to the first set was lost or diminished in intensity. For instance, if in the warming up initiated by the third set of starters mentioned above, the subject is instructed to clench his teeth or scuffle his feet, the direction of the production begun is thrown off its course. Bodily movements were found to follow one another in a certain order of succession according to which starter initiates the warming up. If the succession is interrupted the temporal order is spoiled and the state of feeling released is confused.

On this basis we can diagnose in what phase of its warming up an emotional state is, *status nascendi*, crescendo or climax. Warming up indicators are the deciding clue as to whether an emotional state is in process of release. Verbal reactions are less reliable signs that a state is reached or about to be reached. A subject may use apt words with little or no accompanying emotion, but it is practically impossible, once an emotion is initiated, to act without being carried away by the trend of feeling produced. All associations, acts, verbal and mimic are related to the trend of feeling developed.

Secondly, we experimented with the *intentional* production of specific results, for instance, certain perceptions, certain acts or roles, or certain emotional states. In this experiment a *mental starter* replaces the bodily starters. The subject is conscious of a goal and told to produce a certain state, for instance, "throw yourself into the state of anger." Now he knows his goal ahead. The more successful the subject is in throwing himself into the desired state the better coordinated to the state will be the verbal and mimic associations produced (adequate state). If the subject initiates unfitting bodily starters, the desired spontaneity state is not attained. If the starters are slightly out of focus with the intended state, the state reached is inadequate and the organization of the production will be correspondingly undifferentiated, loose, and of short duration (inadequate states). If the starters are faultily coordinated the production is rash, confused and abrupt, dispro-

portionate to the amount of effort expended (overheated states). In the case of the well developed state, the individual appears to approximate closely his limit of differentiation of the emotions.

In another experiment the mental starter is replaced by *interpersonal* and *social starters*, the starter being another person or a symbol, for instance, the American flag. In another experiment again, the bodily and mental starters are supplemented by *psychochemical starters* as alcohol, coffee, sodium pentothal or insulin, to mention but a few.

In productions which occur on the spur of the moment, extemporaneously, mimic signs or expressions are helpful to start and accelerate the warming up of any emotional or social state. It is different if a memorized role is played as on the regular stage. There, through continuous rehearsal, the actor has an opportunity to crystallize his performance according to a certain artistic pattern. But even *he*, placed into a spontaneous play, falls victim to the technique of warming up the more genuine his performance. The reason for this can be explained. The motive in actual life when we warm up to an emotional state is usually another person's behavior. But in an extemporaneous play this motive is missing, the fictitious partner being too weak a substitute. To start the warming up of an emotion a special effort is needed which is the greater the simpler the emotions, an effort which has to be originated from the bodily mechanism itself. To "fake" these warming up indicators is just as difficult as to eliminate them entirely in presenting simple emotions. It is quite difficult for a person to throw himself into a state of fear, to develop its indicators and to produce *simultaneously* the emotion of love and a corresponding dialogue.

DIMENSIONS OF INTERACTION WITHIN A SMALL GROUP

A well developed theory of spontaneity and the warming up process has to prelude any program of interaction research. Without them the investigator is like a chauffeur who drives a car without knowing the motor; it is good enough until an emergency occurs.

According to plan, we can now move our research a step deeper

into the structure of groups. First we determined the acquaintance matrix of a group, then the sociometric matrix and third, the matrix of motivations and what competence each of them may have for the social survival and social death of such groups. The movement between A and B which we have classified attraction-repulsion-indifference patterns has a corresponding tele structure which may be neither an attraction, a repulsion, nor an indifference *per se*. The problem was to determine the "socioemotional matrix" of the group. By means of some instrument we had to find a way to watch how a few individuals enter into social relations. As arousing and probing the spontaneity of these individuals is the alpha and omega of the search, I have called the test "spontaneity test." It can be applied to relatively unstructured situations, as the meeting of strangers, or to situations of varying degrees of structure. Through the spontaneity test we were able to study the more intimate emotional interactions among a small group of individuals as these developed in the course of their living together. The subject is placed opposite those persons in the community who, through the sociometric test, have been found to "belong together" to the social atom of the subject. These individuals had chosen or rejected the subject in respect to a given criterion, as for instance, that of living in the same house. It is probable that *the material entering into their reactions will be borrowed from experiences they have had together, which they now have, or which they wish to have in the future.* I have not picked a group of individuals at random, but a group which was found to be interlocked in the community and which had been thoroughly explored as to its acquaintance, sociometric and motivational indices. Had I chosen a group at random we could not have learned how the findings in the different dimensions are interrelated. *I selected a group from Cottage 8 with Elsa TL as the central individual.* We recapitulate the findings of the sociometric test and motivational analysis before we go into the spontaneity test.

A. Sociometric Test

The group consists of five individuals, Elsa, Maud, Gladys, Joan and Virginia. The sociometric classification of Elsa (see sociogram, p. 356.) was expressed in the following Classification Formulas:

		ELSA		
		in	L	out
Class. Formula I:	sent	4		1
	received	0		0
Class. Formula II:				
	sent	4 — 1		1 — 3
	received	0 — 16		0 — 16

The dominant features of her classification are *isolated* and *rejected* within her group and within the community. Her classification showed that besides her housemother 31 other individuals were interlocked with her in the criterion of *living* in proximity. Data descriptive of her conduct in Hudson have been gathered from the 31 persons in her social nucleus who expressed a relation towards her—as far as they could articulate it. A study of the networks in which she participated showed that the position of 27 of the 31 persons in the networks were dependent upon two individuals. These two girls lived in the same house with Elsa. Only two other individuals appeared unaffected by them. Therefore, it seemed sufficient to concentrate our attention upon this nucleus of five, assuming that information coming from analysis of this nucleus would automatically elucidate the rest. Hence only the reports of Elsa herself and of these four individuals are here presented. Although these four individuals (who were chosen by Elsa to live with: Maud, 1st choice; Gladys, 2nd choice; Joan, 3rd choice; and Virginia, 4th choice) had been living with Elsa in C6 for more than one year, they unanimously rejected her. Considering the attitudes towards Elsa within her group and within the community, it seemed that Elsa chose the four girls who appeared to her most likely to respond and to help her. The fifth choice of Elsa went to a colored girl in C12 (see p. 356).

As indicated in Classification Formula I, Elsa chose four persons within her group and one from an outside group. Formula II shows that all five persons rejected her and that, in addition, she is rejected by 12 others within her group and by 15 others outside her group, while she herself rejects one person in her group and 3 outside.

We directed our attention next to the sociometric position of the 5 individuals she had chosen. The outside choice was a colored girl whose Classification Formulas reveal her in an otherwise

isolated position. The sociometric position of the four individuals she had chosen in her own group were as follows :

		MAUD		
Class. Formula I:		in	L	out
	sent	2		1
	received	2		1

Class. Formula II:		in	L	out
	sent	2 — 1		1 — 0
	received	2 — 3		1 — 0

Maud is chosen by 3 persons whose positions are not linked to influential currents either within the group or within the larger community. Hence her rejection of Elsa is restricted to a person to person relationship primarily. She has in common with Elsa an attraction to a colored girl, but, in contrast to Elsa her attraction is reciprocated.

		GLADYS		
Class. Formula I:		in	L	out
	sent	3		2
	received	1		0

Class. Formula II:		in	L	out
	sent	3 — 6		2 — 1
	received	1 — 4		0 — 1

As Gladys also is in an isolated position both within and without her group, her rejection of Elsa does not appear to have any appreciable effect beyond their person to person relationship.

		JOAN		
Class. Formula I:		in	L	out
	sent	2		3
	received	4		12

Class. Formula II:		in	L	out
	sent	2 — 2		3 — 2
	received	4 — 0		12 — 0

Joan attracts 4 inside and 12 outside her group. The follow-up of the sociometric positions of these 16 individuals reveals that Joan is the first choice of three individuals who themselves are chosen by 13, 16, and 18, respectively, in the community. As these 47 individuals each enter into 1 to 7 other relationships and their correspondents into still further relationships, the fact that Joan rejects Elsa has a far-reaching effect: Joan is in a position

to influence directly or indirectly some currents in all the networks. She was found to be a key-individual participating in the five main networks into which the population is divided.

VIRGINIA			
Class. Formula I:	in	L	out
sent	2		1
received	6		1

Class. Formula II:	in	L	out
sent	2—6		1—2
received	6—2		1—1

Virginia is chosen by 6 within her group and these 6 receive in all 21 choices from other members of the group. She is thus the key-individual within the group although she herself is not the most chosen. The fact that she rejects Elsa may have an effect far beyond the single relation of Elsa and Virginia. Virginia is in a position to influence directly or indirectly at least 27 persons, that is, all but four of the cottage population.

B. Motivations for Choices and Rejections

Elsa towards Maud:

She is my first choice to live with. She is nicest of all to me. I don't know what I like about Maud exactly but she is likeable in spite of everything they say against her. Her biggest fault is a habit she has of saying right out how she feels about you. She thinks by doing that she will be considered frank. I don't think frankness is always just the way to act. You hurt a person's feelings sometimes more that way, when you could just have said nothing or been a little nicer about it. But we talk to each other a lot and we do like many of the same things and have some of the same troubles, like getting in wrong with the girls and housemother.

Maud towards Elsa:

I don't believe in trying to be friends with her any more because she talks to me about colored girls all the time and goes ahead and tells on me. But just the same I don't believe she gets a square deal in this cottage. Like she is washing dishes and the girls in the kitchen keep passing remarks. One says, "That's not the way to do it, Elsa;" or "You didn't get this dish clean;" or "You can't even wash a glass right even if it had nothing in it but water." And they keep it up till Elsa gets nervous and stops and maybe bangs down what she has in her hands. And then the housemother says, "What's the matter with you, Elsa?" And Elsa gets sent to her room. The housemother never finds out that the kids were aggravating her because they do it under their breath, they hate her so. I get into trouble when I am with her. It is better if we do not live in the same house.

Elsa towards Gladys:

She is my second choice. She doesn't hold anything against you like some of the girls do. She has a forgiving nature and never says, "You are pulling the cottage down," the way Virginia does if you break a little rule. Gladys has to take a lot of blame just like myself.

Elsa towards Joan:

Joan is my third choice. I always liked Joan and wanted her for a friend but she starts to be my friend and then stops all of a sudden. She hasn't got much patience if you don't do just what she wants all the time.

Elsa towards Virginia:

She is my fourth choice. I don't care so much about her as I do about

Gladys towards Elsa:

I don't see that she is so terrible if the kids would leave her alone. The only time she gets my goat is when she sticks around and just stays and stays when you want to be rid of her, like a piece of molasses you can't get off your hands. She is pesty, anybody will have to say that. Expects you to let her play with you after you already get started and hanging on so you can't shake her. I do wish she was in some other cottage. We'd be happier and so would she.

Joan towards Elsa:

Kids can be sneaky once in a while but to be sneaky all the time, that's Elsa. She doesn't get happy over things you'd expect she would. Like her little sister sent her a poem she wrote and I had it put in the school paper and you'd think she would have been proud. But no, she didn't get excited a bit. One time Miss ET was scolding her and she just screamed. She usually doesn't do anything, not even answer back. So this time I felt sorry for her and I did everything for her. I loaned her a mystery story, too, and then when I asked her for it back, because mystery stories are hard to get here, she denied I ever gave it to her and then I found out she had given it to Maud. Elsa is courageous that way; she'll lie or do anything that comes into her head, doesn't seem to care what you think. Sometimes it doesn't amount to anything but it is the way she does it that makes you disgusted, always lying about not going with the colored girls when you see her dart around the corner just to get a glimpse of them, especially of her girl friend. I do not want to live with her.

Virginia towards Elsa:

I feel that Elsa has sunk so far that it's not any use having her

the others. All the girls try to get Virginia to be their friend but she doesn't show much partiality. She is about the same all the time. She is always criticizing me but she doesn't try to help me as much as I would like her to. If she would try to, I would get along better.

Elsa towards the housemother:

She isn't my friend. I just feel she is against me. She listens to the girls who are against me, too. She thinks I am wrong even when I'm not.

around. What's the reason I should bother with her? If she had any backbone she wouldn't be like she is. It just gives you shivers to have her in the same room with you at recreation. I wouldn't want to live with her.

Housemother towards Elsa:

When Elsa's mother comes she weeps, but the next hour she has forgotten her. She thinks she is persecuted by people. She tried once to run away with WT, a mentally retarded child. Elsa threw a pillow case full of her things out of her window and then, with sheets tied to the bed she attempted to slide down. The waving sheets in front of Anna's window and her feet knocking against the house awoke Anna and she pounded on her door to notify me. By the time I had the lights on Elsa was ringing the front door bell. She had sprained her ankle. She acted totally indifferent to the whole episode. On no occasion does she exhibit any temper, nor does she answer back. She is a solitary person, never volunteers for either work or games; day-dreamer, heedless and careless in work. Bad nail biter. Her progress in school is good and she is one of the most intelligent girls in my house. She has a taste for finery which shows on every possible occasion. From some old ragged lace curtains she made a brassiere. Whatever is thrown out she will take and make underclothes and things of. One time she took cast out voile and made panties, small as for a doll, and wore them. Her room is always full of junk which she collects, anything shiny or glittering. Steals, takes things which I would give her if I knew she wanted them. At Christmas time she took about \$2 worth of things from the store. The things were rings, handkerchiefs, pen and

pencil sets, powder puffs, strings of beads, etc. Probably she wanted them to give to both colored girls and white girls as a short cut to friendship as she had them all done up in paper and tied with bits of ribbon when it was discovered. She didn't cry when scolded about taking them. Is persistent in running after the colored girls. My girls have lost patience with her for this. She lies about it even when they catch her in places with them. Language very dirty, and notes likewise. I believe Elsa should be given a new chance in another cottage.

C. *Spontaneity Test*

The purpose of the spontaneity test, in this application, is to explore the range and intensity of the spontaneity of individuals in their exchange of emotions. By its means we ascertain the spontaneous reaction of the subject towards each person placed opposite him, the type and volume of their emotions and the spontaneous reaction of each of them towards the subject. It aids in the determination of the "socioemotional matrix" of a small group.

The subject is instructed as follows: "Throw yourself into a state of emotion towards X. The precipitating emotion may be either anger, fear, sympathy or dominance. Develop any situation you like to produce with her, expressing this particular emotion, adding to it anything which is sincerely felt by you at this time. Throw yourself into the state with nothing on your mind but the person who is opposite you; *think of this person as the real person whom you know so well in every day life. Call her by her actual name and act towards her the way you usually do.* Once you have started to produce one of these emotional states, try to elaborate the relation towards that person throughout the situation, living out any experience, emotional, intellectual or social." The partner receives no instruction except to react as she would in actual life to the attitude expressed towards her by the subject. The two persons are *not allowed* to consult with each other before they begin to act. This type of spontaneity test is not entirely unstructured because the two partners operating

in the situation know one another. Life has already prepared them for each other and for the test. They do not need any preparations as to their feelings for each other and the kind of conflicts they get into. This is obviously different from the psychodramatic situation test in which the subject faces an auxiliary ego, that is, instead of a person relevant to him in life itself, an artificial, experimental agent.

The person tested is placed opposite every person who has been found to be related to her. *As we are exploring both ends of each relationship, we have in turn to make a subject of "every" partner in the relationship.* In other words, after the subject has produced any one of the four states towards a partner, the partner is instructed to produce a state she chooses towards the subject. The person tested may choose to produce towards all partners the same state, for instance, sympathy, or he may choose to produce a different state each time, once sympathy, once dominance, once anger, once fear, or any other combination of states. But he may start out to be cordial and sympathetic; nevertheless, before he knows it, his true feelings show and he warms up to anger and hostility. The reaction time, the words spoken, the mimic expression and the movements in space of both individuals are recorded as directed by the tester. *The salient point of the test is that the subject is asked to exercise full spontaneity.* This technique is illustrated in the testing of the relationship of Elsa to Maud, Gladys, Joan and Virginia. We present here the records of eight situations out of the 32 which were recorded, showing the interaction of Elsa with four other individuals, that is, as Elsa acted towards each of the four girls and as each of the four girls acted towards Elsa.

D. Situation Test and Role Playing Test

According to plan, we moved with our research further into the fifth and sixth dimension of group structure; the situation test explores the "*situation matrix*"; it consists of space and time relations, locus and movements, acts and pauses, volume of words and gestures, initiation, transfer and termination of scenes.

The role playing test explores the "role matrix" of a group; it consists of private and social roles.

Elsa took part in one of the role playing groups and she was

often given occasion to act out different roles—the role of a daughter or a mother, of a girl friend or a sweetheart, of a housemaid or of a wealthy lady, of a pickpocket or a judge. She acted these parts in a great variety of standard life situations as they impress themselves upon an adolescent who grows up in the slums of a great industrial city. In these situations she is faced with a *home conflict*—mother and father in a heated argument which finally leads to their separation; with a *work conflict* in which she gets fired from a job because she comes in late; with a *love conflict* in which she loves a boy who is as poor and rejected as she is. An analysis of the text and gestures produced in these role playing situations gave us clues to understand her early family life better and the emotional tensions which gradually brought about her present status. It also gave those members of the group who rejected her an opportunity to see Elsa operate in a variety of situations other than those to which they were accustomed.

When my idea crystalized in the early twenties, the period of my Stegreiftheater experiment, to “play out” situations and not only to observe and analyze them, the “situation test” was born. When situation playing was limited to a specific aspect of it, for instance to the roles in which the individuals operated, it became “role playing” or “role testing.” When such situation playing was limited to spontaneity, exploring whether an individual can mobilize spontaneity adequately in an imaginary or lifelike situation, it became “spontaneity playing” or “spontaneity testing.” The spontaneity tester is primarily interested in the amount of spontaneity exhibited by the actors; the situational tester is interested in the configuration of the situations; the role tester is interested in the range of roles and their structure. Because of the affinity of the three tests the common material, the scenes and dialogues will be presented first, but the analysis, at one time from the point of view of spontaneity testing, at another from the point of view of situation testing and again from the point of view of role testing, will be presented in conjunction in a later section.

E. Records of Situation and Role Playing Tests

Situation 1. Elsa vs. Maud. Anger.

Elsa: Well, Maud, I hope you got a lot of satisfaction out of telling Miss

Stanley about me walking around with my friend instead of coming right home.

Maud: Who me?

Elsa: Yes, you! You would take it to a staff member that I didn't come directly home!

Maud: Prove it!

Elsa: There is nothing to prove. You told. That is sufficient. You had some nerve accusing me!

Maud: I'm waiting for you to prove it.

Elsa: Well, my losing recreation is proof.

Maud: Well, if you dislike losing recreation so much why did you have to walk home with the girl-friend?

Elsa: Because I wanted to. And besides I notice you walk home with yours when you feel like it, don't you?

Maud: Well, why don't you go and tell on me then?

Elsa: Because I'm not like you.

Maud: I still think I didn't tell. No more talking, prove it.

Elsa: I know right well you told on me.

Maud: All right, I ask you to prove it. You can't, can you? So there is nothing more to prove.

Reaction time: 15 seconds; duration, 2 minutes 20 seconds.

Mimic expression of Elsa vs. Maud: Elsa is lively toward Maud, in certain moments dominates. She moves her arms towards her, looks straight into her eye, speaks in a loud voice, rushes towards Maud, scowling and setting her jaw forward. She made Maud retreat two times. Her eyes flashed and color came and went in her cheeks.

Situation 2. Maud vs. Elsa. Anger

Maud: Elsa, where were you second period this morning?

Elsa: Why I was in the study hall—where I was supposed to be!

Maud: You were *supposed* to be there all right, but you didn't happen to be.

Elsa: But I was there. Where do you suppose I was anyway?

Maud: That's what I want to know. If you were there, where did I sit anyway?

Elsa: Away up in front. I sat in the back.

Maud: You are wrong. I sat half-way back today.

Elsa: Well, I tell you I was in the study hall just as you were!

Maud: Now Elsa, I want to know where you were. I looked especially for you and you were not there. I watched for you to come in late and still you did not come. You did not come in that study hall door second period. Now before you take this any further, I want to know where you were—before I go to Miss Stanley about the matter.

Elsa: All right, I'll tell you, I was in the library second period. Are you satisfied?

Maud: No, I'm not! You lie! You were—well, I know where you were and I'm going in and see Miss Stanley this instant.

Reaction time: 20 seconds; duration, 1 minute 50 seconds.

Mimic expression of Maud vs. Elsa: Maud is hesitant in starting. Her look friendly until almost the very end. Elsa appears to reflect the same at-

titude of secret friendliness. Maud finally becomes encouraged by Elsa's mild reaction to her words, in her last outburst stamps her foot in front of Elsa and rushes off indignantly.

Elsa and Maud extemporized in all eight situations in which they acted together a friendly attitude. Situations 1 and 2 are taken from another series.

Situation 3. Elsa vs. Gladys. Anger.

Elsa: Well, Gladys! You know, when you polished my shoes, what was the big idea in taking all the leather off the heels?

Gladys: I never did take all the leather off the heels of your old shoes. You ought to be thankful that someone was good enough to polish your shoes for you!

Elsa: I am thankful enough that you polished my shoes but I ask you, why did you ruin the heels by skinning the leather on them?

Gladys: I didn't do it.

Elsa: Humm! I suppose it got off by itself! I feel sorry for you if you can't even polish shoes without ruining them.

Gladys: Don't feel sorry for me, please! You have to feel sorry for yourself first, it seems to me.

Elsa: Anyway that was a mean trick, putting my shoes marked in that condition back in my room.

Gladys: My dear, I'm sorry, but I put them back in perfect condition!

Elsa: Oh yes! Well I promise you, you won't do my shoes ever again!

Gladys: Well, who wants to!

Reaction time: 18 seconds; duration, 1 minute 40 seconds.

Mimic expression of Elsa vs. Gladys: Elsa walks suddenly towards Gladys, looks hesitantly at her and then rushes out with her first burst of words. Gladys stands up straight with her head thrown back and smiles as she speaks words expressing anger. At this Elsa loses all aggressiveness, both in her voice and gestures, half-smiles, but eyes express sadness.

Situation 4. Gladys vs. Elsa. Anger.

Gladys: Say, Elsa, what do you mean by staying in your room last night and destroying my Junior Training note-book?

Elsa: Staying in my room to destroy your Junior Training note-book? Why, you are crazy! I was only studying it, and copying notes from it.

Gladys: Why, you have some nerve. You tore the pages out of my note-book and now you deny it. Oh, you make me furious. I could kill you!

Elsa: Why, I didn't do anything of the kind!

Gladys: Well, you certainly did! Now you have to buy reinforcements and fix my book. Why, just think of what Miss Kinderhook will say when she sees such a book. And it's all your fault, too!

Elsa: It couldn't have been me that tore them out!

Gladys: It certainly was you! Don't stand there and contradict me! It was you!

Reaction time: 5 seconds; duration, 1 minute 10 seconds.

Mimic expression of Gladys vs. Elsa: Gladys appears nonplussed in confronting Elsa, facial expression is angry but the tone of voice portrays no

anger. Her movements are gentle and slow. Elsa stands still, taking everything she says with equanimity, looking straight at Gladys all the time but not becoming angry in return, merely defensive in posture.

Situation 5. Elsa vs. Joan. Anger.

Elsa: Well Joan, you got the recreation room to do now, haven't you?

Joan: Well—yes, why?

Elsa: Well I was just hoping that since you've got that room to do now, that you'll polish it up all nice. You know, not like you did my room!

Joan: Say, now, you look to home for those things, do you hear?

Elsa: Of course, I hear. Otherwise I wouldn't be speaking to you, would I?

Joan: A wisecrack from a dumbbell!

Elsa: Well, have you made a resolution to polish the recreation room as you should? You know, all shiny and everything?

Joan: Perhaps I could rely on you to do that.

Elsa: Me?

Joan: Yes, you! All that I have to say is, "Elsa, come polish the rec. floor!" and you come running right along.

Elsa: Oh, no! I don't!

Joan: Oh, yes, you do, and that's not all either. You come at my every beck and call and you know it.

Elsa: If you do the rec. like you did my room it will—

Joan: If you don't like the way I did your room, do it yourself hereafter. Get out of my way mighty quick!

Elsa: I happen to do my own room now since I don't room with you.

Joan: Well, dearie, where does the dirt go? Behind the door?

Elsa: No, dearie, it goes into the dustpan.

Joan: It goes into the dustpan—well, I bet.

Reaction time: 20 seconds; duration, 3 minutes.

Mimic expression of Elsa vs. Joan: Elsa leans on a chair and twists her fingers nervously. During her first verbal expression she looks expectantly at Joan, eyebrows raised, anxious. Joan replies in a condescending tone, sneering. At the next remark Elsa imitates Joan's sarcastic tone and looks away from her. At this Joan aggressively confronts Elsa, causing her to retreat further and further. Joan's voice is loud and dominant. Elsa continues to resort to sarcastic tones.

Situation 6. Joan vs. Elsa. Anger.

Joan: Well, may I have the book you took out of my room, Elsa?

Elsa: Were you speaking to me? I didn't take any book out of your room.

Joan: I won't argue with you but I will have you give me my book!

Elsa: But I don't know even what you are talking about.

Joan: Don't lie to me, Elsa! What's that very same book that I'm missing doing up on your corner shelf? I want the book, please!

Elsa: I got that book from Miss Cranton. The book belongs to her and I borrowed it.

Joan: I happen to have been the one to borrow Miss Cranton's book and that particular book at that. Listen, you will lose your recreation indefinitely for taking things out of girls' rooms. I thought you'd realize that by this time!

Elsa: I want to use that book to do my English.

Joan: I thought you didn't take that book. And since when do you take English.

Elsa: Why, I've taken it all term!

Joan: Oh, that's a good excuse for stealing a book! By the way, what English are you taking?

Elsa: English 8½.

Joan: What period?

Elsa: Third in the morning.

Joan: You are crazy. I take English third period in the morning and I'm sure you're not in it.

Elsa: Well I'm going to keep that book and use it.

Joan: That's what you think. Get out of my way. I'm going right into your room and get that book!

Reaction time: 5 seconds; duration, 2 minutes 50 seconds.

Mimic expression of Joan vs. Elsa: Joan walks up to Elsa, stands directly before her; Elsa remains rigidly on the spot. Joan fires one remark after another at Elsa in loud, brutal voice, but Elsa retains her former sarcastic tone and mild voice throughout. Joan completely dominates Elsa's mimic expression, finally chasing her out of the room.

Situation 7. Elsa vs. Virginia. Anger.

Elsa: Well Virginia, I would like to know what happened to my dress and how you happened to tear it?

Virginia: Your dress? You are disgusting!

Elsa: Yes, my dress, and my best one at that. And since you are my room-mate and you were the last one to hang it up I think it was mean of you to tear it. You could have been more careful!

Virginia: I'm sorry! I don't know how your dress got torn. Am I responsible for the things that go on in that room just because I am your room-mate? How could I tear your old dress anyway?

Elsa: How do you know that you didn't catch it on the bed or something? My best dress too, and I tried so hard to keep it nice!

Virginia: But, I tell you, Elsa, I don't know a thing about your dress. Why don't you take it in to the housemother and don't stand there and holler at me. I don't have to take your abuse.

Elsa: You did tear it, but I won't take it to any housemother. You could at least have told me about it.

Virginia: Tell you? I don't know as I had anything to tell! I didn't tear your old dress!

Reaction time: 22 seconds; duration, 1 minute 20 seconds.

Mimic expression of Elsa vs. Virginia: Elsa walks timorously up to Virginia, taking the longest route around a chair to get to her and speaks to her in an appealing voice. Elsa draws her handkerchief through her fingers as if weaving a pattern throughout the entire scene. Virginia consistently looks at the floor. Her color rises steadily, up to the end. Her voice bursts with anger but she maintains her aloof distance from Elsa, refusing to be ruffled.

Situation 8. Virginia vs. Elsa. Anger.

Virginia: For heaven's sake, Elsa, will you stop singing? Every time you do

those bathrooms you have to go and start singing. Can't you keep quiet for a change? Here I am trying to do my homework to the tune of your old singing and I'm working on a map. How can anyone concentrate with a racket like that?

Elsa: But it makes a person feel good. And people around should be happy too, when someone else is happy enough to sing.

Virginia: Well, if I can't keep you quiet, maybe Miss Stanley will. I'll simply report you to her.

Elsa: I think I sing pretty good. I enjoy it anyway!

Virginia: Well, your singing makes everybody else sick. Will you please shut up?

Elsa: Miss Stanley likes to hear singing because she said so.

Virginia: Well, I'm not Miss Stanley, and besides Miss Stanley doesn't have homework to do.

Elsa: Oh, gosh, you are the most pessimistic person I ever met. I don't see why you have to do your map in the morning anyway. Why don't you get your lessons done at night as you ought to?

Virginia: I guess I can do my lessons when it is most convenient, hear?

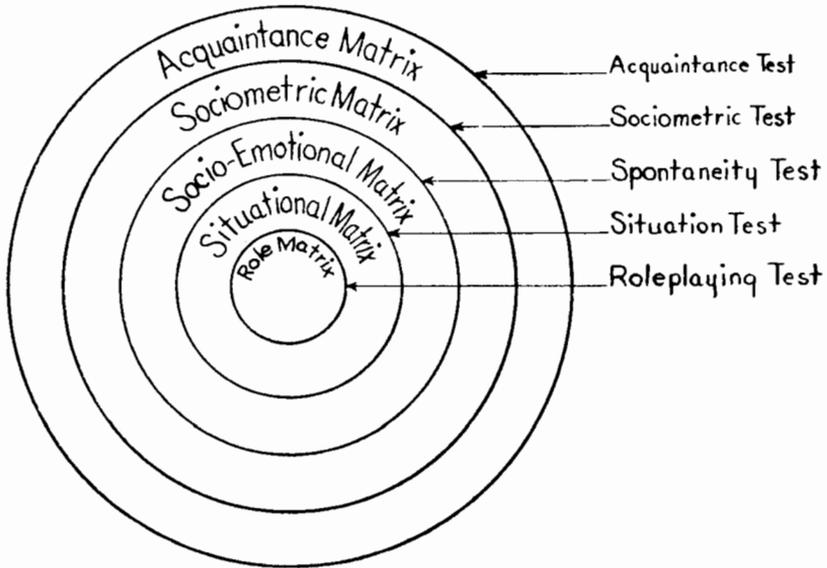
Elsa: Well, if singing is my only crime, I consider myself lucky!

Virginia: Well, I'd rather see you go out and kill someone than to hear you sing constantly, especially when I'm busy with my map!

Reaction time: 6 seconds; duration, 1 minute 50 seconds.

Mimic expression of Virginia vs. Elsa: Virginia swings her arms out in a gesture of disgust, looking away as if she can't stand the sight of Elsa. Her color gradually rises. She stutters twice as she attempts to express verbally what she appears to refuse to allow her mimic expression to betray. Elsa stands perfectly still, relaxed, except for her hands which grasp and ungrasp the back of a chair. She also appears to be holding back and not letting herself go fully.

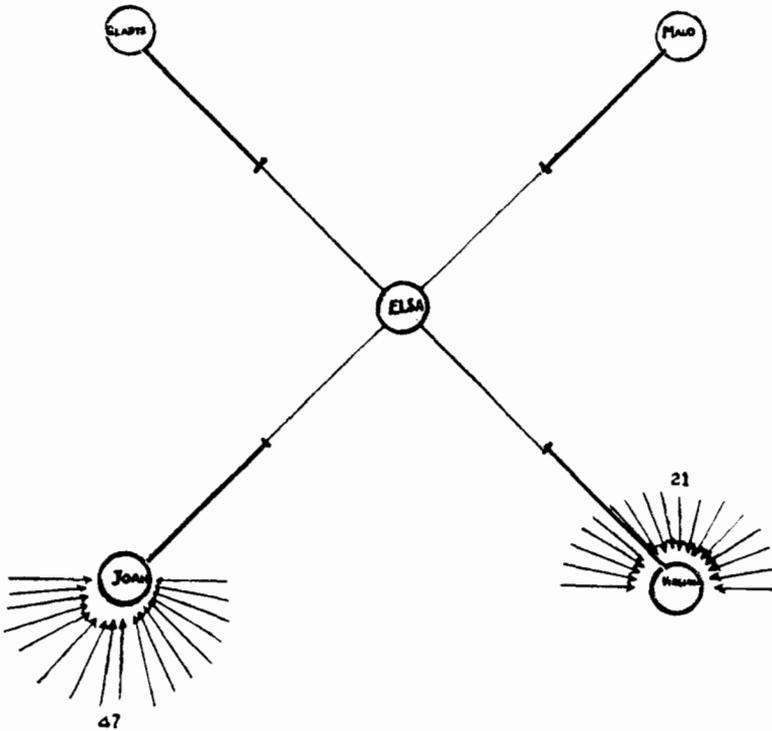
ANALYSIS OF SMALL GROUPS



FIVE DIMENSIONS OF SOCIOMETRIC RESEARCH

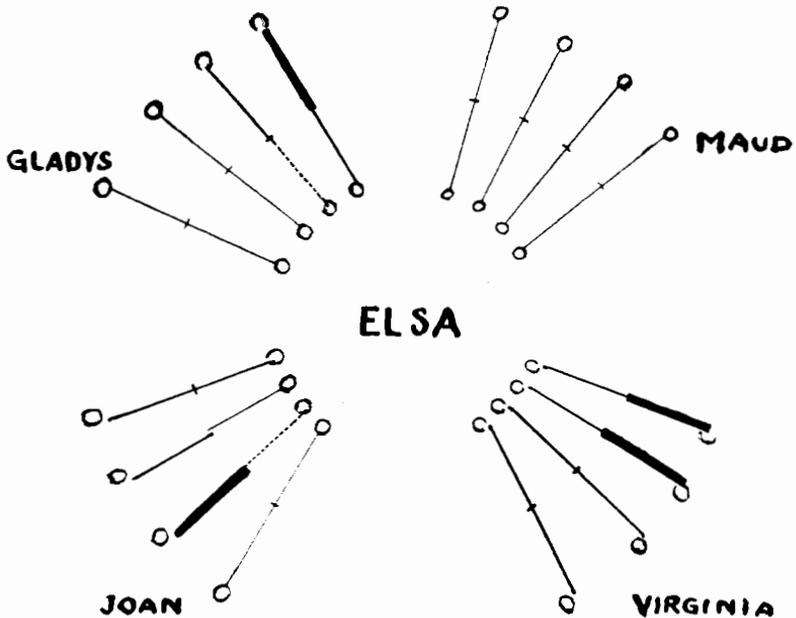
These five tests are constructed in order to tap in five successive steps the more inaccessible layers of the group, starting with the most peripheral and moving to the most centrally located layers. They are essential parts of sociometric research and may establish diagnostic foundations for scientifically valid forms of group psychotherapy.

ANALYSIS OF SMALL GROUPS



A further analysis of the previous sociometric matrix discloses that out of the 31 individuals who took a definite attitude towards Elsa in rejecting her 29 had an insignificant position in the networks of the community; that, therefore, their attitude towards Elsa could not have harmed her beyond their immediate contact with her. Only 2, it was discovered, Virginia and Joan commanded a widely reacting influence in the networks. It is significant that these two were chosen by Elsa, an effort to break into a higher sociometric status. The chart above plots Elsa in the center of the four individuals whom she chose to live with: Maud, Gladys, Joan and Virginia. We see her attracted to each of them and rejected by each of them. But as the chart indicates, the effect of the rejection in the case of Gladys and Maud is of little significance beyond the personal fact. However, the rejection in the case of Joan who has attached to her 47 individuals in different sections of the community and of Virginia who is the leader in the cottage, with 21 attached to her, may account for the persistent and increasing dislike of Elsa.

ANALYSIS OF SMALL GROUPS

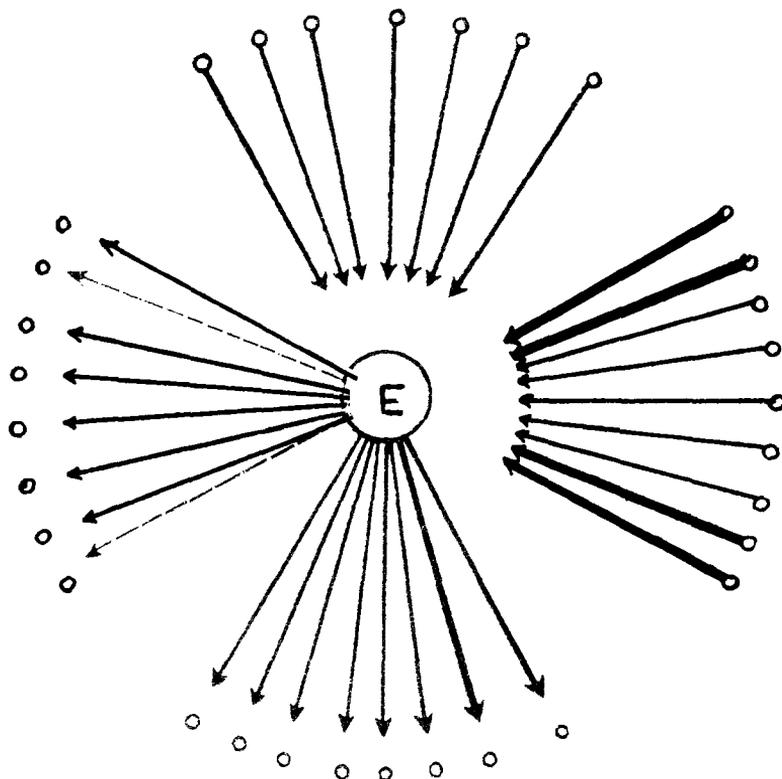


Key to socio-emotional matrix: Red indicates sympathy; dotted black line, fear; thin black line, anger; heavy black line, dominance.

Spontaneity Test; Elsa, the subject. The chart visualizes the findings of the Spontaneity Test comprising 32 situations in 16 of which Elsa took the lead four times each towards Maud, towards Virginia, towards Joan and towards Gladys; in the other 16 each of the four girls, Maud, Virginia, Joan and Gladys each separately took the lead towards Elsa in four different situations. For description of eight of the different situations of the Spontaneity Test see pp. 349-354. On the chart a red line indicates that sympathy was produced towards the opposite partner by the individual taking the lead; a dotted black line, that fear was produced; a thin black line, that anger was produced; a heavy black line, that dominance was produced. Each situation is separately plotted.

The sociometric test had revealed all four individuals to be chosen by Elsa but rejecting her in turn. (See p. 357.) Spontaneity Tests of Elsa in respect to these individuals and of these individuals in respect to Elsa further clarify and differentiate the relation existing between them, as plotted in the chart above. We recognize that the rejection of Elsa by Maud, Gladys, Joan and Virginia has a different weight in each case and that her choice of them has also a different weight in each case. Spontaneity Tests of Elsa and Maud show each of the two girls producing sympathy towards the other, although Maud had rejected Elsa in the sociometric test on the criterion of living in proximity. Elsa persistently demonstrates displeasure towards Virginia although she had chosen her and Virginia rejects Elsa both in the sociometric test and the spontaneity tests. The relations existing between Elsa and Joan and between Elsa and Gladys are shown to be more complex, all of the three demonstrating mixed feelings. The states produced by Elsa towards Gladys and by Gladys towards Elsa are shown to be split, Gladys producing sympathy towards Elsa in half her tests and anger and dominance in the other half; Elsa reacts with fear and anger. Lastly, in one spontaneity test out of four, Joan demonstrates sympathy towards Elsa, dominance once and anger twice; Elsa demonstrates fear once and anger once.

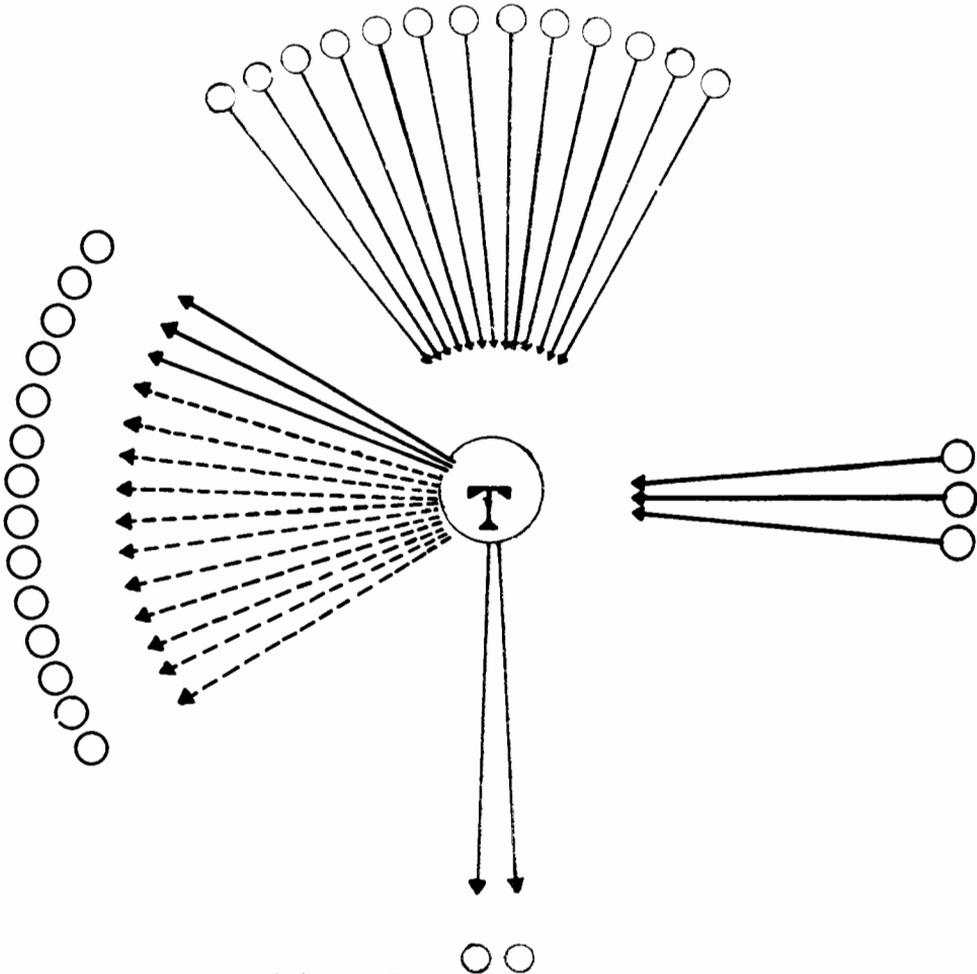
ANALYSIS OF SMALL GROUPS



SOCIO-EMOTIONAL MATRIX

The chart illustrates that the emotions going out from individual E towards four individuals of her acquaintance, M, G, J and V and coming to E from them in return are evenly distributed within the social atom of E. In respect to E, 16 test situations revealed the proportion between the outgoing and incoming emotions expressing sympathy to be 8:7; the proportion between the outgoing and incoming emotions expressing fear or anger to be 8:9. In 64 test situations, the proportions were 34:28 and 30:36 respectively. The proportions indicate that the socially binding and the socially disintegrating emotions are in this social atom only slightly below balance. This would suggest that the attitudes aroused in E in life reality would approximately follow this proportion, whoever happen to be the chief participants in the social atom of E at various times; in other words, that these averages are probably maintained.

ANALYSIS OF SMALL GROUPS



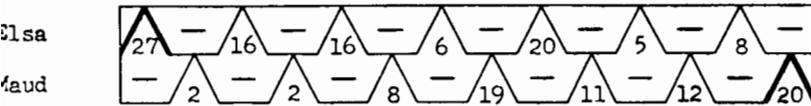
A CASE OF INVOLUTIONARY MELANCHOLIA

The chart illustrates that the emotions going out from individual T (towards the four characters of the group in which she lives and in respect to whom she was tested) and coming to T (from them in return) are unevenly distributed within the social atom of T. Sixteen test situations in respect to T revealed the proportion between the outgoing and incoming emotions expressing sympathy is 2:13; the proportion between the outgoing and incoming emotions expressing fear or anger is 14:3. In 64 test situations, the proportions are 6:54 and 58:10, respectively. The proportions indicate that the socially binding and the socially disintegrating emotions are in this social atom entirely out of balance.

Note for the Group Psychotherapist: T is a member of a psychotic group which was treated by means of group psychotherapy. It was the first group treatment of this type (see J. L. Moreno, "Application of the Group Method to Classification," 1932, p. 99) and demonstrated how one mental patient can be used to help the other.

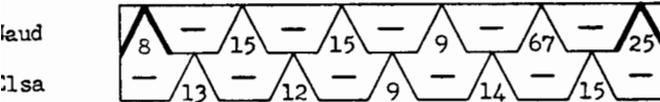
ANALYSIS OF SMALL GROUPS

SITUATION 1



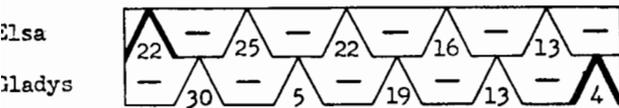
Duration: 2 minutes, 20 seconds

SITUATION 2



Duration: 1 minute, 50 seconds

SITUATION 3



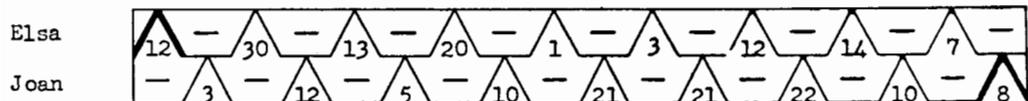
Duration: 1 minute, 40 seconds

SITUATION 4



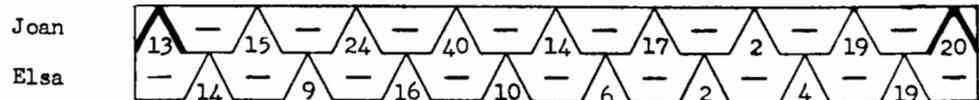
Duration: 1 minute, 10 seconds

SITUATION 5



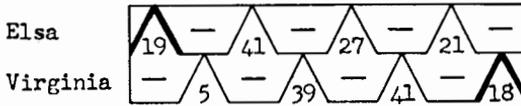
Duration: 3 minutes

SITUATION 6



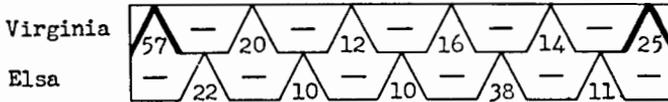
Duration: 2 minutes, 50 seconds

SITUATION 7



Duration: 1 minute, 20 seconds

SITUATION 8



Duration: 1 minute, 50 seconds

Key to Symbols:

▲ Symbol of interact

— Symbol of pause

▲ Symbol of initial or
terminal interact

The *time unit* used for the measurement of an interact is *ten seconds*; for instance, Situation 1 consists of 14 times 10 seconds, *i.e.*, 2'20". The number inserted within an interact symbol is the volume of words (for instance, 12) spoken during that period.

The eight interaction diagrams above portray the eight situations in which Elsa and her partners interacted. Elsa and Joan had the largest number of interacts, of the longest duration, 5 minutes, 50 seconds; Elsa and Maud had the second largest number of interacts, duration, 4 minutes, 10 seconds; Elsa and Virginia had the third largest number of interacts, duration, 3 minutes, 10 seconds; Elsa and Gladys had the lowest number of interacts, shortest duration, 2 minutes, 50 seconds.

THE SOCIOEMOTIONAL MATRIX OF A SMALL GROUP

An analysis of the spontaneous responses between Elsa, the subject, and each of the four partners in the 32 situations acted disclosed that each individual differed in the frequency with which she warmed up to a specific relation. Maud preferred to produce four times a situation in which she could display sympathy towards Elsa, but Virginia did not produce such a situation even once; Joan chose to do so once and Gladys twice, out of the allowed four occasions. Virginia, however, chose to produce a relation which expressed either anger or dominance four times; Joan, three times; Gladys, twice and Maud, not once. Fear did not emerge in any of the sixteen situations. The following table is a tabulation of the attitudes taken by the four individuals towards Elsa:

TABLE OF SOCIOEMOTIONAL INTERACTION I

<i>Towards Elsa:</i>	<i>Sympathy</i>	<i>Anger</i>	<i>Fear</i>	<i>Dominance</i>
Maud	4	0	0	0
Gladys	2	1	0	1
Joan	1	2	0	1
Virginia	0	2	0	2

The attitude taken by Elsa towards the four individuals is tabulated in the accompanying table:

TABLE OF SOCIOEMOTIONAL INTERACTION II

<i>Elsa towards:</i>	<i>Sympathy</i>	<i>Anger</i>	<i>Fear</i>	<i>Dominance</i>
Maud	4	0	0	0
Gladys	2	1	1	0
Joan	2	1	1	0
Virginia	0	4	0	0

Table II indicates that Elsa warmed up to produce four times a situation in which she could display sympathy towards Maud; twice towards Gladys; twice towards Joan and not once towards Virginia. But she chose to produce a situation calling for anger four times towards Virginia; once towards Joan; once towards Gladys and not once towards Maud. Towards Gladys and Joan she chose to produce a situation in which she could display fear.

A comparison of the two tables with the sociometric and motivational classifications of the five subjects up to this point uncovers the finer, microscopic differentiation of the interrelations between Elsa and the four other individuals. We see that the

rejection of Elsa by Maud, Gladys, Joan, and Virginia has a different weight in each case. The greatest frequency of anger towards Elsa is produced by Virginia; the greatest frequency of sympathy is produced by Maud. We see, so to speak, that the repulsion from these four persons towards Elsa could be expressed in *four different degrees* of anger. Table I also suggests that the rejection towards Elsa is not absolute. Maud is sympathetic in each of the four situations. But the fact that Maud rejected Elsa as a person to live with and motivated this so definitely may indicate that when we took the sociometric test we caught Maud in a mood in which anger towards Elsa was dominant, due to some precipitating cause. On the other hand, Elsa had chosen Maud, Gladys, Joan and Virginia as the four girls with whom she would like to live. The feeling she displays towards them in the test shows sympathy dominating towards Maud only; towards Gladys and Joan sympathy on the one hand and anger and fear on the other appear equally distributed; and towards Virginia anger rises up each of the four times. This also discloses clearly that *what appears on the social surface as an "attraction" is a complex of mixed emotions*. The case of Elsa shows further that if an individual is widely rejected or remains unchosen, his very warming up to attraction to certain persons may be rendered unstable. In the desire not to be altogether negative he may make a choice or choices which are the best he can make under the circumstances.

Quantitative studies of the emotional inter-relations of the individuals who belong to the same social atom make it possible for us to penetrate into the inter-personal environment which may be the immediate setting for mental disorder. Elsa produced in the 16 tests towards her associates 8 attitudes expressing sympathy and 8 expressing antipathy (anger, dominance, or fear); the test associates produced towards Elsa 7 attitudes expressing sympathy and 9 expressing antipathy (anger or dominance).

TABLE OF SOCIOEMOTIONAL INTERACTION III

	<i>Sympathy</i>	<i>Anger</i>	<i>Fear</i>	<i>Domi- nance</i>	<i>Sympathy</i>	<i>Antipathy</i>
Elsa towards her Test-Associates:	8	6	2	0	8	8
The Test-Associates towards Elsa:	7	5	0	4	7	9

About as many reactions of sympathy can be counted (7) of the test-associates towards Elsa as of Elsa towards them (8), and about as many reactions of antipathy towards Elsa (9) as of Elsa towards them (8). If the sum-total of the emotions which cross to and from Elsa, and not any one emotion or associate in particular, are taken into consideration, the complex of relations which constitutes Elsa's social atom appears to "balance." This tendency towards "balance," the tendency of the emotions "going out from"—empathy—and "returning to" the center individual—*retropathy*—of a social atom to offset and to "equalize" each other, was so frequently encountered in our studies that we have come to regard it as a particular phenomenon of the social atom.

THE SITUATIONAL MATRIX OF A SMALL GROUP

Let us look at the interactions from the situational angle. We note that Elsa's *resistance to starting* is of different intensity towards each partner. Her reaction time is of shortest duration towards Maud and longest towards Virginia. We differentiate between *inability to start*, *delayed starting* and *erratic starting*; but delay may be due to difficulty in finding a plot. The plot rose up most rapidly in the test Elsa-Maud and it is with the latter that Elsa held her own. Towards Virginia and Joan Elsa's state of production appeared underheated, weak and hesitant; towards Maud, over-heated and verbose. Towards Maud, Elsa maintains the initiative in each situation, suggesting most of the ideas, but in the situations towards her other test-associates the initiative is held by the partner. It is also characteristic that seven of the eight anger situations were *finished* by the test-associate, Elsa being unable to bring about an end without the partner directing it. For the study of situations it is of value that audio-visual recordings are made to register the minute and subtle interactions.

Analysis of Word Material. The length of the sentences in terms of number of words used in the first rush of expression of hostility towards the other person are an indicator of the amount of aggression the subject has towards the other person. Elsa uses 27 words in her first expression towards Maud; 22 words in her first outburst towards Gladys; towards Joan 12 words and to-

wards Virginia 19 words. Evidently it is easier for Elsa to give expression to anger towards Maud and least easy for her to do so towards Joan. It is of interest to compare with this the length of sentences and the number of words used by Elsa towards each partner in the course of the various situations: towards Maud she uses 98 words, towards Gladys 98 words, towards Joan 112 words and towards Virginia 108 words. The picture is therefore reversed. Joan, who received the least in the first onrush of words now gets the most and Maud, who got the most in the first onrush now gets the fewest. The length of sentences in terms of the number of words used in the first onrush of each of the four individuals towards Elsa were: Maud 8, Gladys 21, Joan 13, Virginia 57; counting the number of words used in the total situation Maud used 139, Gladys 88, Joan 164 and Virginia 144. In the analysis of the development of the dialogue, however, there is an indication that the greater number of words used by Elsa towards Virginia was not due to a strength of aggression towards her but to the strong anger reaction of Virginia towards Elsa, who was compelled to reply and hence to accumulate a large verbal reaction. The amount of verbal aggression which Elsa exhibits towards the various partners is the same towards Maud and Gladys, becomes weaker towards Joan and reaches its weakest and softest attitude towards Virginia; whereas the verbal aggression displayed towards Elsa by the partners is strongest from Joan and weakest from Maud.

TABLE OF INTERACTION IV

AMOUNT OF AGGRESSION AND DOMINANCE MEASURED BY THE NUMBER OF WORDS USED IN INITIAL ONRUSH.

Elsa : Maud	Elsa : Gladys	Elsa : Virginia	Elsa : Joan
27 : 8	22 : 21	19 : 57	12 : 13

TABLE OF INTERACTION V

COMPARISON OF SOCIOMETRIC STATUS WITH TOTAL WORD VOLUME IN THIRTY-TWO SITUATIONS.

<i>Sociometric Status</i>	<i>Word Volume— Thirty-Two Situations</i>
Joan (Star)	Joan : Elsa 1300 : 700
Virginia (Star)	Virginia : Elsa 1050 : 600

Maud	Maud : Elsa 900 : 600
Gladys	Gladys : Elsa 850 : 500

Elsa (Isolated, Rejected)

Joan leads in sociometric status; she leads in the volume of words. Elsa is lowest in sociometric status; she has the lowest volume of words.

TABLE OF INTERACTION VI

Sociometric Status	Number of Situations	Time	Volume of Words		Initiation		Terminal Motion	
			Elsa	Partner	Part-		Part-	
					Elsa	ner	Elsa	ner
Isolated, Rejected	8	16 min.,	672	1033	1	7	1	7
Rejected by 12 within group, by 15 from out-group. Rejected by the 4 individuals whom she chooses: Maud, Gladys, Virginia and Joan.	8	17 min.	400	1255	0	8	1	7
Total	16	33 min.,	1072	2288	1	15	2	14

Hypothesis I

There is a high co-relation between sociometric status and "interaction status," i.e., the volume of words spoken (probably also of gestures made) throughout an interaction with certain individuals, see Tables III, IV and V. The low sociometric status of Elsa corresponds to a low volume of words spoken towards the individuals with whom she interacts. The volume of gestures made by her towards these individuals tended to be equally low. If the sociometric status of an individual is high, as an executive of an industrial plant, leader of a political party, physician in charge of a hospital, etc., the volume of words spoken and the volume of gestures made will tend to be equally high. The leader may at times prefer to be silent and let a spokesman, an auxiliary ego, use his volume of words.

Hypothesis II

The amount of "initiative" of an individual in interaction with other individuals at the start and during critical moments increases in proportion with the sociometric status he enjoys within the group. Table V above illustrates this. As Elsa's sociometric status is low the amount of initiative she takes or is permitted to take is low. In reverse, a key individual enjoying a high sociometric status in the group will tend to assume in proportion a larger amount of initiative.

Hypothesis III

The frequency of terminating a situation or conclusion made in interaction will be lower in the case of an individual with a low sociometric status, higher in the case of an individual with a high sociometric status. We see this hypothesis illustrated in the Table above by Elsa and her partners.

A summary of the anger-colored phrases used by the four girls towards Elsa in the eight tests presented follows:

- Maud: Prove it!
You lie!
- Gladys: You ought to be thankful!
Feel sorry for yourself first!
Well, who wants to!
You have some nerve.
Now you deny.
You make me furious.
I could kill you!
You certainly did!
It's all your fault!
It certainly was you!
Don't stand there and contradict me!
It was you!
- Joan: Do you hear?
A wisecrack from a dumbbell!
Yes, you!
Oh, yes, you do!
Do it yourself hereafter!
Get out of my way!
Where does the dirt go?
I won't argue with you!
I will have you give me my book!
Don't lie to me!
I want the book!
You will lose your recreation!
A good excuse for stealing a book!
You are crazy.
That's what you think.
Get out of my way!
I'm going to get that book!
- Virginia: You are disgusting.
Take it in to the housemother.
Don't holler at me.
Don't have to take your abuse.
Stop singing.
Keep quiet.
Trying to do homework to your singing.
A racket like that.
I'll simply report you.
Your singing makes everybody sick.
Shut up.
Hear.
I'd rather see you go out and kill someone than to
hear you sing constantly.

cuses Elsa in intensive anger to stop singing and making noise, using the words "I'd rather you'd go and kill somebody than to sing constantly." Elsa runs away from this attack, responding at the end "If singing is my only crime, I consider myself lucky." Elsa accuses Gladys of scraping the leather from her shoes while polishing them. It appeared during the test that Elsa couldn't find any motivated reason to be angry at Gladys and in her embarrassment sought an incredible one. However, it was found that Elsa had herself done this to the shoes of another girl in the cottage a few days before. The suggestion of secret activities in which Maud and Elsa participated and conflicts developing out of these is reflected in the text of their dialogue. Elsa warms up to a more natural expression in response to Maud.

The word *content* of the spontaneous reactions between Elsa and Maud discloses a common conflict, the relation to colored girls and the fear of being betrayed to the housemother and of being punished. This related both Elsa and Maud to a sexual current which interlocks a group of colored girls with a group of white girls. It explains the often suddenly changing feeling between Maud and Elsa as due to jealousy. The quickness with which they react towards each other and the way they "touch off" each other betrays an intimacy which is not repeated by Elsa in interaction with any other partner. The suddenness, during one of the tests, with which Maud burst into laughter when Elsa accused her of showing to the housemother a love letter she (Elsa) had written to her colored friend and which was fully out of the mood of the context, anger at each other, and the spontaneous naturalness of their acting from this point on intimated that they enacted before our eyes a scene they had done often before in actual life. Immediately afterwards both laughed at each other and we heard from their own lips the tale told how Maud initiated Elsa into the practice of carrying her love letters to a colored girl, how Elsa one day began to write to the same girl and refused to be the carrier any longer. *During this last minute of their interacting they seemed unconscious of the situation in which they were, absorbed in a mood of recapitulation.* They embraced and kissed and petted each other. They did this making it appear as if the situation would demand it, but the tone of their warming up gestures suggested that Elsa and Maud were uncovering their

private personalities. It appeared as if we were witnesses to wishes and interrelations still going on in them, not simply reconstructed from a past relationship or imagined, and that we can predict future behavior from it.

As we know from the spontaneity test experiment, *an emotional state once produced has the tendency to carry automatically all affect-material which is locked within it into open expression; and if, as it is in these tests, the object of this expression is not a fictitious person but the actual well-remembered counterpart in similar life situations, then this process releases, as if through a form of "medial" understanding, a similar warming up process in the other person.*

Elsa and Maud did not warm up in the beginning because they both thought they had to "play." But as soon as they lost themselves they clicked. *Yet this ease of production did not come because they created something but because they lived themselves. It was a piece of revelation on the level of a spontaneity they could not control.* We know that Maud is the only one in the cottage with whom Elsa likes to spend her leisure time and who likes to spend time with her. They also come to each other's aid in their various adventures. Socially they belong to the same group, although Elsa is superior in intelligence (I.Q. 115) and Maud is dull normal (I.Q. 72). Elsa's colored friend too, is far inferior to Elsa in intelligence (I.Q. 65). *It may be that her attraction towards persons mentally beneath her is not only due to the fact that she is not accepted by those nearer to her mental age, but because she gravitates toward social groups whose degree of differentiation normally corresponds to that of individuals younger in chronological age or lower in mental development. It is the group structure as a whole which matters here, not only the individuals concerned.*

A study of her sociometric position before she came to Hudson indicates a simpler setting. This inability to coordinate herself to persons who might become attracted to her, remaining an *isolated* and *rejected* individual within her cottage group, unable to change her position within it through her own effort in the course of more than two years, but always running amuck reminds us of the position of individuals in immature social groups such as the 1st and 2nd grades in public school produce. Upon the basis of

such facts as the sociometric case study of this 17-year-old 3rd-year high school student with an I.Q. of 115 yields, the attraction towards the socially less differentiated groups appear more natural for her. This also explains why she was invariably found mixing and playing with girls far removed from her in age and mental development whenever observed on the grounds.

It can be noted that in both situations which called for anger between Elsa and Maud the motive producing anger was by each of them spontaneously initiated as related to forbidden sexuality. The sexual motive did not appear again among the motives in the situations played by either of them towards other partners. But the stealing motive was initiated three times spontaneously either by Elsa herself accusing her partners of stealing or by her partners accusing her. Elsa warmed up well when she threw the accusation towards Gladys that she had scraped the leather off her shoes, but as soon as Gladys turned aggressor towards her she dropped her attack, became passive, and her movements depicted retreat. She found but excuses for answer, the aggressor turning excuser. The two accusations she made towards Gladys and Joan appeared so worthless and insignificant that they didn't seem to carry sufficient weight to be angry about—both concerned simply petty tricks of one girl upon another. But as it appeared from the overly angry responses of those partners, these were a kind of trick she herself repeatedly played upon them in actuality and they hated her for this in life. Why shouldn't she get angry at them if they were treating her that way in these situations?

The trend to take worthless things and to accumulate them under her bed, of which she is accused by Virginia in a test, is linked to her desire for affection which she lacks or misses and her scheme to gain the love of those who reject her in the cottage through petty gifts as well as to win back the colored girl who had turned to Maud. It appears that the restless, impulsive actions of Elsa are the actions of a daydreamer who is happy in her isolation but unhappy about the loss of affection she used to receive from her mother and unable to comprehend the avalanche of rejection from others.

The strongest attitudes of anger and dislike towards Elsa came from Virginia and Joan. Joan is a key-individual and leader out-

side in the community; Virginia is a key-individual and leader in the cottage group. Due to their position in their respective networks it appears that the influence of their rejecting Elsa has run through the psychological currents which interlock different groups of individuals into various networks and determined or helped to encourage similar attitudes towards her on the part of others.

We are able now also to clarify the most striking characteristic in Elsa's conduct: her indifference and apathy towards censuring aggression. This is the more baffling as it stands in contrast to her lively and combative attitude demonstrated in her former environment. Nor did she display this indifference in the early stages of her participation in Hudson. The change had been brought about, it appeared, by two factors. On the one hand, *her indifference was increasing in proportion to the withdrawal of her emotional interest from the group in which she lived and its transference to a hidden group in which she was allowed to express herself unrestrained.* On the other hand, this appeared to be necessitated and crystallized by the continuous pressure exerted upon her by the group in which she lived. She appeared helpless, displaying a persevering apathy towards a situation to which she felt herself to be unequal. *She was unable to differentiate between individuals who rejected her "directly" and those who simply reflected "indirectly" the attitude of certain leaders within the group. The network which contributed to her conflict was so widely spread that a spontaneous adjustment had become almost impossible for her to attain. An attempt at cure naturally involved a whole chain of individuals with whom her position was interlocked.*

THE ROLE MATRIX OF A SMALL GROUP

The three outstanding roles in Elsa's secret life are: *the role of the nigger-lover, the role of the petty thief and the role of the rebel.* As the nigger-lover she is a leader in the sexual underground of the community. She is not only a practitioner herself, but a letter carrier and intermediary for others; the other nigger-lover in the group is Maud. Because of the empathy which they share for the same Negro girl, an intimacy has developed between them, a circular transmission of feeling. Joan, Vir-

ginia and Gladys operate in sexual counter roles, they are all out for white people and heterosexual love. Because of the peculiar homosexual climate which pervades the community and in which Elsa is an important figure, however strong and superior they appear in their social roles on the surface, they are on the defense against the currents which no one in the community can prevent or control. Elsa's role of the petty thief has a well organized pattern, it is not always impulsive stealing; she has to pay for the love she is getting, just like a boy who brings a gift to his girl when he takes her out. The girl friend tells her what she wants and Elsa tries to get it; this is where the little possessions go which Joan and Virginia get for their good behavior and from their white friends. In the role of the rebel and non-conformist she is in a perpetual war with Joan and Virginia who uphold the conforming roles, representing the official government of the community. She is a schemer of runaways and riots. It is because of these social role dynamics that she is indifferent and apathetic towards censure and aggression from the authorities. This indifference and apathy are not individual characteristics; she is by no means an indifferent individual, her entire emotional expansiveness is diverted and absorbed by different goals. It is in role playing, when she acted out the conflicts with her mother and some dreadful experiences with men, that her other side, her warm and dream-like personality came to the fore. She brought her audience to tears, even her official enemies.

When our attempt to adjust Elsa to the group in which she was living—treatment by suggestion, analysis of her conduct, change of her function within the house and of her associates within the group—did not succeed in effecting a change in her behavior we considered creating an entirely new setting for her. But the question was where to place her and with whom. The sociometric test was at this point a useful methodical guide which indicated to us the individuals in the community to whom her affection travelled, housemothers, teachers or other girls. When we found that her interest revolved more or less persistently around certain persons in three different cottages we began to pay attention to these individuals, especially to the motives Elsa had in seeking association with them and how the latter responded to her affection. As her acquaintance volume in the community

was small, we thought that there may be many other individuals besides these who might have a beneficial effect upon her and we tried to enlarge the number of her acquaintances by having her meet others in the role playing groups. Through this technique we had the opportunity to see her acting opposite the individuals chosen by her in the sociometric test and also opposite other girls whom she had not known before and in roles selfchosen or chosen by us. When the sociometric test was repeated after four weeks, she added three others to the number of girls with whom she wanted to live and she was in turn wanted by four. The girls for whom she displayed attraction we divided into those who showed attraction in return, those who rejected her and those who were indifferent to her. To gain an insight into which associations gave promise to be more enduring and beneficial, we placed her into standard life situations in which she acted with the various other persons, whether these rejected her or were attracted to her, in order that we might predict what their conduct towards her would be in actual life. It was our principle to let the girls work out by themselves any situation which may occur in life and which they may one day have to meet. A comparison of a series of 82 situation records indicated that only two of the seven girls Elsa had chosen released from her spontaneous expressions which, in articulation of emotion and judgment, contrasted favorably with her daily behavior, or which overcame certain petty habitual trends which she had demonstrated in speech and action when interacting in these situations with the other girls. It seemed that she wanted to win the sympathy of Jeanette and Florence from C13 when acting with them. After a gradual elimination of the cottages which were unfit for Elsa and a close scrutiny of her relations to these two girls and to the housemother of their cottage, C13 appeared as the most auspicious assignment for Elsa.

SOCIOPSYCHOPATHOLOGY OF GROUP STRUCTURE

Following the pattern of research presented in this section we have examined a large number of small groups of various types of membership, both normal and abnormal, in prisons, mental

hospitals and the open community. The outstanding discovery was the relation between the conduct of the group and the balances and imbalances of socioatomic structure. *Through quantitative studies we could determine the specific interdependencies of socioatomic structure and conduct disorders. The referent of a social atom structure was not a particular individual A, but "all" the individuals with whom he was involved.* Imagine that, after having analyzed Elsa in reference to her four partners, Maud, Gladys, Joan and Virginia as we have, we would have analyzed Maud in reference to Elsa, Gladys, Joan and Virginia, and after that Gladys in reference to each of the others and finally following through the same routine with Joan and Virginia. Imagine that we would have carried each of them through the five dimensions of research, from the acquaintance level to the role level; the resulting picture of the balances and imbalances within this social atom would not only have been complete, but on an entirely different plane of investigation. We would have moved the center of investigation even further away from the individual than we already have, towards the collective plane of microscopic research. It is a path towards the *sociopsychopathology of group structure*, as I have formulated it on an earlier occasion and which is worth while quoting here. "The psychoanalytical approach of the Oedipus drama is correct as long as it considers the Oedipus complex as an individual reaction of Oedipus mirroring all other persons around him. But to represent the real, whole Oedipus drama, an *interrelation analysis* is necessary. An individual analysis of each of the three persons, Oedipus, his father Laius and his mother Jocaste, has to be made. We will find, then, just as Oedipus may have in his complex hate towards his father and love towards his mother, that his father has towards him and Jocaste a complex which we may call here briefly "Laius" complex and that his mother Jocaste has towards Oedipus and Laius a complex which we may call "Jocaste" complex. *The interlocking of these three persons, the frictions between them, the clashes between their complexes will produce the actual psychosocial process of their interrelations which is qualitatively different from the manner in which the dramatic process reflects in Oedipus alone, or how it is reflected within his father or mother singly, each apart from the other.* In other words, we get a multiplicity of interrelationships

which are, so to speak, ambicentric, and through this kind of study we get an insight from within as to how the "total" family group is microscopically organized."*

It is in the wards of mental hospitals that I could observe the sociometric fabric of psychotic groups and the balances and imbalances within the social atoms of the participating patient membership. I observed *the shift in balance in groups of nurses with a "single" patient member and then with "two" patients as additional members, with "three" and more, until up to the group in which "all" members were patients suffering from some form of psychosis*. In the case of the manic-depressive or the schizophrenic, we have observed deviations of the sum-total of emotions in the social atom, away from balance. This can be explained as follows: The hypoactive depressed individual whose motor behavior is retarded tends to produce a like reaction towards all of the individuals towards whom he is emotionally selective, whereas they assume towards him various and differing reactions. Whatever the reactions of these individuals towards him may be, whether of love, fear or pity, and in whatever frequency these occur, if his attitude towards them tends to be stereotyped into, for instance, fear towards all, the distribution of emotions within the social atom will, it is obvious, appear grossly unbalanced. *The therapeutic problem in the case of T (see sociogram, p. 360) is to reorganize his social atom, to assign experimentally a group to him which can aid him in his attempt at cure and towards which his stereotyped attitude has not become fixed. In the formation of such an experimental group we can be guided by following the "spontaneous" reactions of the patient: the latter are an indicator of who should and who should not be assigned to him at any particular stage of treatment.* Personality structure and the interpersonal environment are merged into a new synthesis; they are parts of one and the same organization, the social atom. Interpersonal environment is not merely a chance factor. There are a limited number only of interpersonal structures probable for an individual, just as there are a limited number only of probable developments of the individual organism. *The individual instinctively gravitates within the united field towards social*

* J. L. Moreno, "Psychological Organization of Groups in the Community," Boston, 1933.

structures in which he is best able to attain and to maintain balance.

From the point of view of a sociometrically oriented psychiatrist the following trends in group dynamics could be ascertained: a) *Sociometric tests of patient groups revealed numerous "ambivalent choices and rejections;" however, when the tests were frequently repeated, at two to three hour intervals, what appeared to the macroscopic eye as ambivalent revealed itself as a rapid and frequent change of feeling towards a particular individual. A patient may embrace a fellow patient in the first test with genuine warmth and other signs of affection, but slap him in the face in the second test two hours later with equally genuine warmth of hostility. In a third test a few hours later both may pass each other by indifferently.* b) *Patient groups develop at times sociometrically constant structures with a degree of persistency which is rarely observed in normal groups. The same pattern of configuration may exist for months practically unchanged. The other extreme is also frequent, a rapidly changing structure which requires repeated retesting in order to keep up with it. It appears that patient groups tend towards extreme rigidity—low spontaneity—or extreme fluency—excess of spontaneity, the in-between forms being comparatively rare.* c) *Psychotic groups have their own psychotic leaders and produce their own isolates. The emergence of a psychotic leader and his status are frequently based on distorted perceptions and delusions. They often have, however, an uncanny way of communicating, sizing each other up with a great deal of realism. The pathological mixture of tele, empathy and transference comes into display in psychodramatic situations and role playing when one patient is used as an auxiliary ego for the other.* d) *They form psychotic networks of their own which determine their norms and standards. These psychotic networks are the more strictly separated from normal networks the more deeply psychotic the group has become. They do not imitate the normals, whom they often fear and reject.*

Looking at the abnormals and deviates from a world scale, they represent a minority; they are comparatively harmless as they are rapidly segregated before they can exercise much harm and, last but not least, they are comparatively immune to

many of the social perceptions and prejudices which spread through the networks of emotional communication produced by the so-called normal groups. Indeed, we often forget that the great manifestations of social imbalance, the wars and revolutions, are products of the normal, average, non-deviate groups. The membership of these groups influence each other through powerful social networks which they have unconsciously created and through which their feelings of love and hate, their direct and symbolic prejudices travel. *The pathology and therapy of the normal groups have been neglected but it is upon them that the social health of mankind depends.*

SOCIATRY AND SOCIOSIS

The imbalances within the social atom and their reflection upon the development of psychological currents and networks give social psychiatry a nosological basis and differentiate it as a discipline from psychiatry proper. *Psychiatric concepts as neurosis and psychosis are not applicable to socioatomic processes. A group of individuals may become "sociotic" and the syndrome producing this condition can be called a "sociosis."*

The initiation of the science of sociatry coincides with the critical historical situation of mankind in the middle of our century. The aim of the new science is prophylaxis, diagnosis and treatment of mankind, of group and intergroup relations and particularly to explore how groups can be formed which propel themselves into realization via techniques of freedom *without* the aid of sociatry or psychiatry. The secret aim of sociatry, and of all science, is to help mankind in the realization of its aims and ultimately to become unnecessary and perish.

Neither the laws of chance nor the laws of heredity can account for the birth of human society. Nor can economics account for it. New factors have been discovered, tele, spontaneity and creativity. The goals of sociatry cannot be attained merely by a series of abreactions or by the adjustment of man *a tout prix* to a social and cultural order. They cannot be attained without changing this order—changing it means the setting up of a new system of values and the penetration of human society with it. This system of values must be evolved in conformity

with sociometric and sociatric laws. The change cannot be brought about without a "revolution" in all departments of life, the most radical it has undergone since the glacial age.

CONDUCT

ORGANIZATION AND CONDUCT

We have often followed with our eyes birds, groups of birds in spring, and watched how they were aligned, one in front, two or three following, then a big bunch close together, then thinning out to three or four, one or two following alone and one or two still more by themselves, on the sides. We often wondered by what kind of rules these groupings are governed. Probably a social instinct drives them to travel in groups. But we wondered whether the arrangement they produce within these groupings is influenced by mechanical forces only, speed of flying, endurance, and so on, or whether attractions and repulsions among the individual birds have a part in producing the formation.

It is certainly so with people. When we observe adolescents at play on the grounds we see how three or four are anxiously trying to keep pace with one who is running ahead, one walking with another arm in arm, two or three scattered, each alone. And if we watched the same group daily, we could ascertain that this arrangement is not accidental, it is repeated at least over a certain period of time in much the same formation until, perhaps, one gets tired of the other and new attachments develop and a new leader comes to the front.

One contrasting element, a colored child among white children, for instance, produces in general an attitude of interest and sympathy. Eventually the other children may become indifferent towards her but rarely do they become hostile. It is different, however, if the numbers change. If three, four, five or more colored enter into a group of twenty to thirty white individuals, the emotional attitude tends generally to change. Each of the colored is sensitive to what happens to the other through the actions of the white group and they are inclined to form into a gang spontaneously. But if the two races are about equal in numbers, hos-

tilities are always ready to be let loose; sympathy and indifference are rarer.

The following incident illustrates such a situation developing in a cottage group. Into C13, which had 29 white girls, an Indian girl, WI, was placed. She became a pet of the house-mother and of the girls. Later two half-Indian girls were assigned to the group. The attitude of the group towards the first Indian girl became critical. They were less attentive to her in play and more seldom defended her in quarrels. When the new Indian girls were scolded by the housemother, WI felt it as an affront to herself as well as to them. The three developed gradually a unity of attitude. The white girls began to feel themselves as a group apart from the Indian girls and became less intimate with them. The minority group, however, were the first to become sensitive to the changed situation. When a fourth Indian girl, SN, was placed into the group, she had to be removed from it due to the difficulties among the girls. Contrasting elements appear to have a stimulating effect up to a certain point, but become an irritating factor if this point is overstepped. A sociometric test at this date revealed the Indian girls in a gang formation, rejected by the white and rejecting them in return. The *saturation point* for Indian members seemed to be reached. Soon afterwards it absorbed readily a foreign-born Polish girl and a Russian Jewish girl. This infers that a group can be saturated for one contrasting element and still be able to adjust easily to other contrasting elements. The structural organization of the group and the degree of differentiation the group has attained indicate its status in respect to saturation for different contrasting elements.

The problem of adjusting contrasting racial and nationality elements into one group appeared to be more difficult in *home* groups than in other collectives. Since the members must live in such close proximity contrasting nationality and racial characteristics are felt more strongly and meet with greater resistance. The saturation point for Negroes and Indians within the same white group was higher in work and play groups than in home groups. Members with different nationality and racial characteristics prove often to be a stimulus for competition and progress for a group. The stimulus appears of greater advantage

in work and cultural groups than in home groups. We recognized the need of a balanced distribution of the different races and nationalities within each group and within the community as a whole: that is, the necessity to develop a racial quotient. It appears that one factor in the racial quotient will be found to be dependent upon the criterion of the given collective.

Just as contrasting nationality and racial elements affect group organization and conduct, other contrasting elements, as sex, have to be considered. If, within a population of 500 to 600 white girls who have lived segregated from the normally organized community, suddenly a group of men appear and reside for a time, a switching of the emotional interest of the girls from their own sex to the men takes place. It can be said that the tele is "bored" with unisexed attachments only and runs avidly into this new outlet. When a few men reside permanently in such a community they become centers of "sexual currents" and pampered due to the excessive amount of attention they receive. Another situation develops in Hudson where a group of sixty colored girls are placed in two cottages of the community. These colored girls provide a new direction for emotional interest, and under the circumstances, a therapeutic advantage to the community in this respect.

In any community there are certain groupings which develop, the organization of which is influenced by forces coming from within. Home and work groups as they are formed in Hudson result from forces coming exclusively from within the community. But in any community certain groupings develop, the organization of which is influenced by forces coming from without. We see an instance of this kind in existence in what we may call a "dual" organization within a state institution: on the one hand, the group of inmates, and on the other, the group of staff members. "This is an inmate," or "This is a member of the staff." Inevitably a different group attitude of each group towards the other develops, around each of these two criteria. The more the attempt is made to melt these two groupings into one, into a monistic organization, as, for instance, in Hudson, the more the community gains the character of a large, a huge family. It is then, at least for the time being, as if the children have changed their parents, as if the state has taken them into its parenthood. In this spirit, even the commitment loses its

hard character as it can be said that all children are "committed" to live with their own parents up to a certain age as long as they are minors.

We have already shown that groups with a population of both sexes have an organization which grows and that the developmental level of a social group can be recognized from the degree of differentiation within its structure. Just as an individual can be "socially retarded," a whole group can be "socially retarded"; it may have an organization corresponding to a developmental level lower than generally found at its age level. Again, we have observed group organizations which were broken up because one set of members within it tended toward producing structures of lower differentiation. On the other hand, group organization can be "socially premature" when the organization of the group is characteristic for a developmental level beyond that of the organization commonly found at its age level. The development of differentiation demonstrates a different pattern if the population of the group is unisexed. The homosexual current flowing between the members is not counteracted, as in mixed groups, by a heterosexual current.

Through the sociometric test we were able to determine when children begin to develop their own societies and at what age levels these associations gained such an emotional effect upon their members that their conduct is determined more and more by these influences and less and less by the influences coming from the mixed adult-children groups. It appears that the critical age in the adult-child relation begins around the eighth year and that about this time the *child-child relations* within children's association's become more highly organized and less dependent upon the adult.

The cases of isolation which develop from the eighth year to the period of pubescence are not simply isolated, forgotten, left out individuals as found at the kindergarten level but result at least partly from different causes. One set of children is attached to and more affected by the adult group, their family or teachers; another set of children is attached to or more attentive to a group of children. There is also a third set of children. They fall *between* the two social groups which are fundamentally related to every growing individual. They belong to both groups, but not

fully to either. This sociometric position seems to mark the beginning of isolation of many individuals who eventually crystallize either apart from both groups, as in schizophrenic conditions, or develop an attitude of aggression. That these isolates finally prefer the boy-gang to the family-gang is due to the fact that whereas their aggression toward the family usually ended in failure, the aggression towards the boy-gang occasionally met with the satisfaction of dominating it. The isolated aggressor has an easier chance here. It is the outcome of such developments which we could study on a large scale in Hudson. Through sociometric tests (Parents and Family Tests, see p. 463) we found that only 19% of the population was attached to and more easily influenced by adults, while 70% of the population was attached to and more easily influenced by their peers; 11% remained little influenced by either group, isolated.

These facts suggested a difficult therapeutic problem within the community. The staff of adults, housemothers and teachers and others directly in contact with the girls, in all about 80 persons, appeared unable to touch emotionally the larger part of the population. It appears that this fact is the chief reason why the staff of institutions are often forced to resort to rigid discipline and particularly to inflicting punishment if they want to impress their will upon a population the majority of which escapes their spontaneous influencing. In Hudson, if the housemothers, teachers, and others want to impress their will upon the 70% who escape them, they have to resort to the strategy of using the 19% as tools, intermediaries, to reach the 70%. But we have learned through our sociograms that these 19% are often not the key-individuals for the majority. They often live within their cottage group in close affiliation with the housemother, segregated and rejected by many of their peers. They emulate the domineering attitude of a housemother which does not stir the rest of the group towards cooperation. And this is the case the more the group gravitates in its conduct in a direction determined by emotional trends, tending towards the development of adolescent gangs.

THE PSYCHOLOGICAL HOME

The family is a complex social group. It consists of two group-

ings each with a different criterion. The one grouping, composed of the man and the woman, is a sexual grouping. The relation between the man and woman is the dominant factor. It had been started by the two persons alone and existed before children came into it. It had been started without intending to take additional members into it, or at least without knowing whom they might be who would enter into it. The second grouping, composed of the father, the mother and the children, is a monastic grouping, monastic because the spirit of the monastery prevails in this group. The monastery was a revolt against the first grouping. It cut itself off from the matrix and emulated methodically the other portion of the family. Another revolt against the family structure is the communistic attempt to divorce the nurturing of the offspring from their procreators. In this case the second portion of the group is cut away and the original remains. These revolts suggest that the two portions are of different origin and may not always have been together. Group two is probably a further differentiation after a totemistic pattern and it can be assumed that the recognition of consanguinity of father and child aided in melting the two portions into one. The psychological experience of parenthood and the distinction of being a parent derived from it must have been enormous and is to this day. It was somewhat shattered when man learned that his individual contribution to the child is negligible compared to the racial heritage of his kind.

The cottage groups in institutions are more simply organized than is the family. The father-mother situation is not present. Only the second, the monastic portion is left, a unisexed group, or a mixed group with a housemother or a housemother and a housefather, but all unrelated to one another. There is no element of blood-relation binding them one to another. It is an "experimental home."

It is difficult for girls who come to a community like Hudson to feel at home as all legitimate motives for such attitude are at first missing: the natural bond feeling as in a successful family group; the feeling of individual liberty and possession; and the feeling of permanent arrangements and objectives. But as we know from observation the importance for children of adolescent age to produce attachment to a nucleus of persons who offer protection and a stimulus for emotional and intellectual progress, it is

equally crucial for us to know in what this "psychological" home which some girls develop and others do not, consists. Is there any possibility to measure this? No girl develops this feeling if she is repulsed by the members of the group who, in turn, do not produce in her any motive for staying with them. "Home" quality is a nucleus of attractions and repulsions and if the repulsive tendency dominates, the home feeling is wanting.

Every individual gravitates towards a situation which offers him as a personality the highest degree of spontaneous expression and fulfillment and he continuously seeks for companions who are willing to share with him. The psychological home is his goal. This home idea may be identical with his actual home group or it may be related to one or more persons outside towards whom he is attracted. It may even be nothing but a vague notion within his mind. Still it may be sufficient to influence his attitude and conduct in his actual home group. The continued existence of a home depends upon the interest its members have for each other. Any home, to function successfully, must have the support of some portion of the group. The only permanent feature, the only invariable in any home structure, is a configuration of relations, a psychosocial nucleus. The larger the membership of the home group the more important it becomes to determine, from the point of view of its continued existence and of its influence upon the conduct of its members, which members gravitate to persons outside.

An illustration may be taken from one of the cottage groups in Hudson. Cottage 8 has 31 members. At the time of the first sociometric test its housemother held the affection, sufficiently to direct their conduct continuously, of Kathryn, May, Grace, Marion, Mafalda, Anna, Jane, Bertha, Felma, Kathleen, Gail and Dorothy. Four of these girls, Marion, Anna, Jane and Kathleen held strong positions within the group. Marion is attracted to and holds the affection of six girls and five of these are different ones from those the housemother holds: Alice, Sylvia, Gladys, Merline and Lucille. Anna is attracted to and holds the affection of three: Bertha, Jane and Kathleen, whom the housemother holds too, and Laura and Helen, two others, so that she strengthens the bonds of the housemother to these three and further extends her relationship to the latter two. Jane holds the affection of two

key individuals, Anna and Marion. Kathleen holds Felma, Anna, Kathryn, May and Grace, all girls whom the housemother holds, and two others, Eva and Letitia. Two girls have a direct personal bond to the housemother only, but not to other girls, Gail and Dorothy. Six girls remain isolated from both housemother and other girls: Lillian, Violet, Louise, Virginia, Marie and Sarah. Four girls, Norma, Edith, Eileen and Charlotte, are bound together into a gang outside the influence of other girls or of the housemother. Thus 10 girls remain outside the psychological nucleus of 21 girls in the cottage group C8. These 10 are evidently indifferent towards the group and the housemother and gravitate towards persons outside the group. The psychological nucleus of the cottage can be described as a chain leadership with the housemother in the center and 12 girls around her. It is obvious that if by circumstance, either through parole, illness, or reassignment, six of these 12 should leave the cottage at one time the housemother would be faced with a dilemma, the psychological nucleus would be shattered, and the group threatened with disintegration.

In other cottage groups the home nucleus varies in its structure. In C1 with a low membership of 20, we see the nucleus limited to the housemother and 14 girls, each strongly related to her but weakly related to one another; further, 3 girls remain isolated, 3 unchosen and rejected. In C3 the nucleus revolves around one girl, the housemother remains outside the nucleus, more like a housekeeper. The reason why a large number of these girls who remain unattached to either housemother or girls do not run away is that they have *nowhere to run to*, or else various objectives make the school still more attractive to them than any place they have previously known.

An important factor is the amount of emotional energy each member spends or is able to spend in his home group. This becomes the more obvious the larger the home group, especially to the member who is anxiously interested or responsible in holding the group together, the housemother. The question is how great or small the capacity of the housemother is to hold her girls; how many girls have no attachment to the housemother of the cottage or to another individual able to encourage and adjust her to the group. From this point of view, if a cottage were to have a population of 10 girls and 5 of them remained unintegrated, the group

would be worse off than if the population were 25 in which the same number were not integrated because the larger the number of girls in a cottage the greater is the opportunity for all eventually to find some agent connecting her with the group. The measure of a housemother's expansiveness is not simply the number but also the personalities of the girls she can hold. Certain girls might require but a minimum of exertion on her part, while for others a maximum of exertion may be called for. The length of time she requires to build up a relation may differ greatly from one girl to another. The ideal principle would be not to assign any new child to any group which has even one member still unintegrated. It is necessary to ascertain accurately the expansiveness of the housemother, as upon it depends the kind of training necessary to increase this capacity and to devise techniques to supplement and substitute natural forces.

We see the natural mother, however large her family, turning her attention to the most helpless, the last-born. This suggests that a housemother should divert her attention to the new child as soon as she comes into her group. The natural mother, when she has one child more disadvantaged, crippled, or backward, transfers to this one an exceptional love and continuously suggests the same spirit to the other members of the family. This procedure leads often to the spoiling of the child and its overdependence upon the mother, but there is a sound principle in it which can be applied to many housemother-child situations.

It suggests that the housemother should not only pay attention to the new child herself, but observe one of the older girls to whom the child is singularly drawn and place upon this girl responsibility in behalf of the child. She has to learn the function of inner assignment in a group, to release numerous functions to the older girls, to turn her attention always to the weakest spot in the group, to assign one girl to another, two girls to a third, a group to a leader and never allow it to happen that one girl is privileged. Instead, she should encourage the development of new centers all the time, as in general, the very limitations she has towards the girls the superior girl-leader has also towards her followers. Such a leader has, just as an adult, a limited capacity to absorb and to respond to love and demands upon her affections. It has often been reported that large families have a greater number of de-

linquents than small families. This can in large measure be accounted for by the limited emotional expansiveness of man and by his limited aptitude for emotional absorption. Even a natural mother becomes a "technical" mother as soon as she has to leave one or two of her children to themselves while she performs other duties which call her away from them or because she has so many children that she cannot be attentive to all. This becomes still more obvious in our cottage groups. We see our housemothers unaware of the natural limitations of their emotional expansiveness, getting restless, nervous, irritable, apparently without reason, but behind it is always the same cause, the feeling of her inferiority to play up to all the demands and calls upon her and consequently her attempt to cover up the deficiencies in her cottage through various subterfuges. She may become supersensitive to criticism, quick-tempered when she had not been so before, and use the very slang of the girls in order to impress them quickly. This kind of conduct may delay the housemother's progress in creating a relation or break down in a moment the work of months and affect by indirection her relation to the friends and followers of the severely scolded girl. Other housemothers may try to get away from their limitations through a policy of *laissez-faire*, watching the surface routine of the cottage only. This is another declaration of insufficiency, another example of the technical mother, leaving an emotional vacuum in so many spots of her group unchecked by bonds between herself and the girls or between the girls themselves. But if the housemother feels that her cottage is her permanent home and the girls with whom she lives her children, she will make an effort to inject all her love and abilities into the situation. If her primary interests are outside the institution, she will be less efficient than the task of a housemother demands and exhaust all her resources.

A special problem in adjustment is represented by the new girl and the new housemother. The more introverted the organization of a group, the harder is it for an individual to break into it and find adjustment in it, and the more the group will be inclined to develop a feeling of difference and distinction from other groups and correspondingly every individual of this group, a feeling of difference and distinction in respect to individuals of other groups in the given community. When a housemother leaves and a new

one replaces her, we see the new housemother beginning with great enthusiasm but soon thereafter becoming hysterical, unsure of herself, anxious for approval and before she reaches the end of this phase, showing fatigue, discouragement, depression. She sees no way out except by giving up the position as outside her aptitude or by following some form of routine. It is necessary to develop a housemother gradually by giving her during the first six months of practice a small number of girls not exceeding the size of a normal family and including not more than one or two children who are especially difficult. When this procedure is not followed and the "limit" of the housemother (or of anyone in a similar position) is surpassed by force, the performance of this person deteriorates or she simply becomes ill.

There is another factor which determines group reaction towards the new housemother and the new girl. It is the *preserving* influence of group organization upon the conduct of its members. When, due to increased influx of population a cottage had to be filled beyond its normal capacity, the number of complaints of girls about other girls increased. It reminds us of the old argument that overpopulation leads to war. It seemed natural that the greater the number of girls who have to be accommodated within the same number of rooms the greater can be the opportunity for frictions. We calculated, if overcrowding has an effect upon the conduct of the group, then we should be able to improve the conduct of the group through reducing the number of its members. We had occasion to test this when in C4 five girls were assigned to other groups or paroled within a few days. The number of disciplinary cases dropped immediately. However, when we applied a similar test to C3 and reduced the number of its members below normal capacity, the number of disciplinary cases failed to drop. An analysis of C4 showed that the five girls who had been assigned or paroled from it reduced, on one hand, the overflow to normal capacity and, on the other, removed girls who, while they did not occupy any key-positions within the group, injected a restlessness into it, either because they were anxious to be paroled soon or because they wanted to be assigned to another cottage. But when we analyzed C3 we found that we had cut out of its structure girls who were well adjusted within it and hence we had not helped the remainder of the group. In other words, we learned that a

mechanical reduction of a large cottage group to a smaller one does not necessarily have a therapeutic effect: it depends primarily upon which individuals are cut out and what group organization remains. C4 had a more highly differentiated structure; the re-assignment of the five girls was a necessary operation; the number of disciplinary cases dropped. But in C3 the structure was so undifferentiated that, as it appeared, no reassignment would have substantially aided immediately.

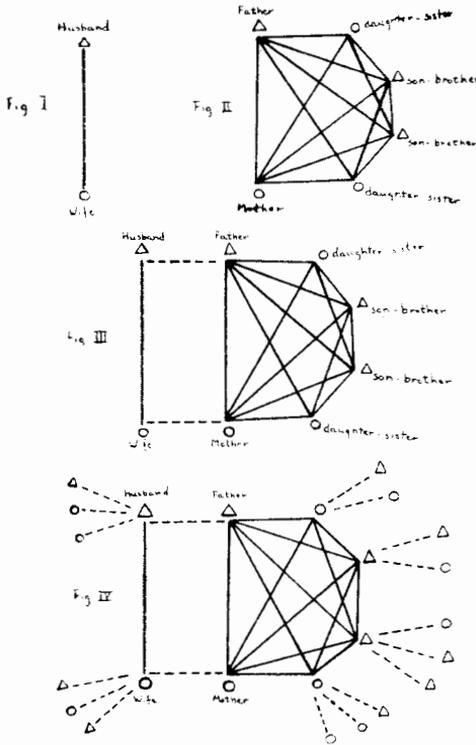
Apparently it is the preserving influence (upon the conduct of its members) of group organization which is responsible for these reactions. C3 and C4 have as groups a *historical* development. As the number paroled from or newly entering into a cottage group in the course of one year is approximately one-fourth of its population, four years go by before a complete population turnover takes place in a cottage. All individuals who have passed through the group have left their mark according to their position in it. At any time incoming girls meet with an established organization built not only by the members who are present, but by those who have left a surviving effect upon the group organization. They are also met by what may be called the *survival* of social and psychological impressions which *predispose* the attitude of the group towards them. This phenomenon preserves the group against any radical innovations the newcomer may seek to impose suddenly. It is a group's *social defense mechanism*. Groups which last over a period of years develop a definite character. The organization of any such group will explicitly reveal it and this, in turn, will be very suggestive as to what persons should or should not be assigned to it.

It has become evident to us that perhaps the chief factor in the growth of group organization is this survival of the impress of several layers of older structures and conditions. We see, for instance, a housemother conducting a group; her method has been to show affection and to attach the girls to herself personally. She leaves the cottage and is replaced by a housemother whose method is impersonal and who puts each of the girls into a plan which she has designed. If the former housemother was successful, the new one cannot break the spell of her influence upon the group overnight. This influence may be reflected not only in the individual

girl's reactions, but more than that, in the interrelations among the girls. Old structures give way only gradually to new structures.

Similarly the personality of every individual who has been a member of a particular group may leave impressions which survive long after he has departed. We see this illustrated over and over again in certain situations arising within families. Yet we pay one-sided attention to the problem in adjustment it so frequently causes. When a son marries, we pay attention to his problem of adjustment in the new relationship but little attention to the problem arising through the change in the old family organization he has left. The complaint of the mother that no one is able to fill his place now that he has left is a popular suggestion of the survival effect of an individual after departure from a group. Many disturbances within the group arise due to such *negative* reasons. The interrelations which are cut out of the group structure by his leaving are not at once replaced.

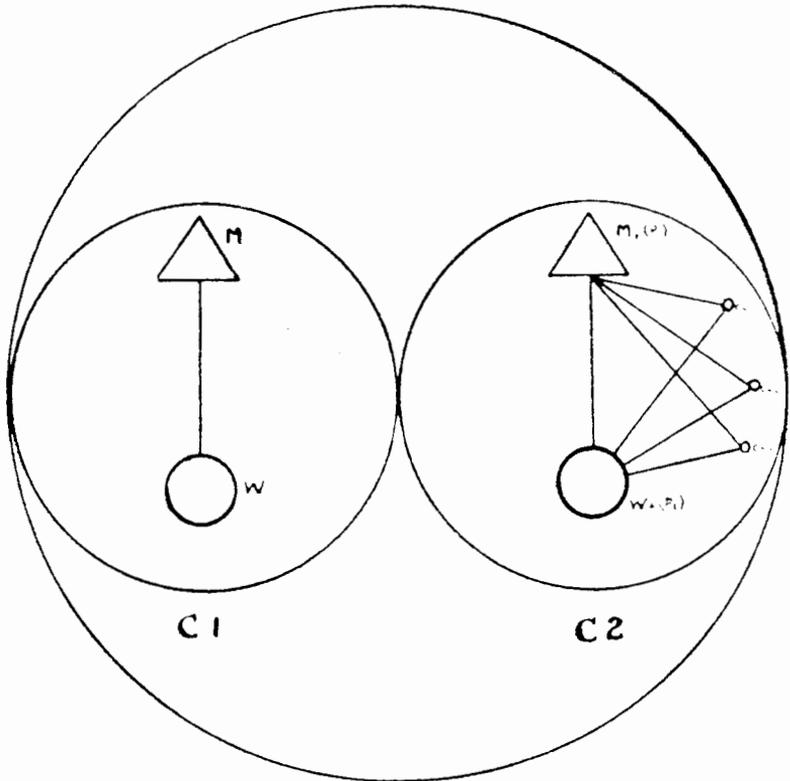
CLEAVAGES IN GROUPS



THE FAMILY CHART

The four diagrams represent sociometric phases in the development of the family. Figure I represents husband and wife as a special two-role relation, a separate dyad. Figure II represents another phase, father, mother and their children, their daughters and their sons on one hand, the same people as brothers and sisters on the other hand. In this grouping the husband and wife relation does not exist. Figure III combines Figure I and Figure II; the husband is also the father, the wife is also the mother, but there is a cleavage between the two role clusters. Figure IV shows the family against the background of its social ecology within its sociometric matrix and not "abstracted" from it as in Figure III. Here we see the husband-father being drawn towards other females and males besides to his wife, the wife-mother being drawn towards other females and males outside of the family institution. The children, too, are attracted to other people outside of their family fold, besides to their parents and siblings. This diagram approximates most closely the actual sociogram of the family constellations and suggests that the various forms which the family has taken in the course of social evolution are value decisions; no one is absolute. In a culture with a polygamous family type the sociograms may show strong monogamous trends. On the other hand, in a culture with a monogamous family type the sociograms may indicate strong polygamous trends.

CLEAVAGES IN GROUPS

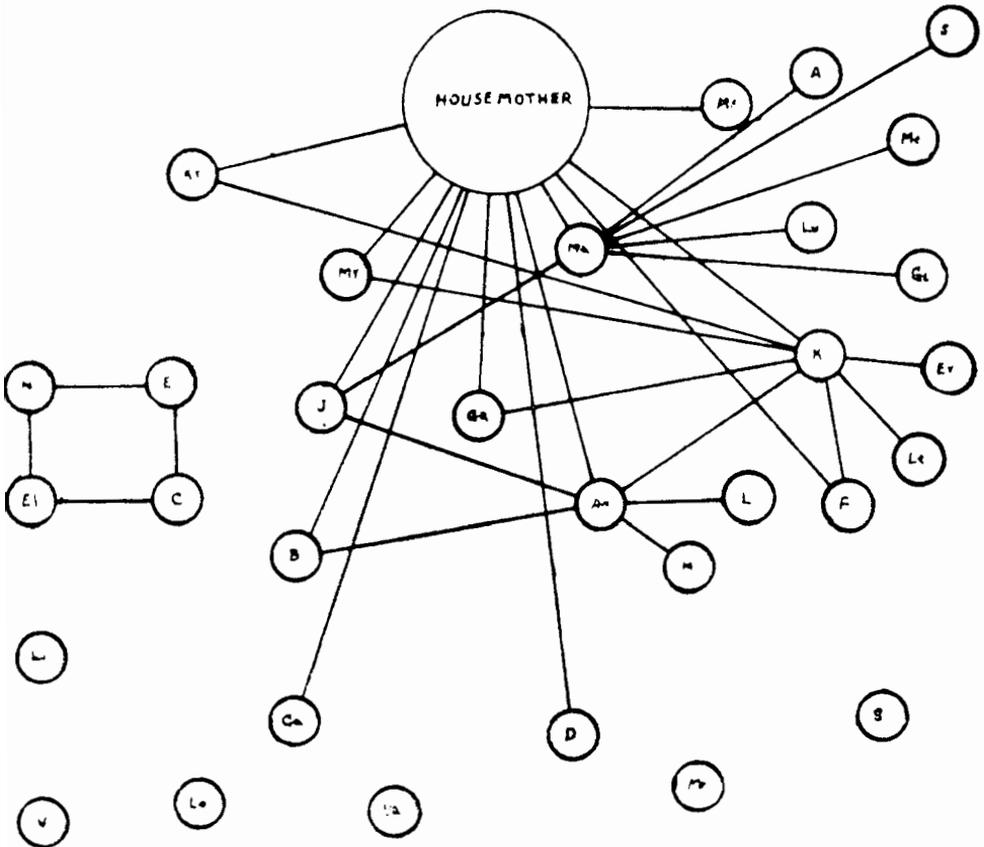


CLEAVAGE IN FAMILY GROUP

Circle C1 represents the sexual grouping; the other, C2, the monastic or social grouping. The large circle indicates that C1 and C2 are two cells within the same field. Lines go from Child 1, 2 and 3 to Parent 1 and Parent 2 in the second cell which indicates that these five individuals form a group; but no lines go from Child 1, 2 or 3 to the man and woman in the first cell, which indicates that the man and woman form this group separately. The two cells represent different functions: Cell 1 the sexual and reproductive; Cell 2 the parental and protective. The two groupings within the family have not always been united into one pattern; they have probably had two divergent lines of evolution. As main steps in the separate evolution of the first cell can be considered group marriage, polyandry and successive polygamy; as steps in the separate evolution of the second cell the totem group and the monastery.

The cleavage between the two cells may also be a clue to the future evolution of the family. Apparently they must not be forever united. The parental dyad may be institutionalized independently from the sexual dyad. Three types of development are here possible: 1) sexual dyads (without reproduction); 2) reproductive dyads (without parental obligation); 3) parental constellations (social parents rearing children of various origin, none of their own).

CLEFTAVAGES IN GROUPS



PSYCHOLOGICAL HOME—CS

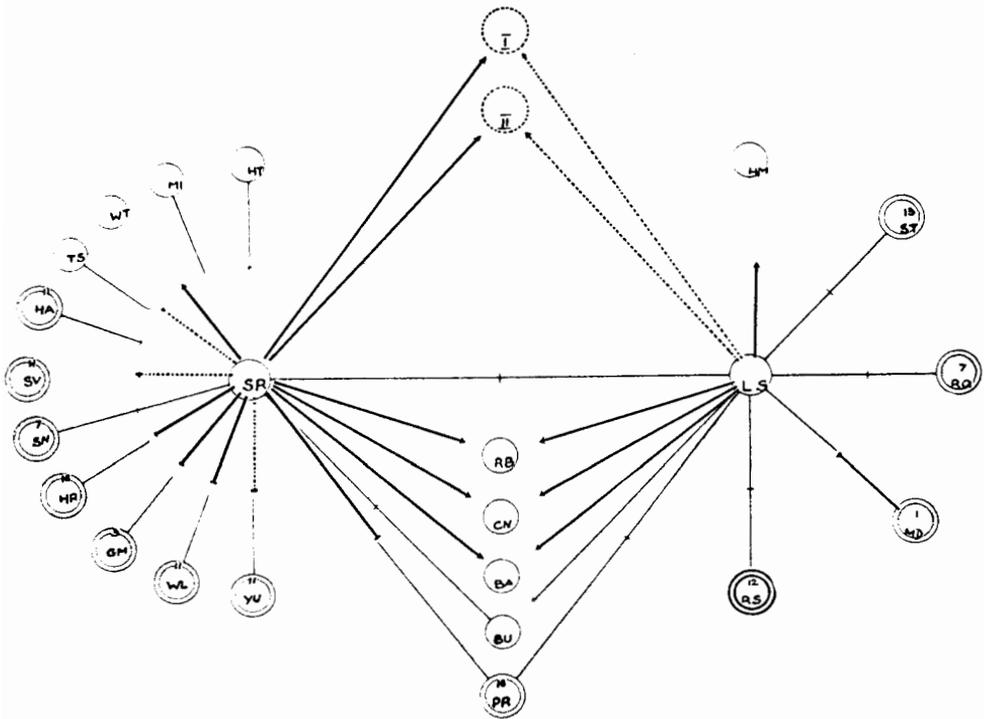
Criterion: Living in proximity, sharing the same house; 5 choices; no rejections; emphasis placed on relationships to Housemother.

31 girls. Outside of a nucleus of 21 and a Housemother are 4 individuals who form a gang and 6 individuals who are isolated.

The Housemother is in direct and mutual contact with 12 individuals which indicates her ability to reach and hold so many people—an unusually large emotional expansiveness. It is rare that a mother has the emotional expansiveness to hold and train effectively more than a few children. If the number is too large the chances are that one or another may escape her educative influence. If the number of children to be taken care of by a particular mother becomes too large her emotional expansiveness is over-reached and fatigue sets in. A physician who has to consult too many patients in a row may tire and his service then becomes perfunctory. The same goes for teachers, salesgirls in department stores, waitresses in restaurants, foremen in factories, for all leadership functioning which requires emotional as well as social productivity. This chart also gives clues to social and mental disturbances, in overcrowded prisons, in hospitals and schools, the consequence of inadequate staff.

The opposite picture results if there are more staff members than patients, more leaders than followers, more waitresses than customers, more producers than consumers. Then the conflict sets in among the staff, the leaders, the producers.

CLEAVAGES IN GROUPS

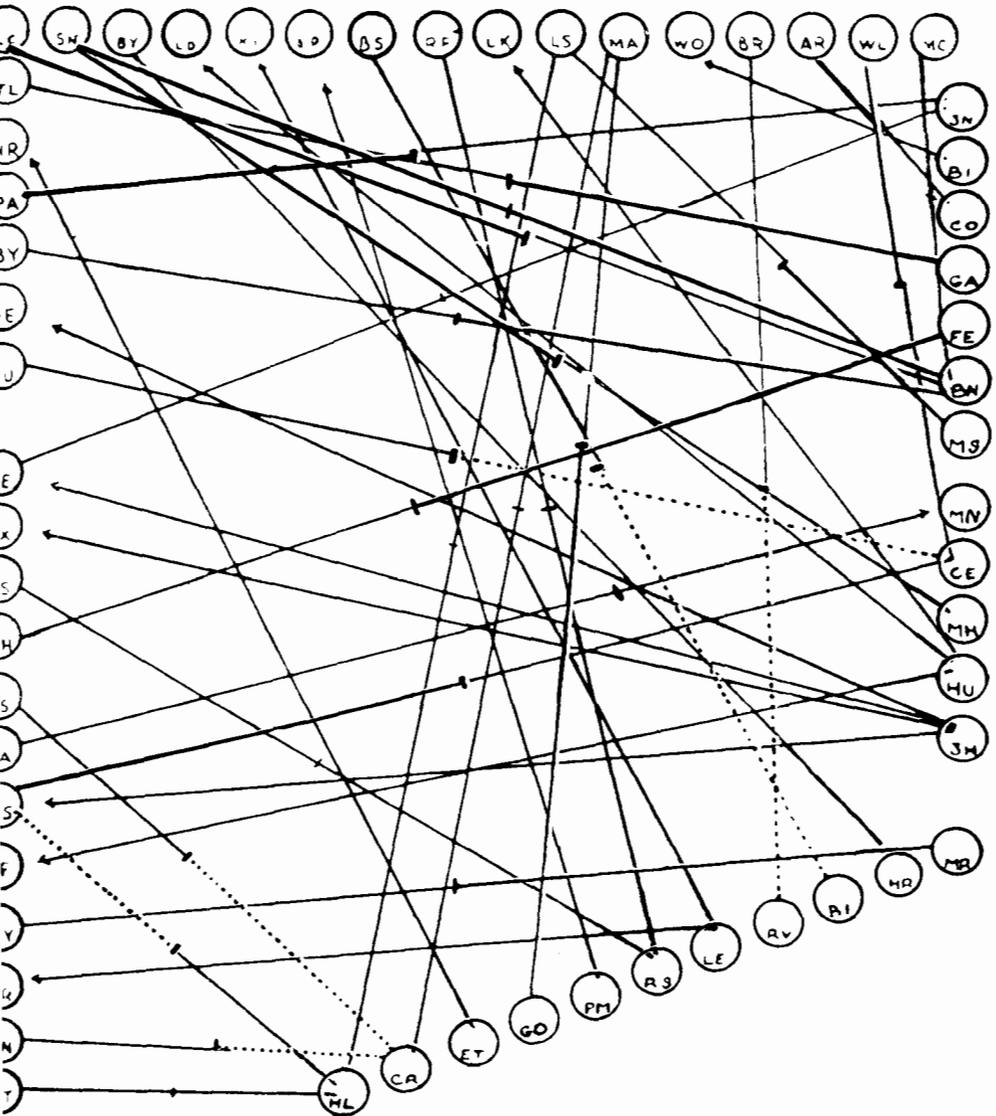


A RUNAWAY PAIR, SR AND LS

The sociogram indicates mutual attraction between SR and LS. Except for the relation of SR to BU, they form an *isolated* pair in their cottage. Both reject RB, CN, and BA, girls in the same cottage. BU, whom SR likes, is also liked by LS. SR rejects I (the housemother) and II (the kitchen supervisor) and LS is indifferent to them. LS forms mutual pairs with individuals in other cottages, RQ in C7, ST in C13, and RS, a colored girl, in C12. SR is indifferent to or rejects attractions coming from outside the home group, PR of C16, YU of C11, WL of C11, GM of C3, HR of C16, HA of C11. She is indifferent to SV of the Hospital but mutually attracted to SN of C7, of whom she makes an exception. Towards members of her own group (aside from LS and BU) she is indifferent (HT, MI, TS) and she rejects WT. Both girls, SR and LS, appear cut off from the main currents and blocked, isolated and limited mainly to each other. SR is attracted to a man outside of the community, who in turn is attracted to her (not plotted on this chart) and this persisting attraction finally precipitated the running away of both girls. It can be seen that their position within the school community predisposed them to this action. Not being integrated into the community they had no resistance to overcome and thus they could more easily respond to goals and aspirations outside.

It is interesting to note that in the previous test of C14 on p. 276, SR chose BU who did not reciprocate. There may have been, however, a latent mutuality already then because when the test was repeated shortly before the parole of BU the latter formed a mutual pair with SR. Since BU was gone at the time of the runaway, her relationship with SR represents another pull away from the Hudson community.

CLEAVAGES IN GROUPS



STRUCTURE OF INTERRELATIONS BETWEEN TWO RACIAL GROUPS

CRITERION: LIVING IN PROXIMITY

The chart indicates the interchanged attitudes in respect to living together in the same cottage of 23 colored girls and 34 white girls. Nine white and nine colored girls form mutual pairs, wanting to be in the same cottage together. Eighteen incompatible pairs are formed in which one party chooses another to live with in the same cottage, the other party either rejecting her or expressing indifference. This is further broken down as follows: 5 colored girls choose 6 white girls who reject them; 6 white girls choose 6 colored girls who reject them; 1 colored girl chooses a white girl who is indifferent to her; 5 white girls choose 4 colored girls who are indifferent to them. Seven colored girls choose white girls who do not respond at all. One white girl chooses a colored girl who does not respond at all. The population in which the sociometric test revealed these interrelations to exist consisted of 377 white and 59 colored girls.

A RUNAWAY PAIR

In the fall of 1932 two girls ran away from C14. Both girls, Ruth (SR), 17, and Marie (LS), 16, were daughters of foreign-born Italian parents and had been brought up in Italian neighborhoods of two different cities in New York State. Ruth was married at 14. Her husband was unemployed and had a long court record. He placed her into a house of prostitution. When she protested he beat her so severely that she became unconscious. After two days in the house she ran away. He was arrested and sentenced and the marriage annulled. Thereafter Ruth did domestic work for one year. At the end of this period she contracted syphilis from another Italian, a bootlegger and robber, and applied voluntarily for her admission to Hudson. She was afraid of the two men who had brought her misfortune but retained an affection for another Italian who had lived next door to her.

Marie, on the other hand, had had no sexual experience. She came from a broken home. Her parents had been divorced, each had married again, and she had lived alternately with each of them except for a period of five years between the ages of 8 and 13 years, when she was placed in a convent school. Her commitment to Hudson resulted chiefly from the plea of her mother that she was incorrigible.

All reports of the conduct of the two girls in Hudson up to the time of their running away, which was a first attempt, had been excellent. The sociometric classification of Ruth in August, 1932 was:

SR. Formula 1:

	in	L	out
sent	2		1
received	5		7

SR. Formula 2:

	in	L	out
sent	2-6		1-4
received	5-0		7-0

Marie's classification of that date was:

LS. Formula 1:

	in	L	out
sent	2		5
received	1		4

LS. Formula 2:

	in	L	out
sent	2-4		5-0
received	1-0		4-1

The sociogram on page 396 illustrates the sociometric position they had in Hudson shortly before their runaway. This was one year after they had come to the school. The test was repeated after

one month and revealed no basic change in their respective positions. On the basis of their classification we found that their position in the community predisposed them to run away. Their names were placed on the list of sociometric reassignments to take place as a result of our study. Before their desired transfer to another cottage was made they ran away.

The sociogram indicates the mutual attraction between the two girls, SR, Ruth, and LS, Marie, in respect to living in the same cottage. They were also mutual first choices for working together. Marie was the first girl with whom Ruth became acquainted in C14. Their attraction appears deeply entrenched as they both reject the *same* girls within the cottage, RB, CN and BA. It is significant that the girls they reject are generally rejected within the group. The one other girl whom Ruth likes, BU, and who chooses SR in turn in the retest (see Sociogram of A Runaway Pair, p. 396) Marie also likes. With the one exception of BU, who was paroled in September, both girls reject or are indifferent to even those girls of the group who are attracted to them. Ruth rejects the housemother (I) and the kitchen officer (II), while Marie is indifferent to them. The two girls form an isolated pair in their cottage and it appears from the motivations of this circle of persons that Ruth usually took the lead in determining what attitude they should both take towards others. Whereas Ruth has one mutual relationship to a girl in another cottage, SN of C7, the position of Marie outside her cottage is more openly friendly. She forms four mutual pairs with girls in other groups. Her friendship with the colored girl, RS in C12 gave the only instance for friction between Ruth and Marie.

Both girls appeared cut off from the main currents, blocked, isolated and limited to each other for BU had by this time been paroled. In October Ruth heard through a new girl that some of her boy-friends were still thinking of her. Thus the precipitating motive for running away was given. While an Hallowe'en party was in progress in the cottage, a third girl acted as "dummy," fainted, distracted the attention of the housemother and the other girls, and Ruth and Marie ran away.

The act of running away can frequently be foretold and preventive measures taken if a careful sociometric classification of each individual of the population is made at regular periods. Even

a child in the community outside may feel pressed to run away from his family or from the whole complex of personal connections, including the town in which he lives. With rare exceptions, the child in a closed community develops rebellious attitudes. We differentiate three classes of runaways: *First*, individuals who are unattached in their group and run away from their *cottage*. Frequently they ask for assignment to another group and try to secure it through various strategies. As soon as they have a more favorable adjustment their restlessness vanishes and they settle down. They are potential runaways until such adjustment has been made. However, there are isolated and rejected individuals within cottage groups who do not run away, as they have attachments to members of other cottage groups. *Second*, individuals who run away from the community as a whole. They are cut off and blocked not only in their cottage group, but in reference to other activities of the community as well. If classification signifies this position in an initial stage, motivations for attachment to the cottage should be developed as preventive measures. The adjustment of these cases is difficult. *Third*, individuals who run away by sudden impulse. But individuals who appear to be impulsive runaways were found to have an explanation for their action in their sociometric position; their spontaneous action was found to be intimately interwoven with the setting. Often, as we have seen in the case of Ruth, the sociometric position of an individual in the town where she comes from and the emotional currents to which she had been related in the past have to be studied parallel with those of the immediate community.

RACE

The question may arise if it is possible through the study of the organization of a given community to foretell in advance not only behavior reactions, as running away, but greater outbreaks involving a group of persons which can be very harmful to one or another part of the population. We have shown that it is possible to recognize early signs which predisposed to such disturbances within the group organization of the community. Up to the advent of sociometric methods either the individual was studied unrelated to the community as a whole, or a mass unrelated to each individual of which it consists. But the application of sociometry

to the problem reveals the sociometric structure of the community and the psychological position of *each* individual within a mass; it traces through the numerous interactions of specific individuals the predisposing zones out of which spontaneous mass reactions arise and the subsequent, gradual development of such reactions.

Such a zone in miniature which existed over a six months' period was studied within a section of the colored population in Hudson.

The Beginning of the Research

The colored population was housed in C9 and C12. C9 had a colored housemother, C12 a white housemother. At the beginning of our research the sociometric test disclosed the organization of C9 and C12; the latter is charted on a sociogram on p. 274. In C12, in the center of 15 attractions within a population of 33 girls were Susan (LW) and Sarah (WT). Mutual attraction was indicated between them. Although Sarah WT received more choices than Susan LW and she was, moreover in mutual relation with another star (AA) who captured another 7 choices, a study of the motivations, of spontaneity and role testing revealed that Susan LW was the dominant partner in their relationship. Thus, Susan was the actual leader of the group. She rejected nine in her group. The analysis of the spontaneous interactions of these nine with her showed fear as the leading emotion. Characteristic for her position is a mutual rejection between her and Jane MS. Jane, who had the highest I.Q. (116) of the group and was the most advanced student, was isolated and rejected by the group, except for one attraction from a newcomer (GO). In C9, not charted among the individual cottages, besides three key-individuals, Elizabeth (PA) is the center of attraction and leads the group. The map indicating the relations within the entire population (Sociometric Geography of a Community, No. III) depicts numerous rejections between C9 and C12. This appeared to be related in part to the relations between the two housemothers, one of whom was colored and one white, and who reject each other. The colored groups centering around Susan LW and Elizabeth PA were also shown in their work units to center around these two girls and during the time they held such positions no serious disturbances arose.

Four Months Later

Routine monthly testing of the population during the next four months did not reveal any alarming change in the colored group organizations. But at the end of this period Susan LW and Sarah WT had been paroled and a number of newcomers had entered, among them Stella DR. The two groups were retested after four months and the group organization of C12 showed major changes. No individual now centers the attractions of the group. The group appears decentralized into six factions. The only consistent factor is the relation of the group to Jane. Four girls are attracted to her but all four have insignificant positions within the group. She is rejected by 12, 11 of whom are former adherents of Susan or of Sarah. The motivations of the girls interpret this as the position of a rejected leader. Spontaneity and role tests of Jane and the 12 who reject her demonstrated that in nine cases the reason behind the rejection was anger at her idea that she is better than they are. Stella's position is inconspicuous. She rejects and is rejected by Philamina LR, who is also her coworker in the steam laundry, and by Jane. Two other coworkers, Hilda GR and Rosalie CV, want to live with her. C9 also shows a major change in organization. The house-mother herself has taken the place of Elizabeth, who had been paroled, and is the center of numerous attractions. In neither home group could any alarming structure be traced.

However, when we tested the colored work groups at this time, we met in the steam laundry with an organization of relationships which, according to our experience, indicated predisposing grounds for serious disturbance. A group of seven girls, all from C12, Stella DR, Philamina LR, Esther GM, Hilda GR, Myrtle WL, Rosalie CV and Lillian FR were occupied in this work unit. The organization of this group as revealed by the sociometric test is charted in the sociogram on p. 281. Stella DR and Philamina LR, the two feeders, reject each other. Hilda GR and Myrtle WL, the two catchers, reject each other. Myrtle WL rejects the feeder opposite her, Philamina LR. Lillian FR and Rosalie CV, the two folders, attract each other and reject Myrtle WL. Esther GM, the shaker, is attracted to Rosalie CV and rejects Hilda GR. Hilda GR is attracted to the feeder opposite her, Stella DR and

the latter is attracted to Lillian FR and rejected by Myrtle WL. Esther GM, Stella DR, Hilda GR and Lillian FR reject the forewoman, but only Stella DR is rejected by her. Philamina LR, Myrtle WL and Rosalie CV are attracted to her and she likes them. Motivations, in brief, were: Philamina states she is afraid of Stella because she has hit her. Stella states, "Philamina is against us; she sides in with Miss O." Hilda is against Myrtle because she is against Stella. Myrtle opposes Hilda because "Hilda always thinks Stella is just right even when she upsets our job." Lillian says, "Stella wants Rosalie to join her in making tricks against Miss O., but she listens to me and won't do it." Rosalie says, "Stella is a good fighter; she will take the blame for you, but Lillian always helps me with the work." Esther likes Lillian because "She is decent and doesn't talk against white people like Stella does," and dislikes Hilda because "She is dumb; she listens to the craziest things Stella wants her to do." Myrtle rejects Philamina because "She is friends with Jane MS and tells everything we do in the laundry to her, and then Jane tells our housemother." Lillian and Rosalie dislike Myrtle as "She is too friendly with white girls." Stella dislikes the forewoman: "If she has to stop the machine she says it's my fault. She always thinks that I'll hurt myself if I just go fast around the machine to help Rosalie." Hilda says, "She blames me and Stella that we don't listen to her and we do so listen." Esther and Rosalie dislike her but do not "know why." The forewoman said, "I like them all except that Stella; she is defiant, stubborn, and always stirring up others to some mischief."

Four Weeks Later

Retesting of the steam laundry group revealed Stella DR as the center of all attractions except from Philamina LR. She and Stella reject each other. All but Philamina reject the forewoman, (see sociogram on p. 282).

Predisposing Causes

The sociometric test of the steam laundry revealed a group formation in its initial stage centering around Stella. The situation depicted in the sociogram and the motivations given

by the seven girls suggested a conflict existing between Esther GM and Hilda GR versus Philamina LR and Myrtle WL, and incompatible relations between both pairs and the forewoman, predisposing the soil for Stella. Esther GM and Hilda GR had often felt a grudge against the forewoman who had censured them when they were careless and slow. Although Esther rejects Hilda they both reject the forewoman. Myrtle WL and Philamina LR opposed Esther GM and Hilda GR; they had been in the steam laundry before the latter two and liked the forewoman; although Philamina also likes Esther GM, both she and Myrtle side mostly with the forewoman in an argument. The forewoman, however, was able to offset their conflict. It is into this situation that Stella entered. As she had the impudence to ridicule the "white" forewoman behind her back and to challenge the others to act similarly, she succeeded so far that Esther, Hilda and Lillian joined with her immediately and emulated her action. They agreed collectively upon an attitude of insurgence. When the test was repeated four weeks later, all sided with Stella except Philamina, who was her partner in feeding the steam roller. Stella persisted in working as her mood dictated—often too rapidly or too slowly for Philamina to cooperate with her. Then, on the other side of the machine, Hilda and Myrtle, the catchers, were rushed and confused or simply idle. Sometimes after quarrels with Philamina, Stella stopped working altogether. At other times she fed the machine too many articles at once, ran around it, and grabbed them before they could become caught and tie up the machine. But in doing this she made such a game of the process by tossing her hands into the rolling hot machine that she endangered herself.

The testing of the cottage group C12 failed to disclose any disturbance at that time as coming from Stella and her group; the enmity between her and Philamina had not yet penetrated the cottage situation. But upon the basis of the findings in the test of the steam laundry we feared a larger disturbance within the colored population of C12 if nothing were done to check its spread. With a population of 33, C12 disclosed at this time 28 disagreeing or incompatible pairs, more than any other home group in the community. Due to its introverted organization

frictions involving its members were concentrated *inside* the cottage. It had been without a leader since the parole of Susan. Both colored cottages in Hudson favored an organization with one leader, following her blindly whatever course she took. When Susan and Sarah were paroled, it was expected that Jane, the most intelligent girl in C12, would come into their position of leadership. While she developed the trust of the housemother, the group persistently rejected her and she in turn rejected them. The organization was loose and rapidly disintegrating.

It was in this period that Stella came to Hudson and was assigned to C12. Stella mixed with girls who disagreed with Jane and she and Jane began to quarrel from the start. The group in the steam laundry had crystallized around Stella as leader and was vaguely directed at the forewoman. It could be expected that the same individuals would bind themselves together into a similar attitude towards the white housemother. It was a zone of chronic emotional excitation.

The organization of the two cottage groups, besides the effect of the emotional differences described, was influenced by attitudes towards racial differences among its own members. The girls discriminated among themselves in favor of the darkest colored girls and in disfavor of the light colored girls, who numbered about 10% of the group in C12, whenever any occasion arose for an opportunity to do so. It is in this respect characteristic that the leaders in both cottages were among the darkest colored girls, and that Jane, who was among the light colored, was the more rejected the more she offered her counsel. Also, the association with the white housemother, which had made Susan and Elizabeth the more important in their eyes, made Jane an outcast. These two poles in the racial current we see further reflected in the organization of the group, the light colored girls having positions in the side currents only.

In a certain succession, the premonitory symptoms appeared, as in the course of a disease, and "called for" preventive measures. We suggested the assignment of Stella from the steam laundry to another work group. This assignment took place one week after the second test of her position. The local group in the laundry was thus broken up and the conduct became satisfactory.

A sociometric test given three weeks before the outbreak

disclosed that the home organization of C12 had undergone major changes: Stella is now the center of 12 attractions; Jane is the center of 15 rejections; Stella rejects the housemother and Jane; Jane and the housemother are mutually attracted to each other. The nucleus of the gang around Stella is partly made up of her former coworkers in the laundry, and eight of them are among those who reject Jane. The motivations reveal that Jane is ridiculed for her friendship with a white girl in C2, as well as for her particular attention to the housemother. Numerous little offenses against the colored girl's sensitiveness of her race, as indicated in the motivations, center around this point (racial current). The current travelled rapidly through the existing network in which C9, C12 and part of C15 participated.

Precipitating Causes

1. The housemother of C12 goes on vacation. A substitute takes her place.

2. During the next few days numerous minor disturbances occur in the house.

3. Stella's mother visits her. After she leaves Jane says in the presence of other girls: "Stella's mother is all right, but she is big and black and sloppy." Stella hears of the incident through her followers and confronts Jane. Jane denies having said it.

Final Phase

The next day was critical. Twenty-six girls of the population of 35 girls sided with Stella against Jane, who might, in fact also have said about their own mother that she is "black and sloppy." They felt Stella justified in defending her mother and her race. Six of them held repeated councils with Stella (four of these girls worked in the steam laundry group). Stella went to beat Jane up. Jane ran into her room and had another girl lock her in. Stella and her gang rushed to the housemother and demanded the key to get into Jane's room. The housemother saw that they had scissors and other objects. She and the other officers attempted to quiet them. From this moment on the fight aimed at Jane turned towards the housemother and all who came to her aid.

They started to yell and to break chairs, desks, tables, glasses, lamps, everything that was at hand.

It becomes evident, *first*, that the excitement was in its detailed formation dependent upon the sociometric organization of the groups and upon the sociometric organization of the community in which the individuals who have appeared as chief actors in the incident had participated. *Second*, that it is possible to reveal the development of these organizations from step to step in respect to each individual concerned and that these organizations themselves have acted as predisposing causes. *Third*, that the outburst was not a mass reaction in the mass psychological sense, but the end phase in the interaction of many individuals within the given community in which each individual had a definable position and acted under a definable psychological pressure; that the short-cut emotions and attitudes, as jealousy, hatred, racial inferiority feelings, and so on, developed visibly from simpler, less differentiated to more highly differentiated forms until they consolidated into the social roles in the end result. *Fourth*, that numerous minute, spontaneous attitudes in many individuals and their interactions were continuously penetrating the collectives of which they were a part.

RACIAL QUOTIENT

In the course of the sociometric classification of the given community we found that the increase in its population was chiefly of two kinds. First, the arrival of individuals who are of the same ethnic kind as the majority, even though as individuals they may be widely distinguished from one another; second, individuals who are not of the same ethnic kind as the majority and who apparently for this reason are inclined to join with others of the same nationality and social character in the forming of a collective. We have seen that homogeneous population may be homogeneous in a certain respect without its members being aware of it and without homogeneity becoming a social factor. For instance, a population consisting of many nationalities of the white race, heterogeneous in many respects, suddenly begins to distinguish itself as belonging together as soon as a group of colored members arrive and reside in that community. It is, therefore, important to recognize that the same group may be homo-

geneous in some respects and heterogeneous in others, and that no advance is made in the knowledge of a group as long as its organization is not uncovered in respect to these differences.

In chemistry we call a solution "saturated" when it can remain under given conditions in the presence of an excess of the dissolved substance. Similarly, there is a sociometric "point of saturation" of a specific homogeneous group for a specific other contrasting element under given conditions. In the case of a chemical solution its point of saturation for a certain substance may change, for instance, with the fall or rise of temperature. In the case of social groups the point of saturation may change with the organization of the interrelated groups.

A sketch of a community situation may clarify this contention. A group of Negroes migrates into a white community. The situation arising can be looked at from three angles: the organization of the white population, the organization of the incoming Negro group, and the psychological currents developing from their interaction. Up to a certain limit the influx of Negroes may not produce any apparent discord. But as soon as such a *limit* is passed various disturbances begin. Before the immigration of the Negro group the white community enjoyed a certain degree of economic prosperity. A great part of its members desired more leisure at the same time. The Negro group, being in economic misery, were able to satisfy a double want of the white population, cheap labor and more leisure, with the accompanying distinction of the white men and women to be regarded and regarding themselves as superior. The desire for distinction was satisfied until then by some part of the white population who were members of the domestic class and common laborers. The newly arrived Negro group contributed towards the compensation of these differences within the white population itself. All white men and women became then united in respect to this one thing, to feel superior to and distinct from the Negro group. As long as only this complex entered into the situation, a warm social current developed between the two races. But the problem was far from being so simple. The sexual factor was another avenue affecting the organization in the white community. The number of men was fewer than the number of women. Italian immigrants had migrated into this community half a century before and had domin-

ated the racial mixture. On the other hand, the Negro group was in ascendance, relatively unexhausted and sufficiently intermixed with the white to become attractive at least to some parts of the white population and to be attracted by them. This picture of a community is certainly becoming full reality in many other towns of the United States today, whether the immigrants are Negroes, Italians, Spaniards, or whatever.

Through the sociometric test an instrument is provided to go beyond these symbols and to ascertain the actual relations. It informs us about the socioeconomic currents attracting and separating the two ethnic groups. It informs us about the intersexual choice between members of the two different groups, between the white men and the colored women, the white women and the colored men. It informs us, second, about the currents of repulsion which in consequence develop automatically as soon as a group of white women is aroused at the intrusion of the colored or a group of white men is incensed by the relations of colored men to white women. These sexual affinities and disaffinities produce an effect upon the organization of both groups, the sexual currents drawing them together and the interracial currents drawing them apart. In the course of time these processes bring about further complications. If the two groups are mixed in school and workshops, even if their respective homes are located in different boroughs, social and cultural currents develop among them which may tend partially to offset the interracial currents described.

Through sociometric classification the rôle of leadership within groups can also be ascertained. Social groups develop leader-individuals usually in proportion to their needs. At every level of group development they have their own leaders. But once a homogeneous group has reached a certain stability it may tend towards an introverted group organization, and with this its point of saturation for leader-individuals is comparatively low. Such a homogeneous, conserving group can be run with a minimum of leadership. If an overproduction of leader-individuals develops within the group serious disturbances in the psychological balance of the group may develop. If a surplus of leader-individual develops, a number of them remain isolated, deprived of having a part in the psychological currents which circulate throughout the community. They brood discontent, produce factions and stir to

aggression. The intrusion of a contrasting racial group into a community often stimulates such a development; for instance, if the intruder group produces more leader-individuals than they need for themselves and the surplus swamps the native population. A sociogram of such a situation visualizes the following picture: We see a native and a foreign leader group, both attempting to subordinate and exploit the dependent groups of the native population. In a later stage interracial currents of aggression develop, first between the native leader groups and the foreign leader groups, then between the entire native population and the foreign leader group. In a final stage the conflict engulfs both the native and the foreign population. It is through such analysis that we are able to understand conflict situations as the one between Germans and Jews.

It is finally possible to bring the point of saturation of groups and the expansiveness of its individual members under a common denominator. We have observed that emotional expansiveness of an individual is largest in respect to homogeneously organized collectives. Evidently, when adjustment to a few such elements have been successful, minimal further effort only is necessary in the adjustment to other, similar individuals. But we have seen that the emotional expansiveness of an individual, that is, the number of individuals whom he is able to understand and to adjust himself to, becomes the smaller the more contrasting elements enter into the group and the more sharply they vary from each other. The low range of emotional expansiveness may repeat itself with every member of the homogeneous group in regard to the contrasting elements which have entered into it. They would prefer to distribute their emotions among individuals with whom they can most easily associate and they may be unable or refuse to expand towards individuals with whom it is more difficult for them to associate. From the social interaction of the members and their emotional expansiveness a group expression results, its point of saturation for a certain contrasting racial element, its racial quotient.

SEX

The percentage of inter-sexual attractions in the classes of boys and girls in the 8th grade of the Public School under study was

18% ; the percentage of homosexual attractions was 82%. The percentage of attractions of girls to girls in Hudson in groups of the same age level as these 8th grade pupils was found to be 80%. The percentage of attractions of boys to boys in a preparatory school in groups at this age level showed an equally high figure, 82%. In mixed groups the possibility of inter-sexual attractions decreases the number of homosexual attractions, whereas in unisexed groups the absence of inter-sexual attractions increases the number of homosexual attractions. Within the first four to six weeks after arrival in Hudson the attractions of the new girls were 70-75%, the percentage of indifference being 25-30%. After this period the percentage of indifference rapidly decreased.

These currents rise and fall, depending upon the age level of the members, the length of time the members belong to the group, the volume of acquaintances each member acquires, and other factors. It became evident (see Acquaintance Index, p. 288) that the larger the volume of acquaintances of each and all members of a community the greater the number of attractions and the greater is the possibility of finding foci of release for their emotional expansiveness. In consequence, a community becomes the better consolidated and the members become the better integrated within it. In turn, the more limited the number of acquaintances of each and all the members of the community, the more restrained is the exercise of their emotional interest and the smaller is the volume of attractions and rejections. In consequence of this many members are not held to the community by the social currents.

The greater the suppression of individuals to prevent their meeting other individuals whom they like the greater becomes the urge to communicate with them in some way. One of the most interesting forms of communication in a closed community is the secret letter, the love note. Although the restrictions imposed upon the girls in Hudson are much greater than in any private boarding school for girls, the large volume of love notes cannot be explained only by the amount of restraint imposed upon them. The text of these notes varies from insignificant, simple and human expressions of affection or poetic and idealistic contents to stark sexual communications. The study of the period of time which passes before the newcomer receives her first note or writes her initial one, the number and kind of individuals with whom she is in-

volved in this manner, the volume of notes she produces, have given us an insight into this most infectious psychological phenomenon. It appears to be a *normal* reaction to a sexually highly sensitized environment. We found true homosexuality very rare and we have not found one case in which it developed because of the conduct described. Through the role playing test and the analysis of letters a form of attraction came to our attention which, as far as we know, has never been analyzed in the literature. This is the odd sexual attraction of white girls to colored girls in communities like Hudson. In the sociometric test given to the entire population of Hudson in respect to the criterion of living in proximity, only 8% of the white population chose colored and 36% of the colored girls chose white. But when we analyzed the volume of love letters guided by the criterion "Who is writing love notes to whom?" (a sort of cold actuary sociometric test) a sexual sociogram resulted which showed the ratio of attraction of the white for the colored girls to be several times larger than appeared on the home sociograms. This discrepancy may be caused by various factors. Being a "Nigger lover" was considered in this community the lowest form of behavior. The home criterion was not suitable for this purpose because the living quarters for white and colored girls were strictly separated here.

The "Crush"

Among the normal and tolerated forms attraction takes between adolescent girls there is one phase which has often allured the fantasy of poets. Soon after a first meeting they fall into feverish courtship of each other, vow that they will be friends forever, dream and plan together, confide their deepest secrets. This is the "crush."

In institutions for girls where no other outlets for the play of sexual energies are given, these "crushes" often take on a more active and exaggerated form. They are more active and exaggerated, not necessarily because the individual girls are sexually more sensitive, but because of two circumstantial factors. One is the homosexual pattern which dominates the community; the other, the greater rivalry displayed when the same girl is the object of several girls' attention.

As long as these crushes occur within the white population their effect upon conduct is similar to that outside in the open community. The forms which sexual interaction takes are in principle the same. But it is different and without parallel in a normal environment when white girls have crushes on colored girls, not only as individuals, but collectively *en masse*. This form of crush greatly outdoes in intensity, variability of attitudes, and effect upon conduct the fancy of a white girl for another white girl. It is a paradoxical phenomenon.

We have rarely found this bizarre form of behavior to be mutual. It is a one-sided attraction of the white girl to the colored. The white girl goes through all the gestures of courtship, sends notes, makes dates, and tries to keep her mysterious conduct secret. Her mind is deeply preoccupied; she neglects school studies, work, and even the thought of running away. As long as it lasts, she is as if in a trance. Later, after it has faded out, she laughs when she thinks of it and cannot understand why she acted so "foolish." Sometimes two white girls work in pairs, one being the letter carrier for the other and "in" on the secret. Nothing seems to deter them—neither the housemother's criticism nor rebuffs of other girls who despise and publicize their conduct.

The colored girl plays a different rôle in this game. She is the subject adored and rarely the wooer. She frequently takes pride in the onstorm of attention and in this pride is mingled the satisfaction of a more subdued race which makes a "conquest." While overtly she responds with affection she almost invariably ridicules the courtship. She gets fun out of it through showing the notes and gifts to her colored friends because it satisfies not only herself as the individual receiving so much attention, but the racial instinct of the entire group. The colored group as a race exults in being for once in a superior position towards the white race. It is a big show for them and inflates their ego. Often the colored girl reacts like a proud, rough fellow who accepts signs of affection but acts as if he doesn't care for them. When there is occasion these crushes lead to physical contact. It appears that the blacker the Negro the more she is pursued and that the blacker she is the more she despises the courtship. Also the blonder the white girl, the more she is apt to be successful in the courtship. Occasionally the dark Indian girl receives similar

"tributes," and she reacts in much the same manner as the Negro towards the white admirers. To the white girls the colored girls appear to be more muscular and physically stronger than they themselves. However, there are instances in which a purely idealistic and fantastic "romance" develops between colored and white girls.

Interpretation

The first impression this process gives is that it is perhaps the worst form taken by adolescent sexuality. However, a closer analysis of the facts suggests another interpretation. We may study first the attitude taken by the white girl in this episode. She has been taken out of the environment in which boys and men are a natural part. She has been put into an environment in which men are forbidden and even when present, are not a natural part of it. At the same time she is at an age in which fantasy and role-playing with the other sex is a natural process in her development. From the point of view of efficiency and pragmatic value, adolescents of both sexes "waste" much time in this direction. But from the point of view of the adolescent, what he does is at the time an exceedingly important business. What they miss in a community of women and girls is boys and men as the immediate objective of their emotional interest. In such an environment, the Negro girl offers the relief of being something utterly different. The relation between the two sexes in their adolescent years is so interesting, due to the "distance" between the two sexes, the unapproachability of the other sex. The physical differences of the white and colored race, the "strange" appearance of the colored girl compared with the white, seem to provide the attribute of "distance" and unapproachability. Further, the Negro girl has, in the imagination of the white, boldness and braveness, a spontaneity of conduct which she envies, as well as appearing more muscular and stronger than herself. The Negro girl is taken by the white as *a substitute for a boy*. This interpretation is corroborated by what the girls themselves write and say about it. There is, however, one feature which does not seem to fit into this interpretation. It is the white girl who almost invariably takes the initiative and courts the colored, seldom the colored girl who

initiates the crush. This can be explained if we look at it from the point of view of the colored girl.

She is a female, but the white girls expects her to look and act like a boy. She is needed by the white girl as a substitute for a boy, but she is a young woman herself. She doesn't receive any adequate incentive to take the initiative. Intuitively, she feels that she is taken for something she is not, that she is put into a false position, and she laughs about it. She takes it very good naturedly and makes a great show of it. To fit into the "game" she acts like a boy as well as she is able, behaves wildly, and writes back notes which are an odd mixture of sexual vulgarity and exhibitionism.

This phenomenon is characteristic for closed adolescent communities in which the living quarters of the colored population are separated from the quarters for the white. In communities where both races live in the same quarters the phenomenon takes a less intense form and is more readily extinguished. Living together brings to realization the similarities of the same sex, and further, if the number of colored in a white cottage reaches a certain limit, antagonisms develop due to the *psychological pressure* within the group. Both factors seem to override and destroy the romantic attractiveness which the colored girl holds for the white "at a distance." This process of courtship is a *psycho-geographical projection* of the white girls in the population growing out of their need and longing for the former environment. As soon as the colored girls are moved into the same quarters with the white, the psycho-geographical fiction fades.

In the familiar crush situation the adolescent warms up to a state in which she is willing to confide fully to the partner whatever fills her thoughts. But the crux of the situation is the partner. It is an interesting tele-phenomenon that the adolescent is drawn to other adolescents, because in order to gain the highest therapeutic effect the individual must call upon persons who belong to a level of social differentiation close to its own. An adult may become the object of a crush but is never the sought-for partner and companion who is continuously in an active and reciprocating role. Instead of separating one partner from the other, it is often advisable to use one girl as the therapeutic agent of the other, and thus utilize the interrelation existing.

PSYCHOLOGICAL CURRENTS

PSYCHOLOGICAL AND SOCIOMETRIC GEOGRAPHY, MAPS
I, II, III AND IV

The mapping of the entire community, the depicting of the interrelationships of its inhabitants and of its collectives in respect to (a) locality and to (b) the psychological currents between them is *psychological geography*. Four different maps are shown here, all representing the psychological geography of the Hudson community. Maps I-II are so designed that they show the local geography, the position of roads, buildings, localities, in relation to each other. Map III is so designed that it indicates every cottage and each individual girl who lives within each, and through the symbols for attraction, rejection and indifference, the inter-relations between the individuals. Individuals and cottages housing these individuals are here presented in relation to the psychological position they have in the community but without indicating geographical locality. Map IV is a simplified presentation of Map III in order to facilitate reading and analysis.

MAP I

This map indicates the relation of each cottage to the cottages of its neighborhood. It can be noted that the community has two quadrangles, each forming a kind of neighborhood by itself: Neighborhood I, formed by C1, C2, C13, C14, C3, C4, C5 and C6; the second, Neighborhood II, formed by C7, C8, C9, C10, C11 and C12; and that a third, Neighborhood III, is formed by cottages more distant, CA and CB. We bring to the attention of the reader that in Maps I and II the cottage numbers run from CA, CB, to C1 up to C14, instead of starting with C1 and continuing up to C16. Nothing has changed except the symbols for the cottages. Therefore, for CA substitute C1, for CB, C2, etc., when comparing these two maps with Map III and Map IV.

The two colored cottages border on the two ends of Neighborhood II and are distinguished by heavier black contours. The dotted lines indicate the inter-racial relations between the white and colored girls of the population in regard to the localities in

which they live. C7 is related to the white cottages C4, C9 and C5. C10 is related to the white cottages, C1, C12, C8, C2, C13, C9 and C5.

On this map is also indicated the runaway status of each cottage from June 1, 1931 to September 1, 1933. Cottages which had no runaways during this period are left blank. They are CA, CB, C4, C7 and C8. Cottages which yielded most of the runaways (six or more) are colored black. They are C3, C5 and C10. Cottages which had up to five runaways are indicated by horizontal lines. They are C1, C2, C6, C9, C11, C12, C13 and C14. Finally, a plain line indicates at what point the runaway chain, which started October 31, 1932, and lasted until November 13, 1932, was initiated. It reads the direction the chain took, from C12 to C5, to C3, C10, where it ended.

MAP II

In Neighborhood I, C1 shows towards C2, C3, C5, C6, C13 and C14 either antagonism or indifference, but towards C4 a sympathetic attitude. It is attracted towards the most distant cottages, CA and CB. Similarly cottages C2, C13, C14 and C5 are less compatible with their immediate neighbors than with cottages located more distant from them. The only exception in this neighborhood is C4, which has better relations to the cottages of the neighborhood except to C14 and to C3. In Neighborhood II, C11, C12, C9, C8 and C7 show antagonism towards their immediate neighbors except C10, which is friendly with all the cottages of the quadrangle except with C7. C7 has an exceptional position as it is either disparaged by the cottages of both neighborhoods or simply isolated. In Neighborhood III, CA and CB are friendly neighbors but their attitude is more antagonistic towards the cottages of Neighborhood II (split currents) than towards those of Neighborhood I. These relations demonstrate a trend of greater friendliness towards cottages and neighborhoods which are more distantly located and a greater trend towards incompatibility in respect to adjacent groups. Being neighbors, it appears, gives more occasion for friction to arise as contacts are more frequent and intimate. It would seem that what is present and helpful is often forgotten by neighbors and that what

is unpleasant turns them away to look into distance. An exception to the rule are cottages CA and CB, which are so far removed from the rest that they are more dependent upon each other. They develop more like a single family living in two houses as the attitude of the two housemothers is conciliatory.

The inter-racial relations between white and colored groups makes another exception. The trend appears to be just the opposite, at least in the case of C10: the closer the white cottages are to the colored the friendlier is the attitude between them; the further the white cottages are from the colored the less interested are both sides. This can be explained in part as follows: The inter-racial choice and attractions are here largely motivated by sexual interest. In sexual matters proximity is more desirable than distance. For this reason the sexual current between white and colored becomes strong enough in Neighborhood II to override antagonistic racial currents. The preference of white persons to live in proximity with white persons in respect to such a criterion as the home can be counteracted by the sexual current up to a certain limit. We see this in the attitude of the neighboring white cottages towards colored cottage C7 (C9 in Maps III and IV). They are incompatible with it. But this antagonism is partly due, as the motivations reveal, to former sympathies which had turned to dislike to some extent, due to the attitude of the housemother, whose attitude of isolation and protest reflects upon her group. The greater interest of nearby white cottages for the colored, as distinguished from that of the more distant white cottages, is related also to another experience we had. Many times a white girl who had a friend in one or the other colored cottage, and who wanted to be nearer to her, begged for an assignment to a cottage in that neighborhood.

A comparison of the runaway status within the community from July 1, 1931, to September 1, 1933, with the runaway chain of 1932 shows that C3, C5 and C10 (C5, C7 and C12 elsewhere in the text, on Maps III and IV and on the Runaway Charts), which had the highest percentage of runaways within the 27-month period, produced also the bulk of escapes in the runaway chain of the following year, *i.e.*, C3, C5, C10 and C12. C3 (C5 elsewhere in the text), which ranked among the lowers for interest

in living with the members of this cottage (see Table 10) and therefore had the most extroverted group organization among the cottages described, has also the highest number of escapes in the 27-month period. The cottage which figured next highest in terms of number of incompatible pairs for this period, C5, produced the next highest number of escapes in the runaway chain. At the time of the runaway chain, C5 (C7 elsewhere in the text and in Maps III and IV) consisted of a well organized group, deeply attracted to the housemother, but with nine members isolated and cut off from the group. The cottage which figured third highest, C10 (C12 elsewhere in the text and other maps) shows in its sociogram of that date (see p. 274) the highest number of incompatible pairs, *i.e.*, attraction responded to by rejection or indifference. It is always the organization of a group which keeps an individual within the fold or forces him out.

MAP III*

On Map III are represented 435 individuals, the entire girl population of Hudson on August 20, 1932, living in cottages, except for those within C8 and C5 of which special studies were made. Each individual is represented by a circle, a light circle for a white girl, a black circle for a colored girl. They are plotted into 14 large circles, each representing a cottage. Several thousand lines express the attractions, rejections, and indifference existing among the individuals. Through this map it is possible to see at once any individual within her cottage and towards which individuals in other cottages as well as in her own she is attracted or otherwise related. The relations here depicted consider only the criterion of living in proximity. The same individuals produce different maps if the criterion is different, as, for instance, if it is working in proximity.

The representation of a community in this fashion can be of value for the analysis of its inner organization. It makes structural relations visible which can be calculated only with difficulty. The inner working of society is here expanded and put under the microscope and its invisible structure made free for exploration.

* See rear of book.

Upon first view the map shows that the currents of attraction, repulsion, and indifference are not equally distributed but that some sections of the community have more of them, some less. Closer inspection shows that two of the cottages which are themselves closely interlocked are cut off from the general network except for a few lines coming in from here and there. They are the two colored cottages. They have the position of *isolated* groups in the community. Then we are struck by the big streams of light lines which come to one cottage from all centers in the community except C9 and C12, the colored groups. It is C2 which has the position of the most attractive group in the community. We see some cottages in mutual attraction, forming pairs, as C1 and C2, C7 and C16. We further see other cottages in mutual rejection, as C3 and C16, C7 and C4. We notice cottages which are incompatible, one attracted to another, the other rejecting or indifferent to it, as C13 and C11, C1 and C3, C1 and C13. We find cottages whose relationship towards another cottage is split, part of its members being attracted and part rejecting or indifferent, as between C11 and C2, C9 and C12. We call this attitude *dual*. Then we see cottages which are most rejected, as C14, which is rejected by C1, C2, C15, C10, C16 and C12, and receives only indifference from C4. There are cottages, as C13, C6 and C15 which form a triangle, and there are others which form a chain, C16, C7, C11, C10, C15, C15, C6, C4, C2, C1, C9, C12. There are cottages which reject each other mutually, as C13 and C3, C11 and C15. Finally, there are cottages which ignore each other, as C16 and C12, C16 and C9, C1 and C16, C13 and C9 and C13 and C12, to mention but a few.

MAP IV

Map IV is so designed that Map III becomes more easily readable. By means of a "decimal" system the total number of lines *within* a cottage is divided by ten and only this reduced number is graphically presented; for instance, instead of a total of fifty lines five lines are drawn. The reduction of the number of lines *between* the cottages in this chart is not ten, but five to one. Such a system of proportionate reduction—the decimal system—can be logically extended to a centennial system (one line to a

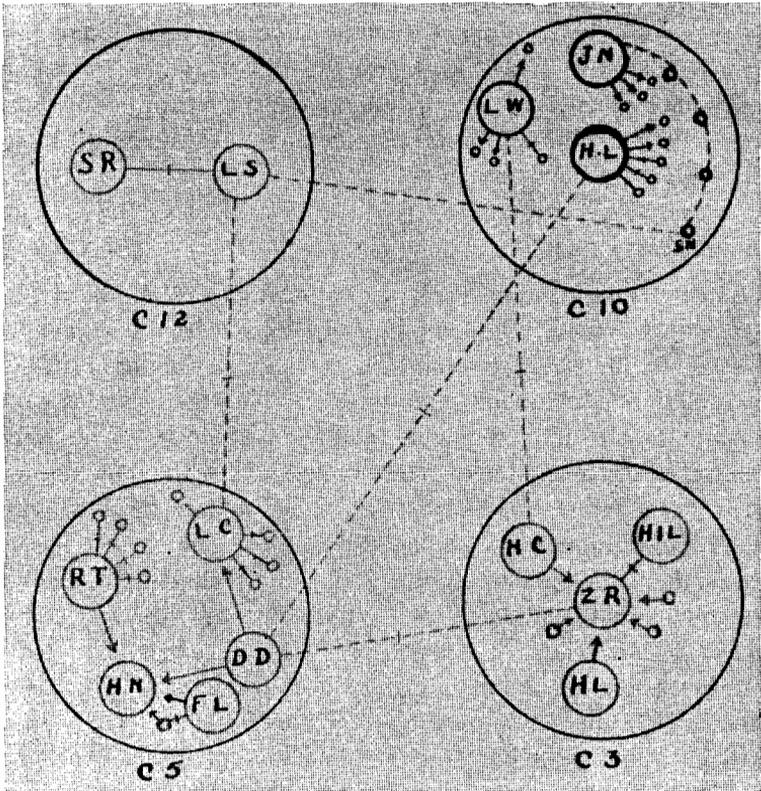
hundred), to a milennial system (one line for a thousand); the actual figures can be attained by multiplication. They enable the sociometric cartographer to chart communities of large populations; such an "omni" sociogram can portray the interactions of societies of any size, *f.i.*, up to the earth's entire population of two and a half billion individuals; they are sociometrically correct and readable at the same time.

Analysis

As the sociogram enables us to present a *structural analysis of a group*, sociometric geography enables us to make a *structural analysis of the whole community*. These structures within the organization of Hudson have a relation to the conduct of the inhabitants who are responsible for their formation. The isolated position of the colored groups indicates that for the overwhelming majority of white inhabitants the desire to live apart from the colored is still greater than the sexual interest in them. In other words, the racial current tending towards a separation of the races is stronger than the sexual current which tends towards elimination of such barriers. C1 rejects or is indifferent to many of the cottages which are attracted to it. It looks as if C1 were populated by a higher class of people, or so considers itself. It has, indeed, an exclusive position as it is the most newly constructed cottage in the school; also, it is geographically in an exclusive position. Moreover, the housemother herself is a very fine lady who expects lady-like conduct from her girls. C4 and C7 reject each other with such vehemence as if they were in a state of war.

From the attitude of each individual of one cottage towards each individual of any other cottage, a certain pattern of an entire cottage results and it is by these criss-cross currents between the cottages that the reputation of a cottage is shaped. In view of this, the member of a rejected or less attractive group has to put up a greater fight to hold her own. It is evident that also in Hudson, it is not a matter of indifference into which group a person is placed when she arrives.

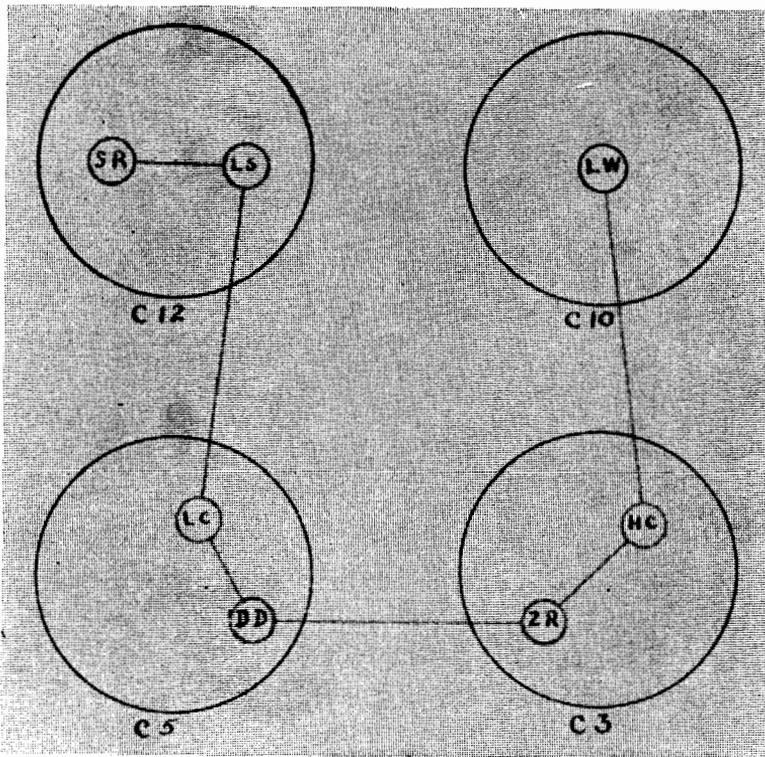
PSYCHOLOGICAL GEOGRAPHY



A RUNAWAY CHAIN

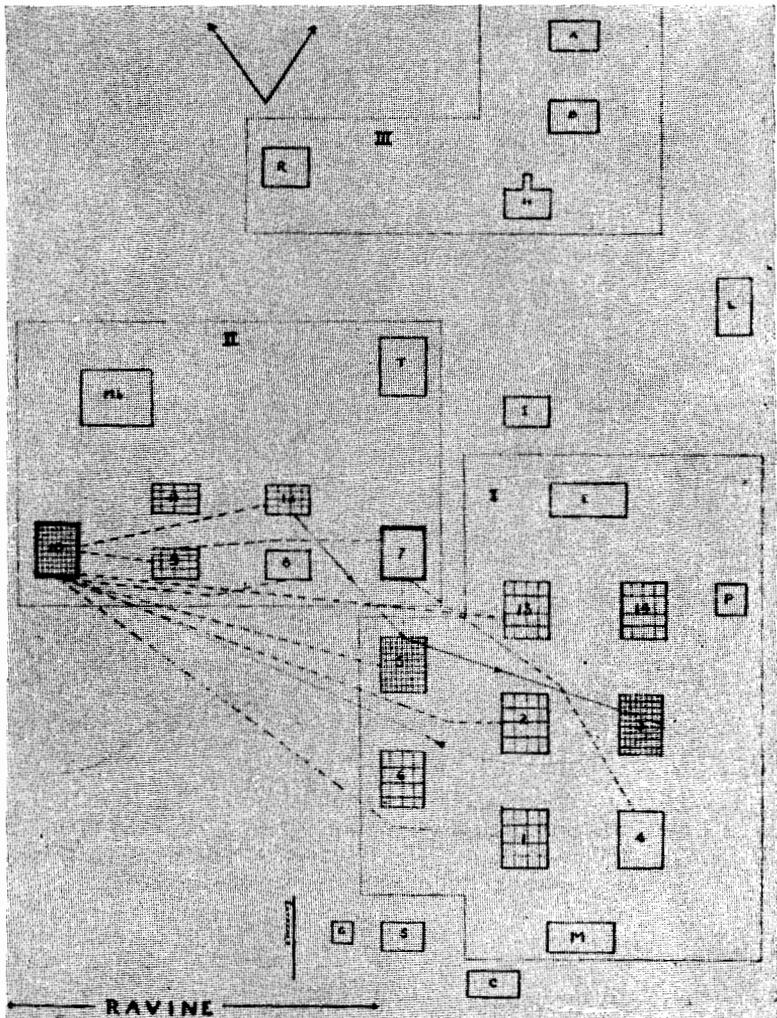
14 individuals comprise four sets of runaways. The positions of the sets are seen to be as follows: Set in C12, SR and LS are an isolated pair; set in C5 are interrelated and all except RT show unadjusted positions; set in C3, ZR, center of attractions of 7 individuals, a mutual pair with HIL, and attractive to HC and HL; set in C10, LW, HL, and JN, each isolated but interrelated by indirection. The interrelations between the sets are seen to be as follows: LS in C12 forms a mutual pair with LC from C5; DD in C5 is interrelated to ZR in C3; HC in C3 is interrelated to LW in C10; further, LS in C12 is interrelated with SN in C10, who, while not a participant in the set, is in a chain relation to JN in C10; further, DD from C5 forms a pair with HL of C10. (Please note that the cottage numbering is C7, C5, C12 and C14, on some of the other charts of the community.)

PSYCHOLOGICAL GEOGRAPHY

**MAIN LINE OF THE RUNAWAY CHAIN**

The main line of the network seems to go from SR to LS in C12 to LC and DD in C5, hence to ZR and HC in C3, and from there to LW in C10 (C14, C7, C5 and C12 on some of the other charts of the community).

PSYCHOLOGICAL GEOGRAPHY



PSYCHOLOGICAL GEOGRAPHY—MAP I

The map illustrates the topographical outlay of Hudson and the psychological status of each region in relation to *runaways produced and to inter-racial trends*.

The community has three different sections, each of which form a kind of neighborhood: Neighborhood I, formed by C1 (now C3),* C2 (now C4), C13 (now C15), C14 (now C16), C3 (now C5), C4 (now C6), C5 (now C7) and C6 (now C8); Neighborhood II, formed by C7 (now C9), C8 (now C10), C9 (now C11), C10 (now C12), C11 (now C13) and C12 (now C14); Neighborhood III, formed by CA (now C1) and CB (now C2). The two colored cottages border on the ends of Neighborhood II and are distinguished by heavier black contours.

The broken lines indicate the inter-racial choice between colored members of C7 and white members of C4, C9 and C5, and between colored members of C10 and white members of C1, C12, C8, C2, C13, C9 and C5.

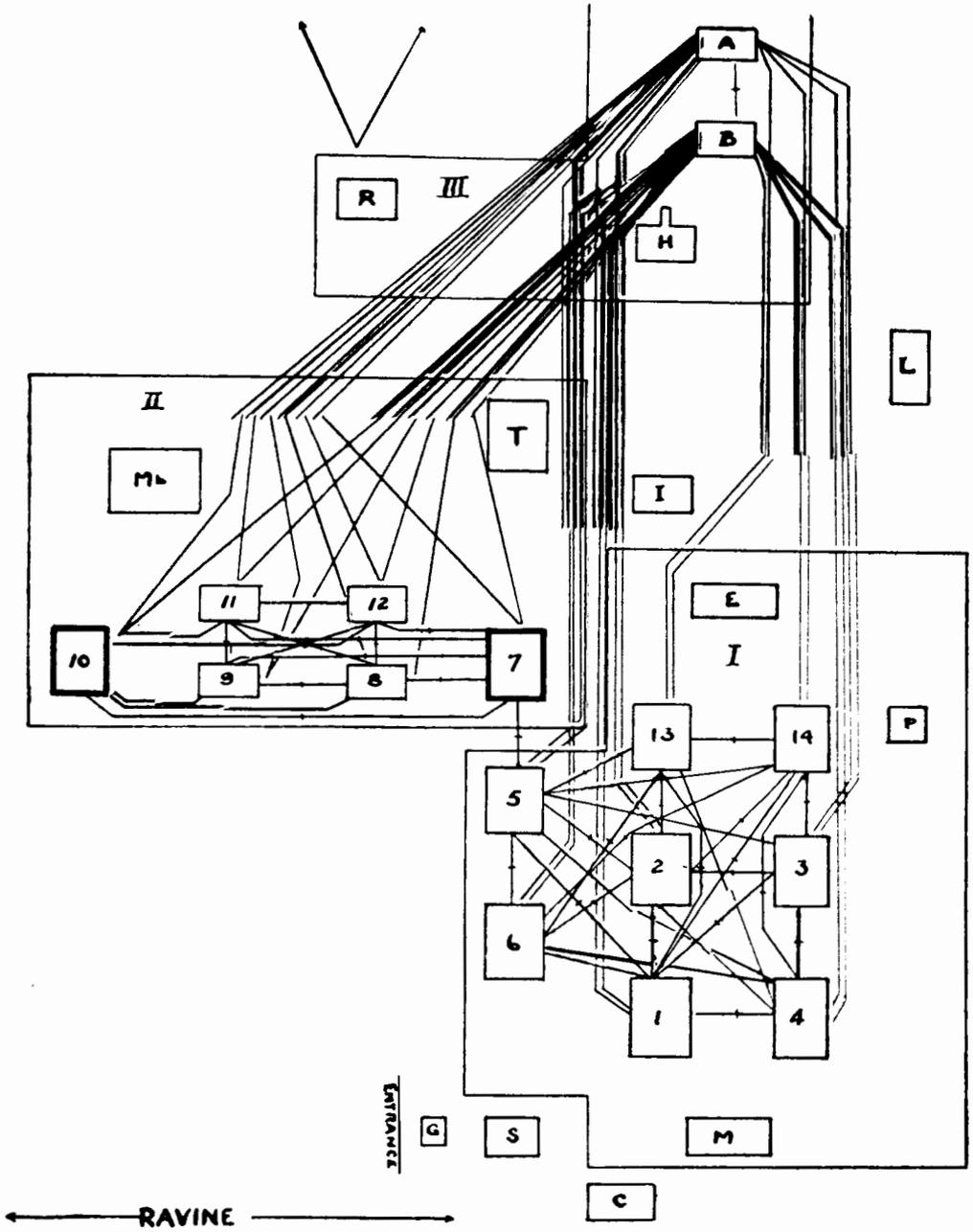
The runaway-status of each cottage from June 1, 1931, to September 1, 1933 is indicated as follows: Cottages which had no runaways during this period are left blank, CA, CB, C4, C7 and C8. Cottages which yielded most of the runaways (6 or more) are indicated by small black squares, C3, C5 and C10. Cottages which had up to 5 runaways are indicated by large black squares, C1, C2, C6, C13, C14, C9, C11 and C12.

A continuous line indicates at what point a runaway chain which started October 31, 1932, and lasted until November 13, 1932, was initiated. An arrow indicates the direction which the chain took: from C12 to C5, from C5 to C3, from C3 to C10, where it ended.

Further Explanatory to Chart: G—Gatehouse; S—Storehouse; C—Church; M—Main Building; P—Paint Shop; E—Educational Building; I—Industrial Building; T—Teachers' Cottage; Mb—Mercantile Building; L—Laundry; H—Hospital; R—Receiving Cottage.

* The numbering of the cottages was originally A, B, 1, 2, 3, etc. In a later renumbering Cottages A and B were changed to 1 and 2, Cottages 1, 2, 3, etc., became 3, 4, 5, and so forth. The reader should take this into consideration when comparing Maps I and II with Map III and later maps which were based on the new numbering.

PSYCHOLOGICAL GEOGRAPHY



PSYCHOLOGICAL GEOGRAPHY—MAP II

PSYCHOLOGICAL GEOGRAPHY—MAP II

The map presents the topographic outlay of Hudson and the *psychological currents relating each region within it to each other region*. For description of the topographic outlay see Map I. Red, black and double (red and black) lines from one cottage to the other indicate cross currents of attraction, of repulsion and of split currents, half attraction and half repulsion.

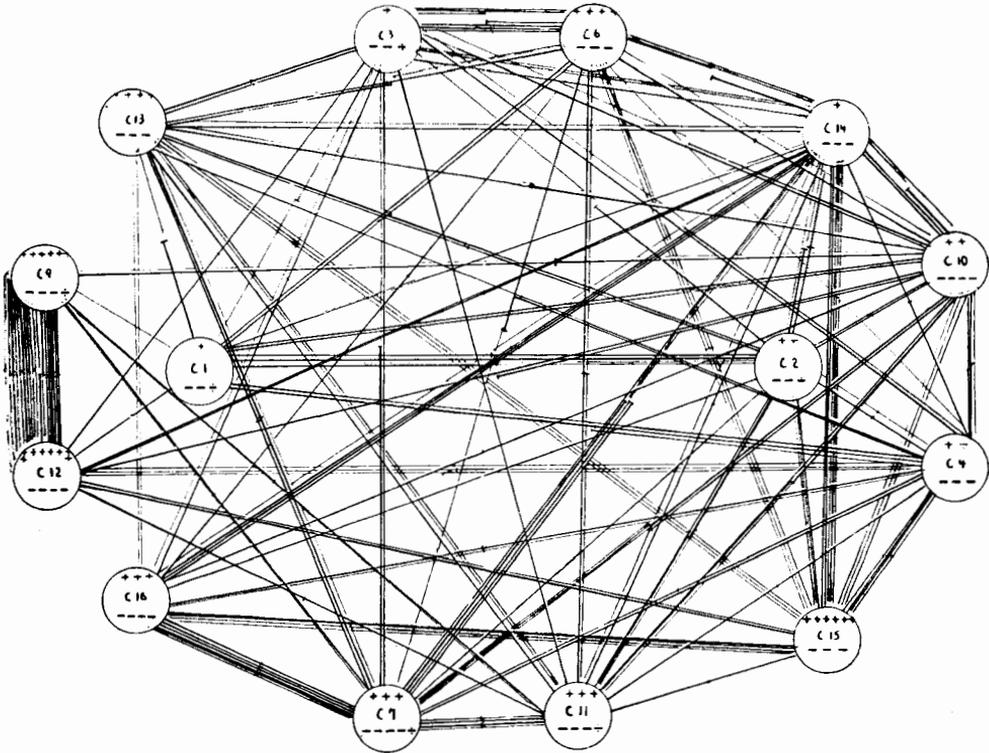
The streams of red and black lines going out and coming from one cottage to the other have been classified as follows: a) when all lines going from one cottage to another were of one color the stream was classified as a red current, a black current or a blue current; b) when the lines of one color going out from a certain cottage to another numbered more than the lines of the other colors together, the stream was classified as a *dominantly* red current, a dominantly black, a dominantly blue current; c) when the lines going out from one cottage to another were of two colors and almost equal in numbers, the stream was classified as a split current (red-black, blue-black, red-blue). Red is for attraction, black for rejection and blue for indifference or neutrality.

Because of difficulties of reproduction the blue lines are not plotted on this map although the findings indicate the great importance of neutrality patterns for group dynamics. Whereas attraction and repulsion patterns have been scrutinized innumerable times, neutrality structures, except for their analysis in this book, have remained unexplored. This might give the reader the impression as if they would be negligible aspects of group structure. The contrary is true. Three categories of neutrality have been discerned in our studies: 1) expressed neutrality; an individual A towards whom an individual B is attracted expressed neutrality towards B; 2) neutrality because of non-awareness of the other; A may be acquainted with B but B has made no impression upon A, he is just left out and not considered when it comes to choosing or rejecting; 3) neutrality may come from non-acquaintance; B is just entirely outside of the social contact range. Expressed neutrality is particularly interesting, for instance, indifference which has developed between A and individuals related to him by kinship, as siblings, parents, in-laws, former business associates and wives.

The plotting of these findings on the basis of such analysis would have made visual only the currents as they have developed in Hudson on the basis of the criterion of living in proximity. As indicated in other parts of this book, the criterion of working in proximity presents at least in part a different distribution; the criterion of sexual, recreational or cultural proximity each in itself would also have accounted for a different distribution.

Description. In Neighborhood I, C1 shows towards C2, C3, C5, C6, C13 and C14 either antagonism or indifference, but towards C4 a sympathetic attitude. It is attracted to the most distant cottages, CA and CB. Similarly, cottages C2, C13, C14 and C5 are less compatible with their immediate neighbors than with cottages located at a greater distance from them. The only exception in this neighborhood is C4 which has compatible relations to all the cottages of the neighborhood except to C14 and C3. In Neighborhood II, C11, C12, C9, C8 and C7 show antagonism towards their immediate neighbors except C10 which, apart from C7, is friendly with all the cottages of the quadrangle. C7 has an exceptional position as it is either disparaged by the cottages of both neighborhoods or simply isolated. In Neighborhood III, CA and CB are friendly neighbors but their attitude is more antagonistic towards the cottages of Neighborhood II (note their split currents) than towards those of Neighborhood I.

PSYCHOLOGICAL GEOGRAPHY



PSYCHOLOGICAL GEOGRAPHY—MAP IV
A REDUCTION SOCIOGRAM

(The reader is referred to Map III, the complete sociometric geography of a community, with explanatory text, at the rear of the book. The above chart is a reduction of Map III.)

Key to Sociogram:

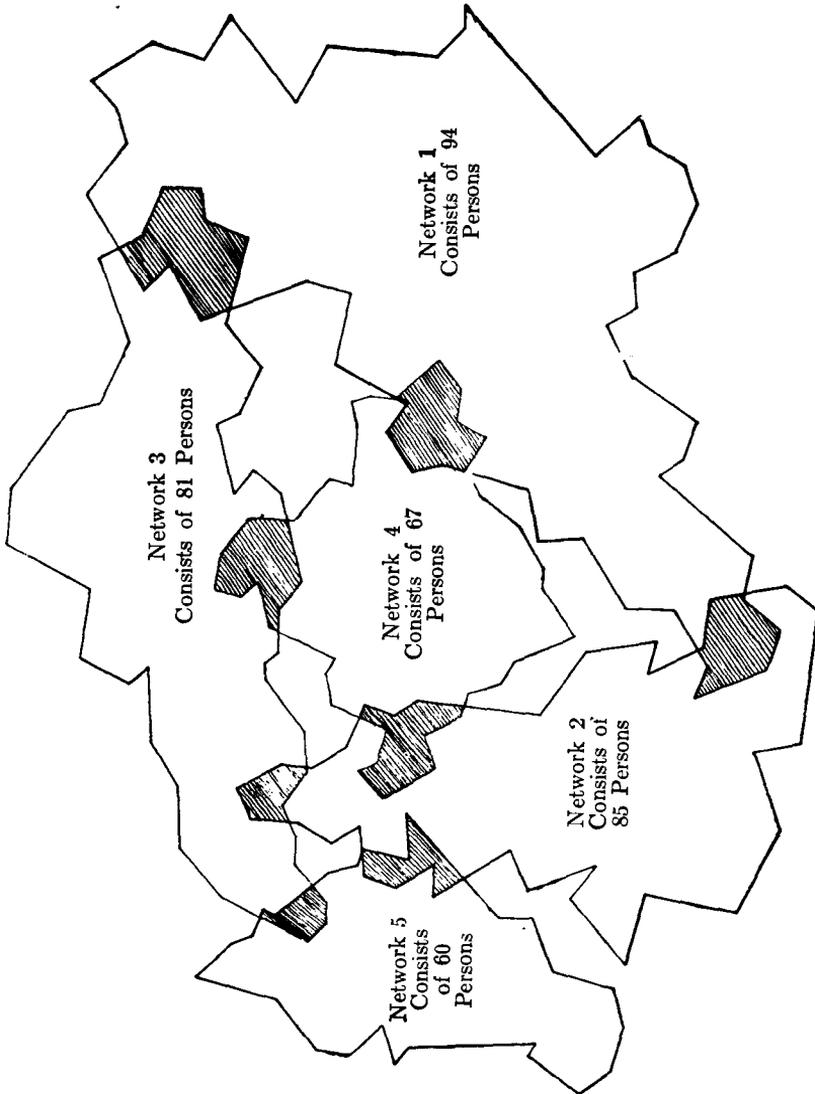
Each plus sign indicates ten attractions which occur within the cottage. Each minus sign indicates ten rejections which occur within the cottage. A dash with two dots represents half a symbol, five rejections or five choices.

Each red line represents five attractions between houses; each black line represents five rejections; the flow is in both directions. Attraction may flow in one direction while rejection flows in the opposite direction.

This sociogram is a reduction of the Psychological Geography of a Community. By using a sort of "decimal" system for sociogram reduction, the number of lines, four thousand one hundred and twenty-seven, can be reduced to one-tenth. In this particular chart the reduction to one-tenth is applied only to within the cottages. The reduction of lines between the cottages is to one-fifth of the original number. By multiplying the red lines and the black lines by five, the actual number of attractions and repulsions between any two cottages can be figured out. By multiplying every plus and every minus sign within the cottage by ten (and every dot-dash sign by five) the total number of attractions and rejections directed towards members within the cottage can be figured out.

This technique demonstrates a method of charting sociograms which permits their application to large masses of people. Sociograms representing the relations between more than twenty to twenty-five people have often been considered unreadable. But as demonstrated above, by means of a decimal system a thousand lines, for instance, can be reduced to one hundred. If the cartographer desires to chart large populations and still portray in a visual form their intergroup structure, he may use a centennial or a millennial system, one line representing one hundred or one line representing one thousand individuals respectively.

PSYCHOLOGICAL GEOGRAPHY



PSYCHOLOGICAL GEOGRAPHY
NETWORKS IN A COMMUNITY—MAP V

The chart illustrates the subdivisions of the whole community into five more or less distinct bundles, each comprising a specific number of individuals. The individuals who belong to each of these networks were found to be so interlocked, directly or by indirection, that emotional states could travel to the members of the respective network with the least possible delay. These networks are invisible. They were traced through inspection of Socio-

metrical Geography Map III by means of a microscopic technique as follows: Each line (tele) which went out from a member of any group to a member of any other group and from this person on to a member of a third group and from this person on to a member of a fourth group, etc., as long as the chain continued. Only such persons are counted who are interlocked as belonging to the same network, irrespective of the cottage in which they lived. We began the counting with a certain individual in Cottage 4, following the line which went to an individual in Cottage 1, and from this individual to another individual in Cottage 6, to find that this last individual had a line going to another individual in Cottage 7, to find that this individual in Cottage 7 had no line going out to any individual in another cottage. At this point the network broke up. We returned to Cottage 4 and proceeded in a similar manner with every individual in the cottage who showed connections to individuals in other cottages, until again we arrived with each of them to the point where the net broke up. In this manner we were enabled to construct what we called the *main communication line* of the network.

Once the members of the main communication line of the network were ascertained, we began to trace from each of its members those individuals within her own group who were *directly* related to her. These branches formed the side lines of the network. It is understood that again each individual of a side line was followed up to determine her contacts to members of other cottages and if such new members were found in other cottages, for them also.

On this basis we ascertained in Hudson complicated networks: in the same cottage, for instance, Cottage 4, a number of individuals belong to one network, Network 1; another number of individuals unrelated directly to the former belong to another network, Network 2. The individuals belonging to it are in general different from the ones involved in Network 1. But they are by no means fully cut off from them. As an example, in Cottage 1 some of the same individuals share in four different networks. But not every group is so promiscuous.

Except for small bridges crossing between these networks, which we have indicated by lines in the sections which are overlapping, we could distinguish within the community five more or less distinct bundles: Network 1 consisting of 94 individuals, Network 2 consisting of 85 individuals, Network 3 consisting of 81 individuals, Network 4 consisting of 67 individuals and Network 5 consisting of 50 individuals. The total number of people participating in the Networks is thus 387. Therefore, 48 individuals out of the population of 435 did not participate in them; this number is still smaller than the number of unchosen ones. Some of the unchosen individuals chose themselves into chain-producing contacts. The question which arises is: what effect has the being left out of the main communication of networks on the development of social roles, social perceptions, social symbols, in these neglected individuals, and how does all this affect their behavior in the social groups in which they live?

The networks represent the oldest form of social communication. Traces of them are already in subhuman societies. They are collective formations, the individual participants are unconscious of all the networks in which they partake, although they may be aware of one or another link between some of the individuals, or realize that such networks exist. An individual cannot move out of networks, just as he cannot move outside of his skin. Networks pre-exist him and pre-exist the official groups of which he is a part.

SOCIOMETRIC SPECULATIONS

The accurate use of figures for comparative sociometric statistics is of methodological importance. The figures have to be related, first, to collectives which have the same criterion; second, to collectives whose members are of a similar chronological age level, especially if these members are in their formative years of childhood or adolescence; third, to collectives which have a similar distribution of the sex or sexes of their membership. Mixed sexual groups and uni-sexed groups tend towards different structures. Similarly, groups in which the sexes are equally distributed tend towards different structures from groups in which one sex predominates. Fourth, to collectives which have a similar distribution of race or nationality.

On the basis of the quantitative analysis of each class group in P. S. 181 (comprising 42 classes), we made a quantitative analysis of the whole school as a sociometric community. Within its population of 1,853 children between the ages of 4 years to 16 years, 260 pupils or 14% remained unchosen; the number of mutual attractions between girls was 238; the number of mutual attractions between boys was 208; the number of mutual attractions between boys and girls was 35. As this school has a cosmopolitan composition representing many different nationalities, these figures may, through further investigation, be found to hold approximately for the entire school system of New York. Among one million grammar school children there may be 140,000 children who are unchosen in their class groups.

On the basis of the quantitative analysis of each cottage we made a quantitative analysis of the entire community of Hudson. Within the population of 505 individuals, consisting of girls between 12 and 21 years of age, the number of isolated or of unchosen and rejected is 81, or 16%; the number of mutual attractions is 331; the number of mutual dislike pairs is 37; the number of incompatible pairs is 112. The discrepancy between the size of population, sometimes being recorded as 505, at other times as 435 can be explained as follows: the first sociometric test was applied to the entire community of 505 individuals. Therefore, the original sociometric analysis was based on this figure. In the course of the study all individuals residing in the hospital or on

the farm attached to the school were left out. They comprised 70 individuals. This reduced the population in the later analysis to 435 individuals living in 16 cottages. The reason why those in the hospital and farm were left out of the community charts is that the criterion used was of a different nature. Whereas in the case of the cottage groups the criterion was "living in proximity," in the hospital it was "to be treated for illness," on the farm it was "training for care of the poultry and the dairy." Both assignments were temporary, eventually the individuals returned to their cottage. However, as long as they were in the hospital or on the farm it was not possible to activate their choice, since they were not at liberty to change; all other individuals of the community were adequately motivated, they had good reason to expect that their choice would be considered and acted upon. Such an expectation of change from the hospital or farm to a residence was impossible.

As the figures given for Hudson concerned home groups and the position in the home group is the most consequential one for an individual, they may suggest a similar position in the other collectives for the majority of the population. It is tempting to apply findings in small communities to large social systems; for instance, how many isolated, unchosen and rejected individuals may exist in the United States? The tentative figure for the population of 133,836,000 (US Census Report for 1928) is then about 21,413,760 (or 16% of 133,836,000) isolated, unchosen or rejected individuals. One may argue that the Hudson community, because of its deviate character, is not a fair sample of the average type of community throughout the USA. Indeed, we should expect that with quantitative changes in size and composition of populations structural changes will take place which will disclose new sociodynamic phenomena; therefore, we should be guarded against hasty generalizations. But similar studies of normal communities have shown that the differences are only quantitative, the trends are the same. When the sociometric test was given to 52 individuals between the ages of 18 and 25 years, 26 single men and 26 single women, living in New York City, to ascertain their position within their respective neighborhood, the number of unchosen among the men was found to be 12.2% and

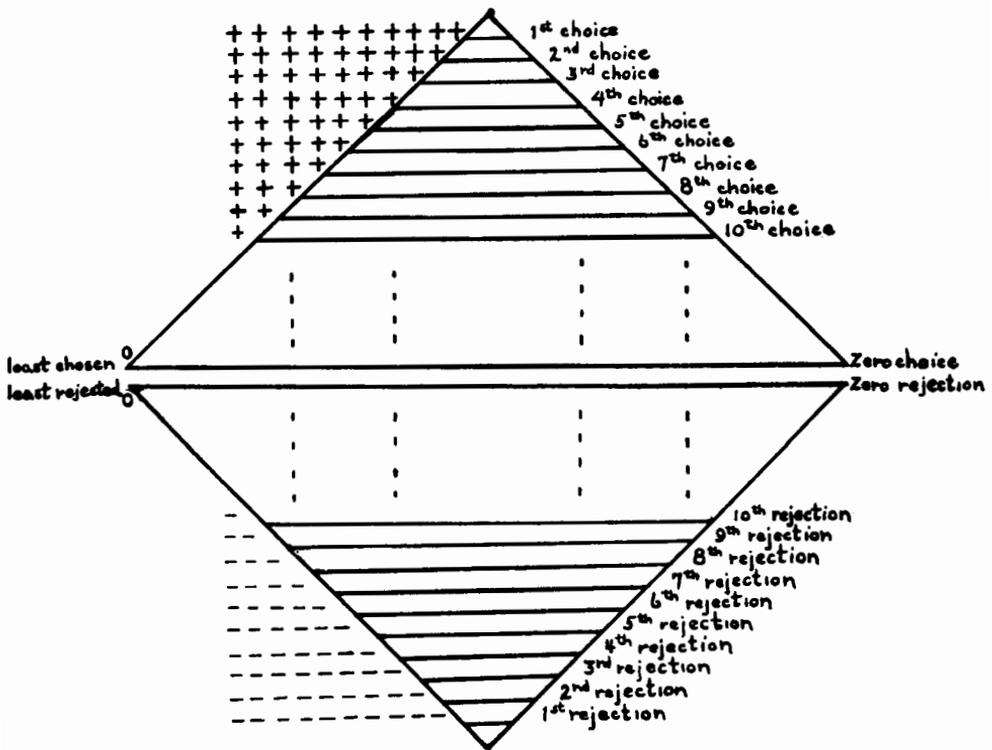
among the women 13%. There are, of course, fundamental differences between the structure of the Hudson community and that of the nation at large. The size of a family (cottage) group in Hudson (20 to 30 individuals) is five to six times larger than that of an average sized family outside. It may be argued on the basis of sociometric figures that in families of larger size more individuals remain unabsorbed than in small sized families. But on the other hand, families of 20 or more also provide the members within its fold with numerous social contacts and offer them more opportunity for clicking with someone than do small sized families, as in the large cities. The city dweller has to search incessantly for new friends; his social contacts will largely be drawn from the outgroup. Such individuals will thus tend towards social isolation.

The Hudson figures can be seen in another light. After the first phase of the sociometric test was given, the analysis of the choices revealed that 204, or 40.5% remained unchosen after the first choices; 139, or 27½% after the 2nd choice; 110, or 22% after the 3rd choice; 95, or 19% after the 4th choice, and 81, or 16% after the 5th choice. Also, through further inquiry, it was found that numerous individuals who had not been chosen spontaneously were still found attractive by one or the other correspondent to a choice. This *sociometric hierarchy* is illustrated in the form of a triangle, see p. 435. Those who are chosen first are on the pinnacle of the triangle. Next are those who are chosen second; next those chosen third; next those chosen fourth, and then those chosen fifth. At the base of the triangle is the volume of those individuals who, after all five choices have remained unchosen. We have found that even when the number of choices permitted are unlimited, some persons are still left out after a tenth, eleventh or twelfth choice. In every social situation a number of variables operate. With every new criterion a new variable enters the social field. Therefore, an individual who remained unchosen in reference to one criterion may be chosen in another. The total social atom of an individual is multi-criterial. However, it may well be that there are individuals who are found, at certain points of time in their lifeline, to be unchosen in regard to all the criteria in which they are involved. This means, figuratively speaking,

that there are millions of individuals among us who, when they love a woman, for instance, compete with at least five others ahead of him who are more attractive to her. Such an individual is perhaps the tenth or twelfth in line. If he applies for employment, there are five ahead of him who are more attractive to the employer. He is perhaps again the tenth or twelfth in line. Even in the home of his parents he may have been less attractive to them than his brothers and sisters were. And these millions are not the physical or mentally defective, but they apparently form a cross section of our population. Again, it should not be forgotten that it is often in the midst of the social groups to which they *belong* that they find themselves isolated, unchosen or rejected. This tragedy can befall entire groups and eventually entire nations. We have shown that these processes are intimately related to the structure of groups and of communities. But what becomes of these people if they find themselves again and again at a disadvantage?

There is no question but that this phenomenon repeats itself throughout the nation, however widely the number of unchosen may vary from 1st to 5th or more choices, due to the incalculable influence of sexual, economic, racial and other psychological currents. For New York City, with a population of approximately 7,000,000—in regard to the criterion: “With whom do you want to live in the same home”—the above percentages would be as follows: after the 1st choice, 2,835,000 unchosen individuals; after the 2nd choice, 1,900,000 unchosen; after the 3rd choice, 1,540,000 unchosen; after the 4th choice, 1,330,000 unchosen; and after the 5th choice, 1,120,000 unchosen. These calculations suggest that mankind is divided not only into races and nations, religions and states, but into socio-economic divisions. 9 *socio-economic hierarchy* results from the differences in attraction of individuals and groups for other individuals and groups. Whether these differences in attractiveness are intrinsic or not, they have been the greatest deterrents or stimulants of the will to power. It is natural that less attractive individuals and less attractive groups will try to attain, through the arbiter of force or deceit what spontaneous attraction and ability fail to provide for them.

HIERARCHIC SOCIOGRAM



TRIANGLE CHART

The two triangles are constructed opposite each other.

The top triangle represents the field of the positive forces drawing people, individuals or groups, towards one another—choices or attractions (+). The triangle is the hierarchical structure of choice making, the volume of choices moves from the base of the triangle which represents zero choice—the least chosen people—towards the apex which represents the highest choice, the level of the most chosen people.

The bottom triangle gives exactly the opposite reading, the field of rejection (-). The triangle is the hierarchical structure of rejection making. The base of the triangle signifies zero rejection, the least rejected people, whence the volume of rejection moves towards the apex, the level of the most rejected people.

SURVEY OF PSYCHOLOGICAL CURRENTS

The mapping of the psychological geography of a community enables us to survey its psychological currents. Two electric currents produce mutual attraction of their conductors when both have the same direction. They produce mutual repulsion when the direction of one current is opposed to the direction of the other current. Similarly, a psychological current between two groups can be a current of mutual attraction or of mutual repulsion. Although far more complex than in electro-physics, there is also in psychogeography in respect to a certain criterion either a yes or a no, whatever the motivations of this yes or no may be. We call the yes attitude attraction and the no attitude repulsion without implying any specific emotional state. And, as in an electric circuit when the differences of potential and the density of current flow in such fashion along the conductors that a balanced state is produced, we call the attitude that is neither a yes nor a no indifference.

Psychological currents consist of feelings of one group towards another. The current is not produced in each individual apart from the others of the group; it is not ready in everyone only to be added together to result in a sum, as, for instance, anger which dominates each individual of the group to the end that the whole group becomes angry as a totality and each of its members equally angry. The contribution of each individual is unequal and the product is not necessarily identical with the single contributions. One or two individuals may contribute more towards determining what feeling directs the current than the rest. But from the spontaneous interaction of such contrasting contributors powerful psychological currents result. Through the mapping of a psychological geography of the emotions of the Hudson population we were able to study varieties of psychological currents.

Sexual Currents

A group of girls were studied from the day of their arrival in respect to their sexual conduct. They had been assigned to C10,* C11 and C12 which are found on Psychological Geography

* C12, C13 and C14 on Maps III and IV and on the charts of individual cottages.

Map II in Neighborhood II. We found that after a period of from 50 to 110 days 9 of these 15 girls began to show an interest in the colored girls of the neighborhood, as apparent from communications between them. From the motivations given and the evident conduct the current appeared to be sexual. But as we have described elsewhere in this book, the current was a perversion of primary sexuality: it was a substitute current for both groups. The white girls were the active, initiating agents and the colored girls responded after a time: it was a counter current to the spontaneous current of the white group.

This group of nine girls gradually became interlocked with eight colored girls. At the start only two of the white girls, A and B, were individually attracted to two of the colored. Both had had colored boy friends outside. A third, C, was the letter carrier of A and a few days later started to imitate A by courting a colored girl herself. The next "caught up" by the current was E, an isolated girl who received no attention from the other girls of her group. A sixth, F, appeared to break into the current because the housemother was against the practice and F was antagonistic to her. Within three weeks she employed three different girls, G, H, and I, as carriers of her notes, and they finally found pleasure in it themselves. From the side of the colored group, the activity began in C10 with three girls who had received attention before and two who were newcomers. The other three girls were from C7. These 17 girls, white and colored, formed their own network and broke up group lines. They formed a current that led others into its already formed pathway.

Racial Currents

The development of a *racial* current has been followed from its traceable beginnings to an open and manifest stage, see p. 424. The white population, being in the overwhelming majority, produced in the colored group, which composed only 14% of the population, a potential sensitiveness in respect to being regarded as inferior. In the first phase, alternating reactions within a group of girls of C12 formed an inter-racial current of aggression between two gangs, one of dark colored girls led by Stella and another of light colored girls led by Jane; in the second phase, we saw the Stella gang turning aggressive towards the white fore-

woman in the work unit and gradually developing in a terminal phase to a racial current aggressively pointed at a section of the white adult population. The majority of the colored girls until almost the last stage were indifferent or undirected. But the organization of the group was ready: predisposed to the coming development. It appears that, when aggressive currents arise in respect to self-preservation or racial difference, a *very small minority* may come to the front and direct the currents which are set for release.

Social Currents

Map III indicates all the reactions of the girls in each cottage of the Hudson community in the sociometric test on the criterion of living in proximity. It shows into which direction the population of the different cottages gravitate in their desires for a home for themselves. From Map II on p. 426 we can see that the current runs in four main directions. The ones which are the strongest among them run from Neighborhood I and II to Neighborhood III. The third largest stream runs between C1 and C4. Streams of rejections can be traced, the largest going to C12. The mixed currents towards the colored cottages leaves them in comparative isolation. These currents demonstrate that even in a community as simply structured as Hudson there are different social strata, a social hierarchy.

We can differentiate psychological currents (1) according to their causation into (a) sexual, (b) racial, (c) social, (d) industrial, and (e) cultural currents; and (2) according to the principle of their formation into (a) positive and negative currents, (b) spontaneous and counter currents, (c) primary and secondary currents, (d) initial and terminal currents, and (e) main and side currents.

These currents can be measured according to expansion. By examining Map III we see *no* social current can be traced in the Hudson community between members of cottages C12 and C16, C12 and C13, C12 and C6, C16 and C9, C9 and C3, C9 and C13, C9 and C14, C1 and C16. Among these eight pairs of cottages between which no currents could be found, the two colored cottages, C9 and C12, figure seven times. Only the remaining pair consists of white groups. On the other hand, C2 was found to be

the center of social currents flowing from every group in the community. This is a sample of the degree of expansion of currents related to a single criterion. And as the same group can be related also to many other criteria, it can be the crossing point of numerous other currents.

We can measure expansion of currents in relation to a particular group (whatever portion of the group is involved) by determining the number of other groups affected by their currents and figure the average emotional expansion for a group in a given community. For instance, the quantity of the current between C9 and C13 is zero tele; the current from C9 to C6 measures 1 tele; from C4 to C10, 8 tele; from C16 to C14, 19 tele; from C12 to C9, 27 tele. Such figures indicate the crude index of the potential power of a current in the community. Besides this number, the effect of each tele has to be classified and considered to gain a more accurate index of the real power of a certain current. If it is an isolated, sidetracked current, then the ablest individuals with the most influential positions within it will end with the current itself into a blind alley. But if it joins the main current of the community, the same tele as before may produce an effect which is many times more powerful.

Due to pressure within populations the mass of psychological currents going out from individuals is far larger than the amount of counter-currents coming in from the objects of their affection, in response. In this crisscrossing a great amount of emotional energy appears wasted and a great amount of dissatisfaction and frustration seems unavoidable. But perhaps just as we have been able to correct the direction of rivers and torrents, we may be able to correct the direction in which psychological currents flow. Just as there are millions of forgotten, isolated individuals in the world, there may be millions of isolated currents within the world population.

We succeeded in estimating the psychological makeup of these currents—whether the dominant emotion was fear, hate, jealousy, love and so forth, or their microsociological makeup, whether the group subjective notions were clicking, crossing, breaking or bypassing forms of interaction; or their anthropological makeup, whether the dominating role structure was conforming or deviant. This was gained through a combination of sociometric techniques.

These psychological currents do not rest in individuals but run into space and there they do not run entirely wildly but through channels and structures which are erected by men: families, schools, factories, communities etc. They are not produced by boundaries which are erected by nature: climate or race. This is the reason why it was deemed insufficient to present the facts through sociometric equations only. We had also to consider their expansion in relation to the various anchorages of our social and cultural structure. If the sociograms of each individual group of a community were combined into a graph, the sociogram of each family, factory, church, etc., depicting also the psychological currents which flow from individuals in one group to the individuals in the other groups, then a picture of a community results which is geographic and psychological at the same time, its psychological geography. We need to study human nature not only in the aspect of its past, not only from the aspect of its consciousness or unconsciousness, but from the aspect of the *actual presence* of the powerful, psychological currents in whose production each man participates, as however infinitely small an agent.

NETWORKS

The psychogeographic mapping of the community shows, first, the relationship of local geography to psychological processes; second, the community as a psychological whole and the interrelations of its parts, families, industrial units, etc.; third, the existence of psychological currents which break group lines, as racial, economic, social, sexual and cultural currents. But these bonds are not the deepest level of the structure which we have tried to raise. There are still deeper layers. We had suspected that beneath the ever flowing and ever changing currents there must be a permanent structure, a container, a bed which carries and mingles its currents, however different their goals may be. The clue to this hypothesis was furnished by the structural analysis of groups; certain forms (as pairs, chains, triangles, etc., see p. 254) recur regularly and are definitely related to the degree of differentiation a group has attained. The other is the trend of individuals to break group lines as if mysteriously drawn by

certain psychological currents. (See pp. 436). We have found that these currents which break group lines, and even community lines, are not lawless. They are related to more or less permanent structures which bind individuals together into complex lines of transportation and communication, large "networks."

Proofs that Networks Exist

In the fall of 1932 an epidemic of runaways occurred in Hudson. Within 14 days 14 girls ran away. This high incidence was unusual for the community. In the preceding seven months only 10 girls had run away. The rush appeared to be without adequate motivation: the motivations, however convincing for the individual cases, failed to explain the *chain*, the fact that so many felt themselves motivated to run away just at this particular time and within so short a period. To say that it was caused by mass suggestion is not a satisfactory explanation either. Another clue comes from the sociometric classifications and sociograms; they indicate that a far larger number of individuals than those who participated in this chain have shown a sociometric position within the community predisposing them to run away as much as these 14 girls who did. A better hypothesis was that these 14 girls were a part of some *hidden existing networks* and that the rest, who were equally predisposed, were not.

Two girls, LS and SR, ran away on October 31st, from C14. The next day, November 1st, 5 girls from C7 ran away; RT, LC, DD, HN and FL. Four days later, November 5th, 4 girls from C5 followed: HC, HL, ZR and HIL. A week later, November 13th, 3 girls from the colored C12 followed: LW, HL and JN. Thereafter no runaway incident occurred until January 8th, 1933. In the corresponding period for 1931 there were only 3 runaways.

The 14 girls came from four specific cottages, C14, C7, C5 and C12. That they belonged together in a *chain within a network* is supported by the following: Only 2 of the 14 girls, FL and HN, both from C7, had made an attempt to run away before. Chronic centers for running away were thus only in this one set. The other three sets were free of them. HN had made her attempt about 15 months previously when she was in another group. FL had run away from C7 on August 27th, about nine weeks

before her second attempt. The question arises: why did the chain of 14 just described not start at that time? An analysis of the position of the four sets at that period offers an explanation. FL was then in an isolated, insignificant position within C7. It was another girl, CE, who had for weeks contemplated a runaway. She looked for a companion for the venture. On the 27th she confided in FL, who in an impromptu fashion decided to go with her. CE, the source of the inspiration in August, did not belong to the network which we have described above, but to a different one; apparently she did not succeed in inspiring those within it to similar actions. FL herself was not an inspiring center and no current was initiated by her sufficient to sway others to emulate her action. To say it figuratively, *the best road, here a network, cannot make a car run through it. The driver must contribute.* The position of FL in the network was not yet crystallized or established.

We traced the positions of these 14 on the Psychological Geography Map III and found that interrelations existed among the girls who belonged to the same cottage and also between individuals of each of the four runaway sets. We have lifted this network from the map and presented it in Chart I, p. 422. The positions of the sets are seen to be as follows: Set in C14, SR and LS are an isolated pair; set in C7, RT chooses HN; DD chooses HN and DD also chooses LC; FL is isolated and rejects HN, but forms a mutual pair with CE with whom she made an earlier runaway attempt; RT forms mutual pairs with four members of her group; set in C5, ZR is the center of attraction of 6 individuals in her group; ZR forms a mutual pair with HIL and is attractive to HC and HL; set in C12, LW, HL and JN are all isolated but interrelated by indirection. The interrelations *between* the sets are seen to be as follows: LS in C14 forms a mutual pair with LC from C7; DD in C7 is interrelated to ZR in C5; HC in C5 is interrelated to LW in C12; further, LS in C14 is interrelated with SN in C12, who, while not a participant in the runaway, is in a chain relation to JN of C12; also, DD from C7 forms a pair with HL of C12. The main line of the network seems to go from SR to LS in C14 to LC and DD in C7, hence to ZR and HC in C5, and from there to LW in C12.

These relations had been uncovered through the sociometric test in respect to the criterion of living in proximity. *Only a part of these relations are conscious and intentional for every individual in this chain.* For instance, SR is fully aware of her relation to LS and of all the detailed planning developed step by step, up to the goal of running away. But she was, as we ascertained, unaware of the processes going on within the other three sets. LS in turn was conscious of the part she played with SR and as she was related to LC in C7, she was aware that LC was discontented and had ideas about escaping. However, she had never become intimate with LC in reference to running away. LC had also kept it secret from LS that she was entangled with DD and through the latter with HN and RT. Therefore, LS was entirely unaware of the processes between DD and the others; in fact, she was unacquainted with any of them and unconscious of the further entanglements of the set in C7 with that in C5, whose intermediary agent was ZR with whom she was also unacquainted. Similarly, as the set in C14 was unaware of the set in C7 and C5, the set in C7 was unaware of the set in C14 and C12; in turn, the set in C12 was unaware of the set in C7 and C14, and the set in C5 was unaware of the set in C14 and partially of the set in C7.

The individuals of each of the four sets, although living in different sections of the same community at the time before the episodes took place, were absorbed by a similar idea and yet unaware of the fact that the social current flowing back and forth among them had gradually enveloped them, and that it had developed a number of fixed contacts and produced channels through which emotions and suggestive ideas could pass uncensored from one to the other without the majority in the community having knowledge of them.

But when FL was found and returned to the cottage the situation had changed. The publicity which she had received from her first escape brought her into particular contact with four girls of her cottage who ruminated in a similar direction. Thus the set in C7 consolidated itself more and more between August 27th and November 1st. When, on October 31st SR and LS in C14 ran away, the impetus was provided and the suggestive current travelled through the minds of those who belonged to the same

network and who were ready to be "touched off" by the action. If the network would not have existed, the chances are that the runaway pair in C14 would have remained isolated actors: the idea would not have spread.

Another factor is in need of discussion. It is rare that a girl runs away alone. When this is the case, as with BN from C12 on August 29, 1932, or with CI from C5 on November 14, 1931, they are fully isolated individuals. They belong to the few who *fall between* networks, either because they are newcomers in the community or because they did not attach themselves in the community to anyone, perhaps never having the intention to stay. In the 27 months' period studied only four ran away alone. The overwhelming majority went either in pairs or in groups of three or more. The companion or auxiliary ego is for the potential runaway of similar importance as the letter carrier for the "nigger lover".

Further proof that networks exist is shown by the following: a series of runaways which started in C4 with DV, TB and DN on August 18, 1932, did *not* develop into a chain of runaways. On August 27th CE ran away with FL from C7 and on August 29th BN escaped alone from C12. Then the episode died out. The latter, BN, was unrelated to any network and the others did not develop a chain evidently because *no roads were established through which their suggestion could travel unhindered*.

The described runaway chain broke off on November 14th after 14 girls had run away. As the networks to which they belonged consisted of 94 members, 80 more girls were touched by the current and 13 of them we considered potential runaway cases if the intensity of the current had continued with equal strength and if no resistance had developed. But three instances can be considered to have contributed to stop it. One is the added watchfulness of the officers the larger the number of escapes became. Another is that the last set of runaways in the chain came from C12 which is a colored group, and it is just there where the network is *thinnest*. The chances that a new impetus would come from there were poor, as few contacts went from C12 to other parts of the community. Just as an electric current has different densities within a circuit, so a psychological current

has various social densities within a network. Finally, the two girls who had started the chain had been returned to the school and to their cottage, C14, on November 4th, three days after their escape. Their failure and disappointment associated with it now ran rapidly through the same network and caught the same individuals who had received an impetus before. Thus it produced an anti-climax. It could not stop the running away of the set in C5 who escaped the next day, but it may have cautioned and delayed the set in C12 and stopped many potential developments.

Another proof that networks exist is the spreading of news or gossip into a certain direction of the community and not into others. We cite here the case of TL in C8. She had stolen a few things of little value from the school's store with the intention of giving them away as gifts. But before this could happen it was discovered. We followed up how the news of her conduct spread. We followed the expansion of the spreading in three phases, after 24 hours, after one week, and after six weeks. We found that after 24 hours only such individuals knew about it as belonged to the Network II, but not all individuals of this network. With the exception of a few persons, C16, C11, C7, C1 and C2 (C14, C9, C5, CA and CB on Map II) were entirely left out, as they did not belong to this network. After a week the story of her action had reached the entire network, consisting of 86 individuals, and it had filtered into large parts of the second and third networks. Six weeks later no further spread could be ascertained. The incident had apparently given way to news of more momentary interest.

Another instance may be mentioned here of proofs that networks exist. It is the spread of the news in detail of the incident in the colored group of C12 described in a previous part of this book. It was traced to have spread through large portions of Networks I, III and IV, but Network II was left completely out. This was so far below expectation that it demands a special explanation. Besides the current of resistance from the side of the officers to keep an event of such unpleasantness as secret as possible, it may be that the fact that it happened during vacation time, when the school was closed, blocked it. Certain networks were, figuratively, *temporarily disconnected*.

Before we close the discussion on spontaneous spread of rumors, another experiment is worth reporting in which the rumor was "planted". We were aware that rumors passed continually back and forth from mouth to mouth. *The object of the experiment was to demonstrate that these rumors followed the paths of the networks which we had mapped.* The experimenter entered Group I and approached an individual, M, who, according to the map, belonged to Network A. M was a key individual, that is, he was linked up with 22 other individuals, some of whom belonged to his Group I, and others to Group II, III, IV and V. *M was chosen to be the person with whom to start the spread of a rumor, which concerned a leading personality in the community's administration.* We had found that, in networks comprising more than 100 individuals, only very few participated in any one other network. It seemed, therefore, that the chances were that the rumor would spread with ease and speed through M's own network, Network A, and then would need a longer time to filter through to the other networks. We assumed that it would take its longest time to reach Network E, into which there was no overlapping from Network A. It was gratifying to see our assumptions verified with great accuracy. Check ups from time to time showed that the rumor was, indeed, following the paths we had expected it to follow.

Causes and Organization of Networks

The network is related to the currents which run through it as a glass is related to the water which fills it except that the network is molded by the currents and the glass is not shaped by the liquid it holds. The psychogeographical network is analogous to the nervous system, whose network is also molded by the currents that run through it. It cannot be compared, however, with a telephone system, as the latter is unrelated to the currents which run through it, it is not molded by these currents. According to the principle of the forming of social atoms, each individual is related to a certain number of individuals; the majority of individuals in his community are "left out," that is, no tele related him to them. This is the sociodynamic cause for the development of networks. The existence of communication tracks such as

networks, is an indirect proof of the powerful influence which social atom formation exercises upon community organization. Another cause of their existence is the economic principle of producing the greatest effect with the least effort.

There are still other causes responsible for the organization of a particular network. We have found, for instance, that certain psychological currents produced by certain emotional states and attitudes are, even towards the regular networks, occasionally selective. In general, news, gossip, ideas, all external and factual matter and all intimate matter which does not hurt its reporter pass without resistance through the networks as we have described them. But if it comes to a certain secret activity concerning sexual, racial, or political activity, this does not filter through even the regular and established parts of the networks. We followed up this phenomenon in reference to the love making between colored and white girls and in reference to the secret intention of running away, activities which were severely criticized by the housemothers and other staff members. Participants in these activities always have to be on guard against a squealer. The housemother tries at all times to find out through a trusted girl which girls of the family have the intention to run away, and her trusted girls try instinctively to get in touch with the girls who belong to the network in which such ideas are simmering. A careful housemother is also always on the watch to find evidence of sexual interests, as love notes, etc. For these reasons the girls are on guard against getting a bad reputation. In her anxiety to hide her activities she produces an instinctive reaction against the networks as if she would sense that networks exist and that they are her greatest enemy; it is as if she would dread the nets which would automatically spread her ideas to individuals who may report the facts to their confidants or to the staff. She cannot eliminate these networks, as they are co-produced by her own emotions. But she may try, in collaboration with her companions, to keep information away from certain untrustworthy individuals in her network. This attempt of hers is, of course, the less easily met with success the larger the networks. Thus the effort to keep a secret and to limit information to a selected group usually ends in failure. One day it filters into the general networks. How-

ever, these finer nets within the networks exist and are an important psychogeographical organization. They are like *private* roads with different labels saying in which direction they lead. One has a label, sex; another has a label, runaway; another has the label, staff versus girls; another has the label drug addiction, communism, fascism, or any activity considered subversive in the particular community. Ideas in regard to these cannot be conveyed to everybody, not even to friends, or friends of friends. It is like having "private" telephone numbers which are not listed in the telephone directory.

Technique of Determining Networks

We followed on the Psychogeographic Map III each tele which went out from a member of any group to a member of any other and from this person on to a member of a third group, and from this person on to a member of a fourth group, etc., as long as the mutual chain continued. We counted only such persons as belonging to the same network who were interlocked, irrespective of the cottage in which they lived (see Map V, p. 429). This can be called the *main line* of the network. Then we followed up each member of this main line of the network and counted those individuals within her own cottage who were directly related to the member of the related network. These branches formed the *side lines* of the determined network. It is understood that again each individual of a side line was followed up to determine her contacts to members of other cottages, and if such new members of the network were found in other cottages, the same applied to them.

We began the count with certain individuals in C4 who share tele with a number of individuals in C1, who in turn share one part of their tele with individuals in C6, C7 and C16. These, in turn, send a fraction of their tele into C9 and C11, forming a network which, like a subway, connects many sections of the community. We found several of such networks in Hudson. In C4, the same cottage in which this particular network has members, a number of individuals not directly related to the network participate in a second network with groups of individuals in C3, C6, C9 and C14, forming Network II. The individuals belonging to it

are, in general, different from the ones involved in Network I. We say "in general" because they are by no means completely cut off from them; for instance, in C1 some of the same individuals share in four different networks. But not every group is so promiscuous. Except for small bridges crossing between these networks, we are able to subdivide the whole community into five more or less distinct bundles: Network I, consisting of 94 individuals; Network II, 85 individuals; Network III, 81; Network IV, 67; and Network V, 60 individuals.

Unavoidably, the larger a network is the larger becomes the number of *dead links*,—that is, the number of relations which are not reciprocally effective, so to speak: emotions which run without registering in the intended other person. They can be called "resistance links" and their sum of resistance is caused by the intrinsic character of the network. This factor is practically negligible in small networks, but in larger ones it plays a definite rôle. The larger the network is, as in the organization of cities or political parties, the larger may become the influence of this resistance within it.

Function of Networks

A certain constancy in the organization of a community is the condition of free and independent life of its members. The mechanism which makes this constancy possible in a community is its networks and the psychological currents which flow through them. This form of free and independent life for the single individuals is the privilege of such communities as have reached the heights of complexity and differentiation. Therefore, societies which are lacking in constancy and differentiation are unable to offer its members the privileges of free life, as we have demonstrated in the organization of child societies. These are less constant and less differentiated, especially below the eight-year age level, and therefore the members are unfree and dependent, just as the groups which they form are dependent upon the more highly differentiated ones. The networks also have an architectonic function in the community. By virtue of this they are the controlling factors of its development. The older and the more mature the society is, the more the entire network system becomes a controlling super-organization.

The local district or neighborhood is only physically one unit. This analysis shows that it is broken up, not, however, into small units, but into parts which have their corresponding parts in other districts and neighborhoods. The local districts are, so to speak, transversed by psychological currents which bind large groups of individuals together into units, irrespective of neighborhood, district, or borough distinctions. These networks are the kitchens of public opinion. It is through these channels that people affect, educate, or disintegrate one another. It is through these networks that suggestion is transmitted. In one part of a community a person has the reputation of honesty; in another part, of dishonesty. Whatever the actual facts may be, this reputation is due to two different networks in which travel two different opinions about him. In Hudson the suggestion may go through them to run away; in the world at large the idea of war may spread. These networks are traceable and we may learn to control them.

LAW OF SOCIAL GRAVITATION

We have accumulated in this volume two series of data. One series has a temporal aspect. It is concerned with distinctions found in group organizations according to the developmental level. It suggests that the most differentiated forms of group organization have evolved from the simplest (sociogenetic law).

The other series of data has a spatial aspect. It is concerned with distinctions found in group organization according to the population make-up in different geographical areas. The distinctions precipitated by spatial proximity appear very early in the development of groups—horizontal and vertical differentiation (see Sociograms, p. 151 to p. 152). The further differentiated a society becomes the more numerous and varied will become the social atoms it produces, and with them, the more differentiated will become the organization of the groups formed by them; further, the more varied and differentiated will become the collectives contained within them. The differences in group organization take place on different developmental levels, as the individuals and the interactions among them mature (see p. 153). In sociometric geography the differences in organization develop from contacts between near and distant collectives. But the farther apart one group develops from the others through certain dis-

tinctions, the more it tends to become isolated from it. In fact, we can well picture a society in which numerous groups have reached this status of isolation and self-sufficiency. It recalls to us the analogous situation of isolated individuals, individuals who have become isolated through a sort of self-sufficient superiority or through insufficient tele relations with other individuals. These isolated groups then develop more and more an introverted, centripetal organization; but when this type of organization is not attainable or when, after it is attained, frictions grow within it at the same time, then a part of the group—due to rapid increase in population accompanied by mass starvation, a surplus of leaders or to whatever other causes—may turn to the outside, become aggressive and eventually carry the entire group with them, the group as a unit exhibiting all the signs of an extroverted organization.

But these processes of horizontal differentiation do not go on unbounded. After a certain point of expansion is reached we can observe the development checked by a counter process. As described, psychological currents have a spatial pattern of distribution between individuals and groups which are differently located. As we have seen, the greater the variety of psychological currents uniting and dividing parts of the population, the greater appears the tendency to develop roads for them through which they can travel—networks. The dynamic character of psychological currents which drives individuals and groups towards further and further differentiation produces also its own barriers and controls. One process, the process of differentiation, draws the groups apart; the other, the process of transmission and communication, draws the groups together. These alternating rhythms of forces, shrinkage and expansion, suggest the existence of a *law of social gravitation*. A sociometric hypothesis of social gravitation can be formulated as follows: People 1 (P1) and People 2 (P2) move towards each other—between a locality X and a locality Y—in direct proportion to the amount of attraction given (a_1) or received (a_2), in inverse proportion to the amount of repulsion given (r_1) or received (r_2), the physical distance (d) between the two localities being constant, the facilities of communication between X and Y being equal.

Including number and distance it reads as follows: People 1

(P1) and People 2 (P2) move towards each other in direct proportion to the amount of attraction given (a1) or received (a2), in inverse proportion to the physical distance (d) between locality X and locality Y, the residences of P1 and P2 respectively, the facilities of communication between X and Y being constant.

RESEARCH PROJECTS FOR READERS OF SOCIOGRAMS

I

QUANTITATIVE ANALYSIS OF SOCIOGRAMS

An individual portrays in a sociogram four ways in which he may react to any other individual—*choice, rejection, indifference and overlooking* (indifference is an “expressed” relationship, overlooking is “not noticing”). For any dyad there are therefore 16 types of relationship possible:

<p>A chooses B and B chooses A A chooses B and B rejects A A chooses B and B is indifferent to A A chooses B and B overlooks</p>	<p>A overlooks B and B overlooks A A overlooks B and B chooses A A overlooks B and B rejects A A overlooks B and B is indifferent to A</p>
<p>A rejects B and B rejects A A rejects B and B chooses A A rejects B and B is indifferent to A A rejects B and B overlooks A</p>	<p>A is indifferent to B and B is indifferent to A A is indifferent to B and B chooses A A is indifferent to B and B rejects A A is indifferent to B and B overlooks A</p>

II

STRUCTURAL ANALYSIS OF SOCIOGRAMS

1. Select from the sociograms *isolated* or *unchosen* individuals and discuss the advantages and disadvantages of their sociometric status. Compare the "voluntary" with the "involuntary" isolate, in our own and in other cultures, for instance, the status of the *solitaire* in our American culture, with the one in Hindu culture.
2. Select rejected and rejecting individuals; discuss their sociometric status by comparing it with their actual behavior in the cottages (an illustration is SL, C10).
3. Select dyads, triangles, chains or stars and compare their sociometric status with their actual behavior in the community (an illustration is the Runaway Dyad, C14, p. 396; see also the Runaway Sociogram, p. 422 and text on p. 444).
4. Redraw every sociogram so that there are a minimum of crossing lines and with the subgroups clearly arranged.
5. Transform every sociogram into a sociomatrix.

III

CLUES FOR GROUP PSYCHOTHERAPY, PSYCHODRAMA,
ROLEPLAYING AND SOCIODRAMA

Study carefully the sociometric structure of every home and workgroup given beneath each sociogram (from p. 265 to p. 282) and point out the clues which it gives for using:

1. Group psychotherapeutic methods as discussion, interview or activity methods to resolve existing conflicts.
2. Roleplaying, psychodrama or sociodrama procedures.
3. Reconstruction methods of entire groups.

IV

SOCIOMETRIC INDICES

Ratio of interest for own group = Sociometric choice status of an in-group structure (concentration of inside choices)

Illustration:

N_1 = size of small group, f.i., 26 members

n = number of choices allowed, f.i., 5 choices

p = actual number of choices received from own group, f.i., 43 choices

$$I \text{ (interest)} = \frac{N_1 \cdot n}{p} = \frac{26 \times 5}{43} = \frac{130}{43} = 33\% \text{ of choices go into own group}$$

Ratio of attraction for outgroups = Sociometric choice status within entire community (concentration of choices upon a given group)

Illustration:

N = size of entire population, f.i., 435 members

N_1 = size of a single group, f.i., 17 members

n = number of choices allowed per individual, f.i., choices

p_1 = actual number of choices received from all other cottages, f.i., 25

$$A \text{ (Attraction)} = \frac{(N - N_1) \cdot n}{p_1} = \frac{(435 - 17) \times 5}{25} = \frac{2090}{25} = 1.2\%$$

Figure out on this basis:

1. The sociometric choice status of a total group, inside and outside.
2. The sociometric rejection status of a group.
3. The sociometric rejection-indifference status of a group.

V

SOCIOMETRIC GROUP COHESION

The hypothesis has been formulated that the larger the number of mutual pairs the wider will be the rate of interaction and the probability of a high group cohesion. The larger the number of individuals involved in positive tele communications the greater the group cohesion. There are, however, important limitations to this hypothesis. There is, for instance, the possibility that 12 individuals form 6 dyads, each isolated from the other; such a group would be of low cohesion notwithstanding its comparatively

high dyad formation. The number of dyads must be *larger* than *one half* of the membership in order to eventuate triangles, chains, stars and more complex structures.

Figure out the possible sociometric combinations between 12 individuals, each being allowed from 1 to 3 choices and the effect of these structures upon group cohesion.

VI

STATISTICAL FOUNDATIONS OF SOCIOMETRY

In order to calculate the probability of an individual being chosen by another individual deviation from chance can be used as the common reference base. I have been posing three questions: 1) the probable number of children who by mere chance selection would be picked out by their fellows, not at all, once, twice, and so on; 2) how many mutuals are likely to occur; 3) how many unreciprocated choices can be expected on a chance basis. Using the binomial formula $(p + q)^n$. These questions have been answered, see p. 628 to 630.

The average number of mutuals in chance experiments allowing three choices to a population of 26 was found to be 4.3. The theoretical findings showed 4.68 under these conditions of three choices within a population of 26 persons. The number of unreciprocated structures in the chance experiments is 69.4. The theoretical results show 68.64 under the same conditions. In the sample studied the probability of mutual structures is 213% greater in the actual sociometric configurations than in the chance configurations and the number of unreciprocated structures is 35.8% greater by chance than actually. For further discussion, see p. 626-628 and Bibliography.

BOOK IV

CONSTRUCTION AND RECONSTRUCTION
OF A COMMUNITY

THE ASSIGNMENT MYTH

Religion has given us a wonderful myth. Long before we are born we live on another plane in Eden and the wise father of the universe, who sees all the beings who are born and who are not born and who knows all the needs on earth and elsewhere, decides where we should be placed, on which planet, in which country, and in which family. This story can be called the "assignment myth." It wants to make us believe, at least for a moment, that our arrival into a special environment is not a genetical-social product but it is the best and wisest choice for us, that it is our assigned place. Should we take this myth as a prophecy that men will one day turn this scheme of the creator into truth?

The most fateful moment for a man is his entrance into the world. The biological process of reproduction is over and the process of living in this world, of unfoldment, begins. But, as a fatalistic consequence of reproduction, his parents and guardians are identical with his procreators and with them the first social organization in which he grows up to be a person. *Parents are given instead of chosen.* It is curious that this first commandment in the social domain sounds so much more provoking than that other commandment in the biological domain—procreators too are given but not tested. But with whom we should live and whom we should emulate is not less pertinent than who should live or who should survive. It is perhaps more obnoxious because in the first instance a human pair is endowed with or deprived of an opportunity only, but in the second instance a reality is given or taken away from them. The born child is regarded as a possession, as a property, perhaps as a reward for the suffering and sacrifice entailed in giving it birth. This feeling has a counterpart in the relation of the creator to his work. He, too, is inclined to regard his work, his child, as his property. But both the parents and the creators are most humanly the victims of the same lust which can be called the *parental illusion or syndrome.* It is an

emotional illusion in the first case, predominantly an intellectual, in the second. This may deserve a broader explanation.

A creator, as soon as his work has emanated from him, has no right to it any longer except a psychological right. He had all rights upon it as long as it was growing in him but he has forfeited these as soon as it is gone out of him and becomes a part of the world. It belongs to universality. An individual is rarely aware of the position he holds in the cultural currents of his community, of the vast material he continuously absorbs, material produced and oftentimes shaped by thousands of other individual minds to whom he is anonymously indebted. However central his position is within myriads of currents, the material of his work is contained and predisposed within universality. This is far more literally and more deeply true with the parent. Biogenetics is still in its infancy, but we know that the units which go into the making of a child are not the product of the two individual parents. Continued genetic research may teach that their biological contribution is more pertinent than we think today, but still cannot be but small compared with the contribution of the whole kind, of mankind. Just as the creators of works, parents have no right upon their offspring except a psychological right. Literally, the children belong to universality.

We array these facts not for the advocacy of a Platonic or Communistic utopia. "All" is as good as nobody. And universality is flat. Or more precisely, children cannot live with and emulate universality. Furthermore, during the pre-socialized period the child's need of a guardian is obvious. It is not the abdication of the individual parent but his clearer definition which we propose. Parenthood cannot but continue to be an individual parent and an individual matter. Observation of the relations between children and adults throws further light upon this subject. We know about parents who are careless of and cruel to their own children, and we know about childless people who become their most useful parents. The instinct for reproduction and the instinct for parenthood are not identical. We propose, therefore, the specialization of the notion of parenthood into two distinct and different functions—the *biological* parent and the *social* parent. They may come together in one individual or they may

not. But the problem is how to produce a procedure which is able to substitute and improve this ancient order.

The first situation which awaits us when we enter the world is duplicated again and again throughout life. Brothers and sisters are given instead of chosen, our colleagues in school, our comrades in factories or in business, and so on. We see our universe consisting of organizations which are either molded by mechanical and economic pressure, as the factory, or by biological pressure, as the family, but we do not see man's own world realized. Yet if we want to make a world after man's own feeling we have to have first a sociometric society.

A community like Hudson offers sociometry an unusual problem, as it has two deficiencies: 1) the biological set-up which controls the community at large is absent; 2) the economic set-up which dominates the community at large is also absent. But exactly these two disadvantages make it possible to concentrate on one front, the sociometric, which in the community outside is continuously crushed in its expression by the pressure of these two major issues. A community is here given free from blood relations and free from economic relations at the same time. In this community, to find the realization of and the proper treatment for the needs of the population and to find the government for it, is one and the same thing. In contrast to the principle of building the state on the biological basis primarily or of building it on the economic basis primarily, the principle is here attempted to build the Hudson community on the sociometric basis primarily.

It is on the basis of the analysis of this community that a therapy of the community as a whole has been attempted. To the tests which analyze the organization of groups correspond techniques which aid to produce and to organize the various groups necessary to the community. To the tests (Spontaneity and Role Tests) which analyze emotional, social, and vocational abilities correspond techniques which aid to shape and to develop these abilities. To the tests which analyzed the psychological currents of a community correspond techniques which aid to direct, to shape, to control, and to produce such currents. In other words, the *analytical* unfoldment of the community which has been presented up to this point, phase by phase, beginning with the home

and ending with its sociometric geography, is complemented now by the *positive* unfoldment, the steps which have been taken to create a community according to sociometric principles.

SOCIOMETRY OF INITIAL CONSTRUCTION

THE SOCIOMETRIC FAMILY

Two persons, a man and a woman, go one day to a city hall to be united as man and wife by a justice of peace. Love and reproduction takes care of the rest. Thus people become parents and babies become their children. Love for the child goes a long way in shaping that unique relationship which is still the cornerstone of our community life, the interrelationship of child and parent. This love is already present long before the child is born and runs to true performance from the moment that the child is born.

From all over the state children are sent to Hudson because for one reason or another they have lost or forfeited their parents and their belonging to a natural group. Within the scope of a few miles these children, numbering in hundreds, are gathered together. On the other hand, a number of women are appointed by the state to be mothers to these children. But how should we bring these people and these children together if not by force or mechanical regulations? Where is the mother cry here, the instinctive mother attachment a child shows to its natural mother? Where is the call to become a mother to a particular child among the crowd of children?

It was meant to provide these children with a situation which was equal to or better than the one which the children had outside. The process of natural development of a family has to be duplicated, but as the natural means of attachment are here cut off, we have to replace them *synthetically* with something which is equally efficient. Thus we have to strive after the ideal to fit a child to a mother as well as a child is fitted to its natural mother and to fit a child to the other children here as well as a child is fitted to its brothers and sisters in a natural family. The question is how do we know which parent is desirable for which child and which child is desirable for which other child?

PARENT TEST

Technique

The Parent Test is so designed that all girls newly arrived at the community are brought face to face with all the housemothers who have a vacancy in their cottage. As the test is so delicate in nature the technique of arrangement is most important. A meeting is called at the Receiving Cottage to which only the participants are invited. First the tester addresses the new girls with these or similar words: "You will meet a number of ladies, each of whom is willing to act as your parent during your stay in Hudson. You have an opportunity to choose your housemother and to decide to whom among them you feel most attracted. They, of course, have the same opportunity to express their opinion before they take you into their house. It is a serious matter. You have to visualize that you are going to decide upon the person towards whom you are so drawn that you feel that you can confide in her as in a mother and from whom you would be glad to take advice, and also that you decide upon the person with whom you shall live together until you have finished your training in Hudson."

The tester then addresses the housemothers with these or similar words: "A number of new girls have come to Hudson for training. You have chosen to act as their parent during their stay. You know well that a discordant home is of the greatest disadvantage for a child and that a harmonious home is the greatest blessing for it. We want to know your reaction to the child before she is sent to your house. This, for two reasons: You may feel attracted to one child more than to another and you may feel better able to help one child than another. Then, too, you know your family. You may feel that one child is better fitted to adjust to your group of girls than another child. Talk with each of the girls freely and make your judgment as spontaneously as it arises."

The new girls act as hostesses and receive the housemothers as their guests. Each girl entertains one housemother at a time in her room. It is important that these two are left alone so that they can come into rapport. In succession one housemother after another converses with each girl until each has met every new girl.

The tester then approaches the housemother and the girl *im-*

mediately after they have finished, to get the fresh, spontaneous impression of each separately about the other. After all the meetings are over and the tester has received the impressions from each of the pairs, the tester comes back to each girl to ask: "Whom of these ladies would you like to have as your house-mother?" After she names one, the tester continues: "If, for some reason, you couldn't have this housemother, to whom else would you like to go?" After the child names a second house-mother, the tester continues: "Should it not be possible to place you with this housemother, is there any other woman among them whom you would choose?" After the child has named a third, she is asked to give free expression to her feelings concerning each of the women she has met and her motivations for feeling more drawn to one than to another. Each statement of the child is recorded in her words and in her presence. The children have no suspicion as they know that it is a procedure constructed with the aim to advance their own longings.

The tester then comes back also to each of the housemothers and asks: "Which girl would you like to have in your family?" After she names one, the tester continues: "If, for some reason, this child cannot come to you, whom else would you like to have?" After she names a second child, the tester continues: "If neither of these girls is available for you, is there any other newcomer whom you would choose?" After the housemother has named a third, she is asked to give her impressions of each of the girls and the motivations for her preferences. She has no suspicion towards the tester, as she knows that the greater her sincerity, the more she is apt to receive the child of her choice.

Method

The crudest form of assignment and the one overwhelmingly in use in our institutions is that based upon the fact that there is a *vacancy* in a particular cottage or dormitory. The individual has "to stay put" in this placement until he is released. This is the logical outcome of the procedure which treats the individual singly, whether through psychoanalysis, hypnosis, suggestion, or whatever, and not as a part of a group. Only when disagreeable incidents take place between two or more inmates who have been

placed together does the administration become aware of the fact that they do not "get along," and if other means, as personal influence or punishment fail, they are separated. The tendency is always to make as few changes as possible. It is expected of an inmate that he "stay put." This attitude towards the population can be observed in penal institutions, reformatories, training schools, hospitals for the insane, orphanages, etc., but also in our public schools, factories, and business offices. There have been exceptions from this rule, especially in the training school field. Based upon a sort of "trained intuition" gained through experience, a child is placed in a cottage into which she appears to be well fitted. These placements sometimes meet with success and sometimes with failure. Yet, as the procedure is not based upon socio-analytic principles, we are not able to learn anything in either case. And even when these intuitive assignments are recorded and an attempt is made to determine the reasons for success or failure in each case, the results are meager, due to the complexity of the factors which enter into the situations. As we have found through our own experience with this method, we run the risk of making early generalizations in theory and snap judgments in practice. In the wilderness of factors which might have an effect upon the situation we miss an archimedic point in which a methodology of assignment could be anchored.

We searched for a procedure which might substitute the trial-and-error method by an *organic* method of assignment. It was then that we paid closer attention to the choice factor in the interrelation of individuals. It appeared to us that an assignment without the reactions of the individuals who are to live together with one another being known, deprives these individuals of expressing their feelings in a, for them, fundamental situation and deprives us of an equally fundamental method of inquiry. The assignment of a child who comes into a training school to an appropriate cottage is a most important matter—the more so as she must have been poorly "assigned" to a family outside or she would not have been sent to an institution. To leave, then, this "therapeutic assignment" to an individual, be it now a psychologist, a social worker, or whomever, is to base it upon the emotional reactions of this individual towards the housemothers of the

different cottages and towards the newly arrived children. It is equal to giving some individual dictatorship powers over situations in which the wisest person may err. But the emotional-social reaction of the individuals who have to live together towards one another may be important and significant. Instead of putting an individual like some merchandise into a situation with other individuals who had been put there before in the same manner, they can be brought together to a test.

The notion of "staying put," that is, to stay and to be stable wherever you are and under all circumstances, has had a similar history in the field of marital relations. Until not so long ago for most of humanity, and still practiced here and there, marriages were made by parents. The emotional reactions of bride and bridegroom towards each other were discounted. Although marriages are made in civilized countries today largely through the choice of the participants, no scientific study has been made so far of the emotional-social reactions and motivations of couples about to be married. It is probable that the application of the sociometric test to this problem would increase our insight into the causes of marital failures.

We have made the meeting of the individuals who are to live together or to work together, or in respect to any other criterion, the first step in the sociometric procedure. If the individuals had not met each other before, we called their reaction towards each other *spontaneous* (spontaneous interaction), and their placement initial assignment. If the person to be found for the newcomer was to act as parent, we called the procedure a *parent* test. If the persons to be found for the newcomer were to act as siblings, we called the procedure a *family* test. In this manner the tests have been constructed to meet the needs of the individual.

Initial assignment of an individual to a cottage upon her arrival at Hudson is based upon (a) the Parent Test; (b) the Family (or Cottage) Test; (c) the organization of every home group as determined by the sociometric test; (d) the organization of the individual's home group outside and (e) psychodramatic tests.

Application of the Test

The following is a sample of the test and its procedure. Eight children, Louise (age 15 years), Dora (15), Hazel (16), Lena

(14), Adeline (13), Evelyn (16), Shirley (14), and Muriel (13), were newly arrived in Hudson. There were vacancies in C2, C8, C9, C11, C14 and CB (C4, C10, C11, C13, C16 and C2 elsewhere in the text and on the charts of individual cottages). The housemothers of these six cottages came to the meeting. The test results for each child are illustrated in the sociograms on p. 489-496.

A crude analysis of these sociograms indicates a different *mother* reaction for each of the children. From the eight children, only one, Muriel, was not wanted by any of the housemothers present. The other seven were wanted by at least one of the housemothers. But a second child, Shirley, remained isolated because she did not want the only housemother who wanted her, the housemother of C8. Thus, out of eight girls, six formed six mutual attractions with five different housemothers. Two of the children did not click. Among the six housemothers, only one, the housemother of C9, failed to click, although she was wanted by one child, Lena. We see, so to speak, one housemother and two children eliminated from the test. A closer analysis of these reactions between the housemothers and children indicates numerous fine distinctions made by them. There are only two children, Dora and Adeline, and only two housemothers, one of C8 and the other of CB, who want each other respectively by first choice. Hazel is drawn to the housemother of C14 and the latter to her, both by second choice. Lena is drawn to the housemother of C11 by first choice, but the latter is drawn to her only by third choice. Lena also exchanges second choices with the housemother of C2. Louise exchanges second choice with the housemother of C8, who wants her second. The one whom she wants first, the housemother of CB rejects her. Evelyn exchanges third choices with the housemother of C8.

We see further how varied the degree of attractiveness can be. Dora is chosen first by two of the housemothers and second by two others, rejected by one and one is indifferent to her. Louise is chosen first by two housemothers, second by two, rejected by one and one is indifferent to her. Lena is wanted second by one housemother, third by two, rejected by one, and two are indifferent to her. Hazel is wanted second by one housemother, third by one, rejected by one, and three are indifferent to her. Evelyn is wanted third by two housemothers, rejected by one, and three are indifferent to her. Adeline is wanted first by one housemother and five are

indifferent to her. Shirley is wanted fourth by one housemother, rejected by one, and four are indifferent to her. Muriel is wanted by none, rejected by four, and two are indifferent to her.

Another characteristic reaction is the force of clicking an individual has. Dora clicks with two out of the five housemothers who want her; Louise, with two out of four; Lena, with two out of three; Evelyn, with one out of two; Hazel, with one out of two; Adeline, with one out of one; Shirley, with none out of one; and Muriel, with none out of none. The force of clicking is likewise characteristic for the different housemothers. The housemother of C9 is wanted by one and clicks with none; the housemother of C8 is wanted by six and clicks with three; CB's housemother is wanted by five and clicks with two; C2's housemother is wanted by one and clicks with her; the housemother of C14 is wanted by four and clicks with one; and the housemother of C11 is wanted by six and clicks with but two. This discloses that far more emotional efforts are made besides those which are successful and click. It indicates the tendency of emotion to expand further than the possibility of its satisfaction. It appears that a certain amount of emotional striving is always wasted. This is the sociometric counterpart to the observation of Malthus that populations tend to increase faster than the means of their subsistence.

The emotional-social reaction of each housemother towards the given group of children can be classified with the following "sociomatrices" which include also the reactions of the children towards her.

Housemother of C8:

PARENT TEST

Sends choices to 4	Rejects 2 (Indifferent 2)
Receives choices 6	Rejected by 0 (Indifferent 2)

		P	
C11:	3		3 (2)
	6		0 (2)

		P	
CB:	3		1 (4)
	5		1 (2)

		P	
C14:	2		1 (5)
	4		1 (3)

C2:	3	P	3 (2)
	1		2 (5)
C9:	2	P	0 (6)
	1		2 (5)

Interpretation

Our experience to date with the Parent Test indicates that mutual rejection between housemother and child is the poorest risk for assignment. If the housemother rejects the child, although the child may want her, such an assignment is still a poor risk. If the housemother wants the child but the child rejects her, such an assignment is a better risk than in the two previous instances. If the housemother and the child attract each other mutually, this is the best risk of all for a successful assignment, particularly if they have chosen each other by first choice. These rules are valid if all other circumstances are equal: that is, if the motivations behind the attractions do not point to disadvantages for the child, as, for instance, a housemother wanting a mentally retarded child because she thinks she would make a willing slave for her, or if other tests do not suggest other assignments which are better. If one or another individual appears as a poor risk for assignment after the Parent Test, she may still change her status through evidence in other phases considered in initial assignment.

Muriel appears unassignable to this set of housemothers as she is rejected by all those whom she wants. Shirley, too, appears unassignable to these housemothers. One housemother wants her as a fourth choice, but Shirley is indifferent towards her, as she is towards two others; those she chooses are indifferent to or reject her. Dora appears best assigned to the housemother of C8, with whom she has a mutual first choice. She appears also to be assignable to the housemother of CB, although less well. She also appears assignable to the housemother of C11, who wants her by first choice, but Dora is indifferent towards her. She does not appear assignable to C2, C9 and C14. The decision for her assignment has to be made between C8, CB and C11. The best assignment for Adeline appears to be CB, with whose housemother

she has a mutual first choice. No other cottage among those in the test can be taken into consideration. Louise can be assigned to C8 or C11, with whose housemothers she forms a mutual attraction, or perhaps to C2, whose housemother wants her, although she is indifferent to her. To the others she cannot be assigned. Lena can be assigned to C2 or C11 on the strength of the housemother test, as she forms mutual attractions with both housemothers, but Hazel can be assigned only to C14 and Evelyn to C8.

FAMILY TEST

The child has to be placed in a cottage not only with the housemother but with all other girls who form the family. We have demonstrated that children from a certain age level on tend to develop social groups of their own independent of the adults who are in contact with them, and that these groups become more and more differentiated the older the children become and deeply affect their conduct. The attitude the group assumes towards the newcomer largely determines what adjustment the newcomer makes. The Family or Cottage Test is designed to determine what group appears to be best fitted to her.

Method

From each cottage whose housemother was a participant in the Parent Test the tester selects one girl who represents the general tone of the cottage. The better adjusted the girl is within her cottage, the more will she be able to react towards the new girl not only for herself but also for the other members, and the more articulate she is the better will she be able to express her reactions. Besides the analytic function to give the emotional-social reaction of the cottage family as a whole, the representative girl has also the productive function to break into her group the newcomer to whom she feels especially drawn. As the housemother is a permanent member of the group, her reaction pattern in the test situation is within a certain range more or less inflexible. To balance this it is desirable to make the Family Test as flexible as possible. A different girl from each cottage represents the

group at each Family Test, and each member has at some time the opportunity to break in a new girl into her cottage. This has the added advantage that no one girl can gain an exceptional prestige through being called to be a representative. If, due to the inability of certain members to express their reactions, this desirable technique cannot be fully carried out, then at least every individual who holds a key-position in the group should at some time become a participant in the test. Through this procedure the population itself becomes active agents in the formation of its groups.

Application of the Family Test

The Family Test is given in a similar manner as the Parent Test, except that instead of the housemothers the representative girls from each cottage take part. The tester addresses the representative girls in these or similar words: "A number of new girls have come to Hudson. You were once newcomers yourselves and you remember how it felt. You remember how important it was then to start off right, to feel welcome, and to get into the right cottage. Converse freely with each of them. You may be attracted to one and able to help her. You know the other girls of your group. Try to visualize how each new girl would fit in not only with you but also with them. Talk to each girl and make up your mind to whom you feel most attracted."

The representatives of C2, C8, C9, C11, C14 and CB were respectively Ruth, Leona, Harriet, Marion, Alberta, and Katherine. The reactions of attraction, rejection or indifference given by them and by the new girls in relation to each other are charted in the sociograms on p. 489-496.

As indicated in the sociogram, Dora has a mutual attraction with Leona of C8 and with Harriet of C9. She is chosen by three other girls, but she is indifferent to or rejects them. According to the rule before mentioned, the assignment of Dora to Leona is the best risk, as their mutual attraction is a first choice. The assignment to Harriet is less desirable, their choices being respectively third and second. Marion of C11, Alberta of C14, and Ruth of C2 do not click with Dora and so cannot be considered in her assignment. Katherine of CB is indifferent to Dora, who

chooses her second. Therefore the decision has to be made between C8 and C9.

Adeline indicates mutual attraction, first choice and second in return to Katherine of *CB*. Her relations to the girls from all the other cottages are discordant. The only assignment which appears desirable on the strength of this test is *CB*.

Louise shows a mutual attraction, first choice, with Harriet of C9; mutual attraction with Ruth of C2, third choice from Louise and first choice in return; mutual attraction with Marion of C11, second and first choice respectively; the relation towards the three other representatives is discordant from Louise's side. On the basis of this test, the decision has to fall between C9, C11 and C2.

Lena shows mutual attraction with Ruth of C2, third from Lena and fourth from Ruth. All other relations are discordant in reference to C9, C8 and *CB* from both sides; in respect to C11 and C14 from the side of the cottage. On the basis of this test the best assignment appears to be C2.

Hazel indicates discordant response to representatives of each cottage present. On the strength of this test the best assignment appears to be C14 as the only mutual relationship is to the housemother of this cottage.

Evelyn indicates a mutual attraction with Leona of C8, second and third choices respectively. All other relations are discordant. On the findings of this test the best assignment of Evelyn appears to be to C8.

Shirley shows discordant relations with representatives of all the cottages present. On the strength of this test no assignment to these cottages is indicated as desirable.

Muriel indicates mutual attraction with Ruth of C2, first choice from her and fourth from Ruth; mutual attraction with Marion of C11, third and second choice respectively; mutual attraction with Katherine of *CB*, fourth and third choice respectively. The remaining relations are discordant. On the strength of this test and assignment to *CB*, C2, or C11 appears equally desirable.

Classification

On the basis of the Parent Test and the Family Test, the classification of the eight new girls is as follows:

Dora

Parent	Sends choices to 2			Rejects 3 (Indiff. 1)			Sends choices to 3			Rejects 1 (Indiff. 2)			Family
	Receives choices 4			Rejected by 1 (Indiff. 1)			Receives choices 5			Rejected by 0 (Indiff. 1)			
Louise	P $\frac{3}{4}$			0	(3)		3	1	(2)	F			
		1	(1)				6	0	(0)				
Lena	P $\frac{3}{3}$			0	(3)		3	0	(3)	F			
		1	(2)				1	1	(4)				
Evelyn	P $\frac{3}{2}$			0	(3)		2	1	(3)	F			
		1	(3)				4	0	(2)				
Hazel	P $\frac{3}{2}$			0	(3)		3	2	(1)	F			
		1	(3)				0	1	(5)				
Adeline	P $\frac{3}{1}$			0	(3)		1	0	(5)	F			
		0	(5)				2	0	(4)				
Shirley	P $\frac{3}{1}$			0	(3)		3	0	(3)	F			
		1	(4)				2	4	(0)				
Muriel	P $\frac{3}{0}$			3	(0)		4	0	(2)	F			
		4	(2)				3	0	(3)				

ORGANIZATION OF COTTAGE GROUPS

The organization of C2, C8, C9, C11, C14 and CB (C4, C10, C11, C13, C16 and C2 on individual cottage charts and in the Tables) determined through the sociometric test was as follows:

C2 (C4) Quantitative Analysis:

Ratio of interest for own cottage, 46.67%.
 Distribution of attractions, 48.41%; of repulsions, 51.59%.

Structural Analysis:

Unchosen, 1; Unchosen and rejected, 4; Unchosen, rejected and rejecting, 2; Pairs, 9; Mutual rejections, 3; Incompatible pairs, 2; Chains, 1; Triangles, 1; Stars (attraction), 3; Stars (rejection), 2.

Position of Housemother: 13 attractions, 10 rejections, 3 indifferent.

C8 (C10) Quantitative Analysis:

Ratio of interest for own cottage, 32.12%.
 Distribution of attractions, 49.20%; of repulsions, 50.80%.

Structural Analysis:

Isolated, 1; Unchosen, 6; Unchosen and rejected, 7; Pairs, 10;

Mutual rejections, 6; Incompatible pairs, 9; Chains, 2; Triangles, 0; Squares, 0; Circles, 0; Stars (attraction), 3; Stars (rejection), 2.

Position of Housemother: 4 rejections, the rest attractions.

C9 (C11) Quantitative Analysis:

Ratio of interest for own cottage, 53.57%.

Distribution of attractions, 68.47%; of repulsions, 31.53%.

Structural Analysis:

Unchosen, 2; Pairs, 24; Mutual rejections, 1; Incompatible pairs, 4; Chains, 12; Triangles, 1; Squares, 2; Circles, 2; Stars (attraction), 2; Stars (rejection), 2.

Position of Housemother: 3 rejections, the rest attractions.

C11 (C13) Quantitative Analysis:

Ratio of interest for own cottage, 71.03%.

Distribution of attractions, 84.43%; of repulsions, 15.57%.

Structural Analysis:

Unchosen, 2; Unchosen and rejected, 2; Pairs, 40; Mutual rejections, 1; Incompatible pairs, 5; Chains, 6; Triangles, 8; Squares, 6; Circles, 3; Stars, 8.

Position of Housemother: All attractions.

C14 (C16) Quantitative Analysis:

Ratio of interest for own cottage, 46%.

Distribution of attractions, 67.30%; of repulsions, 32.70%.

Structural Analysis:

Unchosen, 7; Unchosen and rejected, 5; Pairs, 17; Mutual rejections, 2; Incompatible, 7; Chains, 6; Triangles, 2; Squares, 0; Circles, 0; Stars, 5.

Position of Housemother: 3 rejections, the rest attractions.

CB (C2) Quantitative Analysis:

Ratio of interest for own cottage, 55.45%.

Distribution of attractions, 85.36%; of repulsions, 14.64%.

Structural Analysis:

Isolated, 2; Pairs, 23; Mutual rejections, 1; Incompatible pairs, 9; Chains, 2; Triangles, 2; Squares, 2; Stars, 2.

Position of Housemother: All attractions.

On the basis of the quantitative and structural analysis of these cottages, C2 and C8 appeared to be poor risks for individuals who are unattractive to the housemothers and the representative girls of these two cottages. Their members show a lower interest to stay in their group and high number of isolates. C2, in addition, had a high number of runaways in the last season. Individuals as Shirley, Muriel, Adeline, and Hazel, run a greater risk to stay isolated or to be among the number of the discontented than they

would in the other cottages. If all other circumstances are equal, these two cottages should be given the opportunity to receive individuals who have appeared especially and spontaneously attracted to the housemother and the girl representative and who may aid in balancing the group. New girls, as Dora, Louise, Lena, and Evelyn, if they are drawn to these two cottages as strongly as to the other cottages represented, should preferably be assigned to them. On the strength of the quantitative and structural analysis of their organization, the cottages *B* and 11 should be preferred as assignments for poor risks in adjustment, as Adeline, Muriel and Shirley.

The position of the different housemothers in their cottage indicates that the housemothers of C2, C8 and C9 have to meet a great amount of dislike from the members of their own group at present. On the strength of this fact, none of the new girls who reject them should be assigned to any of them, as for instance Muriel or Dora.

The position of the cottage representatives within their cottage indicates that all have a favorable situation among the other girls and also in relation to the housemother. Each appears, therefore, well selected by the tester to aid in making a new girl feel at home in her cottage. However, Marion of C11, Katherine of *CB* and Leona of C8 appear especially well fitted, for various reasons. Marion is the center of seven attractions, five of which are mutual, and through these she dominates the network. Therefore, the new girls, Louise and Muriel, with whom she forms mutual attractions, would have a marked advantage in being assigned to C11. Katherine of *CB* forms three mutual attractions within her group and all three of these are interlocked into chains which include almost every member of the cottage. Her position would thus be of significance in breaking in Adeline and Muriel with whom she forms mutual attractions. Leona has a mutual attraction with a star of her group and is attracted to a second star. Dora and Evelyn form mutual attractions with her. She is thus in a position to break in Dora or Evelyn.

VERBATIM RECORD OF PARENT AND FAMILY TESTS

The initial and most important event for a newcomer in a community is what start is his, his assignment to the group of

persons with whom he is going to live. When a person comes into a city, he picks the house in which he may live and the persons with whom he is going to live by circumstance, by recommendation, or hit or miss. The groups and situations into which he breaks are his social fate. The start in the new group may turn to his advantage or disadvantage in its subsequent development, but the early stages of his career in the strange community are almost entirely beyond his control. This is due to a small and often one-sided acquaintance volume which permits him to select his associates only within the boundaries dictated by circumstances. This fact has fateful consequences for the residents as well as for the newcomer.

The technique of the Parent Test and the Family Test described above is an attempt to coordinate the spontaneous tendencies and aims of newcomers with the spontaneous tendencies and aims of the residents of the given community. It makes the start for the newcomer more articulate. It opens the opportunity for him to break into social avenues which promise him a better development and the group a greater contribution from him. Otherwise he may eventually wander long in this community or remain blocked in a side line. The process is a technique of freedom (see p. 8): it expands individual power, it brings the individual to wider social release.

The following report is a verbatim record of a Parent Test and a Family Test given in respect to the eight newcomers, six housemothers, and six residents who choose and reject each other. See pp. 463-473 and sociograms pp. 489-496.

DORA B.

Chooses Among the Housemothers

1st Choice: Mrs. Reid (C8): "She looks like my grandmother and she was nice to me."

Reactions of the Housemothers

Mrs. Reid: 1st Choice: "Her personality appeals to me: so frank and straight-forward. Talks like a grown-up person, very definite and poised. Everything would be in the open in your contact with her. I tend to be frank myself and we would get along just excellently. She would make a real contribution to my group at present when it needs such a girl, so many de-

pendable ones having been paroled."

2nd Choice: Mrs. Dickey (CB): "She acted as though she could get along with any of the girls and not have a special pet among them. I like a lady who will sit down and talk to you like she does and make things plain to you."

No additional choices.

Mrs. Dickey: 2nd Choice: "Very attractive to me. Acts natural and unpretentious, yet confident of herself. Responds intelligently and is really delightful."

Rejects: Mrs. Brett (C9): "I didn't like her at all. She isn't cheerful."

Mrs. Brett: 2nd Choice: "I need a big girl with a forceful personality like Dora to aid with so many little girls in the cottage at present. A good talker about her plans and seems to mind her own business."

Rejects: Mrs. Dorsey (C14): "She wouldn't understand me. I couldn't get along with her, not even a little. She seems cross."

Mrs. Dorsey: Indifferent.

Rejects: Mrs. Bradley (C2): "I think she'd take an interest in just certain girls and not in all. Once she smiled but mostly she was stern when she talked to me. I don't want to be in her house."

Mrs. Bradley: Rejects. "Don't know why, but I don't think I could get along with her. She would not fit in with my group."

Indifferent to: Miss Nellis (C11).

Miss Nellis: 1st Choice: "It was the way she met me that won me. She wasn't too forward and not too bashful. Appeals to me most among this group. She isn't spoiled and she doesn't attempt to bluff. I'd be glad to work with her."

Chooses Among the Representatives

1st Choice: Leona (C8): "Most everything about her I like. I just can't say it is any particular thing."

Reactions of the Representatives

Leona: 1st Choice: "It's hard to decide. I never judge a person until I watch her a long time. And although I am most fond of Dora and would choose her first, I wouldn't be sure I was right in choosing her because you never can tell till you live with a person."

2nd Choice: Katherine (CB): "I

Katherine: Indifferent. "I don't dis-

choose her second because she is so much like Leona."

like her but I feel that she can get along with most any group. She would cooperate with us in our cottage but I don't especially see her as belonging really to our cottage more than to other ones. You know what I mean. Sometimes you see a girl and just feel right off that she'd be right at home with your cottage and other times you see a girl and you think, 'She's very nice,' but it doesn't enter your head to think of her in connection with your group. I don't feel anxious about her because she will get along wherever she is. The girls I choose I think wouldn't get along so very good except in my cottage."

3rd Choice: Harriet (C9): "She has a beautiful expression and she makes you feel you can make good here."

Harriet: 2nd Choice: "Level-headed with a good attitude and wouldn't be misled by other girls."

Indifferent to: Ruth (C2).

Ruth: 2nd Choice: "A strong character. I wish we could have her. We really need her and she would get an opportunity to be a leader in our cottage because we haven't any real strong leader right now."

Indifferent to: Marion (C11).

Marion: 1st Choice: "A real good girl. Anybody would be glad to have her in their cottage."

Rejects: Alberta (C14): "Too giggly."

Alberta: 2nd Choice: "She is full of the dickens and it would be great fun to have her."

LOUISE D.

Chooses Among the Housemothers

1st Choice: Mrs. Dickey (CB): "She has a sense of humor and I like the way she talks."

Reactions of the Housemothers

Mrs. Dickey: Rejects. "To tell the truth, I just don't care to have her; can't put my finger on what it is about her but I feel I shouldn't take her."

2nd Choice: Mrs. Reid (C8): "Her talk is nice too."

Mrs. Reid: 2nd Choice: "She says she's in fourth year high school and that means she would be some help

among the others. I like her very much."

- 3rd Choice: Miss Nellis (C11): "Friendly and homelike."
- Miss Nellis: 2nd Choice: "She didn't appeal to me in the beginning but when talking to her, her fine mentality struck me. She doesn't feel sorry for herself."
- Indifferent to: Mrs. Brett (C9). Mrs. Brett: 1st Choice: "A good girl and would fit in well."
- Indifferent to: Mrs. Bradley (C2). Mrs. Bradley: 1st Choice: "Sensible ideas, would adjust; although only fifteen years old she has suffered a lot from her marriage."
- Indifferent to: Mrs. Dorsey (C14). Mrs. Dorsey: Indifferent.
- Chooses Among the Representatives*
- 1st Choice: Harriet (C9): "Very dignified and attractive."
- Reactions of the Representatives*
- Harriet: 1st Choice: "You can tell by the way she acts that she's sincere about everything. You can count on her."
- 2nd Choice: Marion (C11): "Very refined and lovely."
- Marion: 1st Choice: "I think she is a good influence because of her high hopes and ambitions."
- 3rd Choice: Ruth (C2): "Good-looking and not vain."
- Ruth: 1st Choice: "She has the aim to go ahead, same as I do, and is very friendly. She's what we need in our cottage: more girls like her who can't be swayed by every little thing that makes them mad."
- Indifferent to: Alberta (C14). Alberta: 1st Choice: "She's in high school and she's smart. She attracts me by her speech, so interesting. More my type than any of the others."
- Rejects: Leona (C8). "Don't care for her at all. Seems cold."
- Leona: 2nd Choice: "She wants to learn and she appreciates advice."
- Indifferent to: Katherine (CB). Katherine: 1st Choice: "Intelligent and knows how to talk and I think our house would be a good place for her; we have such a fine atmosphere. You know a girl like her needs the proper environment to bring out her best qualities."

LENA R.

Chooses Among the Housemothers

1st Choice: Miss Nellis (C11): "Has hopes for you and lots of fun in her."

2nd Choice: Mrs. Bradley (C2): "I talked to her a lot. She made me feel I can succeed here."

3rd Choice: Mrs. Brett (C9): "Very nice. I like her next best to the other ones I said I would like to live with."

Indifferent to: Mrs. Reid (C8).

Indifferent to: Mrs. Dickey (CB).

Indifferent to: Mrs. Dorsey (C14).

Chooses Among the Representatives

1st Choice: Alberta (C14): "A wonderful, interesting girl."

2nd Choice: Marion (C11):
"Lovely."

3rd Choice: Ruth (C2): "Would be a good friend, you can tell."

Indifferent to: Leona (C8).

Indifferent to: Katherine (CB).

Reactions of the Housemothers

Miss Nellis: 3rd Choice: "She is a little rough but she could be tamed down. I think I can get under her skin. I found her very responsive."

Mrs. Bradley: 2nd Choice: "Wouldn't fly off the handle or get upset easily; a healthful, outdoor kind of a girl. Is just the one for my group. Stable and steady."

Mrs. Brett: Indifferent.

Mrs. Reid: Rejects. "She just doesn't appeal to me, doesn't leave a good impression. Think she is dull mentally."

Mrs. Dickey: Indifferent.

Mrs. Dorsey: 3rd Choice: "She goes in for sports, like many of my girls do, and I feel my group would take to her quickly—she is so unassuming and direct."

Reactions of the Representatives

Alberta: Indifferent.

Marion: Indifferent.

Ruth: 4th Choice: "I felt a lot of sympathy for her. She is such a simple thing and she doesn't have any high ideas like the others; only wants to be a cook. If I can have a fourth choice, I want her."

Leona: Indifferent.

Katherine: Indifferent.

Indifferent to: Hariet (C9).

Hariet: Rejects. "Uninteresting. Very easily impressed by what you say to her. If anybody smiled at her she would do just what they wanted her to—good or not—just to please. An easy-mark."

EVELYN M.

Chooses Among the Housemothers

Reactions of the Housemothers

1st Choice: Miss Nellis (C11): "I think you can treat her like a friend."

Miss Nellis: Indifferent.

2nd Choice: Mrs. Dorsey (C14): "Good to live with."

Mrs. Dorsey: Indifferent.

3rd Choice: Mrs. Reid (C8): "Very darling. I like old people and she reminds me of an old neighbor we had once."

Mrs. Reid: 3rd Choice: "Strikes me as a good girl. I can just see the group in my house that would take to her. She has a fineness of manner that attracts you although she is very unexpressive when it comes to talking."

Indifferent to: Mrs. Brett (C9).

Mrs. Brett: Indifferent.

Indifferent to: Mrs. Dickey (CB).

Mrs. Dickey: 3rd Choice: "A wholesome, sincere sort of girl. She is very appealing to me. I know I'd get coöperation from her. I could get right at her. I'd really take pleasure in helping her to develop."

Indifferent to: Mrs. Bradley (C2).

Mrs. Bradley: Rejects. "She is too melancholy, especially for a child of her age, and I know my group wouldn't understand her. She is no doubt a promising girl but I can't imagine her fitting into my group."

Chooses Among the Representatives

Reactions of the Representatives

1st Choice: Katherine (CB): "She understands me."

Katherine: Indifferent.

2nd Choice: Leona (C8): "She is very much like Katherine."

Leona: 3rd Choice: "Very prejudiced and doesn't want to be in our school. Says she has to have a cottage that is home-like. But there is something about her that attracts me a lot. She'd fit in with most of

our girls; you know you can't fit in with all of them. There's times you fit in with one set and then for some reason they change their tactics and you can't get along with them and you go with the group you neglected for a while. The cottage is always divided up. The girls form sets; I don't know if you've observed that. We have about five sets right now. The bunch is too large for you to fit to the whole of them at one time. I can see Evelyn fitting in with the group I'm with now. I'd do my best for her if she could come to our house. I'd show her what is what and how to get over being prejudiced. I'd make her like us."

No additional choice: "I can't choose anybody but Katherine and Leona to live with; the others are all right but these are the only ones I want to be with in a cottage."

Indifferent to: Alberta (C14).

Alberta: Indifferent.

Indifferent to: Ruth (C2).

Ruth: 3rd Choice: "You have to like her. She takes such a brave attitude and doesn't sympathize with herself even if she had a lot of trouble, like some girls do."

Indifferent to: Marion (C11).

Marion: 3rd Choice: "I would call her awfully sensitive and very sympathetic towards people. You can touch her feelings very easy. I think she needs to be in our house because our girls would know just how to treat her. In our cottage the girls respect each other's feelings."

Indifferent to: Harriet (C9).

Harriet: 3rd Choice: "Another high school girl; would help our cottage a lot, just like the first two would that I chose. Talked quite a lot to me about what is opportunity. I think she is intellectual. And we

have some very intelligent girls in our house who would appreciate Evelyn. She's very likeable and I hope she can come to our house. You could say she is serious-minded and you can tell by her face that she wasn't very happy ever."

HAZEL W.

- | <i>Chooses Among the Housemothers</i> | <i>Reactions of the Housemothers</i> |
|--|--|
| 1st Choice: Mrs. Reid (C8): "Seemed so happy to be talking with you. She talked as if she would like to have me in her cottage. She says she is very fond of girls." | Mrs. Reid: Indifferent. |
| 2nd Choice: Mrs. Dorsey (C14): "She caught my attention as soon as I saw her. Before I talked with her even I knew I was going to like her. It's the way she has about her that I like so much." | Mrs. Dorsey: 2nd Choice: "She's a sixth grade girl but seems to feel that she will succeed, not afraid of the future and I like that about her. I could help such a girl." |
| 3rd Choice: Mrs. Dickey (CB): "More like a mother. She isn't one who'd be mean to you or quarrel. If you got into trouble you could go to her and explain. After you get talking to her you feel as if you had known her a long time. Only these three interest me." | Mrs. Dickey: Indifferent. |
| Indifferent to: Mrs. Brett (C9). | Mrs. Brett: Indifferent. |
| Indifferent to: Mrs. Bradley (C2). | Mrs. Bradley: 3rd Choice: "Slow-minded but has a good character and that's what counts. I'd like to have her." |
| Indifferent to: Miss Nellis (C11). | Miss Nellis: Rejects. "Couldn't even talk to her. We just didn't click." |
|
<i>Chooses Among the Representatives</i> |
<i>Reactions of the Representatives</i> |
| 1st Choice: Leona (C8): "I liked her from first seeing her when she was talking to another girl in the corridor. She has the nicest smile. I think she must be very good-hearted." | Leona: Indifferent. |

2nd Choice: Ruth (C2): "I'd like to know her better. She made good suggestions to me and yet she wasn't bossy." Ruth: Indifferent.

3rd Choice: Marion (C11): "I'd like to be like her, so confident and sure she is going to succeed." Marion: Rejects. "She is altogether different from the girls in our house and she couldn't put her ideas over with us. We are fond of sports and she isn't; she just thinks of being a missionary and says she reads the Bible all the time. At the same time she wants to be a waitress and a missionary at one time. She asked me if there was much call for missionary jobs and I said I hadn't heard that there was."

Indifferent to: Hariet (C9). Hariet: Indifferent.

Rejects: Alberta (C14): "Too silly." Alberta: Indifferent.

Rejects: Katherine (CB): "I couldn't feel free with her." Katherine: Indifferent.

ADELINE K.

Chooses Among the Housemothers
1st Choice: Mrs. Dickey (CB): "Talked so kind, I love her and I can't say why it is. She's good and she's nice and she's everything like that. She likes little girls and she has a little girl in her house."

Reactions of the Housemothers
Mrs. Dickey: 1st Choice: "I would simply love to have her. As I spoke to her I began to love her right off. I felt my group might be too old for her but she would be an influence to uplift the other girls, I feel. You know a young child can have that effect and my girls do love little ones. Of course, she wouldn't be a bit of help with the work but just the presence of a child like her would raise the others to greater effort. She'd be just the proper playmate for my Irene and if I take such small children it's better if I have two. Otherwise Irene will get spoiled. She is on the way to becoming so now, being so petted by the group. Both children would develop better if they had each other."

2nd Choice: Mrs. Reid (C8): "She looks so nice but not so nice as Mrs. Dickey to me." Mrs. Reid: Indifferent.

3rd Choice: Miss Nellis (C11): "Not so much as Mrs. Dickey though. They have smiles and things but they aren't so good to you when they talk as Mrs. Dickey. I really only want to go to Mrs. Dickey's to live." Miss Nellis: Indifferent.

Indifferent to: Mrs. Brett (C9). Mrs. Brett: Indifferent.

Indifferent to: Mrs. Bradley (C2). Mrs. Bradley: Indifferent.

Indifferent to: Mrs. Dorsey (C14). Mrs. Dorsey: Indifferent.

Chooses Among the Representatives

1st Choice: Katherine (CB): "She knows about little girls and talks nice. Told me I would like their little girl Irene, that we would be girl friends and do our lessons and play together and she would help us. You can just talk and talk to her and she'll listen to you and yet she is a big girl, not small like me."

Reactions of the Representatives

Katherine: 2nd Choice: "We have a tiny girl Irene and she would be an ideal playmate for Adeline and at the same time the two together would be less trouble for us older girls than Irene is alone. Besides Adeline is so smart and winning she would help Irene a lot."

No additional choices: "I don't want to live with any of the girls besides Katherine very much. The rest are all the same to me."

Indifferent to: Leona (C8). Leona: Indifferent.

Indifferent to: Ruth (C2). Ruth: Indifferent.

Indifferent to: Marion (C11). Marion: Indifferent.

Indifferent to: Harriet (C9). Harriet: Indifferent.

Indifferent to: Alberta (C14). Alberta: 3rd Choice: "A charming doll of a kid and she would be a novelty in our house as we haven't any small girls."

SHIRLEY A.

Chooses Among the Housemothers

1st Choice: Mrs. Dickey (CB): "I felt she took confidence in me and

Reactions of the Housemothers

Mrs. Dickey: Indifferent.

that would make me not disappoint her."

2nd Choice: Miss Nellis (C11):
"Nice to me and I think she likes me."

Miss Nellis: Rejects. "She seems 'flat' to me, nothing to appeal about her. I didn't take to her at all and it would be a mistake for me to ask for her."

3rd Choice: Mrs. Dorsey (C14):
"Talked nice to me, is a nice woman."

Mrs. Dorsey: Indifferent.

Indifferent to: Mrs. Brett (C9).

Mrs. Brett: Indifferent.

Indifferent to: Mrs. Bradley (C2).

Mrs. Bradley: Indifferent.

Indifferent to: Mrs. Reid (C8).

Mrs. Reid: 4th Choice: "I choose Shirley as my fourth choice. I feel she is teachable and I respond to her awkward strivings."

Chooses Among the Representatives

1st Choice: Katherine (CB): "I want to live with her most of all. Has a way about her as if she would be your best friend when she has only just met you."

Reactions of the Representatives

Katherine: Rejects. "Pretty fresh. Interrupts you while you're talking to her. First she wants you to know she's discontented and then she starts joking. Shirley would be fun to have around all right but not worth the trouble she'd cause us."

2nd Choice: Ruth (C2): "I admire her manner and her lovely way to talk to you; makes you feel welcome to the school and that you should be glad to be here. I want to see her often even if I don't go to her cottage."

Ruth: Rejects. "Shirley's certainly not very keen on the school. She has a way of shrugging her shoulders at what you say to her. She's not so smart as she thinks she is either. I don't want to have her in my cottage. I think she'd be stubborn and bossy and take her walking papers at her first opportunity."

3rd Choice: Marion (C11): "She's quick at understanding me. I think we'd get along good together."

Marion: Rejects. "Too much a 'know-it-all.' Wouldn't want to agree with the other girls. I don't like her. She's got a sneaky atmosphere about her. I think she is watching for a chance to run away. Shirley is the boldest new girl I

ever saw. Just her attitude shows she's apt to get in with the wrong set. Says she wants to get ahead but her manner doesn't go together with what she says. She really wants to raise Cain."

Indifferent to: Alberta (C14).

Alberta: 4th Choice: "She's nervous and kind of uneasy about being here but sometimes she's jolly too and I'd like to have her in our cottage."

Indifferent to: Hariet (C9).

Hariet: 4th Choice: "She has ideas about not letting other people run her but I could get around her all right. Mostly it's just that she likes to show off. I think Shirley is likeable any way and our house is about the best for her in my opinion."

Indifferent to: Leona (C8).

Leona: Rejects. "Too loud and kind of conceited. Our cottage wouldn't like her at all. She's altogether too bold. Makes sarcastic remarks about everything."

MURIEL F.

Chooses Among the Housemothers

1st Choice: Mrs. Reid (C8): "She's a lot of fun and likes to hear you talk."

2nd Choice: Miss Nellis (C11): "She makes you feel happy because she's so happy."

3rd Choice: Mrs. Dorsey (C14): "Mrs. Dorsey tells you interesting things. She knows a lot."

Rejects: Mrs. Dickey (CB): "I just couldn't live with her."

Reactions of the Housemothers

Mrs. Reid: Rejects. "Too nervous for my group; talks too much; can't stand or sit still a minute."

Miss Nellis: Rejects. "She is ever so cute. She said, 'I like you,' in the fashion of a very young child. But I think she is sick; when she is in better health I should like to have her, but not at present. She would be too much for my patience right now."

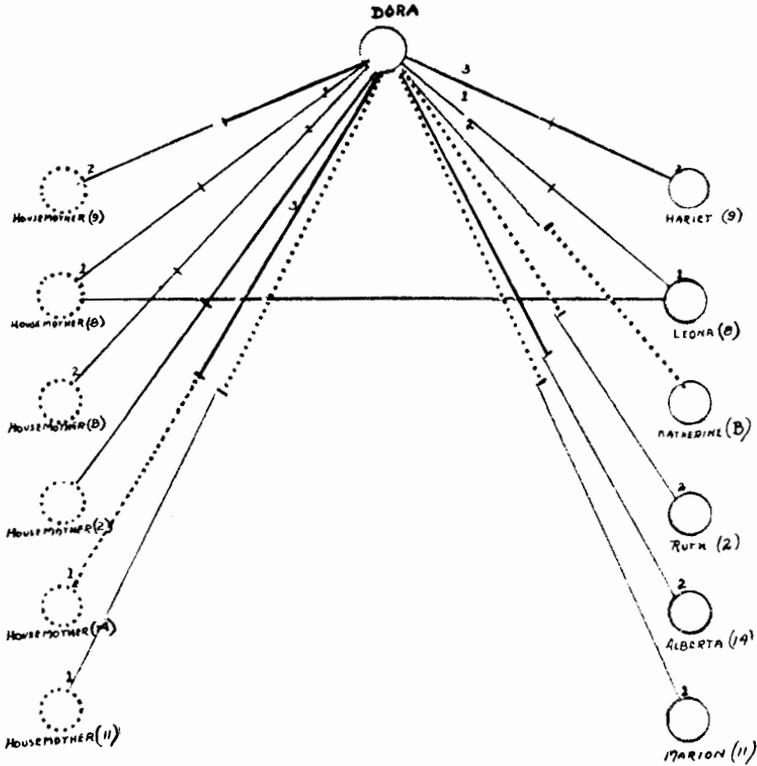
Mrs. Dorsey: Rejects. "Highly irritable, nervous and jerky. Said she had been ill; really doesn't look well. I don't feel she is ready for cottage life yet."

Mrs. Dickey: Indifferent.

- Rejects: Mrs. Bradley (C2): "I just couldn't live with her either." Mrs. Bradley: Rejects. "She complains of headaches; very nervous; difficult for any group. Should be in the hospital for a while before going into any cottage."
- Rejects: Mrs. Brett (C9): "I just can't stand to live with her." Mrs. Brett: Indifferent.
- Chooses Among the Representatives* *Reactions of the Representatives*
- 1st Choice: Ruth (C2): "The best sort of girl to talk to. You feel happy with her." Ruth: 4th Choice: "I feel I'd like to help to make her happy. She's got the best heart and she is so pitiful."
- 2nd Choice: Alberta (C14): "Friendly." Alberta: Indifferent.
- 3rd Choice: Marion (C11): "Very nice to you in what she says." Marion: 2nd Choice: "I'm awfully sorry for Muriel. She fidgets all the time you talk. She tries to talk but she can't be interesting; answers in monosyllables. Needs a lot of help, I think. A case for sympathy. Perhaps if someone would be motherly to her she'd be all right. She's just sort of lost. As if she'd always stood alone with none to help her. Kicked around I suppose. I'd like to help her."
- 4th Choice: Katherine (CB): "Cheerful and cheers me up." Katherine: 3rd Choice: "I feel sorry for her. She seems to try hard to be nice to you. I think she needs plenty of good treatment from the girls too, besides a housemother. I could get the girls in our house to be kind to her. Our housemother is real gentle too."
- Indifferent to: Leona (C8). Leona: Indifferent.
- Indifferent to: Harriet (C9). Harriet: Indifferent.

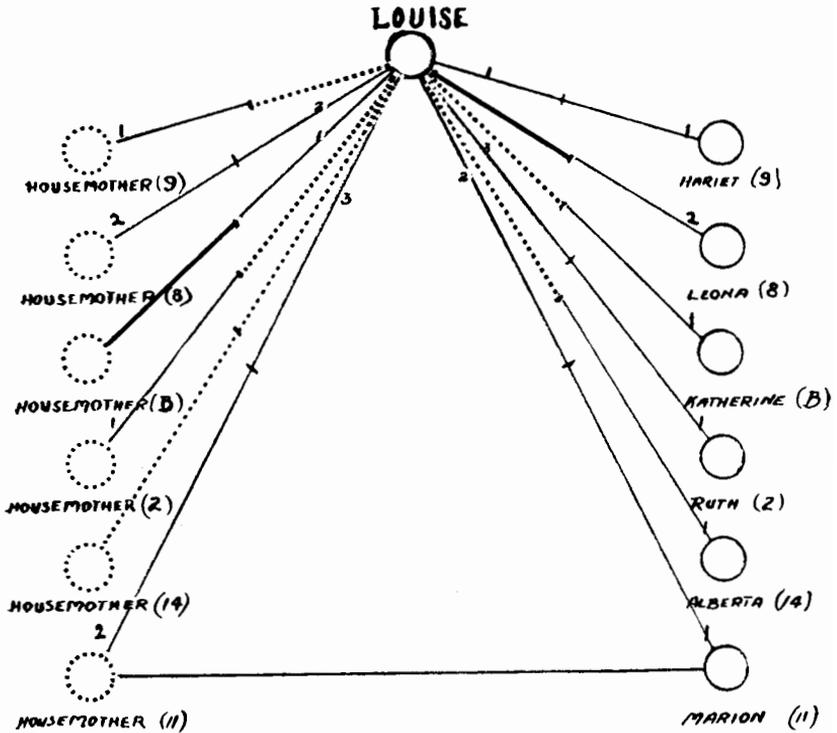
The conduct of assigned individuals was followed up and it appeared that when a large number of newcomers who had been assigned through the test were compared with an equal number of individuals who were placed into a home without a test, the success in adjustment and conduct was more favorable for the tested than for the untested group. (See Control Study II, p. 667.)

INITIAL ASSIGNMENT—PARENT AND FAMILY TESTS



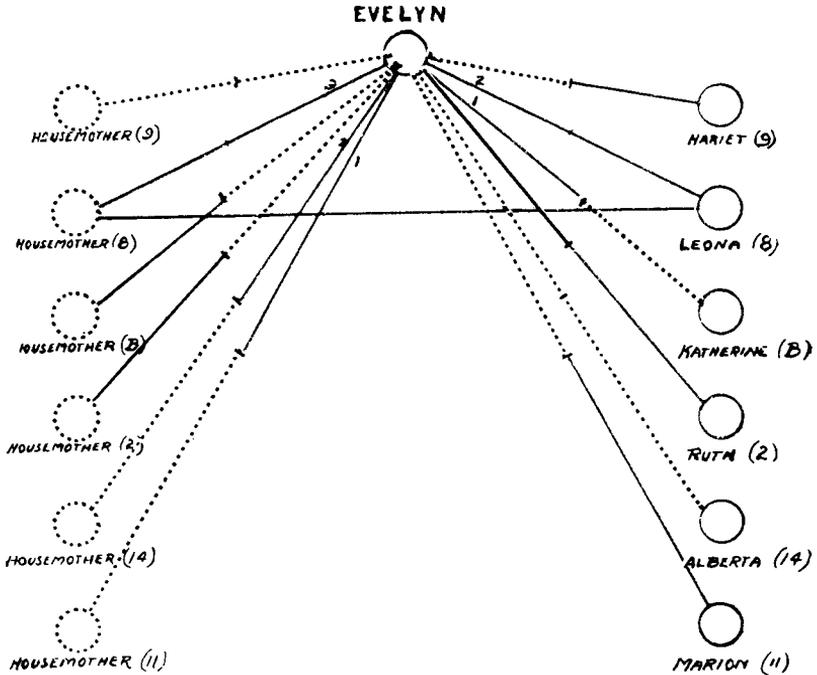
The chart illustrates the findings of the Parent Test and the Family Test of Dora: the reactions of the housemothers of C9, C8, CB, C2, C14, and C11 to Dora and Dora's reactions to them; the reactions of a representative girl of C9, C8, CB, C2, C14, and C11 to Dora and Dora's reactions to them. The number at the side of the lines indicating attraction of Dora towards a particular individual relates to the degree of choice—first, second, or third. The line drawn between the housemother of C8 and the representative girl of this cottage indicates that C8 has been selected as the initial assignment for Dora. Dora is a mutual first choice with the housemother of the cottage as well as with the key individual of that cottage. That should give her a good start for rapid and central integration into the cottage family (according to Hypotheses I and II).

INITIAL ASSIGNMENT—PARENT AND FAMILY TESTS



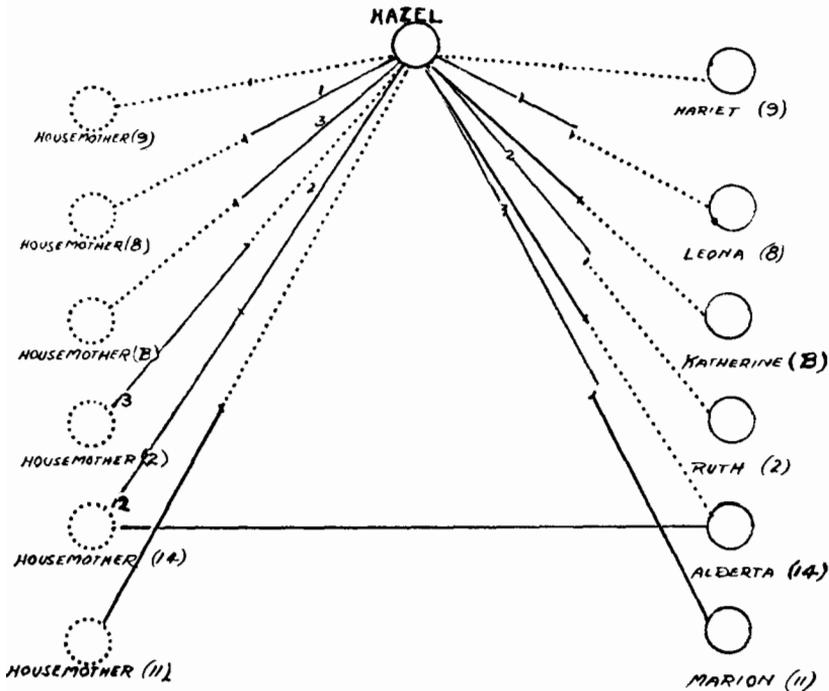
The chart illustrates the findings of the Parent Test and the Family Test of Louise: the reactions of the housemothers of C9, CB, C2, C14, and C11 to Louise and Louise's reactions to them; the reactions of a representative girl of C9, C8, CB, C2, C14 and C11 to Louise and Louise's reactions to them. The number at the side of the lines indicating attraction of Louise towards a particular individual relates to the degree of choice—first, second, or third. The line drawn between the housemother of C11 and the representative girl of this cottage indicates that C11 has been selected as the initial assignment for Louise. Louise is in mutual choice relation with the housemother and the key individual (Marion) of one cottage only, C11. The choosing is not on the highest level of preference, the housemother choosing her second, Louise choosing her third, Marion choosing Louise first and Louise choosing Marion second. However, they are mutual choices. There is a close race between C11 and C9. The housemother of C9 chooses her first but Louise is indifferent towards her. She is chosen first by the key individual of the cottage and she chooses her first in return, but Louise's indifference towards the parental figure and the reasons she gave for it decided the assignment against C9. Because of the importance of the parental figure in such a cottage the spontaneous choice coming from Louise is considered more important than the fondness for Louise. Another close race exists between C11 and CB. Here we see that Louise chooses the housemother of CB first but the housemother rejects her. The key girl of the cottage chooses her first but Louise is indifferent towards her. Notwithstanding Louise's own first choice for the housemother the housemother's negative feeling towards her may block her and we therefore decided against the assignment.

INITIAL ASSIGNMENT—PARENT AND FAMILY TESTS



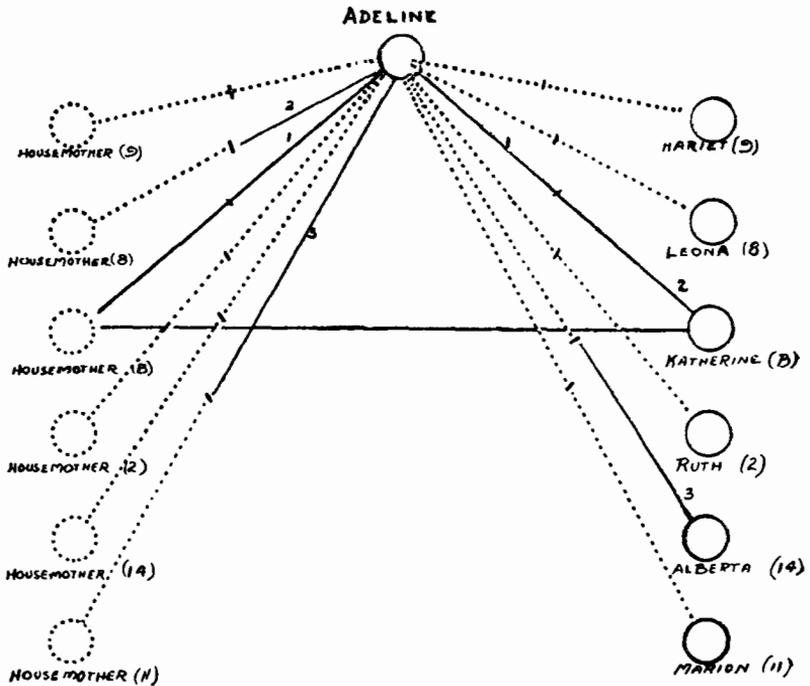
The chart illustrates the findings of the Parent Test and the Family Test of Evelyn: the reactions of the housemothers of C9, C8, CB, C2, C14, and C11 to Evelyn and Evelyn's reactions to them; the reactions of a representative girl of C9, C8, CB, C2, C14, and C11 to Evelyn and Evelyn's reactions to them. The number at the side of the lines indicating attraction of Evelyn towards a particular individual relates to the degree of choice—first, second, or third. The line drawn between the housemother of C14 and the representative girl of this cottage indicates that C8 has been selected as the initial assignment for Evelyn. Evelyn's first and second choice for housemothers of C11 and C14 are met with indifference; Evelyn is further indifferent towards the key individuals of both cottages; the key individual of C11 chooses her, the key individual from C14 is indifferent towards her. Her first choice for cottage companion goes to Katherine of CB who responds with indifference. The housemother of CB chooses Evelyn but she is indifferent towards her. Therefore CB is undesirable. Under the circumstances the best assignment is C8. Evelyn chooses the housemother of C8 third and this housemother responds with a mutual choice; Evelyn also gives her second choice for cottage sibling to Leona who responds with a mutual choice.

INITIAL ASSIGNMENT—PARENT AND FAMILY TESTS



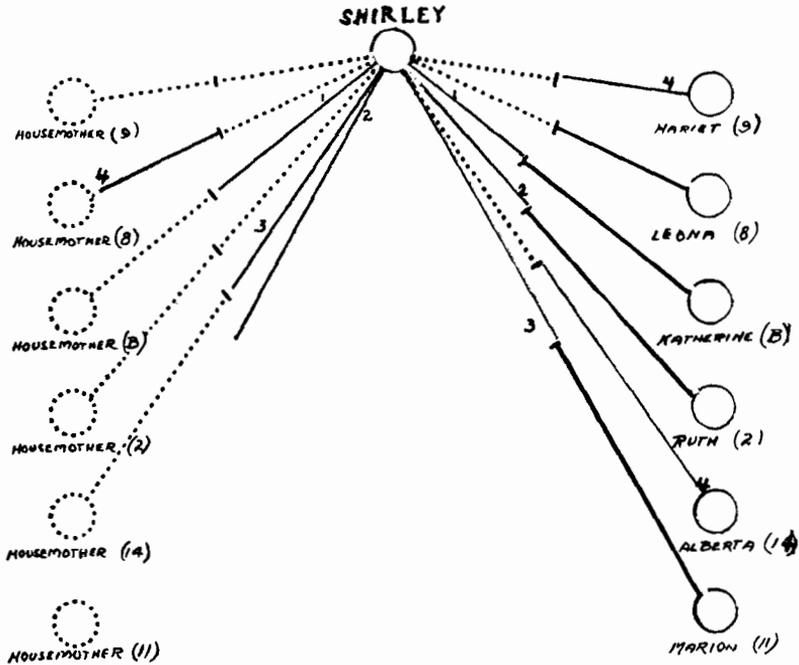
The chart illustrates the findings of the Parent Test and the Family Test of Hazel: the reactions of the housemothers of C9, C8, CB, C2, C14, and C11 to Hazel and Hazel's reactions to them; the reactions of a representative girl of C9, C8, CB, C2, C14, and C11 to Hazel and Hazel's reactions to them. The number at the side of the lines indicating attraction of Evelyn towards a particular individual relates to the degree of choice—first, second, or third. The line drawn between the housemother of C14 and the representative girl of this cottage indicates that C14 has been selected as the initial assignment for Hazel. Hazel is a difficult newcomer to place. Her first and third choices are for the housemothers of C8 and CB but they both respond with indifference. The relations to the key individuals of both cottages are also unsatisfactory; Hazel chooses Leona first, Leona is indifferent towards her. Hazel rejects Katherine from CB and Katherine responds with indifference. The choice fell for C14 because the housemother of that cottage is the only one with whom Hazel has a mutual relationship, each being the other's second choice. This outweighs the fact that Alberta, the key individual, is indifferent towards Hazel who in turn rejects her.

INITIAL ASSIGNMENT—PARENT AND FAMILY TESTS



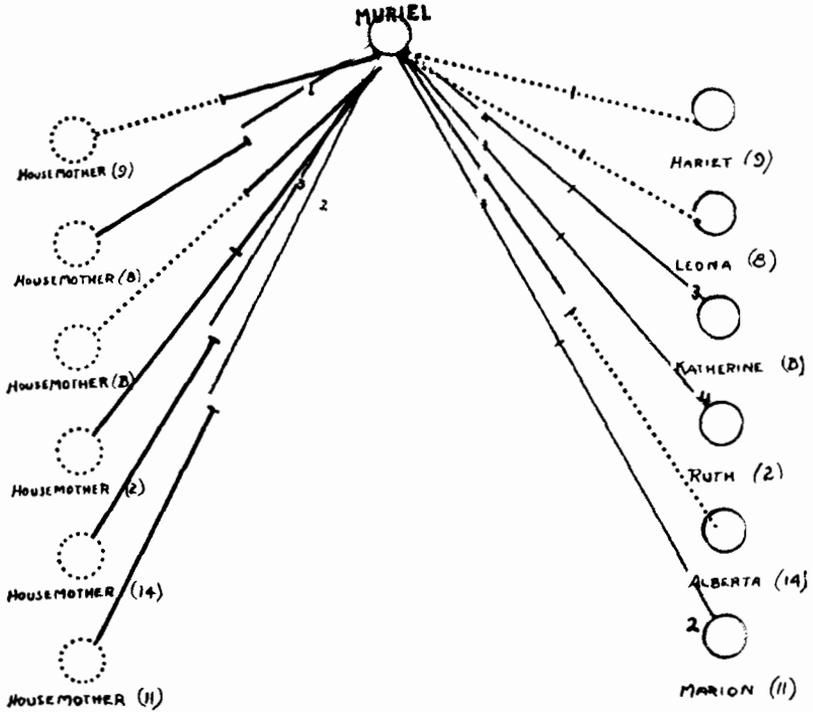
The chart illustrates the findings of the Parent Test and the Family Test of Adeline: the reactions of the housemothers of C9, C8, CB, C2, C14, and C11 to Adeline and Adeline's reactions to them; the reactions of a representative girl of C9, C8, CB, C2, C14, and C11 to Adeline and Adeline's reactions to them. The number at the side of the lines indicating attraction of Adeline towards a particular individual relates to the degree of choice—first, second, or third. The line drawn between the housemother of CB and the representative girl of this cottage indicates that CB has been selected as the initial assignment for Adeline. Adeline's first choice for housemother goes to the housemother of CB who responds with a mutual first choice. The key individual of CB, Katherine, whom Adeline also chooses first responds with a second choice. The assignment of Adeline to CB is therefore in accord with sociometric logic.

INITIAL ASSIGNMENT—PARENT AND FAMILY TESTS



The chart illustrates the findings of the Parent Test and the Family Test of Shirley: the reactions of the housemothers of C9, C8, CB, C2, C14, and C11 to Shirley and Shirley's reactions to them; the reactions of a representative girl of C9, C8, CB, C2, C14, and C11 to Shirley and Shirley's reactions to them. The number at the side of the lines indicating attraction of Shirley towards a particular individual relates to the degree of choice—first, second, or third. No assignment is plotted. Shirley remains unassigned. The sociogram discloses no mutual relationships. The housemother of CB whom Shirley chooses first is indifferent to her; the key individual of that cottage, although chosen first by Shirley, rejects her. Shirley's second choice goes to the housemother of C11 and is responded to with rejection. She chooses Marion of C11 third; Marion too rejects her. Shirley's third choice for housemother goes to housemother of C14 who is indifferent; the key individual of C14 chooses Shirley but Shirley responds with indifference. There is only one housemother who chooses Shirley, the housemother of C8, but Shirley is indifferent towards her and moreover, the key individual of C8 rejects Shirley. Shirley is indifferent towards her. If only some mutual relationship could have been found for Shirley with a housemother or with a key individual the minimal conditions for placement would be fulfilled. She continues to live in the Reception cottage for another week until the next test can be made and another opportunity arises for finding a permanent cottage.

INITIAL ASSIGNMENT—PARENT AND FAMILY TESTS



The chart illustrates the findings of the Parent Test and the Family Test of Muriel: the reactions of the housemothers of C9, C8, CB, C2, C14, and C11 to Muriel and Muriel's reactions to them; the reactions of a representative girl of C9, C8, CB, C2, C14, and C11 to Muriel and Muriel's reactions to them. The number at the side of the lines indicating attraction of Muriel towards a particular individual relates to the degree of choice—first, second, or third. No assignment is plotted. Muriel is another assignment problem which cannot be solved at this time. Her cottage housemother choice for housemother of C8 is met with rejection and Muriel is indifferent to the key individual from this same cottage who is also indifferent towards her. Her second choice for the housemother of C11 meets with a rejection; her third choice for key girl of C11 finds a mutual choice in Marion. She also has mutual relations with the key individuals from C2 and CB but both housemothers of these cottages reject her and Muriel rejects also the housemother from C2. Therefore, because none of the housemothers choose her Muriel continues to live for a while longer in the Reception cottage.

PSYCHOLOGICAL CURRENTS

Cottages 8 and 9 which appeared on the Psychogeography Map IV as C10 and C11 appeared to be caught in sexual currents with the Negro population. However, none of the new girls appear particularly suggestive to an interest in the activity. C4 appeared disturbed by a racial current. Nine of the 10 girls who reject the housemother in C4 (See Map IV) have foreign-born parents. None of the new girls is of foreign or minority group parentage. This factor has played a role in other tests. For instance, in the initial assignments of the week before there was an Indian girl whose assignment was so difficult that C13 and C10 were excluded because of this factor. C4 and C11 appeared with a high number of escapes in runaway status. Therefore Dora, who had run away many times outside, should preferably not be assigned to either of these groups initially.

ENTRANCE TEST—ROLEPLAYING

Every newcomer is subjected to an entrance test which consists of three situations: a family situation, a work situation and a community situation. In these situations they act in the crucial roles of their daily conduct as, for instance, daughter, sister, co-worker, wife or girl friend, churchgoer and student. Housemothers and key members of the cottages are playing with them in these situations. A jury is present and rates their performance; the role-playing gives us decisive clues for the most advantageous assignment of the newcomer. When an individual leaves, he undergoes an *Exit Test* which consists of the three situations he expects to face in the community at large.

ASSIGNMENT

	<i>Suggests assignment to:</i>
Adeline: Parent Test	CB (C2 on Map IV)
Family Test	CB (C2)
Organization	CB or C11 (C2 or C13)
Position of Housemother	CB or C11 (C2 or C13)
Position of Representative	CB (C2)
Psychological Currents	CB (C2)
Entrance Test (psychodrama)	CB (C2)
Social History	CB or C11 or C14 (C2 or C13 or C16)
Final Assignment	CB (C2)

Dora:	Parent Test	C8, C11 or CB (C10, C13 or C2)
	Family Test	C8 or C9 (C10 or C11)
	Organization	C8 or C2 (C10 or C4)
	Position of Housemother	C8 (C10)
	Position of Representative	C8 or C11 (C10 or C13)
	Psychological Currents	None
	Entrance Test (psychodrama)	C8 (C10)
	Social History	Any except C4 and C11
	Final Assignment	C8 (C10)
	Louise:	Parent Test
Family Test		C11 or C9 or C2 (C13 or C11 or C4)
Organization		All three equally indicated
Position of Housemother		All three equally indicated
Position of Representative		C11 (C13)
Psychological Currents		None
Entrance Test (psychodrama)		C11 (C13)
Social History		Excludes C2 (C4)
Final Assignment		C11 (C13)
Lena:		Parent Test
	Family Test	C2 (C4)
	Organization	C2 or C8 (C4 or C10)
	Position of Housemother	C2 (C4)
	Position of Representative	All equally indicated
	Psychological Currents	C2 (C4)
	Entrance Test (psychodrama)	C2 (C4)
	Social History	All equally indicated
	Final Assignment	C2 (C4)
	Evelyn:	Parent Test
Family Test		C8 (C10)
Organization		C8 (C10)
Position of Housemother		C8 (C10)
Position of Representative		All equally indicated
Psychological Currents		All equally indicated
Entrance Test (psychodrama)		C8 (C10)
Social History		All equally indicated
Final Assignment		C8 (C10)
Hazel:		Parent Test
	Family Test	All equally indicated
	Organization	C14, C11 or CB; not C2 or C8 (C16, C13 or C2; not C4 or C10)
	Position of Housemother	Not C2, C8 or C9 (not C4, C10 or C11); others equally indicated
	Position of Representative	All equally indicated
	Psychological Currents	Not C2 or C9 (not C4 or C11)
	Entrance Test (psychodrama)	CB (C2)
	Social History	All equally indicated
	Final Assignment	C14 (C16)

Shirley:	Parent Test	None
	Family Test	None
	Organization	C11 or CB (C13 or C2)
	Position of Housemother	C11 or CB (C13 or C2)
	Position of Representative	All equally indicated
	Psychological Currents	C11 or CB (C13 or C2)
	Entrance Test (psychodrama)	Not C2 or C9 (not C4 or C11); all others equally indicated
	Social History	All equally indicated
	Final Assignment	No assignment made; stayed in reception Cottage for later assignment
Muriel:	Parent Test	None
	Family Test	CB, C2 or C11 (C2, C4 or C13)
	Organization	CB or C11 (C2 or C13)
	Position of Housemother	Not C2, C8 or C9 (not C4, C10 or C11)
	Position of Representative	CB (C2)
	Psychological Currents	C11 (C13)
	Entrance Test (psychodrama)	All equally indicated
	Social History	Suggests hospital
	Final Assignment	Hospital

Shirley and Muriel are left over to be tried out with housemothers and representatives of another group of cottages as soon as a few more girls have arrived. An illustration that this procedure is practical and successful is the case of Lena, who is among the girls whose assignment has just been described. She had been "left over" from the previous set of girls whom we had tested for assignment a week before. The findings then did not suggest any constructive assignment for her. She appeared unwanted by the cottages represented at that testing. But in this, her second test, she found a housemother for herself.

ANALYSIS

A comparative study of 102 initial assignments made through the foregoing procedure indicates that the best risks in assignment have been cases in which the majority of the factors disclosed in the test coincided. The analytic basis for each assignment is filed and the success or failure of every assignment methodically followed up. A new line of research develops from this point to determine what relative value the different factors have upon which the assignments have been made.

PARENT AND FAMILY TEST IN OPEN COMMUNITIES

The natural next step in the application of the Parent and Cottage Tests is the foster home. The foster family is the nearest approach to a synthetic family organized for children who are deprived, for whatever reasons, of their natural, biological family. The foster home into which one or more children are placed by some social agency often develops frictions between the genuine members of the family and the foster members. The natural grouping versus a social grouping drafted upon it predisposes a situation potentially disadvantageous to the foster child. From this point of view training schools have an advantage, as all their members are on an *equal* footing towards each other and towards their houseparents. This difficulty in the foster home is partly alleviated when the foster parents are childless or when their own children have already grown up. Placements may become more adequate and successful if, instead of leaving them to the judgment of the social worker, sociometric testing is employed. The Parent Test can be used in a similar manner as described. All applicants for a foster child could be invited by the social agency to meet all the children who are under consideration for placement. Each parent, then, would meet each child. The fathers and mothers should be tested in separate meetings. After an exact analysis of the findings, the Family Test should also be given. The form of this test as used in Hudson may have to be somewhat modified. In families of average size or smaller, all members should be tested, especially if there are children close in age to the prospective foster child. On the basis of the findings and their evaluation, the particular family suitable for a particular child can be decided upon. A series of Roleplaying Tests are indispensable for preparing the newcomer for the climate of the new home.

SOCIOMETRY OF RECONSTRUCTION

SOCIOMETRIC ANALYSIS

The entire community, its home, school and work groups were subjected to a sociometric analysis at regular intervals of about four weeks. From this it became clear which were the most

effective approaches: a) individual treatment; b) group psychotherapy; c) roleplaying and roletraining; d) sociometric reconstruction. Knowledge of the structure of the community and the position of every individual within it determined the choice of method.

Individual Treatment

The individual approach may consist in acquainting the individual with the sociometric findings which bear upon his situation, to bring the individual to full awareness of every relation in which he participates, to disclose for him every psychological current by which he is touched. For individuals who have a well developed analytic sense, particularly for certain adults, such a method may be useful. But by its very nature this method is not always applicable to children, adolescents or immature adults.

Group Psychotherapy

The term and concept of group psychotherapy which I have introduced refer to the treatment of the total group. *It treats not only the individual who is the focus of attention because of maladjustment, but the entire group of individuals who are inter-related with him in the community;* just as in medical therapy, while we concentrate our attention chiefly upon the organ affected, we also pay simultaneous attention to all other organs which are or may be co-affected. The methods of group psychotherapy can either be a) *analytical*, that is, it can bring to the realization of every individual of the group the harmful effects their interrelations produce upon this or that particular individual or upon them all; the analysis can be supplemented by discussion and suggestion, or b) *activistic*, it can take an immediate form, *in situ*, that is, in the course of all activities in which the individuals are engaged, in the home, in school, at work, for instance the handicraft shop, steam laundry, carpentry shop, department store, etc. The situations of living and working are at the same time used as therapeutic settings. We have found, however, that *the analytic and activistic forms of group psychotherapy are not applicable to the deepest disturbances of the individual and the group; they require the application of deep action methods in the form of psychodrama.* But they are applicable to social problems of the group

in a setting in which, during the treatment, the group is artificially cut off from the community as if the rest of the community were non-existent and as if the influence coming from it could be disregarded. But the salient point is that certain conditions may develop in a group which group psychotherapy in this limited sense cannot affect, as for instance, the conditions arising from a surplus of leader-individuals, a surplus of certain racial elements or economic distress. Even if the problems of a particular individual were solved by it and assuming he could be brought to such a degree of sublimation that he would take the exigencies of the situation cheerfully, the source of these adverse attacks against him would still continue to exist. While the problem might be solved for him, for the community it would remain unsolved. The task would really be to sublimate the individual and the group as a whole: in other words, the sublimation of the entire group or of the entire community, an ideal which the Christian monasteries so rarely attained and which is apparently impossible of attainment in communities of children and adolescents. *Under such circumstances a therapy which is not sectional but applied to the "entire" community is necessary, an intergroup or a reconstruction therapy.*

All group psychotherapists have certain basic conditions in common: a) they meet with groups already formed or to be formed, on the reality level or in the clinic; b) after individual evaluations have been made as Intelligence Tests, interviews, Rorschach tests, brief psychoanalysis, and so forth, the stage is set for facing the group itself; c) the living through the group, through the individual participants (including the therapist), their relationships and the group as a whole is necessary to the process; d) lecturing, interviewing, discussing, commenting and explaining are extremely facilitated and intensified if a sociometric technique is applied to begin with. An illustration of an appropriate technique for group sessions is to ask who among the members of the group present they would like or dislike to consult in a matter vital to them. The relationships thus expressed are plotted in a sociogram; e) the sociogram is the simplest guide in working through the group; it is a helpful entering wedge. It gives an immediate picture of the group as a whole and cuts short the pro-

cedure, avoiding many wasteful sidetracks. It is a "social compass," guiding the therapist through the intricate maze of the group structure. Phenomena threatening the cohesion of the group can be rapidly discovered; emotional contagion and the direction it takes can be diagnosed and its further development prevented. The therapist may try his luck without a sociogram, he may move into the group, start with himself as a focus or a particular individual. He may move from one individual to another but without guides like the sociogram or psychodrama the conduct of a session easily goes out of hand and may become diffused.

Roleplaying and Roletraining

In an earlier chapter we have described roleplaying as a diagnostic method but it can also be used as "role therapy" to improve the relations between the members of a group. The number of roles in which members of the group are able to interact in life itself is limited. In roleplaying every member can assume a new role. Roleplaying frequently influences the results of the next sociometric test and changes the position of an otherwise maladjusted or isolated individual. In this manner roleplaying becomes roletraining and role therapy.

METHODS OF CONSTRUCTION AND RECONSTRUCTION OF GROUPS

In numerous cases individual treatment, analytic and activistic group psychotherapy as well as roleplaying are only partially successful. Then the individual must be transplanted from his old soil to another social soil better suited to his needs. But how are we going to recognize or to produce a better soil for the development of an individual? It can be accomplished through a comparative analysis of every home group with every other home group. Just as a gardener, knowing the composition of the soil which thwarted the growth of a plant, transfers it to a soil from which such factors are eliminated, so we, when planting individuals, carefully see to it that the same conditions which brought failure in the first place are not repeated. This principle of sociometric transplantation can also be applied to entire communities.

The individual who becomes delinquent outside, according to the

laws of the community at large is one problem, the individual who becomes delinquent towards the rules in a closed or institutional community is another. Therefore, the information received concerning his conduct outside is of little value to the sociometrist of the closed community. He is not dealing with a sociometric study of the groups in which the individual participated in the past. Through the sociometric test the position which an individual has acquired in the present, new community is accurately defined. Whatever the results of this test may indicate, actual or potential maladjustment, adjustment in some respects and poor adjustment in others, as the structure of the entire community is similarly studied, we are able to aid the individual in his adjustment within the area under scrutiny. Whereas a newcomer starts with a clean slate for the population and staff, and they with a clean slate for him, the residents who have been members for any length of time develop a reputation within the closed community. The reputation is shaped by the behavior of the individual, by the various psychological currents by which he is caught and by notions which are spread about him through the networks of that community.

The individuals who fail to adjust to the institution, as non-social and antisocial individuals, runaways, pilferers, etc., produce in such communities which are set up to cure them the same problem which has compelled society at large to establish institutions. It is only natural that the same psychological forces which have compelled the state to establish jails and correctional institutions may force their administrators to resort to similar measures in fact, if not in name. Indeed, we find in many institutions special houses for the delinquent who fails to adjust to the institution. As an institution is at least in intent a "therapeutic society" and all factors which refer an individual to it expect his training to constitute a cure, administrators of institutions are faced with a most perplexing problem. The conduct of the individuals under their supervision may be such that they are in want of a therapeutic measure to control them.

The high ideal towards which the monastery in the early Christian centuries was striving may aid to clarify the position and the possible future of the correctional institutions in the modern scheme of things. The monastery aimed at being not only a number of single saints, but a community of saints, a *therapeutic*

society. It wanted to put before and against the world an example of a community in which not only every member was in control of his own conduct, but also in which no warfare existed among the members. Similarly, the administrators of correctional institutions and their populations, which also consist of "sinners", of incorrigibles in the world, have an opportunity to give their communities, which are the most extreme expression of human weakness, a deeper meaning. They can demonstrate that an individual who appeared incorrigible outside in the world, may appear corrected and adjusted within its fold; and second, that whereas the community as a whole cannot function without developing places for the degraded, jails and correctional institutions, these therapeutic societies can function without them. They may become an object lesson to human society as a whole.

In Hudson we made numerous studies in assignment therapy. Before the maladjustment of an individual within a group becomes flagrant, his assignment to another group can be arranged. Such an assignment, to be therapeutic, has to be made at the psychological moment. If it is made too early, before the individual and the group to which she belongs have made every effort for successful adjustment, the effect of the procedure may be lessened. If it is delayed, an attitude of indifference and resentment towards the entire environment may develop which may destroy in the child the possibility of an enthusiastic beginning in a new family group. The assignment has to be made at the proper time and then rapidly, preferably after she herself spontaneously asks for a transfer. The technique for the assignment of new individuals to cottages (see p. 462) has to undergo a change when it is adapted to the assignment of individuals from one in-group to another.

TRANSFER OF MEMBERS OF HOMEGROUPS AND WORKGROUPS

Case of Anna GU, An Example

A. Sociometric status in C6 before assignment :

ACQUAINTANCE TEST

The acquaintance volume of Anna at the outset was 37 (distributed in C10, C1, C11 and C4); six months later it was 55 (in C10, C1, C11, C3, C2, C16); 12 months later it was 101 (the

majority distributed in C10, C1 and C7, with every cottage in the community included).

SOCIOMETRIC TEST

The sociometric test in respect to the criterion of living in proximity disclosed the position of Anna in the community. (In the reassignment to work groups the work criterion would be considered; in the reassignment to educational groups the educational criterion is considered, etc.) She chose no one in her own cottage (C6). All her choices (5) went to members of other cottages. She was chosen by one member of her cottage and received choices from members of other cottages (3). Two of these choices were mutual.

Classification Formula 1:

	in	L	out
sent	0		5
received	1		3

In the follow-up of these choices she appeared rejected by three members of her cottage. She herself rejected no one. From the five she chose outside, three responded positively (in C10 and C4) and two with indifference (in C1 and C11). She was not rejected by anyone outside and rejected no one.

Classification Formula 2:

	in	L	out
sent	0—0		5—0
received	1—3		3—0

Of the staff she rejected her housemother, who was attracted to her; she was drawn to the housemother of C10, who wanted her, and to the housemother of C1, who was indifferent to her. Hence the Formula 2 becomes:

Classification Formula 2A:

	in	L	out
sent	0—1		7—0
received	2—3		4—0

The sociometric test given at that date in relation to the criterion of working in proximity disclosed further her position in the community. She chose two from her Art class and three from classes (Salesmanship and Handicraft) of which she was not a member. These five also chose her. Of the staff she was drawn to two teachers and rejected three. They were attracted to her (Art and Handicraft teachers) or rejected her (teachers of other groups) in turn.

Classification Formula 3:

	in	W	out
sent	3-0		4-3
received	3-0		4-3

Position of Anna in C6 six months later:

She and the housemother of C6 rejected each other. She rejected 12 members of the cottage and was indifferent towards the remaining members. Six of them rejected her. She was attracted to two girls in other cottages (in C10 and C1).

Classification Formula 2B:

	in	L	out
sent	0-13		2-0
received	0-7		4-0

Her work situation remained unchanged:

Classification Formula 3:

	in	W	out
sent	3-0		4-3
received	3-0		4-3

Sociometric status of Anna in C6 twelve months later:

She rejected the housemother of C6 and was rejected by her. Anna was attracted to one girl of the cottage who was also attracted to her. She was indifferent towards all other members of the group, eighteen among them rejecting her. She was attracted to the housemothers of C7, C10 and C1, the first two being drawn to her, the third indifferent to her. She was attracted to two girls in C10 who were drawn to her, and to two others in C1 who were indifferent to her.

Classification Formula 2C:

	in	L	out
sent	1-1		7-0
received	1-19		4-0

On the criterion of working together she was attracted to the same girls as six months before, but two of them at this date rejected her. Her relation to the staff remained the same.

Classification Formula 3B:

	in	W	out
sent	3-0		4-3
received	2-1		3-4

The sum of Anna's relations in respect to living and work groups presents the following formula:

	in	L and W	out
sent	4-1		11-3
received	3-20		7-4

COTTAGE ORGANIZATION

	C6	
	<i>At the Outset</i>	<i>Retest, 18 Months Later</i>
Population	25	25
Ratio of Interest (for own group).....	71.20%	71%
Sum of Attractions (in per cent)	75.42%	67.56%
Sum of Repulsions (in per cent)	24.58%	32.44%
Index of Popularity	3%	3%
Structure:		
Unchosen and Rejected	0	2
Pairs	28	31
Mutual Rejections	1	3
Incompatible Pairs	8	10
Chains	5	6
Triangles	4	5
Squares	5	6
Circles	6	6
Stars (of attraction)	6	9
Stars (of rejection)	1	1

PARENT TEST

As all other cottage groups in the community had been tested and their structure disclosed, the tester was able to eliminate such groups from among them as appeared to present conditions for Anna similar to those which confronted her in C6 and to pick from among the cottage groups those which appeared more desirable for her. The evidence gathered indicated C6 to be undesirable for her development and suggested C1, C10 or C7 to be better placements. Therefore, a meeting was arranged between Anna and the housemothers of these cottages. Anna chose the housemother of C10 first and was chosen first by her. The housemother of C7 was her second choice and the housemother of C1 her third, but both of these housemothers rejected her.

SPONTANEITY TEST AND ROLEPLAYING

Anna was placed in several roleplaying situations in which she was confronted with her sociometric partners in the community, with individuals from C1, C7 and C10, in the role of a cottage partner, daughter, sister, co-worker, and girl friend. In the

situations with members of C10 she showed the highest degree of adequacy and spontaneity.

ASSIGNMENT

It can be seen that through sociometric testing at intervals we gained a knowledge of 1) Anna's situation at the outset, 2) her development within the group in the course of eighteen months, 3) the development of the group during that same period, and 4) her situation at the end of this period. A study of her position in relation to the chief psychological currents pervading the community revealed that she remained untouched by the sexual and racial currents, but that due to her relation to two girls in C1, to the Art teacher, and to three other members of the staff, she was caught by a cultural current. Whereas the position she had in C6 tended to drive her away from the community, the position she had attained in reference to the cultural currents tended to provide a counterbalance.

The mutual attraction of Anna and the housemother of C10 weighs heavily in favor of assignment to this cottage. The cottage organization of C10 was inferior to that of C1 or C7, but it might offer Anna, in her desire for recognition and independence, less resistance than the more highly organized and more rigidly disciplined C6, C7 or C1, in which the key sociometric positions are crystallized.

Sociometric Testing	suggested	C10 or C1
Cottage Organization	suggested	C7, C1 or C10
Parent Test	suggested	C10
Psychological Currents	suggested	C1 or C10
Acquaintance Test	suggested	C10 or C1 or C7
Assigned to		C10

B. Sociometric status, subsequent behavior and development in C10 after assignment:

1. The organization of C10 at the beginning of our sociometric study and its organization after a period of 18 months when Anna was assigned to it was as follows:

	C10	
	<i>At the Outset</i>	<i>Retest, 18 Months Later</i>
Population	33	32
Ratio of Interest (for own group)	32.12%	39%
Sum of Attractions (in per cent)	49.20%	57.17%
Sum of Repulsions (in per cent)	50.80%	42.83%
Index of Popularity	2.90%	1.70%
Structure:		
Isolated	1	1
Unchosen	6	2
Unchosen and Rejected	7	2
Pairs	10	18
Mutual Rejections	6	3
Incompatible Pairs	9	3
Chains	2	2
Triangles	0	3
Squares	0	0
Circles	0	1
Stars (of attraction)	3	3
Stars (of rejection)	2	1

2. Position of Anna in C10 after three months:

Classification Formula 2D:	in	L	out
sent	3—0		2—0
received	7—0		5—0

Classification Formula 3C:	in	W	out
sent	3—0		3—3
received	2—2		4—2

Position of Anna in C10 after twelve months: She chooses five girls in C10 and two of the staff (her own housemother and assistant housemother), and is chosen by both as well as by twelve girls within her own cottage; she is attracted to two girls and two housemothers of other groups and to two teachers; she rejects one girl in another cottage, is the choice of three girls and six staff members of other groups. Her classification is therefore as follows:

Classification Formula 2E:	in	L	out
sent	7—0		6—1
received	14—0		9—0

3. Sociometric summary: We recognize that after an unfavorable start in her original cottage group, C6, Anna's sociometric status in that group became more and more that of a radi-

cally unadjusted individual during a period of one year. The new individuals who had been assigned to that cottage in the course of this period did not contribute to the improvement of her position, either directly or indirectly. Her choices for housemother and friends ran persistently to three other cottages (C10, C7 and C1) and the majority of her acquaintances also consisted of girls belonging to these groups. Her role playing pointed persistently towards C10 as the most satisfactory cottage group for her.

After Anna's assignment to C10 a remarkable change in sociometric status became visible from the start. Her Classification Formula 2E given above expresses the degree of adjustment attained in the new group, C10, after one year. The process which took place in and around Anna can be described as a mental catharsis through reassignment to another group.

Each case offers a different picture and may be in need of a different assignment. For instance, in contrast to Anna, who was near-isolated and rejected in C6, Flora CM in C4 formed a mutually attracted pair with another girl of the same cottage, but they were rejected and isolated as a pair. (See sociograms presenting the atomic structure of Flora's position before and after reassignment, p. 516). Mary DA is another example. She is the center of four attractions coming from the outgroups and two coming from the ingroup. She dares to oppose the housemother and the other members of the group around the housemother (see sociograms, p. 517). Again, Betty PW, an Indian girl, presented simple isolation in the first group after a period of three months; she repeated the same picture of isolation after a period of eight months in the second group.

By comparing the position of the individuals in the sociogram with their behavior in the actual life situation, observing them, interviewing them and their associates, roleplaying with them, etc., we gain an idea of the validity of their behavior in the sociometric tests.

A WORKGROUP, BEFORE AND AFTER SOCIOMETRIC REGROUPING

Before Regrouping

The steam laundry was found to be the source of a race riot which spread throughout the community. The task was to re-

shuffle the personnel of the laundry and to reorganize it with the assumption that this would lead to better race relations and to greater work productivity. The sociometric status of the workers in the steam laundry before assignment was as follows: 7 Negro workers and 1 white forewoman were occupied there. Stella DR and Philamina LR, the feeders, reject each other. Hilda GR and Myrtle WL, the catchers, reject each other. Myrtle WL rejects also the feeder opposite her, Philamina LR. Lillian FR and Rosalie CV, the folders, attract each other. Lillian FR and Rosalie CV reject Myrtle WL. Esther GM, the shaker, is attracted to Rosalie CV and rejects Hilda GR. Esther GM, Stella DR, Hilda GR, and Lillian FR all reject the white forewoman (FM) but only Stella DR is rejected by her. Philamina LR, Myrtle WL and Rosalie CV are attracted to the forewoman. The seven workers live in C12 (but only Myrtle WL is plotted on the sociogram of C12 because most of them came to the community at a later date). Myrtle WL is a star of considerable attraction in her home group. However, her sociometric position in the steam laundry is of a different order. Here she is rejected by 3 of the workers; the mutual attraction to the white forewoman is a carryover from the homegroup in which she represents one of the few stabilizing forces and where she has an affectionate relationship with the authoritative figure, the white housemother. Stella DR is the leader of a rebellious gang which produces a countercurrent. She is rejected by Myrtle WL and by most of those workers who are attracted to the forewoman.

In order to remove from this group the socioemotional strain which was pressing upon the forewoman and the workers, disturbing the morale of the group and interfering with its productivity, the elimination of Stella DR and Myrtle WL was indicated.

After Regrouping

The jobs vacated, after Stella DR and Myrtle WL were eliminated and assigned to another work group, were filled by Dorothy RS and Mildred CE. A new sociometric test was then applied to the new sociometric structure thus attained. The two feeders, Dorothy RS (new member) and Philamina LR are indifferent towards each other. The lack of personal feeling here may be an

advantage. Indifference to each other is preferable to mutual rejection. But at times, when mutual attraction is linked to mutual liking only and not to competence in the work it may be of disadvantage. Instead of gossiping they concentrate on the job and join their skills. The two catchers, Mildred CE (new member) and Hilda GR attract each other. This attraction is not motivated only by a feeling of comradeship but because they know that they can work more efficiently together than with someone else. Their relationship to the feeders has improved. Before reconstruction each catcher rejected one of the feeders. Now only one of the feeders is rejected by one catcher. A considerable improvement in the work relationships on both sides was noticed. The two folders attract each other as before. Their relationship to the total situation has only changed for the better. The two folders who rejected one of the catchers are now indifferent. The rejection of the forewoman by Lillian FR and Hilda GR has changed into an attraction towards her from both. Except for the shaker Esther GM all the workers are now attracted to the forewoman. The production of the workshop has increased in output, the time schedule has been advanced and the interpersonal frictions have been much reduced.

The sociometric test, before and after, is followed up by interviews with every worker in order to find out the reasons they have for a choice or rejection of their work participants. The results are compared with the actual behavior of the workers in the real situation. In case of continued difficulties roleplaying situations were devised into which the total work situation was projected for diagnostic and retraining purposes; the participants in the roleplaying sessions are the workers themselves.

TOTAL EFFECT OF SOCIOMETRIC RECONSTRUCTION UPON THE ENTIRE COMMUNITY

Within a period of eighteen months, 102 individuals, about one-fifth of the population, had been initially assigned to a cottage or reassigned from one cottage to another. At the end of this period, the status of each cottage group had changed considerably compared with the status it had shown before our techniques of assignment to cottages and reassignment from cottage to cottage were employed.

The value of assignment can be estimated in its accumulative effect upon the community as a whole and upon the groups within it. The continuous assignment of new individuals to the different cottage groups produces changes in the social structure which can be traced later through the sociometric test. A single case of initial assignment already concerned numerous individuals. The report given above (p. 510) directly involved twenty individuals. Indirectly, however, more than two hundred individuals were in some way involved when we take into consideration the social atoms, the volume of acquaintance, and the position in the networks of each of these twenty individuals.

Table 16 indicates that fifteen cottages have increased and one has decreased its ratio of interest, and that the average ratio of interest has increased by 9.67%. Table 17 indicates that the sum of attractions expressed in percentages has increased in twelve cottages and decreased in three. Table 18 indicates that the index of group attraction has increased for four, decreased for ten and remained the same for two cottages.

TABLE 16

RANKING OF COTTAGES ACCORDING TO RATIO OF INTEREST

	<i>Original Status</i>	<i>Status at the End of the 18 Months Period</i>
C6.....	71.20%	71%
C13.....	71.03%	74.46%
C15.....	69.63%	71.24%
C9.....	59%	62.16%
C12.....	56.36%	66.73%
C8.....	56.10%	57.05%
C2.....	55.45%	62.38%
C11.....	53.57%	62%
C1.....	47%	70.91%
C4.....	46.67%	65.34%
C16.....	46%	70.25%
C7.....	44.57%	53.78%
C3.....	39.17%	43.62%
C14.....	37.93%	45.84%
C10.....	32.12%	39%
C5.....	31%	55.71%
	Average Ratio of Interest 51.05%	Average Ratio of Interest 60.72%

TABLE 17

RANKING OF COTTAGES ACCORDING TO THE SUM OF ATTRACTIONS AND REPULSIONS IN PERCENTAGES

	<i>Original Status</i>		<i>Status at the End of the 18 Months Period</i>	
	<i>Attractions</i>	<i>Repulsions</i>	<i>Attractions</i>	<i>Repulsions</i>
C2.....	85.36%	14.64%	88.77%	11.23%
C13.....	84.43%	15.57%	82.93%	17.07%
C1.....	83.93%	16.07%	89.29%	10.71%
C7.....	78.79%	21.21%	91.08%	8.92%
C15.....	76.23%	23.77%	67.23%	32.77%
C6.....	75.42%	24.58%	67.56%	32.44%
C11.....	68.47%	31.53%	84.09%	15.91%
C16.....	67.30%	32.70%	72.95%	27.05%
C12.....	66.67%	33.33%	85.16%	14.84%
C9.....	65.49%	34.51%	67.03%	32.97%
C14.....	59.14%	40.86%	65.48%	34.52%
C8.....	58.48%	41.52%	62.94%	37.06%
C3.....	55.81%	44.19%	57.58%	42.42%
C10.....	49.20%	50.80%	57.17%	42.83%
C4.....	48.41%	51.59%	52.02%	47.98%

TABLE 18

RANKING OF COTTAGES ACCORDING TO GROUP ATTRACTION (An Index of Relative Popularity)

	<i>Original Status</i>	<i>Status at the End of the 18 Months Period</i>
	<i>Ratio of Attraction</i>	<i>Ratio of Attraction</i>
C2.....	4.0%	1.5%
C1.....	3.8%	.8%
C7.....	3.3%	2.0%
C6.....	3.0%	3.0%
C4.....	3.0%	1.0%
C13.....	3.0%	.4%
C14.....	3.0%	2.4%
C10.....	2.9%	1.7%
C11.....	2.6%	1.0%
C16.....	2.5%	.7%
C15.....	2.5%	3.0%
C8.....	2.0%	2.3%
C3.....	1.7%	1.9%
C12.....	1.6%	2.0%
C5.....	1.2%	1.0%
C9.....	.9%	.9%

CONSTRUCTION AND RECONSTRUCTION OF GROUPS

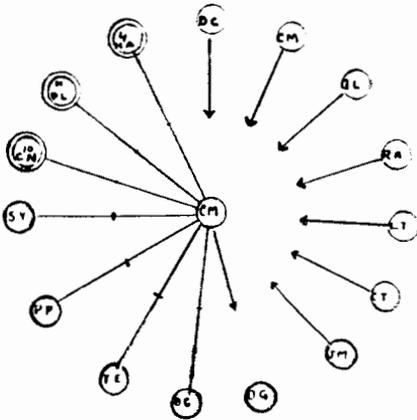


Fig. 1

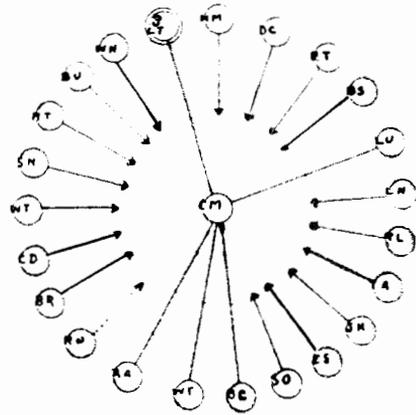


Fig. 2

ASSIGNMENT THERAPY

Fig. 1. Indicates the position of CM in her first assignment, C3. After a *two years stay* within it she had developed the position as charted. From her four choices three go outside the group and one inside to BC with whom she forms a pair. But BC is herself isolated. CM is rejected by ten individuals of her group (DC, CM, GL, RA, LT, CT, JM, YE, PP, SY) and she rejects four (DG, YE, PP, SY). She rejects the house-mother and is rejected by her (not plotted on this chart). Mutual rejections with three individuals or more have in this case and in many other instances proved a fruitful source for frictions. Isolated in the cottage with BC they had both planned to run away. CM forms mutual attractions with individuals in different houses, NA in C4, PL in the hospital and CH in C10. This indicates that although isolated and rejected in her present cottage she is able to produce attachment to other individuals in the community. As she is a typical Reassignment case her mutual relations with outsiders may indicate where to find a better placement for her in the given community.

Fig. 2. CM has been assigned from C3 to C6. The chart indicates the position which she has developed after a period of six months in C6. Of her five choices, four now go into the group, to LU, DC, WT and RA with all of whom she forms mutual attractions. One choice goes outside the group to LT in C3 who rejected CM when she was living in C3 and towards whom CM was then indifferent. She is attracted to the house-mother who is attracted to her in return (not plotted). A study of the entire membership of the group revealed that 15 of the 23 members were attracted to CM, 6 rejected her and one was indifferent to her.

CONSTRUCTION AND RECONSTRUCTION OF GROUPS

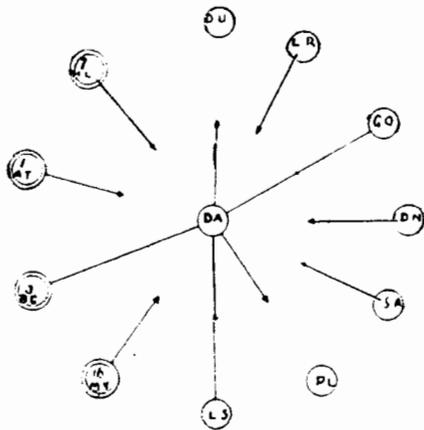


Fig. 1

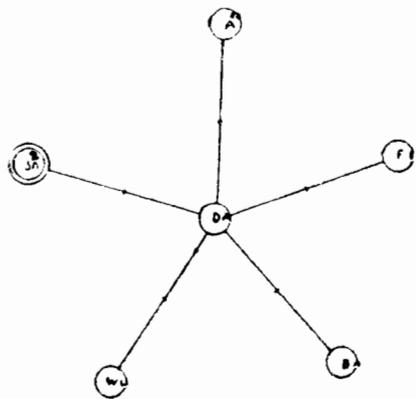


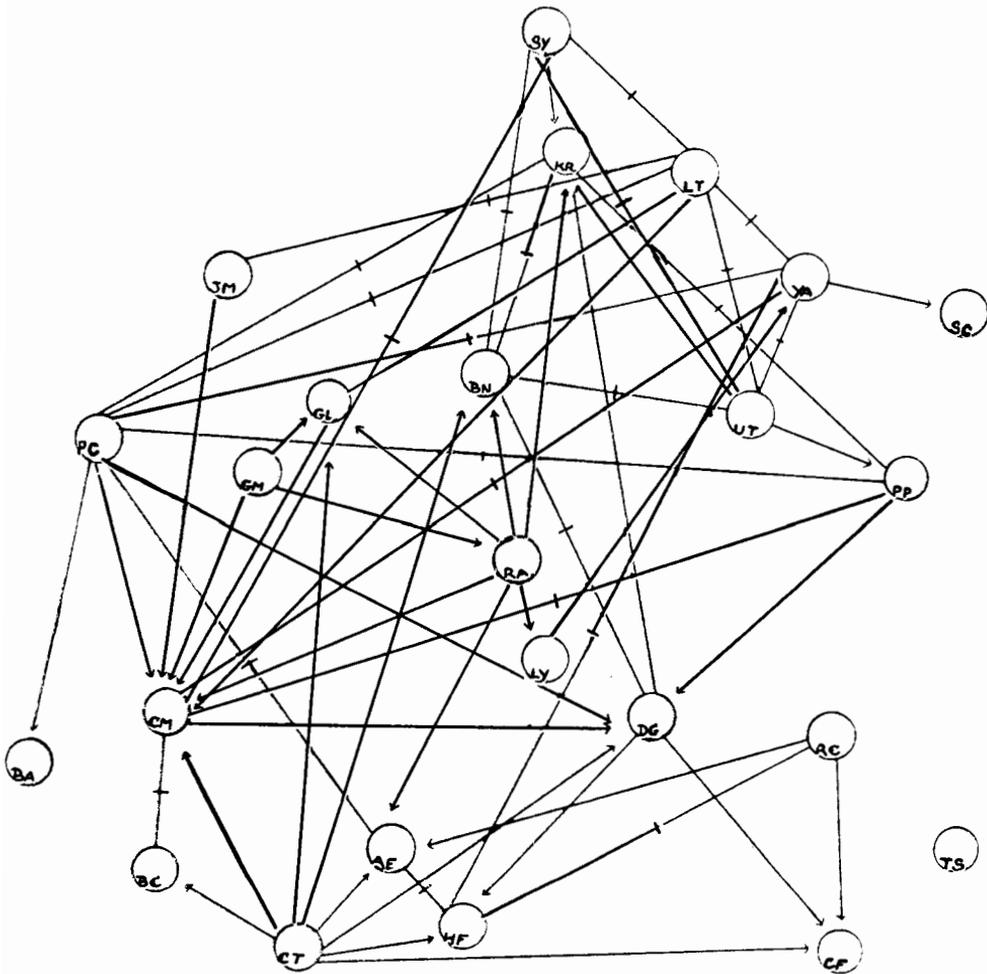
Fig. 2

ASSIGNMENT THERAPY

Fig. 1. Indicates the position of DA in her first assignment, C4, after a period of 14 months. From her four choices she sends three into her cottage; two remain unresponded to and one is responded to favorably by GO. She is rejected by three individuals, LR, DN, and SA, within her own group and she herself rejects one, LS, who is attracted to her. She forms a mutual attraction with BC in C3 and is chosen by HL in C7, AT in C1, and MY in C16. She rejects the housemother and is rejected by her in return (not plotted).

Fig. 2. DA has been assigned from C4 to C7. The chart indicates the position which she has developed after a period of four months in C7. Four of her choices go inside her group and she forms mutual pairs with AA, FI, BA and WL, the leader-individuals of the cottage. She is rejected by none. She is chosen by the housemother to whom she is attracted (not plotted).

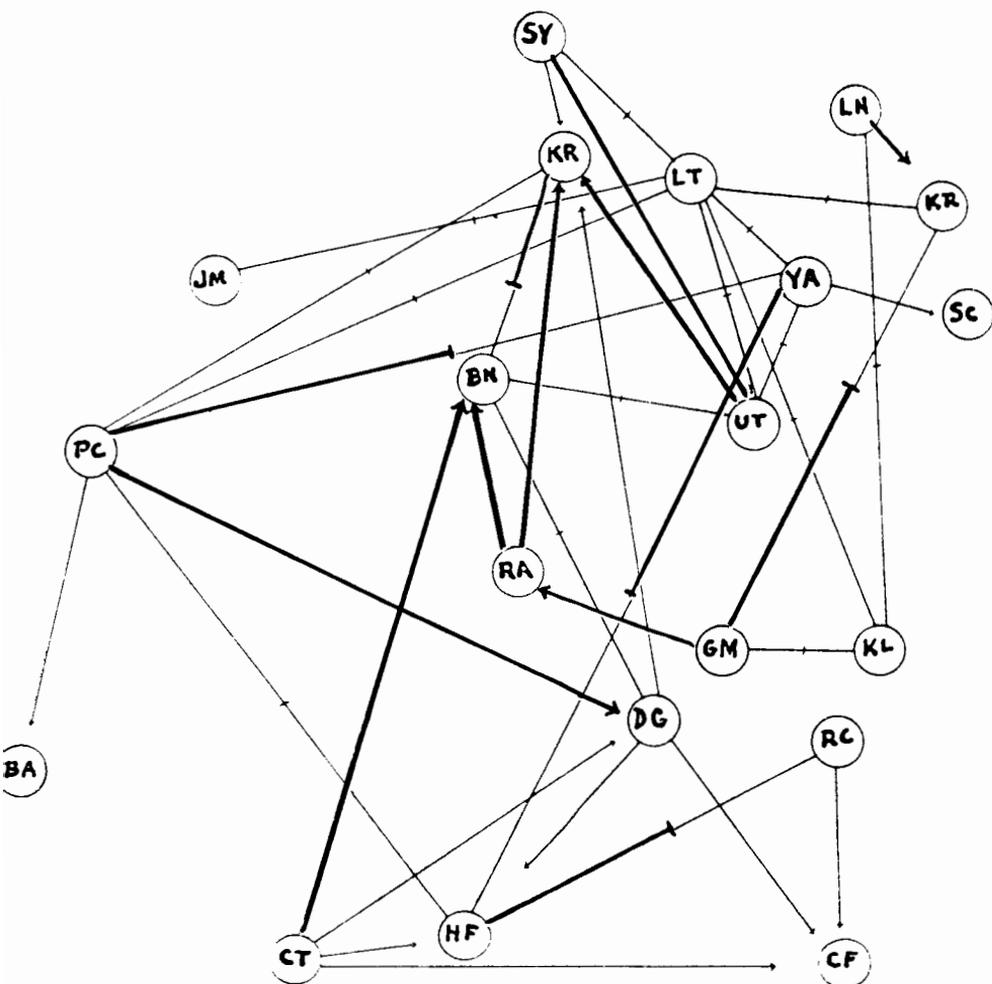
CONSTRUCTION AND RECONSTRUCTION OF GROUPS



STRUCTURE OF A COTTAGE FAMILY—C3, BEFORE RECONSTRUCTION
 24 girls. *Isolated* 1; *Unchosen* 2; *Unchosen and Rejecting* 1; *Unchosen and Rejected* 4; *Not Choosing* 3; *Pairs* 15; *Mutual Rejections* 5; *Incompatible Pairs* 4; *Chains* 2; *Triangles* 2; *Squares* 1; *Circles* 1; *Stars* (of attractions) 1; *Stars* (of rejections) 1.

Classification: Extroverted Group Organization; Inward Aggressive.
 Since the first test was given the population changed from 23 to 24. Note that 4 girls do not use their choices at all, they only express rejections. The structure has changed considerably since the entrance of the 24th girl, CT. LT, for instance, who was an Isolated Star before, now has mutual relations with all those who choose her and a mutual rejection with GL who formerly chose her.

CONSTRUCTION AND RECONSTRUCTION OF GROUPS



STRUCTURE OF A COTTAGE FAMILY—C3, AFTER RECONSTRUCTION

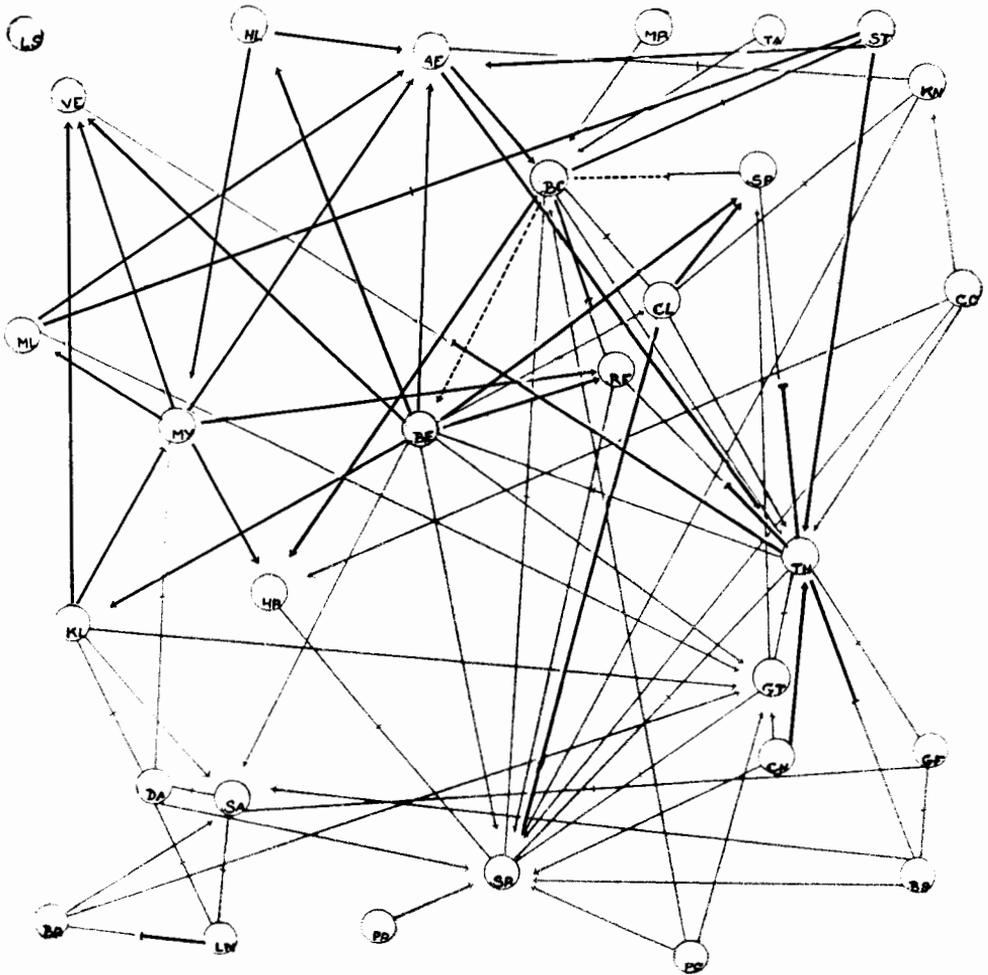
20 girls. C3 has been reconstructed through assigning to other groups the isolated and rejected pair CM and BC, both in a poor position. BC is little chosen, CM is the center of the largest number of rejections (10). BC, besides being in mutual attraction with CM received a choice from CT, to whom she pays no attention. (See C3 before reconstruction.) CT herself is an unchosen individual. These surroundings made the pair, BC-CM, practically isolated from the group. Other individuals who required attention were LY and GL, both isolated and rejected; further, the isolated TS and PP. The latter, though not isolated produced continuous frictions with leaders of rejection and thus reduced the cohesion of the group.

About 52% of the choices go into the cottage now whereas before only 46% of

the choices went into it. There are several indications that a marked change in the cohesion of the group has taken place: a) the increased number of choices going into the cottage family, centering interest more upon members of the group than upon members of other groups; b) the number of mutual rejections has fallen from 5 to 1; c) there is no isolate; d) the higher structures have increased, there are now 2 triangles instead of 1, 1 square instead of 0 and there is no star of rejections as against 1 in the previous sociogram. Another feature is the distribution of attractions and rejections within the group. There were 58% of attractions and 42% of rejections before; there are now 74% of attractions and only 26% of rejections. The cottage group was classified before as Inward Aggressive, more than 50% of its population rejecting some member of the group. After reconstruction the inward aggressiveness has receded, only 9 members of its population reject some member of the group.

Classification: The original Extraverted and Centrifugal Organization has turned into Introverted and Centripetal Organization.

CONSTRUCTION AND RECONSTRUCTION OF GROUPS



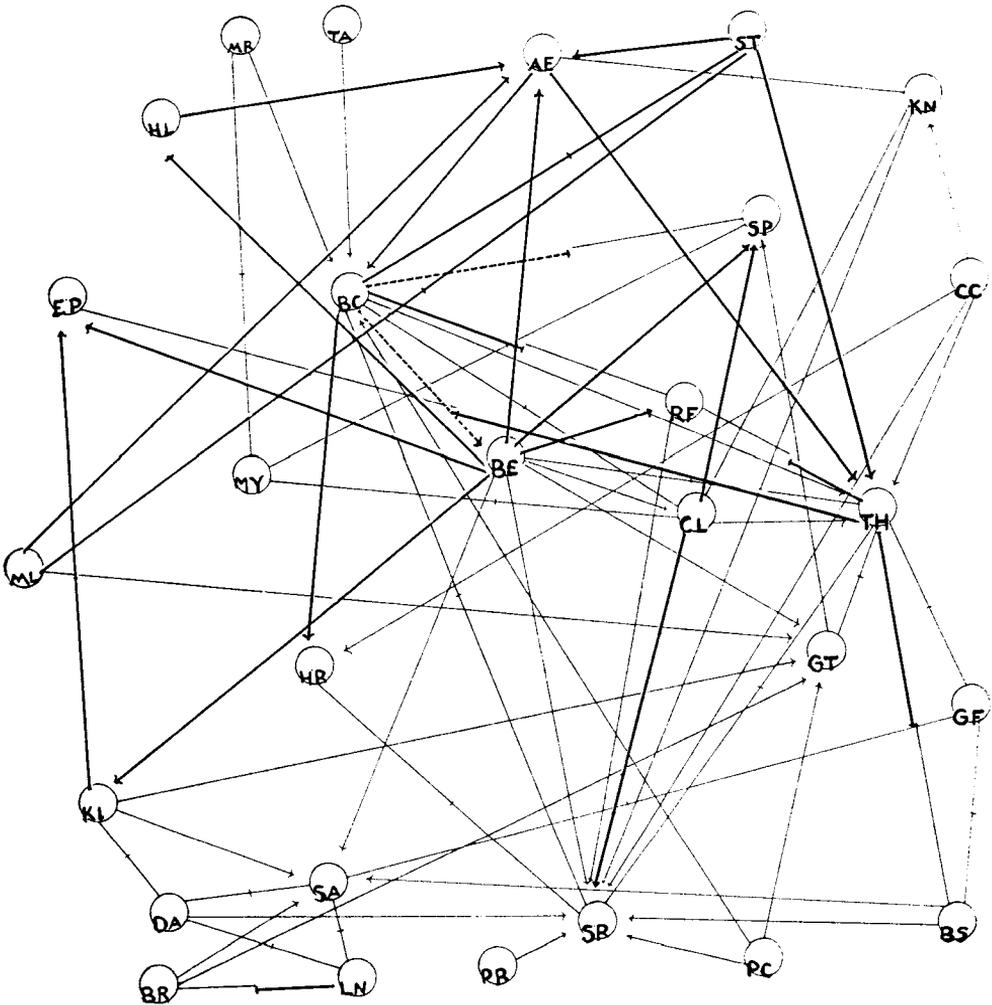
STRUCTURE OF A COTTAGE FAMILY—C16

Criterion: Living in proximity, sharing the same house; 5 choices; no limit placed on rejections.

30 girls. *Isolated* 1; *Unchosen* 6; *Unchosen and Rejected* 5; *Not Choosing* 1; *Pairs* 18; *Mutual Rejections* 2; *Incompatible Pairs* 7; *Chains* 6; *Triangles* 2; *Squares* 0; *Circles* 0; *Stars (of attraction)* 5; *Stars (of rejection)* 1.

Classification: Extroverted. Special Feature—Large Number of Unchosen and Rejected.

CONSTRUCTION AND RECONSTRUCTION OF GROUPS



STRUCTURE OF A COTTAGE FAMILY—C16, AFTER RECONSTRUCTION

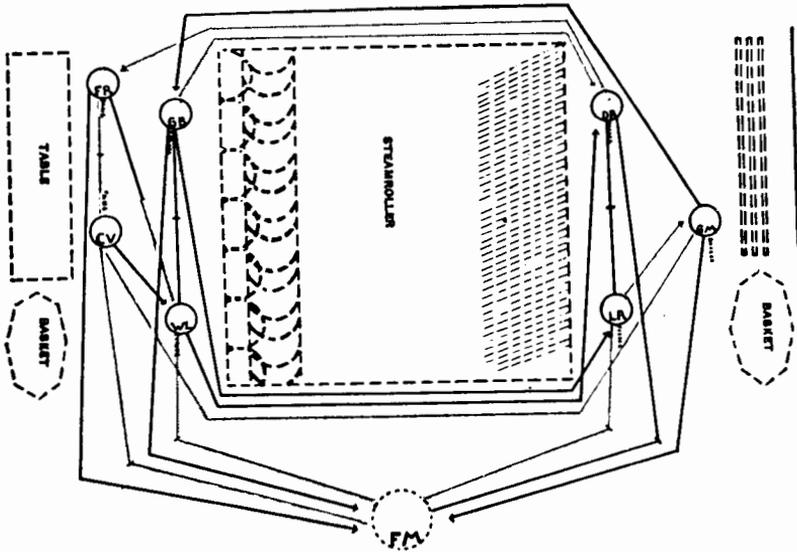
Criterion: Living in proximity, sharing the same house; 5 choices; no limit placed on rejections.

28 girls. *Unchosen* 4; *Unchosen and Rejected* 5; *Pairs* 17; *Mutual Rejections* 2; *Incompatible Pairs* 6; *Chains* 6; *Triangles* 1; *Squares* 0; *Circles* 0; *Stars* (of attraction) 5; *Stars* (of rejection) 0.

Three members of this group, in an isolated, unchosen or rejected position, were assigned to other cottages, CN, LS, and VE. A new member was admitted, EP. The numerical analysis of the attraction-repulsion patterns shows practically no change. The housemother, however, reported a considerable change in the be-

havior of the girls; the number of temper tantrums, stolen articles, secret dates, passing of incriminating letters, had decreased to about one half of the former frequency. In order that a sociometric explanation for this turn of the tide can be given, a careful reading of the sociogram is required. Although the actual number of the structures has not changed, the distribution of the lines of communication has changed, and new, significant constellations have been formed. Individual MY, for instance, rejects five individuals and is rejected by two in the first sociogram. Apart from the relation to DA she is unchosen, does not choose and is therefore practically out of communication. In the sociogram *after* reconstruction we see MY in *three* mutual relationships with individuals who formerly ignored her. Moreover, she does not reject anyone nor is she herself rejected by any member of the group. She joins a new constellation of MR, CL, TH, SP and GT. This constellation produced, by direct and indirect links of six individuals, a ramification involving a total of twenty-one members of the group. Before re-assignment the group was fragmented into a number of small cliques around the leaders, a larger number of the members of the group being left out.

CONSTRUCTION AND RECONSTRUCTION OF GROUPS

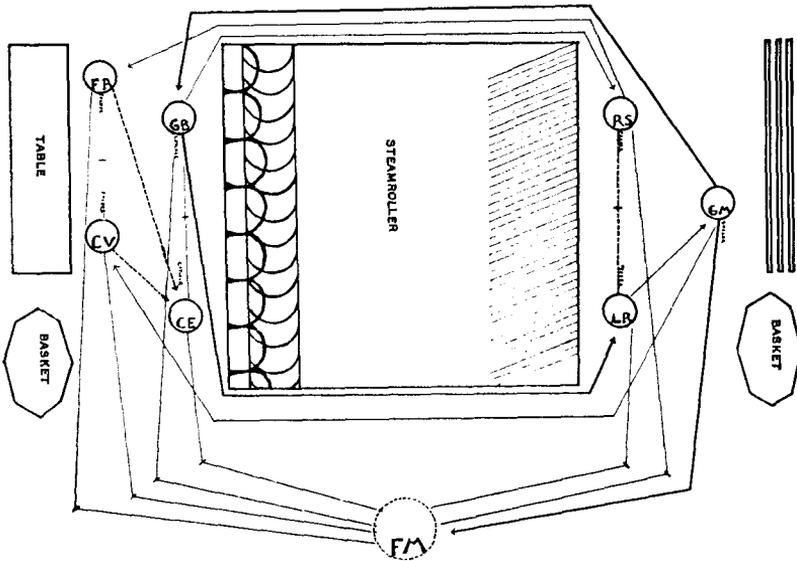


STEAM LAUNDRY

STRUCTURE BEFORE RECONSTRUCTION

Fig. 1. 7 workers and 1 white forewoman. DR and LR, the feeders, reject each other. GR and WL, the catchers, reject each other. WL rejects also the feeder opposite her, LR. FR and CV, the two folders, attract each other. FR and CV reject WL. GM, the shaker, is attracted to CV and rejects GR. GM, DR, GR and FR reject the forewoman (FM) but only DR is rejected by her. LR, WL and CV are attracted to the forewoman. The seven workers live in C12, but only WL is plotted on the sociogram of C12 because most of them came to the community at a later date. WL can be located on the sociogram of C12 on p. 274 at the top left hand corner. It may be noted here that she is a star of considerable attraction (5) in her home group. However, her sociometric position in the steam laundry is of a different order. Here she is rejected by 3 of the workers; the mutual attraction to the white forewoman is a carryover from the home group in which she represents one of the few stabilizing forces and where she has an affectionate relationship with the white housemother.

CONSTRUCTION AND RECONSTRUCTION OF GROUPS



STRUCTURE OF A WORK GROUP—STEAM LAUNDRY, AFTER RECONSTRUCTION

After assignment of DR and WL to another work group and their replacement by RS and CE the new sociometric structure attained by a new sociometric test is here plotted. (Compare with Steam Laundry, Before Reconstruction.) The two feeders, RS (new member) and LR are indifferent towards each other. The lack of personal feeling may here be an advantage. Indifference to each other is preferable to mutual rejection. But at times, when mutual attraction is linked to mutual emotional liking only and not to competence in the work it may be of disadvantage. Instead of gossiping they concentrate on the job and join their skills. The two catchers, CE (new member) and GR attract each other. This attraction to each other is not motivated only by a feeling of comradeship but because they know that they can work more efficiently together than with someone else. Their relationship to the feeders has improved. Before reconstruction each catcher rejected one of the feeders. After reconstruction only one of the feeders is rejected by one catcher. A considerable improvement in the work relationships on both sides was noticed. The two folders attract each other here as before. Their relationship to the total situation has only changed for the better. The two folders who rejected one of the catchers are now indifferent. The rejection of the forewoman by FR and GR has changed into an attraction towards her from both. Except for the shaker GM all the workers are now attracted to the forewoman. The production of the workshop has increased in output, the time schedule has been advanced and the interpersonal frictions have been much reduced. The sociometric test, before and after, is followed up by interviews with every worker, in order to find out the reasons they have for a choice or a rejection of their work participants. The results in the sociogram are compared with the actual behavior of the workers in the real situation itself. In case of continued difficulties role-playing situations were devised into which the total work situation was projected for diagnostic and retraining purposes.

DISCUSSION OF SOCIOMETRIC RECONSTRUCTION METHODS

It has been demonstrated that the distribution and regrouping of individuals within a given community by means of sociometric procedures is a valuable aid in raising its sociometric status and morale. The application of such a sociology of reconstruction to numerous communities has enlarged our methodical experience and given support to our hypothesis that no individual and no group should be removed from a community until its sociometric integration has been attempted. It stands to reason that by supplementing legal and economic social planning by sociometric planning many of our reformatories, prisons and mental hospitals will become superfluous.

The problem of the runaway is closely related to the problem of migration, the deeper causes in the latter case, however, being more obscured. A sociometric study of the migrating groups would probably show the gradual isolation and rejection of such groups within the area and would indicate in what manner psychological currents develop and contribute to the readiness of such groups to resort to migration and to be swayed by economic motives.

These results suggest that distribution and redistribution of the population within a given community on the basis of sociometric classification are valuable aids in the betterment of its general status. After practicing assignment therapy in many communities, our knowledge of technique will increase and perhaps we will begin to realize that no individual should be segregated from the community at large before an attempt is made to find a place for him within its fold, and that correctional institutions in the modern sense may disappear when legal and economic planning of society is supplemented by sociometric planning.

We may take occasion here to discuss an argument which has often been raised since my tests were inaugurated: "Are not communities treated in this manner in danger of becoming too harmonious and too peaceful, and when these individuals return to the world at large are they not in danger of again failing there?" These communities do not become more harmonious and peaceful because their heterogeneous elements are eliminated from them,

or because their contrasting elements are discouraged or replaced. Just the opposite approach is true of our procedure. We bring to unfoldment and awareness all the spontaneous movements which are potential within the population and begin then, in cooperation with the whole populace, to reorganize and coordinate their currents. It is not a flat harmony but a harmony in which the harmonies and disharmonies are balanced within a larger scope. It may be said also that the danger of too happy homes and too happy communities is very small. Unmixed harmony and love are rarely evidenced. This very study has certified the frightening truth that our social universe is overwhelmingly filled with aggressiveness, cruelties and jealousies of all sorts, and that these are deeply imbedded, not only within the individual but particularly within the complex structure of social interaction.

SUMMARY AND CONCLUSIONS

The runaway status of a community like Hudson is an indicator of the extent to which the community has become the psychological home for the members of its population. There are few state institutions known to us where the number of runaways is as low as it is in Hudson. However, a remarkable drop in runaway incidents has been noted during the last year.

The decrease in the number of runaways can be appreciated fully when we consider that *initial* assignments through sociometric techniques *began* on February 22, 1933. After a four months' period the effect of assignment became evident within the community. The number of runaways gradually dropped and during the following eight months—from July 1, 1933, until March 1, 1934—the number of runaways was unprecedentedly low, a total of six, which would be equally unusual for an open population outside the institution, consisting of an equal number of adolescents. As no essential change in the set-up of the community had been made during this period, either in personnel or in the general character of the population received, the greater inclination of the girls to remain in Hudson can be ascribed to the procedure of assignment. A greater number had reached this minimum of adjustment, they did not run away.

SOCIOMETRY IN A CHANGING SOCIAL ORDER

DIMENSIONS OF SOCIETY

The rise of new psychological currents in a community and the decline of old ones effect a slow but continuous change in the community structure. Therefore, to keep a community in a status of equilibrium corrective means are necessary.

If we look at the universe we see the life of its organisms interlocked in a state of interdependence, and if we look particularly upon the organisms which reside upon earth, we see this state of interdependence in two aspects, a geographical, *horizontal structure* of interdependence among the organisms and a *vertical structure* of interdependence among them. We see that more highly differentiated organisms rest in and depend upon the less highly differentiated. It is this heterogeneity of order which makes bacteria and algae indispensable for the more complex structures resting upon them and which gives creatures so vulnerable and dependent as man the possibility of existence.

The vertical line of structure, the tendency of binding together higher with lower forms, to express one part through the other and to exploit one part through another for a common aim can be observed in every part of nature. In the human body the head rests upon the trunk and the trunk upon the legs. In the topography of the mind the lighter and finer elements, the ideas, rest upon the heavier and rougher elements, the emotions, which in turn rest upon instinctual drives. And it appears that the mental health of the individual depends upon a happy mixture of these elements rather than upon the absolute predominance of one factor at the cost of the other. There seems to be a point of saturation in respect to how much intellect a man with a given emotional equipment can stand, how much of this emotional energy should undergo sublimation, or, in turn, how much emotional energy should be spent by a particular individual with a given emotional capacity.

The two directions of structure can also be observed in social groups. No individual will stand long apart from the other and no group isolated from others if they live in geographic proximity. They will, sooner or later, come to an exchange of emotions and other social values and thus produce horizontal structures through

interdependence and collectivistic differentiation. The vertical line of structure can be observed in groups which tend to endure over a period of time. We see a number of dependent elements at the "bottom" of the group and a number of leading elements at the "top" of the group, and often also a number of intermediary agents between them. The members at the top need the dependent groups as a medium to express themselves and the dependent groups need the members at the top as a medium to express themselves. The analysis of groups in earlier pages of this book has demonstrated that the actual organization of a group is far more complex than this simple division indicates, but one principle always appeared to prevail, the tendency to produce groups which are therapeutically fit for survival. And it appears further that this demand was responded to best by such groups as were provided with a well-balanced vertical mixture of individuals differing in regard to numerous factors, as for instance, mental capacity, ability and chronological age. It indicated, however, that this heterogeneity could not go on without limit, that there existed a point of saturation for leader-individuals, for contrasting racial elements, for individuals of retarded mental development, and other factors; neither could heterogeneity be reduced to a minimum without reaching stagnation and gradual disintegration.

The condition of a group in which a certain individual member has failed to produce a successful adjustment after a period of six months or more was our first concern aside from the condition of this individual himself. The group can be in *ascendance*, that is, developing from a lower to a higher level of organization, or it can be in *decline*, regressing from a higher to a lower level of organization. The situation of a newcomer is influenced by the condition of the group he enters. In the process of adjusting himself to the group he passes through a phase of ascendance, the gradual acquaintance with the members of the group, the gradual developing of a position within it which gives the best possible expression to his strivings and abilities against the pressure brought forth by the other members around him. Secondly, he enters into a phase of maintenance of the position attained. The latter takes place when the process of ascendance ends in a relatively successful adjustment of the individual to the group. But sometimes it is observed that this process of ascendance is

blocked, either at the very entrance of the individual into the group or in some of the later phases. Resistances against his adjustment come either from the group or from himself, or from both sides; it may not melt through attempts of the individual or through attempts from the outside, and if this arrest is maintained for a period of six months or more, then some therapeutic approach to the problem becomes urgent. The maladjustment may be due to particular individual difficulties which he developed prior to entering into the group. If the group to which he is assigned has a number of other individuals besides him who suffer from similar or other difficulties, such members of the group as are aiding in their adjustment may be overburdened. He and his difficulties are then too much for the group and he may become rejected. Or his maladjustment may not be due to particular individual difficulties, but to difficulties within the collective itself. Specific social, racial and nationality characteristics may produce disturbances among the members, if the group is already saturated with individuals of this particular nationality and if that group is saturated with leader-individuals of his abilities and tendencies and he is, in consequence, handicapped in developing and expressing them. These and similar conditions may suggest the conclusion that this individual is of disadvantage to the group and that the group is of disadvantage to him. He may throw the group out of balance and the group may tend to keep him out of balance. All this may be due not only to causes originating in the subject or in this or that member of the group, nor to the interaction of the subject with the members, but it may also be determined by the developmental level of the group; it could be due to the type of organization it represents and to the point of saturation for certain elements which are important for the maintenance and survival of the group as a whole.

When the organization of a group is uncovered through the sociometric test it also reveals the contribution which each of its members makes towards the mental or social disorder by which a particular individual is especially caught. This recognition of the community structure and of the position of each individual within it can be used for therapeutic ends through a form of individual treatment, through group psychotherapy or through regrouping.

PSYCHODRAMA, SOCIODRAMA AND SPONTANEITY
TRAINING

If we should merely have succeeded in adjusting each individual to every possible group within the fold of the given institution, this would still not be a guarantee for an adjustment later in the community at large. The perplexing problem of a community like Hudson is the necessity of returning its population, after a period of training, from a given environment to a more complex environment. Theoretically we could imagine a solution in the idea of conditioning the individual through placing him successively into many environments to learn through trial and error. These environments, however, may not always be available; or, again, incorrigible habits may develop. Yet, in want of a manifold of natural environments we can resort to the creating of *experimental* environments, and in want of a manifold of living roles we can resort to fictitious roles which are brought as close as possible to the living ones. To accomplish this aim we have developed techniques for "training social spontaneity."

The problem can be looked at also from another angle: the more similar the set-up of a closed community to that of the community outside the more it will be a reality test. Therefore, the better defined the social reality, the better we will be able to define the techniques necessary to attain potential preparation for it in Hudson. But the difficulty starts right here. We have no means whereby to define with any amount of precision this reality to which the individuals return. We have been able, through the sociometric test, to obtain a good idea of the psychological reality, Hudson. For us who have made this sociometric study, Hudson is the known, the world the unknown. We have gained a criterion for measuring the success in adjustment of an individual here, but we have no criterion as yet to predict whether an adjustment to the community at large will or will not be successful—more especially since the set-up of Hudson, in which the social and work situations into which the individuals may enter are limited in number and readily definable, is so relatively simple compared to that of the community at large. If the world were of as comparatively rigid a structure as we imagine society was in the Middle Ages, then we could preview the social and vocational

situations, their number and character, for which the individuals have to be trained. But today these situations differ from country to country, often from state to state, and undergo transformation within a few years, even within the same town. It is a reality which does not remain stationary, a changing reality. The technological process destroys well accredited vocations with new inventions and develops new ones. While inconformity with the law is technically sufficient to define an act as antisocial, this is no criterion for deciding whether or not an individual has attained successful adjustment to the persons in his community.

The trend towards greater complexity and differentiation reflects not only upon the social and vocational situations but also upon the instinctual drives of man, particularly upon the sexual and parental impulses. And it is for failure to command these impulses to the advantage of the individual and the kind that the majority of the population of women's institutions are committed. The fact that they are sent to institutions is irrelevant. The problem would be the same in any case. Regardless of whether they have transgressed the law or not, these girls have in common with many others who remain unapprehended, that they develop a comparatively larger emotional expansiveness in reference to sex than to other criteria, without, at the same time, being able to direct their emotions. As the difficulties arise in relation to the other sex, the problem is one of emotional learning: how to behave towards the other sex. But for this particular problem in adjustment no therapeutic approach exists either in our institutions or other schools.

Two conclusions can be drawn, however, from the psychological reality of the community outside and the equipment required for an individual who meets these demands adequately. The first conclusion is a negative one. The lack of fixed vocations and their transitory character, the impermanence of the social situations and the constant uprising of new varieties make it unwise to take these as a criterion around which to construct a program of training. The second conclusion is based upon sociometric studies as far as they have been made to date in the community at large. Social groups have a definite organization in respect to the age levels of their members and to the criterion of the particular collective in which they participate; the position of an individual in

a group which has one kind of organization is a means by which to prognosticate the position he will attain in groups of a like or closely similar organization.

But successful adjustment to a plurality of environments requires a flexible, spontaneous personality make-up. The question then arises how such a personality make-up can be achieved and what attributes this personality requires. The objectives of our systems of education in the past have been to train man for a series of rigid social situations and for a series of rigid vocations. The roads through which the individual had to travel were given. Development or perfection could be obtained only within these dogmatic and clear-cut boundaries. Outside of these were chaos and disintegration. But within the last century a change has taken place. This change did not move from the old dogmatic situation to a new dogmatic situation, but to one of flux and uncertainty. The argument has been raised that the cause of this development is the industrial revolution and that the remedy lies in halting the progress of the machine, or, again, that the cause lies in a perversion of man's instincts and the remedy in a return to a more primitive civilization. But another point of view can be taken: that *man is resourceful enough to become more highly differentiated and more flexible in accord with a more highly differentiated and more flexible form of society which, as it appears, is in the making.*

We had observed in the case of Elsa TL that the spontaneity testing was accompanied by a by-product: the attitude of many members of her group towards her underwent a modification although no other effort had been made except the placing of the members into experimental situations to act with her. As it appeared, during these acts Elsa was stimulated to uncover aspects of her personality which she had not had an opportunity to reveal in the disciplined course of cottage life, and likewise the other members of the acting group had an opportunity to uncover towards Elsa aspects of their personalities which had remained hidden or little displayed. The suggestion arose out of these observations to supplement the routine group life through activities in experimental play situations, giving the members of the group a chance to act in a variety of functions and rôles and enabling them to release and shape their interests. Through this medium it was

possible to make each member of the group, the interrelations among the members, and the group as a whole more flexible. The conflicts of the actual family constellation and of love and business relations, etc., were lacking in this community. We introduced precisely such situations as might arise in relations of this sort in order that conduct in these situations might be improved through incorporating functions relating to them into plays. In this manner we provided a means to offset and fulfill the lacks intrinsic to a closed community.

The individuals chose the situations and the rôles in which they wanted to act, and the partners whom they wanted to act opposite them in a certain rôle, or they reversed the rôles they had in life, or they were placed in selected situations. As the acting was pure improvisation, the performance was a yardstick of how they might perform in life situations. But whereas conduct in a life situation is irrevocable, here every phase of the performance is open to correction through criticism made by the other participants, the instructor and the subject himself. Thus a technique for learning to differentiate in action behavior patterns which may have been inadequate at the start is made available to the individual and to the group. We found it advisable to construct the situations in such a manner as to resemble as closely as possible the position the individual expects to assume in the community outside. For instance, if the individual receives training in a specific vocation, she is placed in a variety of situations which might arise in this vocation.

Social life has the tendency to attach a definite rôle to a specific person so that this rôle becomes the prevailing one into which the individual is folded. Anxiety, fear, resentment, or feelings of difference and distinction are often increased by this condition and the accruing strains and tensions reflect into the group life. They can, however, be reduced through the release and training provided by skillful guidance of the individuals in the performance of play situations.

Many things which one girl would not tell another or the housemother in life she may act out in a play, and the humor of it may prevent and heal many potential grievances which might otherwise have led to actual conflict. And there is another aspect

which is the more important the more rigidly differentiated social life is. *Everybody is expected to live up to his official rôle in life—a teacher is to act as a teacher, a pupil as a pupil, and so forth. But the individual craves to embody far more rôles than those he is allowed to act out in life and even one or more varieties within the same rôle. Every individual is filled with different rôles which he wants to become active in and that are present in him in different stages of development. It is from the active pressure which these multiple individual units exert upon the manifest official rôle that a feeling of anxiety is often produced.*

The method has numerous advantages compared with training in adjustment through actual life experiences, particularly for the individual in the formative stages. First, in actual life situations an individual often has difficulty in learning from a mistake due to the earnestness of the situation. In his anxiety he may repeat such error when a similar occasion occurs, thus retarding his learning to overcome it. Second, for many individuals actual life situations encourage an emotional inertia if the performance is successful in a given rôle, and more is not demanded. Third, actual life situations, even if these develop an individual to the point of fitting perfectly into a certain rôle, they make him single-tracked and exclude from his horizon other varieties of situations and vocations. As a *developmental* technique Spontaneity Training is thus superior to life training. Through training of individuals for conduct in possibly arising situations, in a variety of rôles and functions they may have to assume towards a variety of persons in the possible rôles they may assume, the subject learns to meet life situations more adequately. The training makes him more resourceful and versatile. The possibility can be envisioned of directing man's evolution with the aid of "Stegreif" (spontaneity) techniques into avenues which differentiate and enlarge the spontaneous base of his heritage, his ability to be spontaneous, his "spontaneability." Spontaneity research has disclosed that spontaneity is not a mystic and irrational factor, but a capacity with which all men are endowed and which can be tested and trained. The problem of learning becomes one of not inducing and conserving habits but to train spontaneity, to train and develop man to the habit of spontaneity. These considerations have led me to the development of a "spontaneity theory of learning."

A series of life situations calling for the embodiment of specific states and rôles is constructed. This series is not arbitrary but organized upon the basis of the findings of the sociometric and Spontaneity Tests in relation to the specific individual under training. Each of the situation-patterns is constructed through several phases ranging from the simplest possible form of a given situation-pattern through the more complex forms to the most highly differentiated, all carefully graduated according to the requirements of the subject. Hence *the subject is trained through acting in the simplest of rôles in any specific situation-pattern through several degrees of differentiation of the same situation-pattern until he can command the pattern adequately*. As in life the individual must perform in many situation-patterns, Spontaneity Training must also include not only many varieties of any single situation-pattern but many different situation-patterns.

An example of how such training is graduated to develop and sustain a specific attitude in a given rôle in several varieties of the same situation-pattern is as follows: For instance, in the first stage the subject produces the attitude of sympathy towards another individual. In the second stage he has to produce the same attitude in a rôle in which he has to command a certain function, for instance, the rôle of a salesperson in a dress shop and in relation to certain things, dresses. In the next stage, the subject has to produce the same attitude in the same rôle as above but in a situation selected by the instructor, as selling dresses to a business-like and ready customer. In a later stage, the task is further differentiated. The subject produces the same attitude and in the same rôle but the instructor selects a customer who is to act resentful and argumentative. The task of the subject is to sustain the cheerful, sympathetic attitude in the face of such resistance. The differentiation of this pattern can be further elaborated in accord with the ability and progress of the subject.

In some phases of the training in which the situation, his own rôle and the partners are selected by the subject, the position of the instructor is that of a critical observer. But in the process of graduated training the part of the instructor becomes more active. One of the most important problems is then *how to get the subject started*. The instructor may have arrived at certain conclusions

in respect to what kind of roles the subject is deficient in and what kind of persons he needs to adjust to. He constructs situations in which the subject is to act in a certain rôle opposite one or more persons. In the instructor's mind the pattern of this situation, the details of arrangement, and particularly the rôle the subject should act, gain a definite, clear form. The instructor is thus himself warmed up to the state and rôle he realizes needs to be embodied by the subject. In this condition the instructor discloses to the subject the rôle to be acted by him. This procedure wherein the instructor transfers to the subject the rôle and the possible form it may take is called the *Act of Warming Up*. The value of the training depends partly upon the impression which the act makes on the subject and upon the clarity of the thought which formulated the rôle. The Act of Warming Up itself has only the significance of providing a "starter." The rest of the procedure remains the production of the subject and co-actors.

Another important phase of the training is an analysis *immediately* following the action. This may reveal that an act was successfully but too hastily embodied, perhaps because the subject was too anxious to succeed, warming up too early, jerking while in the state and jumping into higher levels. Such a spontaneity state can be called "overheated". It may reveal the inability of the subject to produce a state demanded of him and can therefore be called "rudimentary". Or it may reveal the inability of the subject to stop, to *finish* the act, that is, to finish it in accord with the demands of the situation. It may reveal the anxiety of the subject to be in the lead all the time, unwilling or unable to collaborate with a partner in a given situation-pattern. Again, it may reveal the inability of the subject to coordinate his bodily movements of arms, legs, etc., to his verbal expressions and to the bodily and verbal expressions of his partners. Or it may reveal the lack of factual information in respect to the matters which are brought to expression in the course of the situations acted. These and other analytic findings may have a bearing upon the next situation and rôle to be selected for the subject, and are also an indication of the progress he has made in the training.

SPONTANEITY THEORY OF LEARNING

As the training of spontaneity states and not the learning of contents is the objective, the attempt is made to loosen the fixed associations between states and contents as they have become established in the course of education by traditional method. Emphasis upon contents results in the split of the individual into an *act* personality and a *content* personality. We found it a valuable hypothesis to assume that two different memory centers develop, an *act center* and a *content center* which exist in general as separate structures without connection. A content is received in a dull, untuned state, an act in a highly heated state; our hypothesis is that they trace different paths in the nervous system. They are not received at the same moment. In consequence they do not recur simultaneously, filling one moment, uniting the entire personality with one action, but at different times, separated from each other. The material learned does not reach the act-center of personality. A shut-in memory develops and prevents the integration of the factual knowledge into the active personality of the individual. The knowledge remains undigested, unabsorbed by the personality and hinders its full influence upon his activity and judgment. But in actual life situations the supreme desideratum is exactly this facility of integration.

There is another problem arising in the course of mental growth which has to be considered. An individual may begin any specific activity with improvisation. But the more often improvisations around that complex are produced, the more the tendency develops in the individual to pick out from past efforts the best actions, gestures, thoughts and phrases, in other words, to improvise less and less and to develop more and more a safe and organized anchorage. He is then able to forsake improvisation entirely in relation to this specific complex and to rely upon the censured and recensored product of his improvisations, that is, upon a "content". Spontaneous production was merely a starting form of the process which in the end turned into a finished product, a content which later became *sacred* through repetition. The effort at spontaneity is no longer necessary; it becomes rudimentary and dies out. Therefore, the objective of a spontaneity theory of learning is to develop and sustain a spontaneous and flexible per-

sonality make-up. A technique of Spontaneity Training as described has to come to the rescue to offset the resignation and inertia of the individual.

It has been observed that when soldiers return from war in a foreign land they can be divided into two groups: in one group are those men who have gone far towards mastering the foreign language and in the other are those who have remained almost entirely in ignorance of it. I have made the observation on a small sample that this fact has little to do with the intelligence of the men. While a man of superior intelligence returns ignorant of the language a less intelligent man may have attained a remarkable command of it. The freshness and originality of his speech is frequently surprising. Inquiry has revealed that these men have gone through some intensive emotional experience, for instance, falling in love. It appeared that it is not the emotional experience itself but certain processes accompanying it which account for the greater facility of this group over the former in acquiring the language.

Every one of us realizes the relative availability and presentness of various facets of his knowledge. The question remains why certain knowledge is immediately at hand and other knowledge which we have struggled equally hard or harder to attain is always slipping away when most needed? There are several theories which have tried to explain this process, the one is the theory of conditioning, the other the theory of repression. But there is one hypothesis which has been neglected, that is that among other factors, learning is affected by the rising and falling of the spontaneous states in the learner.

In order to illustrate our hypothesis we may refer again to the learning of a foreign language in the case of our group of soldiers. Some men, ignorant of the new language, tried to learn in a popularly accepted way, that is, by using a text book, memorizing words and phrases and trying to retain characteristic idioms of speech. In other words, their learning took place when they were poorly warmed up, in states of low spontaneity. However, when they were deeply involved in a life situation, in a highly heated state and had to deliver some of the phrases they had learned, their memories did not function adequately in the sudden need of the

moment. According to spontaneity hypothesis it is assumed that learning connected with highly warmed up states establishes special associations. Contents of learning which enter the mind connected with highly warmed up states recur more easily with the recurrence of similarly warmed up states. On the other hand, contents of learning which enter the mind associated with untuned, unemotional cold states tend to recur with these and not with highly warmed up states. We assume that also between these states special or close associations exist. The man who failed to use the foreign language well had to deliver it while functioning as an actor; at the time when he acquired it, however, he was in the behavior of a more or less passive recipient, interpersonally uninvolved. He did not have the emotional experience of the man who learned it in an interpersonal situation and who was therefore able to apply it more effectively to other interpersonal situations. The latter had learned to speak it in an exciting way, therefore his conversation, when required, however faulty, was keyed to an emotional pitch. Interpersonal situations as love relations are, as a matter of course, accompanied by intensively heated states. Every word and phrase exchanged in these states remain associated with them. The contents enter the mind when the subject is in the behavior of acting. Later, when he is anxious to use them in emotional situations again, they recur spontaneously, connected with the present acts. Since he began by receiving contents in a spontaneous activity, he could finish by delivering them as a spontaneous expression. This way of learning not only increases his knowledge but shapes and gives more unity to his personality; his learning becomes essentially connected and integrated with his acts, not apart from them.

THE OPERATION

Spontaneous operation refers to the actions taken by the learner in the moment of learning. If the moment is not completely encountered and lived some residua of the spontaneity in action may result and block the learner's progress. These residua may be caused by numerous stimuli, for instance some stresses in the course of doing, and remain undigested in the learner. It is from the residua of spontaneous action that what is often called

frustration of the learner results. The learner can deal with his residua in three ways: first, he can let the residua passively mount up until they make his immediate living unsteady and unbearable, *i.e.*, he becomes mentally ill; second, he can use them as cliché materials for the building of mental stereotypes and cultural conserves. These two ways have been practiced almost to the exclusion of any other way; lastly he can stick to spontaneity, try to resolve the residua by de-conserving and go on actively and systematically by training it. This is the type of operation to which the spontaneity theory of learning has been dedicated.

Experiments of spontaneity testing and training adequately set up are few. Our hypotheses in this area are largely based on clinical observations. But enough has been done to set other investigators to studying the problem.

To the spontaneity theorist the difference between association and field theory of learning appears secondary. The association theory analyzes behavior into elements and tries to discover laws governing the combination of these elements. The field theory contends, in contrast, that the parts have no significance except in terms of the total configuration. The two theories have in common that a) they feel safest in experiments with animals, b) they try to explain the dynamics of the highest forms of human productivity with reference to the simple hypotheses formulated on the basis of animal experimentation, without reference to spontaneity and creativity.

The field theorists have discovered one dimension of learning, the visual or perceptual restructuring of the problem, but they have neglected to study the dynamic factors which cause these restructuring tendencies to *emerge*. The association theorists have discovered another dimension of learning, the laws of associative strength, as the frequencies of response and the latency of reaction time of response. Both contributions can be integrated into the spontaneity theory of learning, the one having focussed on the structure, the other on the functions of the mind. The spontaneity theorist places both phenomena into a larger matrix, the action matrix dealing with a higher grade organism, the actor *in situ*.

METHODS OF LEARNING

The acts taken by the learner are influenced not only by the moment *in situ* but by events which have taken place in the past or by goals which are set for the future. According to emphasis several theories of learning have developed: associational learning (of the behavioristic or the gestalt type), goal learning, and in our own time spontaneity learning. An illustration as to what goal determination does to the learner is "goose step" learning, the model taken from military schools. The learner rehearses, he is meticulously drilled as to how to behave in special situations because it is assumed that he will be more accurate in handling a specific situation the better he has rehearsed it; he is made to learn like an actor memorizing his rôle. The result may be a great precision in solving that task but a minimum of spontaneity for anything else which might occur unexpectedly. If a new situation takes place for which the student-soldier has no spontaneity experience to fall upon, he'll be blinded and blocked by the very clichés he has learned to master. He might have been prepared for *all* potential situations instead of for a few specific ones but this would amount to changing the philosophy and technique of learning. We would have to train the spontaneity of the soldier instead of his precise execution of this or that situation. It has been said especially of the Australian, but also of American soldiers, that they have shown to be, during the last war, less exact and prompt than the German soldier, but more individualistic and more spontaneous. This can easily become a drawback and may lead to disorganized behavior if not considered in a larger frame of reference. *The objective of learning may, for instance, not be the precision in a specific number of tasks, but the spontaneity of the total organism of the soldier and the spontaneous coordination of interaction between all the members of a platoon.* The objective should then be to make the organism of the soldier able to act adequately and quickly on the spur of the moment; to preserve and increase his plasticity becomes more important than to train his precision within a narrow range. It may very well be that the greater spontaneity and resourcefulness of the American and Australian soldier was a contributory factor towards winning the war, wresting victory from the Germans against bad odds, as the Germans had in the beginning the

superiority of weapons and vastly better disciplined armies.

The transfer effect from the learning of one thing to the learning of another should be the more difficult the less developed the plasticity between the different loci of learning is. The task of the spontaneity learner is therefore to prepare himself for easy transfer and, at the same time, learn how to integrate it with disciplined action; how to meet the proper balance between the two extremes, how much to sacrifice of the one or the other depends upon the individual case. There are several methods by which one can learn to mobilize easy transfer, for instance, the improvisation of senseless, manufactured words and phrases in the treatment of stutterers. Such an exercise is an exercise in spontaneous production. It has a different purpose than the memory test of nonsense syllables and should not be confused with it. It is a method in "deconserving" the learner's mind, gradual removal of clichés and training his spontaneity. One area of application is stuttering. It moves the stutterer from the semantic to the presemantic level of speech; now that feelings and gestures are associated with senseless words the stuttering vanishes. At a later stage the moment may come when it is possible for the stutterer to retransfer the spontaneous balance attained by nonsense speech to the semantic level. This chaotic, spontaneous, freely emerging language I have called "*basic language*" as it has some similarity to the baby languages of the infant.

The goose step learner is often instructed to overlearn, to know his piece better than necessary, as a safety device against slipping or stage fright. "Under learning" may be an equally important device for the spontaneous learner. The overlearner wants a cultural conserve to stick, the underlearner wants his spontaneity to thrive.

THE VEHICLE—THE STAGE OF SPONTANEITY VERSUS THE PSYCHOANALYTIC COUCH

The vehicle in which learning takes place symbolizes the kind of learning which is contemplated. An illustration is the psychoanalytic couch. The patient has to lie down passively in a horizontal position. If he wants to be in a more elevated position he has to stretch the legs of the couch and raise the mattress. If he wants to be in a lower position he has to take the legs off and if he wants

to move from one position to the other he has to transform the couch into one with several layers. If he wants to stand on his feet safely he needs a couch with a hard, perhaps wooden surface and if he wants to move around freely, expansively and into all directions, he needs wide spaces, an extensive field of action. When he is through with these manipulations a new vehicle has been born, the old couch has changed into a theatre of spontaneity. And something else is added; when he was on the couch, if his mother or wife was on his mind, he talked about them; that is all the couch permitted. But on this new vehicle they can appear and act on the stage, presenting their own part and the whole world can sit before them in the audience.

The vehicle for army exercises is the "open" field. It is a vehicle similar to the stage, farthest removed from the couch, as anything might happen in it and anything might have to be acted out on it. The events are not determined by a single individual, a talking soldier on a couch; spontaneity in a triple sense, individual, social and actional are the desiderata for an army in movement. But this open field can be deteriorated by forms of exercise which misuse the opportunities of that field. Their symbol is the goose step. The goose step would not require the wide open spaces in which to operate. A vehicle like a railway track would be sufficient for its fulfillment. The railway track does to the open field what the couch does to the stage. From the point of view of mobility the railroad track is like a physical frustration of the open field of action, the couch the frustration of the therapeutic stage and psychoanalysis a frustrated psychodrama.

AUTONOMY OF THE LEARNER

Learning is an all inclusive process of which educational learning is only one phase. It must include learning in life itself from infancy up to old age, for sub-human as well as human organisms. It must include social and cultural learning as it occurs within the framework of social and cultural institutions. It must include therapeutic learning as on the couch or on the psychodrama stage. Once we have formulated such a broad view of the learning process we can go a step further and evaluate all these various learning instruments as to what they accomplish for the autonomy, the spontaneity and the creativity of the learners themselves.

One can measure the educational or therapeutic value of an instrument by the degree to which it stimulates the autonomy of individuals or groups. The degree of autonomy, for instance, which psychoanalysis permits a subject to attain is limited to the verbal dimension. Non-directive counseling may be given a still lower rating than psychoanalysis because by itself it does not increase the spontaneity of the therapeutic learner; on the other hand it is so designed that it decreases the spontaneity of the counselor. The degrees to which the subject warms up to an experience and expression of himself and others is a measure of the autonomy of the self. It is useful to study the degree, the range and intensity of warming up which individuals attain in the course of various operations of learning. We can talk about instruments which encourage only a minimum of involvement and autonomy, and of instruments which encourage a maximum of involvement and autonomy. Some instruments encourage the individual only to warm up to perceptions, others only to fantasies, others to a free association of words, illustrations are the Rorschach, the TAT and the Word Association tests. A large number of not yet existent instruments can be envisioned which would mobilize and sustain in a controlled fashion larger and larger areas of personality until a level of warming up is reached by which the actor *in situ* is completely taken in and released. Such instruments enabling high degrees of autonomy are psychodrama and sociodrama.

CATHARSIS OF INTEGRATION AND THE AIM OF LEARNING

One of the contributions of spontaneity research was to recognize the various phases and degrees of spontaneity as one continuous process, the reduction and loss of spontaneity, impulsive abreactions and the pathological excesses as well as adequate and disciplined spontaneity, productive and creative spontaneity. Another contribution was to recognize that spontaneity does not operate in a vacuum but in relation to already structured phenomena, cultural and social conserves. "Spontaneity is a function of organization."*

* This apt phrase has been coined by Professor Wellman J. Warner during an address at a meeting of the American Society of Group Psychotherapy and Psychodrama, May, 1951.

The unification of all types of learning by the principle of spontaneity is the dream of many educators. It will gradually take place in proportion to the invention and practice of methods which demonstrate its usefulness. We are more and more becoming aware that in operation the educator cannot be neatly separated from the parent, the counselor, the therapist, the friend and partner. In turn, the pupil cannot be neatly separated from the son, the learner, the counselee or the patient. The dynamic inter-relatedness of all types of learning brings to the fore a concept which was relegated up to now to a specialty, to psychotherapy only, that of mental catharsis. Mental catharsis is here defined as a process which accompanies every type of learning, not only a finding of resolution from conflict, but also of realisation of self, not only release and relief but also equilibrium and peace. It is not a catharsis of abreaction but a *catharsis of integration*. To use Shakespeare's Hamlet as an illustration—if we imagine that the Hamlet on the stage is the real Prince Hamlet and *not* an actor—there are from the critical experience of his father's appearance to the entrance of Fortinbras, besides numerous abreactions, a long chain of role takings and interactions, dialogical sequences and pauses, moments of meditation and decision, the total sum of which aims at an integration of Hamlet with his co-actors and the spectators of the drama into a community experience.

Within a universe which is dominated by cultural conserves and social stereotypes the comparatively freer and more spontaneous unit is the single individual. But the isolated personal spontaneities of two billion individuals, however worthy, do not produce a spontaneity of the masses. Therefore, it is imperative that the spontaneity of the masses of people is systematically developed by means of special procedures. As we have learned from sociometric and spontaneity research, with the increase of the number of individuals and the interaction between them, a *decrease* of their own spontaneity and the spontaneity of the group takes place. They make each other unfree and unspontaneous. The larger the population of mankind becomes, therefore, in a conserve-dominated world order, the more unfree the individual becomes and the more unfree become the small groups within the total population. The crowd and mob psychological studies of LeBon, Tarde and others were in themselves correct. They found

that the crowds and mobs are impulsive, automatic and uncontrolled, given to primitive emotions, reducing the individual participants to a lower level of initiative, freedom and spontaneity. What they did not realize is that what are called crowds, mobs and so forth are all already pathological, distorted group structures for which our world order itself is responsible. LeBon and Tarde described what the structure of crowds and mobs are in *our* type of society, but not what they could be if the optimal social structure of spontaneous-creative human relations were mobilized. If we should decide to develop a spontaneous-creative universe to replace the one in which we live—and in which spontaneity is arbitrary and incidental—the spontaneity of one individual will stimulate the spontaneity of the other and the quantitative result will be the opposite of what we have at present. The spontaneity of the group will increase with its size and with the number of interactions of its members. In our present world order the spontaneity quotient of the total of mankind is practically inert as for instance the League of Nations and the United Nations Organization have illustrated.

The spontaneity of mankind in such a future world order will multiply in direct proportion to the number of its groups and the numbers of interactions between them. It will be so enormous that the power of man, the exercise of his collective energy will surpass everything we have ever dreamed.

Book V

SOCIOMETRIC PLANNING
OF SOCIETY

SPONTANEOUS EVOLUTION OF SOCIETY

Before we consider any technique of planning we must examine the course which natural evolution takes. We have to settle the question whether the process of "natural" evolution is still not the best course in itself, for if this remains the case even sociometric planning is not only vain and unnecessary but possibly harmful. Furthermore, any motive for planning has to be clearly established, a theological, cooperative or anarchistic system of society, before a natural outgrowth of planning can follow justifiably. In the history of community experimentation Charles Fourier and Robert Owen have earned a place of honor. Over a century ago these two indefatigable pioneers evolved ingenious schemes for social organization. It was their Utopian concept of human nature and of human society which accounts for the failure of their respective efforts. Aided by the theory of sociometric realism and sociometric methods their experiments might have succeeded. We may look successively into developmental aspects of our society—social, industrial, cultural and governmental.

It is also of significance to compare the similarities and differences of the new community projects with the early American frontier settlements. The early American frontier was a spontaneous movement of people. The availability of vast unsettled territory was the condition which made this spread of settling possible. The movement of population was comparatively unrestrained except for the barriers of nature. But since the frontier days a society has grown up with the most exacting social, industrial and cultural patterns. The back-to-the-land movement today is restrained by this social structure and the established rights of the people. In this instance, at least, the process of migration is in need of planning.

In the pioneer days of community formation, as in the days of the American frontier, there was either rough equality or the

inequalities which develop as natural expressions of individual and group differences. In the course of social evolution, institutions are created which transform the pioneer society into a conserving, stationary society, conserving wealth, property and cultural values. In the succeeding generations new inequalities develop within the population which cease to be a natural expression of the organic individual differences, physical or mental, and the superior individual may find himself, due to circumstances which are beyond his control, in a social situation which is in total discord with his capabilities. On the other hand, individuals who may be average or inferior may find themselves in social situations which provide them with authority and power. Class distinctions develop which are eventually the reverse of the more natural distinctions of the pioneer phase. In the sociometric sense the described situation reflects the developmental level which a society in evolution has reached if it is allowed to follow its course blindly.

A critical point is found again in industrial evolution. Mechanical invention and the development of the machine which appeared at first to be for the good of society gradually developed new difficulties. The execution of machine work became necessary without regard to the adjustment of man to it. A split between the industrial and psychological development of man grew out of the situation man-machine—in contrast to the relative unity of man's relation to his occupations in the handicraft era. This unity was due to the interlocking of his instinctive work abilities and his occupations, a condition which was favorable to his development as a creative actor. But if we should be able to bring these instinctive work abilities into accord with machine work, the interrelation man-machine, which at present is a source of potential conflict and disintegration, may be readjusted. The Spontaneity Test is a working method accomplishing this end. Aside from detecting the various work abilities, it provides a course of training to foster the individual's adjustment to new industrial situations and opens up the possibility that man may be stimulated to develop as a creative worker with a wider range of flexibility. The drawback which the machine brought about may be, as in former crises surmounted by man, but another obstacle to be overcome and an aid to his progress.

The critical point of natural growth appears also in cultural evolution. At the beginning of national cultures, the cultural forms, dance, music, drama, religion, custom, are improvised, created in the moment, but as the moments of inspiration pass man becomes more fascinated by the contents which have remained from the by-gone created acts, by their careful conservation and estimation of their value, than to continue creating. It seemed to man a higher stage of culture to forsake the moment, its uncertainty and helplessness, and to struggle for contents, to select and idolize them, thus laying ground for our type of civilization, the civilization of the *conserve*. An example is the *extempore* Dionysian plays of the old Greeks. It ended in the written drama; this was its natural fate. The process beginning with inspired Dionysian acts, ended in a *sacred* content. This was not accidental. It was an intentional evolution. As soon as its goal, an organized expression, the drama of Aeschylus, Sophocles, Euripides, was gained, the creative process was conserved forever, and so then the unnecessary attempt at spontaneity could die out. We experienced a similar case in Russia. After the revolution Russian workers enjoyed acting the revolution *extempore*. Their goal, however, was not the moment and with it the flexible, spontaneous personality, but the mass man, the functional man, the man who can be *exchanged*, and with it the repetition of a sacred political rite, a conserve, the revolution.

The vicious cycle between the creative act and the conserve in which the creative instinct of man is caught was brought to test in our experiments of play improvisation. We studied groups from day to day and found that if the players were left to themselves, although they might have the intention to improvise each time again, repartees which had been most brilliant and gestures which had been most effective were repeated, and after a few months of work, if every phase of the process had been recorded, they ended in stereotypes. It was this phenomenon which led us to invent techniques like Spontaneity Training to protect the individual against the enfeebling of his instinctive spontaneity.

The critical point is found again in the forms taken by government. An illustration would be self-government, if it were literally executed. In its ideal form it is meant to allow every individual to have an equal share in the government. In its realization it

produces the opposite effect. Only a minority of the population has a chance to express itself. A minority, not necessarily superior to the rest, secures power and assumes authority to decide of what the happiness and welfare of the majority consists. Self government, aided by sociometric analysis could be a powerful device. In sociometric studies we found that the official leaders in the community were not necessarily the ones who received most of the choices, that the key positions were often held by individuals whose quantitative influence is small. We came to realize that when the forces within the population are let loose, sociodynamic mechanisms hinder the majority of the individuals from actually fulfilling their strivings. We found that the spontaneous choice factor may come into collision with the spontaneous choice factor of many other individuals and that this possibility of collision is the greater the more unrestrained the individuals and groups are allowed to become in their expression. The study of psychosocial networks disclosed that every individual is unaware of his actual position within the community. He is aware only of a small part of the structures in which he is involved. It appears that no individual is supreme enough to be aware all the time of all the psychological currents by which he is affected.

A socio-emotional continuum of relations intermittently interacting with the external society lies below all the patterns of community life, families, clubs, labor, political or religious units. This is the true vehicle of power. Yet at no time in history has an attempt been made to base the government upon this continuum itself, instead of upon its upper structures. There is no doubt that in certain critical moments in the history of man, however, these parts of our social structure rose up and flooded the barriers. Indeed, if we study the principles from which our forms of government and public representation emerge, we see that they are often constructed in utter disregard or ignorance of this underlying continuum of human relations. We stave it off and accept and use techniques unrelated to the basic forces, artificial substitutes for the factors which are actually creating the world. Through a sociometric analysis of human relations the true and factual organization of a community would be brought to a political expression in the system of government and this expression would change on the surface only if it changed beneath. If there was a true hier-

archy inherent within its make-up, it would come to lead the rest in accord with sociometric findings.

Spontaneous and Guided Migration

It was a propitious coincidence that the government of the United States initiated as a part of the program of National Recovery the creation of new small communities to be established in various parts of the country, the so-called "homestead" projects. Each project provided an agricultural set-up and a small community factory. The population was drawn from urban or rural problem areas—in other words, it was a form of voluntary mass assignment. What complicated the problem was that the total population had to move in practically at once, not gradually as a natural settlement would develop, and that the intention was to *select* the population, not to populate the new communities *hit-or-miss*.

The results gained in a closed community as Hudson cannot be automatically transferred to open communities. The inhabitants of a closed community cannot leave it freely, outsiders cannot come freely and take up residence, the natural family unit is missing, the conflicts coming from economic situations and conflicts coming from situations between the two sexes are non-existent. The inhabitants of an open community must, in principle, permit the coming and going of anyone; the factors of the two sexes and family life as well as economic competition come into display, psychological currents bind them to the surrounding communities. In consequence, classification of its individuals and groups is beyond the range we have studied in the closed community. It is important to know, however, that *the sociometric structures found in closed communities do not differ in their basic features from the ones found in open communities*.

On the basis of the analysis of a sample of communities in various sections of the country, the sociometric aspect of inter-community and interstate migration might come to the fore. The gradual increase of restrictions on immigration reduced one difficulty in the way of classification, the continuous flux in the ethnic composition of the American nation. It gives the ethnic groups who are already living within this geographical area a more constant character, ending perhaps the first period in the evolution of

the American nation, the phase of expansion and development and beginning a new period, the phase of organization and concentration.

But there is another aspect of impermanency: the spontaneous migration of people within the territory of the United States from the country to the city, from one state to the other, from East to West, from the South to the North. A few figures, taken from the US Census Reports from 1928 to 1951 are significant. In 1920, 19.2% of the native-born population were living in states other than those in which they were born. Before 1910 the migration of the population was largely westward; but from 1919 to 1920 this movement stopped and instead an increased migration of whites from the northern states to Florida, Texas and California developed. This movement was balanced by the northward Negro migration. Whereas some large parts of the population are at one time in movement, other parts are stationary. The most stationary part lives in the south Atlantic and southeast central states, showing over 90% of the population born in the state of residence. On the other hand, in Oklahoma, Colorado and Montana more than 50% of the population was born outside of the state. The psycho-social currents behind these facts, instigating such movements of population are relevant to this study. The sociometric evidence gathered may disclose the attractions and repulsions between individuals and between groups and the motives underlying these attractions and repulsions. The motives may be economic, moving from a region of low, to another of higher prosperity, better opportunities for employment; or they may be racial persecution, moving from a region of intense persecution of a particular ethnic group to areas in which no persecution of this minority has yet developed; the motives may be religious, cultural, etc. But whatever the social forces compelling these individuals and groups to migrate, when their behavior matures to the making of choices and decisions they take the form of attractions and repulsions; those patterns are revealed by sociometric methods. We are not concerned with economic or ethnic processes as expressions of their own, but only as they enter into the choices and decisions of individuals and groups, and as they influence their interaction, attraction and repulsion patterns. In the last analysis the social forces have substance and meaning only as far

as they initiate and develop the attractions and repulsions between individuals and groups. Sociometric evidence has a further contribution to make. Statistical accounts of migratory movements indicate only the actual facts of migration, to and fro, but they do not give an account of the impeded efforts at migration, frustrated by various causes. Sociometric investigation of population movements reveal that the desire for migration is many times larger than that which becomes actually manifest and towards which parts of the country these potential migrations tend, that only the recognition of the restlessness prevailing in the depths of the population opens the way to a full understanding of migratory movements, and that the economic situation is often only the precipitating factor. The actual number of inter-cottage assignments made in Hudson, compared with the number who desired to move from one group to another, is exceedingly small. The unsatisfied feelings and tendencies of the individuals desiring such assignment produce powerful currents which express this far better than the actual figures of reassignment. Whether these migrations are always desirable for the persons themselves, for the places which they forsake, for the places to which they move, and finally for the national organization as a whole, is a large question.

When these migrations occurred in the pioneer stage of the country there was plenty of free land and no crystallized social or economic structure to restrain, divert, or prohibit these movements and the spontaneous instinct of the migrating population was a rough but in general reliable guide for the advancement of the projects they had in mind. However, today the dependence of the individual upon the social and economic structure is far greater than his dependence upon nature, and the problem of migration is far more complex. The administration of the sociometric test to populations in problem areas, thus revealing the spontaneous trends and potential movements, may lay the ground for a procedure of *guided* migration. Such a procedure could not only unburden urban centers of a surplus of industrial population but also relieve areas from the cumulative effect of socio emotional tensions.

Another factor which has a bearing upon the depopulation of one part of the community and the repopulation of another part is the social shock which the establishment of a new community

produces upon the surrounding populations, especially if the population coming into the new community is from a different part of the country and is of a relatively contrasting ethnic composition. The psychological motivation of this shock can be given through a description how, out of a social pattern as simple as the family, large and unified groups develop.

Through the study of historic lineage the common ancestors of two or more individuals can be determined. Down to a certain historic point it is demonstrated that they belong to the same family tree. This does not imply that they are of the same blood in a racial sense but relatives in a family sense. It is the family idea seen not only in its present but in its retrospective composition. In a certain geographical area a great number of these family trees will be more or less interlocked. But these family trees may continuously break up and new ones may start, greatly affected by population movements such as immigration and emigration. As individuals who are members of the same family live in the same house, individuals who are of the same family tree often have the tendency to stay in each other's neighborhood or to live in proximity. This living in proximity in groups has, as we have described, numerous effects. It ties these groups to the same geographic area and the more this proximity expands, including, besides the family the social, agricultural, industrial and cultural collectives, the greater becomes the probability that *protective* currents will develop among all the groups living together in the same area, just as they are expressed within one family or within one family tree. The protective currents may bind these individuals together even after they have moved away from the area. They develop a *social* unity. Hence, whenever new groups immigrate into this area the degree of "psychogeographical" proximity necessary for them to become integral parts of the already existing organization cannot be determined by deduction. It needs an intensive sociometric exploration of all the social contacts emerging.

We could divide the members of a cottage in Hudson into two groups: those who want to stay (the stayers) and those who want to move away (the movers). The proportion between these two groups decided whether or not a cottage group had an introverted or an extroverted organization. We saw then that groups with an

introverted organization disclosed a stronger craving for difference and distinction. This feeling of difference and distinction could easily turn into a current of aggression against intruders from other cottages. This phenomenon appears to have universal application. Also in society at large communities can be divided into two classes, those who tend towards an introverted or an extroverted organization. In every community there are stayers and movers. Communities with an introverted organization also tend to produce restrictive and protective currents against intruders. Although the motivations for these phenomena are complex, these restrictive and protective currents appeared to further social differentiation and integration within communities. An intimate study of the population structure in a local geographical area will probably demonstrate that the consanguine groups, the family trees, are the strongest centers of introverted organization and that the craving for difference and distinction is most strongly focussed in them. In just this sense national groups and psycho-geographical units, and what we call a "nation" approximates a closed psycho-geographical organization.

Attractions and Repulsions Between Germans and Jews, A Case Study of the Racial Saturation Point

We have learned that psychological currents are, in general, not produced at will, but that certain conditions within a population predispose their development. Specific groups can become racially saturated in the attempt to adjust incoming elements which are racially or in other ways contrasting. Up to the saturation point a wave of sympathy may prevail. As soon as this point is surpassed, states of anxiety, fear, jealousy, anger, etc., rise up in individuals and in groups, gradually building up the predisposing constellation for aggressive currents.

Sociometry tries to look at human society with the same objectivity with which one looks at an ant-hill and with that subjectivity which only individuals can have who are themselves participants in ant-hills. There is no scientific progress possible as long as we look at humanity through sentimental and moralistic glasses, analyzing intolerance, persecution and wars from the point of view of a particular system of values without a strict concentration upon the facts. This does not mean that the value systems

themselves are excluded from sociometric research; they are a part of the process and calculated into it up to the point to which they are able to influence social forces.

In dealing with the development of, for instance, racial currents, it is not quite as simple a matter as saying: here we have a majority group, a population of, for instance, 60,000,000 Germans with certain cultural and social constellations, and there we have a minority group, a contrasting population consisting of, for instance, 600,000 Jews with certain cultural and social constellations of their own. We must determine the saturation point of the majority group for the minority group and organize the population within the critical geographical area accordingly. By the saturation point we mean here the size of the minority group which the majority group can absorb without producing social tensions and wars between the two. We can easily see that this is not automatic, merely a matter of numbers and not answerable by mere demographic analysis. We have to consider all the dynamic factors which affect group organization as they have been brought forth to an extent in this volume, if we want to get even a dim understanding of how racial conflicts arise.

In the first place, there is the question of the emotional expansiveness of individual Jews and of individual Germans and whether the emotional expansiveness of individual Jews on the average exceeds that of the Germans. Jews may have developed, for sociodynamic reasons, a larger emotional expansiveness than Germans. We should not conclude that this condition is characteristic for Jews *per se* because certain levels of aspiration are forbidden to them,, economically, professionally, socially, culturally. Another sociometric finding has been that the emotional expansiveness of individuals grows with their acquaintance volume and that the effect of differences in individual emotional expansiveness will be multiplied proportionate to the growth of interaction between members of the two groups. The greater the restrictions on making acquaintance with members of the majority group, the greater will become the load of frustration upon the emotional expansiveness of the minority members and the tensions between the two groups will increase in intensity.

In the second place there is the factor of sexual attraction between Jews and Germans which may also gain in significance far

beyond the numerical proportions of the German and Jewish populations involved. It is primarily from carefully designed and comprehensive sociometric studies that questions of this type can be objectively answered and the existing, irrational impasse in this area, of which there are numerous parallels on every continent, can be overcome. It is said that the Jews comprise approximately 1% of the German population but we have reason to suspect that their dynamic influence far exceeds their numerical proportions. Only from the sociogram could we learn how many more German women have been attracted to Jewish men and how many more Jewish women have been attracted to German men, how many more German men have been attracted to Jewish women and how many more Jewish men have been attracted to German women, than would be proportionate to their numbers within the population as a whole. Similarly, only the sociogram will disclose how many German women reject Jewish men, etc. Evidently, the amount of sexual attraction and rejection which the members of a minority group, here the Jews, exert upon members of the opposite sex in the majority group, the Germans, and *vice versa*, has a definite bearing upon the point of saturation of the majority for the minority group. Such disproportions are able to give rise to aggressive psychological currents due to profound rivalries, individual and collective.

In the third place, the cultural, political, social, professional and economic positions or situations aspired to or controlled by the members of the minority group, should be considered. If, as it is claimed, that the Jews in Germany held more positions in the professions, arts and industries than would have been proportionate to their numbers, this may have been due to an excess of effort beyond that of perhaps equally talented Germans. In such a case currents of aggression and of protection arise, trying to offset conditions which appear to threaten the power of certain elements within the majority group. As we have learned from the workings of the sociodynamic effect, such structural relations as described may attain a symbolic influence far beyond the concrete relations formed between individuals. Such symbolic influences may affect the imaginings of Jewish men in regard to economic, cultural or sexual attainments beyond the potentialities of actual realization. There is another phenomenon which our sociograms repeatedly

disclose, that is the extent of rejections which members of the ingroup have for one another. It was quite astonishing to see that, in a different setting, parallel with a high number of attractions which colored individuals have for each other in preference to the whites, the high number of rejections and hostilities they had for each other, far exceeding those for the whites. Similarly, the amount of rejection which the Jew has for himself and for his fellow Jews in various degrees of intensity and clothed in all kinds of motivation is well known as Jewish antisemitism. There may be a correlation between the amount of rejections received and the self rejections of the members of the ingroup; there may be a negative correlation between the amount of self rejection of the Germans and the amount of self rejection of the Jews. What is true of self rejection must also be true of the dynamics of self-preference, As the self preference of the Germans grows the self rejection of the Jews may increase. But mutual withdrawal often makes for peace, there are benign cleavages which prevent and delay saturation.

In the evolution of groups we have learned of the role of homosexual attraction in the production of sexual and ethnic cleavages within groups. The volume of homosexual attraction among the members of the German group may differ widely from the volume of homosexual attraction among members of the Jewish group, perhaps entirely out of proportion. This, again, might affect the heterosexual situation within and between the two populations.

Had the 600,000 Jews been farmers, manual workers or in other occupations of restricted social impact, the range of their acquaintance volume, social expansiveness and consequent influence would have been limited in scope, that of the businessman or member of the professions is more expansive. But it is only from reading the sociogram that a concrete disclosure of these fundamental realities can be obtained.

In our microscopic analyses of sociograms we have seen that a boy receiving attraction from a girl who is wanted by a great number of other boys becomes the center of jealousies and distrust, whereas the boy who receives attention from a girl who is isolated passes unnoticed. On the inter-racial level, the attention which a man of the Jewish minority receives from a German woman who happens to be the center of admiration of numerous

German men may produce within the psychological networks a "tele" effect, that is, a sociodynamic effect with consequences far beyond the two persons and the immediate group of persons involved in the matter. It is obvious that the frictions increase if the individuals rejected, overlooked or pushed aside belong to the "top" of the majority group. If the German women sought after by Jewish men belong to a higher social or intellectual class, jealousies and distrust aroused may come largely from Germans who belong also to the crucial top groups within the population. If the sexual attraction which members of the minority group exert upon the majority group is great, even a comparatively small percentage of the majority group who are nonparticipants, males and females, may develop powerful psychological counter-currents which consequently will reduce the saturation point for the minority group considerably below what it would be otherwise. It is therefore not sufficient to say that there is a sexual conflict naturally arising between two distinct nationality groups. But it is necessary to weigh the significance and force of the conflict; all the ramifications which are entailed in the intersexual choice have to be studied in detail through psychogeographical charting.

Another element prominent in interracial sociograms is the influence of leadership. Applied to the German-Jewish conflict, the Jewish population in Germany may have produced more leader individuals than their numeric proportion, either because the Jews suffer from a surplus of leader individuals or because the Germans suffer from an insufficiency in leader production. The surplus of leader individuals among the Jews may only be a false effect, due to the crowding of the Jewish intelligentsia into certain professions and industries which give their members considerable prestige. But whatever the causes of the surplus of leader individuals of Jewish origin among the German population may be, we see here a conflict arising between the two leader groups, both driven by the desire to claim and command for themselves the following of the dependent groups. As the majority of the dependent groups are German, we can imagine feelings of resentment arising among the German leader groups, together with the conviction that they have a more "natural right" than the Jewish leaders to direct the German masses of workers and farmers. From a sociometric aspect microscopic events like these often give clues

to novel and interesting hypotheses. The German population may be labelled "homogeneous", but it discloses beneath the surface a multitude of contrasting elements, as may a Jewish population labelled in like manner. If this picture approximates the conditions which exist in Germany, then the point of saturation of Germans for Jews evidently cannot be based upon the simple numeric proportions of the two nationalities, that is, how many Germans can live with how many Jews within a certain territory in peace without either side resorting to oppressive measures.

The racial saturation point is therefore a highly complex phenomenon; it emerges first in the small social systems and can be noticed in the attraction-repulsion patterns emerging between the native and the foreign population. It is there where it must be checked. It is not a function of the numerical size of the two groups but depends upon the structure of each group and the structure of their interaction.

The Self-Regulating Mechanisms of Groups

The sociometric test, if given to the entire population of the United States, would disclose a picture similar to that found by us in the small community. We would find a structure of national organization entirely different from the outward composition which appears to prevail in the villages, cities and states. The population may be found to be broken up into sharply divided nationality and social groups, more or less homogeneous, or we may find certain groups within one nationality crossing over into another nationality group, the remainder being relatively cut off from this process. We may find, for instance, large parts of the Negro population separated from the rest *en bloc*, an isolated psychological state. We may gain an insight into the psychological nearness or distance among the numerous nationality and religious groups comprising the population of the United States. It can be expected that such data regarding psychological nearness and distance would give a truer picture of the emotional trends in the population, as they would be based on the reactions of one concrete individual to another concrete individual and not upon the reaction of one individual towards a class of people, as in the so-called social distance tests. The findings would become a tangible basis for a redistribution of the population within any part of the given area.

Psychological currents appear to have a self-regulating mechanism. When a racial current, for instance, of a white group against a colored and a counter-current of Negroes against whites develop in any predisposed region, we commonly observe the current rushing and climbing up to an intensity and expansion on a certain level. After the initial excitation is over the current gradually returns to its natural level. The volume of Negro population as compared to the white population in a given area may be fairly constant. However, at times riots and other forms of acute persecution break out, but they vanish and are replaced by more moderate forms of persecution. It is as if neither of the two populations can stand a permanent excess of violence, as if it would be destructive for both. This process can well be compared with the warming up of an individual to a spontaneity state, this state also tends to fall from its excessive expression to a natural level. The trend of psychological currents towards maintaining their natural level is an important self-regulating mechanism.

We have differentiated between spontaneous, organic determinants of a psychological current (see p. 436), such as the feelings which arise from the individuals and groups themselves, and the artificial or mechanical determinants, such as all media of mass communication. They succeed in initiating or influencing such feelings from without. The spontaneous determinants of currents may produce a movement of a certain intensity, duration and direction. The artificial or mechanical determinants may either accelerate or retard the intensity, duration and direction, that is, accelerate or retard the development of a current. They may also excite a current to rise beyond its natural level to an unnatural intensity and prolong it beyond its natural duration. The groups in power in a community may be interested to, and often do, exert such influence.

The tendency to interfere with the self-regulating mechanisms of a current is a phenomenon which may be daily observed in a community. After a conflict between two political or criminal gangs has subsided, another, a third group may be interested in this warfare to continue and may devise methods to plant and spread stories which materially contribute to extend it beyond its natural limit. Our knowledge of the psychological networks by which a large population in a given geographical area is inter-

connected suggests to how great an extent groups in power may be able to *degenerate* the development of psychological currents through the use of the modern technological methods for the dissemination of propaganda. They may not be able to create psychological currents but they may be able to extend, to accelerate or to retard them—in other words, to *denaturalize* their spontaneous unfoldment. Groups in power, however, may even attempt to “produce” psychological currents *at will*, synthetically. As they have to be artificially sustained they are of short duration. Such manipulation of the networks and currents in a population is a most dangerous game which may produce greater disturbances in the depths than the momentary effects upon the surface may indicate at first.

EXPERIMENTAL PLANNING OF A NEW COMMUNITY

It is a good practical rule to look at the project of a new community strictly from the point of view of the population which is going to fill it. This point of view is perhaps most drastically expressed in the conduct of people who migrate to a new land upon their own initiative, groups of pioneers. It is instructive to study their actions. The conduct of such a group of pioneers can be divided into two phases: (1) when they get the idea to move from their present place of residence to a new place of residence, to the land of “milk and honey”—this can be called the preparatory phase; (2) when the group arrives at the new place and begins to act upon it, to struggle with the unexpected in a mood of “on to victory”—this can be called the pioneer phase. The initiative, the vision, the emotional and intellectual qualities of the pioneers are in operation. One or another leader of a group of settlers chose a locality upon which eventually a community developed. It was one or another’s ingenuity which developed the type of house, the groupings within it and the government itself. These two phases can always be distinguished in the evolution of pioneering. The productive experiences as they arise in the initial stages in conjunction with the project are the most characteristic feature. A community project can only arouse enthusiasm and participa-

tion if it is an expression of the visions and expectations of the population; it should call forth through some techniques the cooperation of the people themselves and warm them up to all the demands which the projected community will impose upon them.

The pioneers unconsciously incline towards natural affinities in the formation of groups, in opposition to the rigid settings which they have forsaken. They often operate like blindfolded sociometrists. As the pioneering stage passes, also the social spontaneity passes with it and gives way to a more restricted social order.

Preparatory Phase

The technique to be used naturally depends upon the type of population and upon the conditions in which they lived prior to their resettlement. A population of predominantly Anglo-Saxon stock from Virginia whose homestead is, let us say, projected far from their original residence, for instance, in Arizona, needs a different approach from a population comprised predominantly of American Indians whose homestead is projected close by their original seat of residence. But in whatever setting a certain population is found, one necessity is common to all. The population has to be prepared to take an active part in it. They have to become attached to the project and this project has to be exemplified by the leader or leaders. The goal is, by necessity, to produce in them and with them that pioneer spirit and pioneer phase which alone may provide the substance through which a valuable community can be created. But to bring them into this condition they have to be warmed up to it, worked up to a state of mind through a socio-emotional process into which their common goal, the new community, is well integrated. The production of this process, the attachment between leaders and population, one to another, and the whole population to the common objective brings us to the consideration of the problem of the structure of tele.

The form of transference arising in the psychoanalytic physician-patient situation is a by-product of tele dynamics, its psychopathological outgrowth. Whereas *tele structure guarantees the stability and cohesion of the group, transference threatens it with dissociation*. The situation in which a group of pioneers find themselves differs from the physician-patient relation, it is tele-dynamic; transference appears here and there but it is like the

dirt which all social wheels leave behind. The pioneers are driven forwards. They are in the midst of producing a series of constructive, future building acts; they are in need of throwing themselves into purposive action. If any form of guidance should reach them constructively, a transference technique is not sufficient. *A new form, a more active and direct form of communication has to be created. Their minds have to be directed not towards an emotional experience and conflict in the past but towards a task in the "present"; the action patterns and involvement have to be developed in reference to it. It is this present which requires analytical reflection on the part of the leader. He, the helper, has to co-act with them, it is a social drama, it is the technique of the "sociodrama" which can bring the sociometric process to realization.*

At first it may look as if we would regress to the more primitive concept of suggestion as developed about fifty years ago by the Nancy school. They also expected the hypnotist and the suggester to assume an active and direct role during the procedure of hypnosis or suggestion. We returned to this older approach but from a *different* point of view and on a more comprehensive plane. As in suggestion, this co-action enhances direct communication of one person to another. But, in contrast, it is not based upon the absence of logical reasoning for acceptance of the contents transferred; it is not blind, it is productive-analytic. The immediate aim of the hypnotist-suggester is to make the subject do what he wants him to do. Here it is to make the subject create, to stimulate his spontaneity and creativity. The old method of suggestion becomes a more highly organized action procedure.

An illustration of this technique is its use in Spontaneity Training of dramatic groups, which was the occasion for its first development. In this experiment the hypnotist-suggester is substituted by the *poet*. In spontaneous play-acting no written play is given. The poet-creator becomes bodily the initial source of information concerning the play-to-be. Instead of writing the plot, the characters, and dialogue upon paper, he transfers some expression of these to the players. He becomes, to an extent, a hypnotist and suggester towards them. But in the inner motive of the procedure he is more than a hypnotist or a suggester. In the poet's mind, moods and visions of the rôles have been continuously in

the process of becoming. After having passed through various stages of development they have reached a certain maturity of expression within him. The clearer they are within him, the more he is warmed up by them in the moment of production, the more effective will be his attempt to move the players themselves into creative action. The sociodramatic leader assumes consciously a direct and active rôle, but he is not the leader of traditional type. He has undergone a change. It is not more or less blind enthusiasm with which he infects his followers and in which he develops the project, but it is an enthusiasm articulated into the group. It is based upon the spontaneous motives each individual has in respect to each other member of the group and in respect to their common aim; second, upon the organization of the group, as the guidance of groups ought to be based upon the knowledge of their organization. The leader thus gains in objective strength through considering the spontaneous forces within the group and does not impair the subjective strength of his own spontaneity. In his attempt to initiate and reconstruct the state of mind of the pioneer, that naturally flowing enthusiasm and unity of attention the latter devotes to his objective, he is during the preparatory phase directed by the emotional status of the population to be led. To prepare his group for the pioneer phase is his immediate aim. This preparedness of the population for the pioneer phase may be in various degrees of development. One sample of a population may be lethargic, another may be stirred up by economic considerations chiefly, and other groups within it, which, although not having reached through their own initiative the pioneer state of mind, may be potential material for this state through interaction with the key individuals in the group.

The pioneering phase of such an undertaking begins when the concrete population becomes actively related to the project a) in choosing the locality of the new community and b) in organizing its set-up. An essential first phase is the selection of the population for the new community.

Population Test

The second phase in the sociometric planning of communities is the classification of their populations. For this purpose a "sociometric population test" has been devised. It is an extension of

the sociometric test; it attacks, by a single stroke the cluster of all criteria around which groups within a community are formed. Its function is to determine the organization and interaction of large populations consisting of numerous social groups and of communities located in different points in space. It aids in selecting individuals and groups most easily adjustable to each other, best fitted for the occupations made available within the environment of the new communities and most easily adjustable to the populations in the adjacent towns or areas.

In the pursuit of this problem we begin to inquire into what evidence had been ascertained from study of the population at large and how such information could relate to it. The current sociological studies were unable to give us an insight into the psychological structure of large populations—either through data or through a methodological approach. In the studies of interracial attitudes towards Negroes, Chinese, Germans, Jews, Italians, etc., the differential attitude of the subjects towards each individual Negro, Chinese, Jew, German, Italian, etc., is not considered. In the study of group behavior the collective as a whole is considered, the individual being neglected; in consequence the structural characteristics described do not reach beyond outer appearances. The classifications arising were an intermingling of facts with symbols; either the individual was made a symbol, that is to say, *left out*, the ratios being calculated for classes of people, or the group was made a symbol, *left out*, the classification being made of individuals. Studies in respect to the marriage rate, the delinquency rate for different areas of the country, the suicide rate, quantitative analysis of public opinion, reading habits of different communities, business cycles and other cyclic phenomena, etc., however significant they may be as such, do not carry any weight if it comes to the concrete questions what position the individual X has in Kansas City, what position the family unit B has in Forest Hills, or a certain group of Negroes in Miami, Florida.

But the sociometric test—as we have learned in other parts of this book—is able to provide a basic element in classification which no other methodology has worked out. It appeared able to uncover the position of each concrete individual and each concrete group in the given sample of population on one hand and,

through the cumulative effect, through inter-individual and inter-group reactions, the trends in the population on the other hand, with the added advantage that the trends were not presented like the frequency curve of a histogram but were further broken up into a configuration of rich individual detail. Similarly, the sociometric test can be of aid in the classification of the population for a prospective community. The number of criteria ought to be enlarged to include more than the three criteria, living, working, and studying in proximity; it ought to include as many criteria as appear to operate in the groups of a given community. The more criteria the test covers, the more accurate will become the classification picture. However, experience may suggest that the testing in respect to living and working in proximity is sufficient for practical purposes. It is our experience that it is easy to gain the coöperation of the people tested as soon as they come to think of the test as an instrument to bring their will to a wider realization, that it is not only an instrument for exploring the status of a population but primarily an instrument to bring the population to a *collective self-expression* in respect to the fundamental activities in which it is or is about to be involved.

It is obvious that whether an economic or other kind of distress suggests the shifting of a part of the population, *mechanical* assignment may carry with it the germ of disrupting tendencies into the new area affecting its population and the newcomers. The selection of the new area and the selection of the population cannot be made on the basis of either physical and economic evidence or ordinary social investigation only. A *Population Test* needs to be given which will at the same time aid in recommending through its evidence the most desirable composition of area, geographic and ethnic, and the kind of persons best fitted to live within it.

But another factor is involved in the classification. Each new community, in whatever part of the country it may be established, will, in the course of its development, be exposed not only to the forces within it but to the population pressure coming from outside and expressed in the rising and falling of psychological currents. Thus, before we occupy our minds with a technique of procedure adapted to a particular community it is necessary to gain an insight into the distribution and character of the population in the immediate neighborhood and the character of the main psycho-

logical currents which cross the population at large. This may be accomplished through giving the sociometric test to a score or more typical communities in sections of the country in which, among others, interracial tensions and population movements from rural to urban centers are particularly active.

Process of Selection of Population

The third phase in the experimental planning of a community is to select a population for any given community in a manner that is not arbitrary, but an outgrowth of the spontaneous forces operating within it. In order that each settlement can be expected to develop into a community it is necessary that the selected population shall be a harmoniously interrelated whole. Any selection which neglects to take into account the spontaneous attractions and repulsions existing within the population may lead to the inclusion of families which, however worthy they may be as individual units, together make up group formations which may later have a disrupting effect upon the progressive development of the whole population.

The sociometric technique ascertains the dynamic relation of each family unit to all other family units. Out of this evidence we may be able to determine the kernel group around which the rest of the population can gradually revolve. Thus the project can contain a socially interrelated organization from the start, the nucleus of a "community." The principles gained from the study of the psychological organization of communities can be followed in order to secure a composition of population which can be expected to progress and survive. Factors which have been found to cause disintegration and decline can be eliminated. Whether the geographical location of a community is in an urban or a rural section, whether the size of the population from which the selection has to be made is large or small, whether the population is of one nationality or another, each of these circumstances has a practical bearing upon the selection. Certain relations which have been found to affect the harmonious functioning between the abilities and strivings of the workers with the available work situations have also to be considered in the selection of the population. It can be calculated, within certain limits, what proportions among the different nationality, racial and religious elements

the community is able to absorb; the most appropriate distribution of the sexes, of leaders and followers, of individuals who are able to develop the industrial, social and cultural activities to the greatest satisfaction of the population. It may be found that certain units gravitate towards each other and produce cohesive groups drawn to each other by a "natural selection", whereas great numbers remain isolated and disconnected. The ascertained motivations for a certain family unit to want one family included and another excluded will aid to interpret the causes behind the position of each family in the structure of the selected population. It may be that a certain homogeneous element is small in numbers but that it forms a closed group. Such subgroups within a given nationality, for instance, may be more disadvantageous for the total community in producing frictions than a larger number of the same nationality who are less united among themselves and better integrated into the fabric of the population as a whole.

This type of selection has to supplement the natural course of development for still other reasons. Communities today do not crop up in a comparative wilderness as in the pioneer settlement period, but are planted in the midst of a highly differentiated and well organized group of villages and towns with definite traditions and cultural trends. The structure of the selected population must be of such texture that adjustment to the neighboring towns will follow as an outgrowth of their functioning in proximity.

The population from which the selections have to be made may fall into the following three classes: Class 1: the family units are acquainted with a number of other family units within the population; Class 2: the family units are totally unacquainted with each other; Class 3: the family units are in part acquainted with other family units and in part unacquainted. In the case of Class 1 the sociometric test uncovers the social relationships already existing among them. In the case of Class 2 it discloses the spontaneous attractions and repulsions arising through initial meeting. In the case of Class 3, the two forms of the sociometric test just mentioned are combined to secure the essential information.

In a typical case one hundred and twenty-five families have to be selected out of a population of about two hundred and fifty families applying; this is the maximum number that can be accommodated in the particular community project. The total

population applying is invited to a meeting and addressed in regard to the question of how the population can be selected for the new community. The need, it is explained, is to make the selection approximate as closely as possible that of a community spontaneously formed; that is, it should consist of a nucleus of family units naturally interlocked through interest and activities in common undertakings. The authority to select the population can come from outside or inside the population. If it comes from outside it can be purely dictatorial, based on fictitious assumptions, as, for instance, that only "Greeks and Italians should be selected for an agricultural community", or it can be based on the empirical knowledge of how populations in other communities are comprised. But we have found that findings in respect to one population do not hold true for another and hence cannot be mechanically transposed upon another population without regard to many factors. The authority to select the population can also come from inside, from an individual who is appointed to make the selection, or from a particular group which feels especially informed to know what is best for everyone. But due chiefly to social pressure and the limits of emotional expansiveness, any *part* of the population is prohibited from arriving at an awareness of the total attraction-repulsion process. The only exact and comprehensive method of approach remaining is to use a population test which brings the total process of interaction out in the open. This population test has to be so constructed that its findings disclose the psychosocial structure of the entire collective and every detailed individual-to-individual relation at the same time.

The test is given as outlined and the findings analyzed. This procedure is taken as the first step in selecting the population from Class 1. The situation is different in the case of Class 2 because here the group of families are strangers to each other. In this case a personal meeting of representatives one adult (and, if possible one child) from each family, is necessary, so that they may determine in face to face feeling each other out, to whom they are drawn. If the number who are totally unacquainted is large, several meetings have to be held. (See Initial Assignment, p. 462.) In the instance of Class 1, such meetings of representatives are unnecessary; it is not even necessary that the people are called to a town meeting to make their choices. The field worker

may visit one family after the other and collect the choices and the motivations. The procedure in the case of Class 2 appears more time consuming, very complicated and impractical, but it must be realized that in practice only a small portion of the population will be totally strange to the rest. As to Class 3, for that part of the population in which the families are acquainted with each other to some extent, the procedure is as described for Class 1; for the remainder, the procedure is as described for Class 2.

POPULATION-TEST

FORM A

1. Whom do you select to live in the new town with you?

Family X or Home Group

<i>Choices</i>	<i>Name of the Person</i>	<i>Reasons or Motivations</i>
1st Choice		
2nd Choice		
3rd Choice		

2. Which families do you select *to live in the new town with you?*

From each family two representatives (one of the parents and one of the children) express their choices separately.

<i>Parent</i>		<i>Child</i>	
<i>Choices</i>	<i>Reasons or Motivations</i>	<i>Choices</i>	<i>Reasons or Motivations</i>
Name of Family			
1st Choice		1st Choice	
2nd Choice		2nd Choice	
3rd Choice		3rd Choice	

3. Whom do you select *as a co-worker in any occupation in the new town?*

<i>Choice</i>	<i>Name of the Person</i>	<i>Name of the Occupation</i>	<i>Reasons or Motivations</i>
1st Choice			
2nd Choice			
3rd Choice			

4. Name three occupations you would like to be employed in in the

new town, giving them in order of preference. Also state your former occupations and in which occupations you have been most successful.

<i>Choice of Occupations</i>	<i>Former Occupations</i>	<i>Most Successful in Which Occupations</i>
1.		
2.		
3.		

5. Which families do you select as your next-door-neighbors in the new town?

Two representatives of each family (one of the parents and one of the children) express their choices separately.

<i>Parent</i>		<i>Child</i>	
<i>Choices</i>	<i>Reasons or Motivations</i>	<i>Choices</i>	<i>Reasons or Motivations</i>
Name of Family			
1st Choice		1st Choice	
2nd Choice		2nd Choice	
3rd Choice		3rd Choice	

Population Test Form A can be an aid in the process of selecting the population for a new community in the event that the individuals or families are *acquainted* with each other. If phase 1 of the test is not practicable, phase 2 can be used as an alternate. Population Test Form A can also be given to a community which is already established; its aim is then to determine the existing psychological organization and eventually to disclose the areas in which disrupting tendencies prevail.

POPULATION-TEST
FORM B

<i>Family X</i>	<i>Name of the Person (or Family)</i>	<i>Initial Meeting Reasons or Motivations</i>
<i>Choices</i>		
1st Choice		
2nd Choice		
3rd Choice		

Population Test form B can be of aid in the process of selecting the population for a new community when the individuals are *unacquainted* with each other. In the ideal application of the test every individual should meet every other individual of the group from which the selection has to be made. In practice, it will often suffice if representatives of the different families meet with one another. However, even this may be impracticable when these families are not only unacquainted with each other but for one reason or another cannot be brought to an initial meeting. Then Population Test Form A can be used (a) to determine the position of the family unit in the *old* community and (b) when the family knows at least one or two of the other families who wish to move into the new community, the position of the family within this small group may disclose important evidence.

Analysis of the material is made according to organization, according to interracial and intersexual attraction, and in respect to industrial, social, or cultural criteria around which groups may develop in the new town.

The evidence may indicate that one hundred and twenty-five families, the number for which the project is planned, group themselves as a coordinated unit, leaving out about half of the population. Or it may be that the entire population breaks up into a number of small groups. Then the question arises which of these groups should be combined to make up the community. The evidence clarifies the position which each group has in relation to other groups. It may reveal that the composition of the population contrasts so considerably from the surrounding towns in reference to social and cultural traditions, that the new community appears as a "sociological island". The possibility of its gradual adjustment to them may be hindered from the start.

The data gathered is a basis for the classification and selection of the population. As the existing organization within the sample population has been ascertained it is necessary to take the second step: to analyze and carefully weigh all the factors. The selection made should include those family units which together produce as balanced a psychological organization as possible. This does not mean that only those families which have been most chosen should be included, in fact, to do so may put the organization out of balance, forcing the inclusion of too many leader-families for

the size of population and making the community a potential center of conflicts through too keen competition among the leaders. Furthermore, the fact that certain families have not been chosen at all should not, on that ground alone, exclude them. They may be of such composition that they add an element of stability, both to the economic and to the social set-up, and they may be a check on the psychological currents dominant in the community. On the other hand, a sufficient number of mutually attracted families should be selected or they will not produce the feeling of being a community, mutually interdependent, with a unity just as that of any other town. As practically all of the population has to move into the new community at once, mutually rejecting families should, as far as possible, be separated and considered for different localities. The inclusion of, for instance, two leader-families which mutually reject each other may prove to be a dangerous experiment, since there are already sufficient sources of conflict in the building of a new community.

A Case Example of a New Community

An example of a re-settlement situation which is typical for many concrete projects is the following one. The government has purchased land and provided housing facilities for five hundred families in area X. However, there are seven hundred and fifty families who have applied for a new home and been found eligible. Two hundred and fifty families live in village A, two hundred and fifty families in village B, two hundred and fifty families in village C. A, B and C are some distance apart. The people of each village do not know those in the other villages. Some selection has to be made because there are two hundred and fifty applicant families too many. But even if there were not more applicants than houses available, the question would still arise whether they would make a well balanced kernel likely to produce a live community.

The sociometric investigator assembling the applicants of one community, village A, says: "You may have something to say about the people with whom you would like to live. No outsider can ever guess these wants of yours accurately."

Everyone writes down the family which he would like to have *as a neighbor* in the new community. He is asked the reason for

his choice. Mr. McCormick chooses Mr. Mitchell and gives his reason: "My daughter is engaged to his son." The sociometric investigator asks them to make a further choice, a second, third, fourth and fifth *or more* and to arrange them in the order of preference. They always add the reason for each choice. The results are assembled in a sociometric chart. It is a social map of that community. It shows some families isolated; no one wants them. Here and there a family or its head appears as a potential leader of a large group. This is not necessarily because the family or the individual has received many first choices, but on the sociometric chart a series of significant chains appear, leading finally to this head. For instance, Mr. McCormick appears directly or indirectly as the center of seventy-five families.

Sociometric analysis indicates structures important for social balance. Mr. McCormick and Mr. Mitchell give their first choices to each other. As Mr. McCormick is the potential leader of seventy-five families, and Mr. Mitchell is the head of sixty-two families, they make a combination of much strength and influence. These are groupings which have taken years to build and cannot be replaced. Their breakup might precipitate failure in the new community. Such groups may be transferred bodily in the migration.

The analysis further shows one or two small groups of families which choose one another but are isolated or rejected as a whole. It shows a few scattered families which command little popularity but provide the stimulus of progress in the community. It also shows families who have little education but can perform the necessary hard physical labor.

A careful study of village A suggests the most desirable combination of families for community X. The same procedure is repeated for village B and village C. The results are assembled in sociometric charts.

Now, however excellent the groups selected from the three villages may be, placing them together may lead to clashes. They cannot live successfully if their leaders are antagonistic. Therefore, before the final selection is made, the potential leaders from villages A, B, and C are picked from their respective sociometric charts, three from A, four from B and six from C, more or less as may seem necessary. These leaders come together in a face-

to-face meeting. Each man meets each other man individually. They express their preferences for one or another in the manner developed at Hudson in the Family Test. Mr. McCormick from A feels attracted to Mr. Brown from B, who is there the leader of a minor group. But he rejects Mr. Smith from B, who is the potential leader of more than half of this community. The evidence weighs heavily against placing the McCormick coterie with the Smith group without careful consideration. The reason Mr. McCormick gives for not liking Mr. Smith is: "His ideas are too radical for our crowd. I am afraid quarrels may result."

The evidence is presented in the three community charts and the leader sociogram carefully analyzed with the ultimate aim in mind of selecting from the seven hundred and fifty applicants five hundred for the new settlement.

A simple consideration shows the three charts in a new light. The nationality and race of each applicant is known to the investigator. The evidence usually shows that there is no real prejudice until the saturation point for that particular minority group is reached. This saturation point—the rejection of an excess of persons of a particular race, creed, or nationality—arrives when the dominant group no longer has need for more of the minority group. Thus the test shows that Negroes are often welcome additions to migrating communities. The map of village A shows nine Negro families. Seven of them choose one another, but they are isolated from the rest of the community. Yet two of the Negro families are chosen second and third by three families which in turn are chosen by one of the potential leaders. It is apparent that these two Negro families are fairly well adjusted and have become an essential part of the community. The sociometric saturation point is fluid; it changes from time to time; with it, prejudices ebb or rise.

Before selection, the sociometric investigator makes critical use of all supplementary techniques available, case studies of each of the families, interviews and observation, information and advice as given by intelligent observers who have lived in these communities for some time and know their own people.

Another typical re-settlement situation arises when the applicants are so widely scattered over so large an area that practically no family knows the others. Then, of course, the technique de-

scribed above cannot be used, as it is practicable only for compact groups who are well acquainted. Two hundred families are applicants, but only one hundred and twenty-five can be selected. The problem area within which the two hundred families are scattered is divided into ten regions, twenty families coming from each region. The heads of the twenty families are brought face-to-face meeting. The results of the meetings of every region are charted. From the ten sociograms the potential leaders are picked and brought to a face-to-face meeting. The results are again charted. The total evidence is analyzed and the selection is made.

There is no re-settlement situation for which some sociometric procedure cannot be devised and used to advantage. It is an individualistic, democratic process of selection. The settlers are given the feeling that they are not moved like cattle, but take an immediate part in a matter which is immensely important to them.

The most intelligent and penetrating observation or case-study cannot serve as substitute for sociometric procedures. The larger the size of the population to be considered, the less adequately can observation or case work enable us to form an idea of the whole.

Another concrete illustration is Centerville, an experiment in "cooperative living". For the first time in twenty years since I began to develop the application of sociometric techniques in European resettlement programs during the First World War, sociometric principles have been applied to *open* communities.

As a psychological preparation for the community life in Centerville, as well as for educational and informational purposes, frequent group meetings for about fifteen families at a time were held in a large city accessible to the applicants, during a period of almost one year before the project was ready for occupancy. One hundred ninety-eight families (the project was intended to accommodate two hundred and fifty families) participated in these meetings, which, of course, included the thirty-five families considered here. The group meetings, often attended by the whole family, served to foster personal and social contacts, with their fabric of criss-cross attractions and repulsions. Lines of cleavage were noted. Friendships were formed on the basis of the spirited discussions usually generated by the Family Selection Specialist or other project officials.

With the completion of the first thirty-five houses, thirty-five

families totaling a hundred and fifty-four persons were chosen for occupancy. The determination of these first thirty-five families was based primarily on the need for satisfactory personnel for factory operations.

In the pre-settlement situation in Centerville, all of the thirty-five families accepted as prospective settlers were unknown to each other before applying for membership to the colony, except in a few cases where the family heads had had common employment contacts in the industry. All the families were residents of a large neighboring city.

In approaching the problem of assignment of houses to the individual families, the Family Selection Specialist deemed it advisable to apply sociometric principles and procedures as far as conditions would permit. In consideration of the personal and family welfare of the colonists, the population test, a form of sociometric testing, was utilized in the determination of the house assignments to the first thirty-five homesteaders. The test was based on *the criterion of the neighbor preference* of each family.

Leader individuals and their following were noted. The former included several applicants who had long been identified with the project in its early struggles for realization. Some others were highly regarded for their ability to uphold their convictions in discussions, and others were favored for their personality characteristics. On the whole it may be said that, in spite of the low acquaintance volume and the limitations on vital criteria in the relationships of the future colonists during the pre-settlement period, there was adequate basis for assignment of houses based on a sociometric population test. The thirty-five settlement families were agreed that a test based on their neighbor preferences was both an individualistic and democratic process of selection. They felt that they were not to be moved like cattle, but were taking an active part in a matter of great importance to them.

The families were asked to submit a secret ballot indicating three neighbors in the order of choice, at the first, second and third level. The Family Selection Specialist stressed the fact that the preferences were to constitute a composite reaction of the whole family. The structure of affinities of one family for another are graphically charted in sociograms. Individual centers of attraction, mutual and unreciprocated attractions, and unchosen

families are all indicated in the chart. A veritable network of forces, attractions and repulsions are delineated. The sociogram expresses the spontaneous activations that came out of the group meetings.

Motivations that were evident within the whole group *before* the families actually moved into the new community were, of course, personal and social likes and dislikes. A few ambitious souls made more or less successful attempts to influence certain family heads in the neighbor preference vote.

A sociometric geography of the entire community is charted which shows the *actual* geographical assignment of houses, with all degrees of mutual choices and unreciprocated choices of the neighborhood selection test superimposed. It should be noted that the houses are set about a hundred feet apart (except in seven cases where two are connected by adjoining garages) and all are in one line, about the same distance from the roadway. In the map the houses are offset merely for purposes of clarity in drawing the lines of expressed choices.

The thirty-five available houses were divided into six geographical units, five units containing six houses and one unit containing five houses. Every family was assured a location, if not next door to its choice, at least within a restricted area along with the other definitely related families of his group.

After six months of living in Centerville a second survey of the same first thirty-four families was made to ascertain the psychogeographical position of the families and to note progress, regression or standstill of community interrelations.

The preferences of the colonists were not discovered by calling them to a meeting of the *entire group* for that purpose. The data for the second sociogram was gathered for the most part in the course of information conversation with individual homesteaders. In several instances older children in the families cooperated by getting the exact information required. Each family again was asked to make three choices at the first, second and third level of choice.

In comparing the sociogram of the first test with that of the retest, it is discovered that from the first to the second tests there is observable a considerable diversion of tele from the most popular leader group. The tele goes to more obscure individuals, po-

tential leaders who may become the kernel of a subgroup. The observation of recent developments has clearly shown that in the course of the economic development of the community such a minor group is growing up. At this stage of development it is merely in negation of the ideology of the "cooperative", but under favorable circumstances it may develop into opposition around an ideology which is more individualistic and more conservative.

The fact that a decrease from six to four unchosen families occurred from the first to the second test may well be significant. Since we regard the project as a lifetime affair, the bringing about of greater mental happiness to two families has great import. If in the course of the next few years, through sociometric techniques and whatever means natural to the situation, one more of the four "unincluded" families wins an acceptable position, there will gradually be built up a strong human collective as well as a strong economic collective, if indeed the latter ever can become truly strong unless the former lays a basis for it. We know from control studies that the building up of reciprocal relations and the gradual integration of one newcomer after another into a community in process of formation has a cumulative effect.

Comments and Interpretations

In the course of its operation we can learn from the spontaneous responses of the individuals concerned something about the causes underlying their fears and resistance. In one of the communities tested some individuals made their choice and gave their reasons without hesitancy; others hesitated long before choosing; one or two refused to participate at all. After the findings of the test were applied to the group a frequently chosen individual was much displeased. He had not received that man as neighbor with whom he had exchanged a mutual first choice. It took him weeks to overcome his anger. One day he said smilingly that he liked the neighbor he had now and he would not change him for his original first choice even if he could. There was another individual who did not care to make any choice. When the chart of the community was laid out it was found that in turn none of the other individuals wanted him. He was isolated. It was as if he guessed that his position in the group was that of an isolate; therefore he did not like to know too much about it. He did not have the position in

the group he would like to have and so perhaps he thought it better to keep it veiled.

Another problem is the phenomenon of "*ambivalent*" choice; A chose B and rejected him at the same time. When A found out in the interview that B chose him, he dropped the rejection and was happy, admitting that he was afraid of being unwanted by B. At other times the interview reveals that the ambivalence is the result of two conflicting criteria. A rejects B as a co-worker but chooses him as a neighbor.

Other individuals also showed fear of the revelations the sociometric procedure might bring. The fear is stronger with some people, and weaker with others. One may be most anxious to arrange one's relationships in accord with actual desires; another may be afraid of the consequences. For instance, one of the persons remarked that it made him feel uncomfortable to say whom he liked for a co-worker. "You can not choose all and I do not want to offend anybody." Another person said, "If I don't have as a neighbor the person I like, *i.e.* if he lives farther away, we may stay friends longer. It is better not to see a friend too often." These and other remarks reveal a fundamental phenomenon, a form of inter-personal resistance, a resistance against expressing the preferential feelings which one has for others. This resistance seems at first sight paradoxical as it crops up in face of an actual opportunity to have a fundamental need satisfied. An explanation of this resistance of the individual versus the group is possible. It is, on the one hand, the individual's fear of knowing what position he has in the group. To become and to be made fully conscious of one's position may be painful and unpleasant. Another source of this resistance is the fear that it may become manifest to others whom one likes and whom one dislikes, and what position in the group one actually wants and needs. The resistance is produced by the extra-personal situation of an individual, by the position he has in the group. He feels that the position he has in the group is not the result of his individual make-up only but chiefly the result of how the individuals with whom he is associated feel towards him. He may even feel dimly that there are beyond his social atom invisible tele-structures which influence his position, unconsciously applying to himself his "sociometric perceptions." The fear of expressing the preferential feel-

ings which one person has for others is actually a fear of the feelings which the others have for him. The objective process underlying this fear has been discovered by us in the course of quantitative analysis of group organization. The individual dreads the powerful currents of emotions which "society" may turn against him—it is fear of the psychological networks. It is dread of these powerful structures of communication whose influence is unlimited and uncontrollable. It is fear that they may destroy him if he does not keep still.

The sociometrist has the task of gradually breaking down the misunderstandings and fears existing or developing in the group he is facing. The members of the group will be eager to weigh the advantages which sociometric procedure is able to bring to them—a better balanced organization of their community and a better balanced situation of each individual within it. The sociometrist has to exert his skill to gain their full collaboration, for at least two reasons: the more spontaneous their collaboration, the more valuable will be the fruits of his research, and the more helpful will the results become to them.

THE ARCHITECTURAL PLANNING OF A SOCIOMETRIZED COMMUNITY

The physical setting should be a function of the sociometric and sociopsychological set up of a community. The more criteria the population test covers, the more can the physical structure of the community be organized to reflect it: the location of the public centers, the houses and so on.

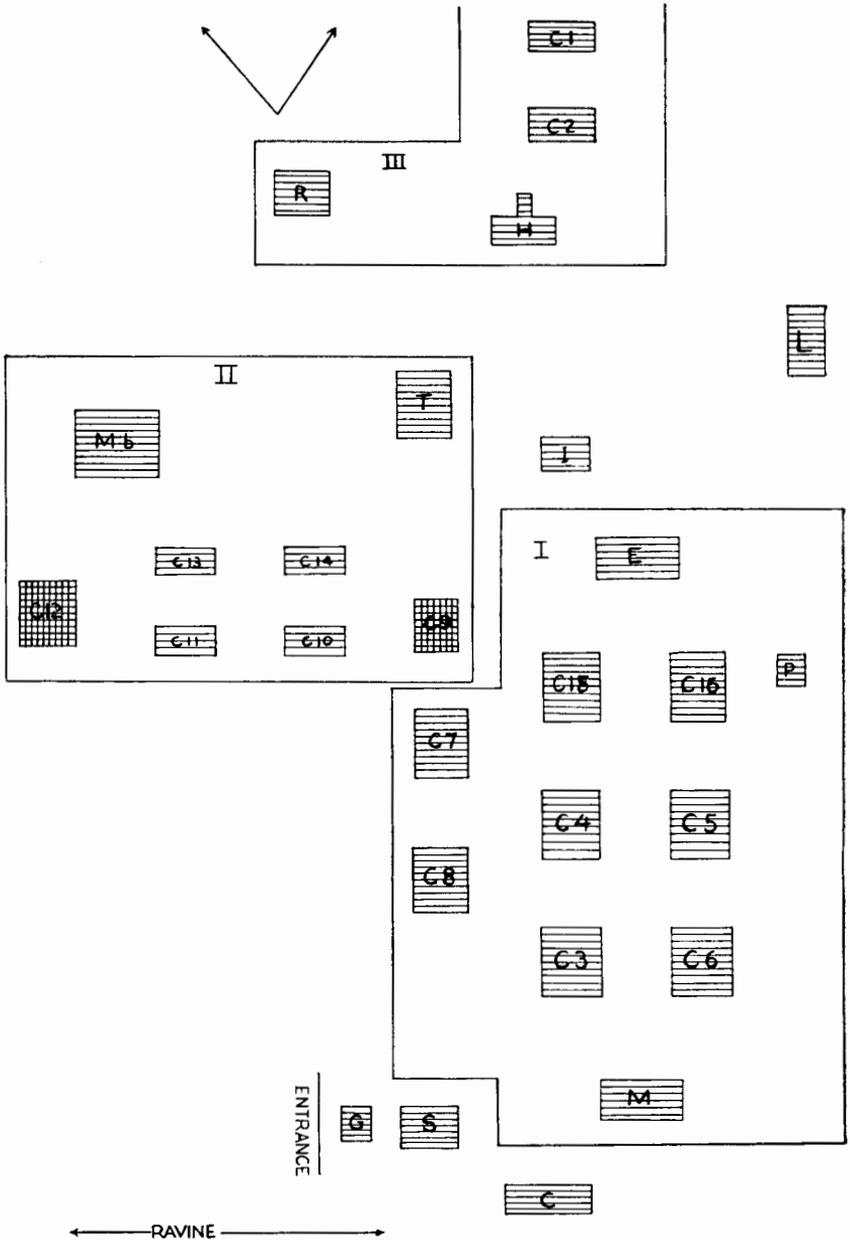
The geographical distribution within the community area provides an avenue which can be directly utilized to provide the most auspicious distribution of the population which has been selected. The problem of neighbor selection cannot be solved by a purely arbitrary distribution of the population, as the family units must reside permanently in relatively close proximity and each family will have certain other families as neighbors with their land adjoining. Through the evidence gathered through the sociometric technique the families can be assigned as immediate neighbors who are mutually attracted *and* mutually beneficial. The family units

can be so located geographically that harmonious social relations already existing are stimulated and other less advantageous relations discouraged.

The question arises whether the houses should be arranged in the form of long chains or if they should be grouped in several neighborhoods. Commonly this problem is decided by accident or according to architectural or industrial planning. There is another possibility opened up through the population test : to reflect into the physical organization of the town the psychosocial and sociometric structure of the population. In this manner, perhaps, the forces of social gravitation which draw the groups together or apart may suggest the grouping of the houses and the distribution of the population within the town.

A study of the psychogeographical charts of the Hudson community suggested a number of pertinent questions : Is there any relationship between the attraction-repulsion patterns linking two houses and the physical distance between them? Is it possible that an excess of nearness retards healthy group formation just as much as an excess of distance? Which type of architectural organizations of a community stimulate group formation and which discourage it? What is the relationship of esthetic factors as the unattractiveness of the houses and street patterns, as, for instance in city slums and ghettos, to the development of social contacts and sociometric group formation? *The architect of the future will be a student of sociometry*; the sites of cities, industrial plants and resort places will be chosen so as to meet the needs of the populations living and working in them.

ARCHITECTURAL STRUCTURE OF A COMMUNITY

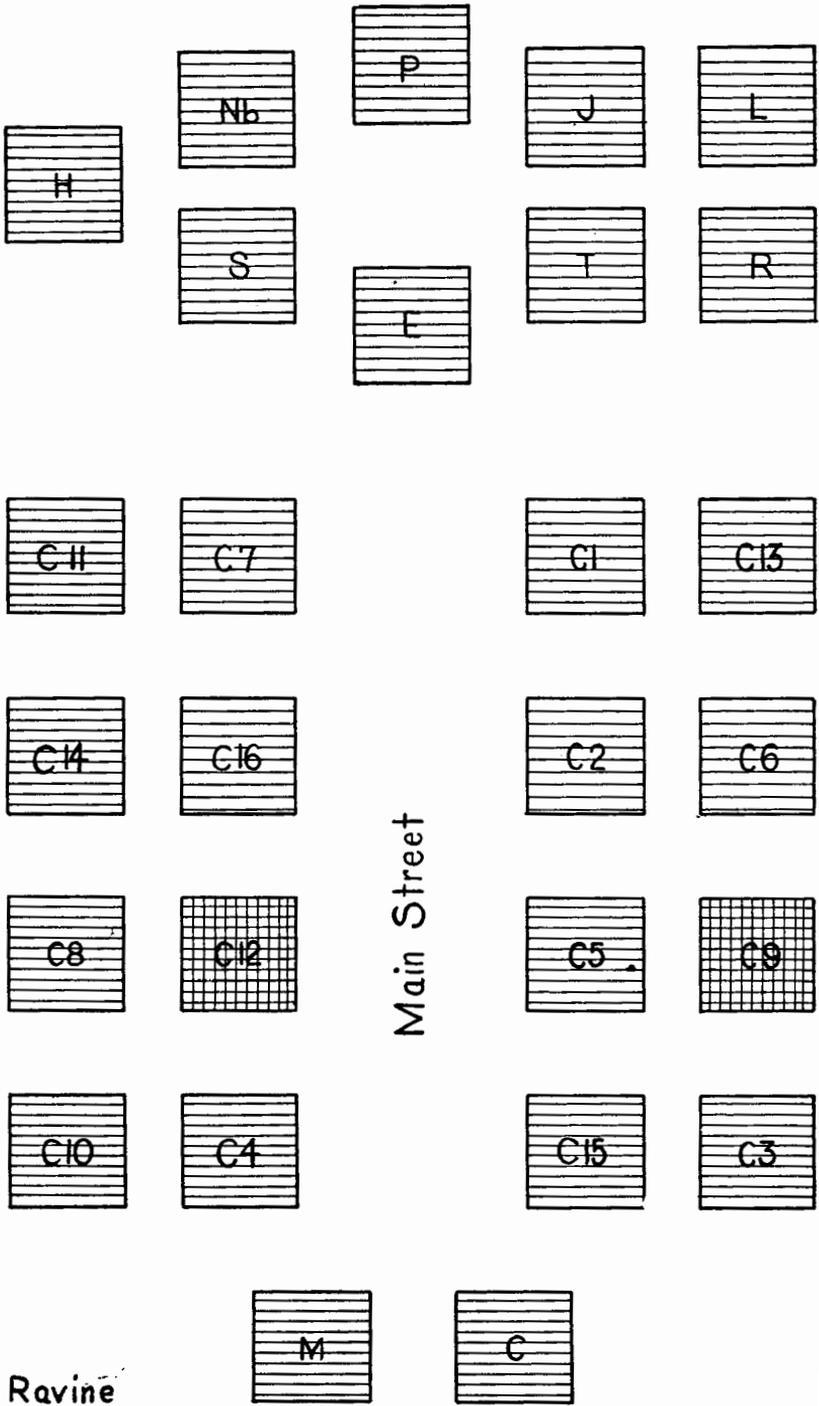


I. ARCHITECTURAL STRUCTURE OF THE COMMUNITY "BEFORE" IT WAS SOCIOMETRIZED

The map illustrates the topographical outlay of Hudson. The community has three different sections, each of which form a kind of neighborhood: Neighborhood I, formed by C3, C4, C15, C16, C5, C6, C7 and C8; Neighborhood II, formed by C9, C10, C11, C12, C13 and C14; Neighborhood III, formed by C1 and C2. The two colored cottages, C9 and C12, border on the ends of Neighborhood II and are distinguished by small black squares.

Further Explanatory to Chart: G—Gatehouse; S—Storehouse; C—Church; M—Main Building; P—Paint Shop; E—Educational Building; I—Industrial Building; T—Teachers' Cottage; Mb—Mercantile Building; L—Laundry; H—Hospital; R—Receiving Cottage.

ARCHITECTURAL STRUCTURE OF A COMMUNITY



II. ARCHITECTURAL STRUCTURE OF THE COMMUNITY "AFTER" IT WAS
 SOCIOMETRIZED

This map suggests the "new" topographical outlay of Hudson after it was sociometrized.

The findings on the sociometric geography of a community (Map III, rear of book) suggest that a) the "better" houses section consisting of cottage C1 and cottage C2 be broken up. Accordingly cottage C1 and cottage C2 are removed from the residential area on the top of Map I and placed in a new area; b) the "colored ghetto" be broken up; accordingly colored cottage C9 and colored cottage C12 are separated and placed in two different neighborhoods; c) an equal distribution and placement of the official and social buildings of the community. Accordingly the main building (M) and the church (C) are at the one end of Main Street, all other buildings are placed in the Northern section, S—Storehouse, Nb—Mercantile building, H—hospital, R—receiving cottage, L—laundry, J—industrial building, P—paintshop, E—educational building, T—teachers cottage.

In accord with the sociogravitational trends the following cottages are put together in the same residential area: Cottage C7 and and cottage C16, cottage C14 and cottage C4, cottage C1 and cottage C2. The following cottages are separated: Cottage C9 and cottage C12, cottage C3 and cottage C4.

BOOK VI

WHO SHALL SURVIVE?

THE CREATIVE REVOLUTION

The weakest point in our present day universe is the incapacity of man to meet the machine, the cultural conserve, or the robot, other than through submission, actual destruction, and social revolution. The problem of making over man himself and not his environment alone has become outstanding the more successfully technical forces prosper in the realization of the machine, the cultural conserve and the robot. Although the development of these is far from having reached its peak, the final situation of man and his survival can, at least theoretically, be clearly visualized.

First, one may ask how it is possible that a machine-like device can become dangerous to man as a creator. Following the course of man throughout the various stages of our civilization, we find him using the same methods in the making of cultural products which are used later and with less friction by the products of his mind, his technical devices. These methods have always amounted simply to this—to neglect and abandon the genuine and outstanding creative process in him, to extinguish all the active, living moments, and to strive towards one unchangeable goal: the illusion of the finished, perfected product whose assumed perfectibility was an excuse par excellence for forsaking its past, for preferring one partial phenomenon to the whole reality. There is a shrewd motive in this procedure of man because if only one stage of a creative process is a really good one, and all the others are bad, then this chosen stage substituting for the entire process can be memorized, conserved, eternalized, and can give comfort to the soul of the creator and order to the civilization of which he is a part.

We can observe this strategy in all the cultural attempts of man and it could deceive man and be regarded as worthy and beneficial as long as the process of industrial revolution did not produce an unprecedented world situation. Up to the time when the mechanical device did not enter *en masse* into the economic situation in the form of the book, the gramophone, and the talking film, man had no competition in the execution of his conserves. Once an

ensemble of actors had rehearsed and acquired a play to perfection, this ensemble was the only owner of their particular bit of merchandise which they offered for sale. Their only competition could come from another group of persons. Once a group of musicians had rehearsed and perfected a certain number of musical compositions, they were the only owners and executors of this product. Through the process of repetition they earned money. The introduction of cultural devices changed the situation completely. Man was not needed any more for the repetition of his finished products. Machines did the work just as well and perhaps even better, and at a much smaller expense.

In the beginning of this industrial process man tried to meet it with aggressive action. But the nearer the avalanche of ghosts rolled towards him the more he tried other means of defense. He invented socialism and hoped that through changing the present state of production and distribution the mechanical device would become of even greater help and comfort to him than it had been.

One side of the problem, however, has been overlooked. There is a way in which man, not through destructiveness nor through economic planning, but as a biological being and a creator, or as an association of creators, can fight back. It is through a strategy of creation which escapes the treachery of conservation and the competition of the robot. This strategy is the practice of the creative act, man, as a medium of creation, changing his products continuously. Spontaneity as a method of transition is as old as mankind, but as a focus in itself it is a problem of today and of tomorrow. If a fraction of one-thousandth of the energy which mankind has exerted in the conception and development of mechanical devices were to be used for the improvement of our cultural capacity during the moment of creation itself, mankind would enter into a new age of culture, a type of culture which would not have to dread any possible increase of machinery nor robot races of the future. The escape would be made without giving up anything that machine civilization has produced.

In the process of biological evolution, natural selection has to date been considered the final arbiter of survival. But man has arrived at crossroads. He may learn to live and survive in two different environments; the one is the natural environment in which his freedom as a biological being, the function of the

creator, is the supreme criterion; the other is an industrial or, better said, a conserved and conserving environment in which his freedom and his creative functions are restrained and have to flow between the bedrock of mechanical evolution. Obviously, races of men fit for the one may be unfit for the other. The criteria of unfitness are different in both environments. One line of evolution may lead inescapably to societies of men similar to societies of insects, harmonious and one hundred per cent constant and efficient, but unindividualistic and uncreative. The other line of evolution may lead inescapably to a new race of men which tacitly will follow the opposite direction and which will be partly modified by the triumph over the robot. There will then be two possibilities of survival for man: one, as a *zootechnical animal*, the other, as a *creator*. The notion of Darwin of the survival of the fittest gains herewith a reorientation. Both environments may guarantee survival to man but each towards different goals. In an environment in which the machine and the technical conserve are functions of creativity only, in a state of strict dependence, the fittest will be the creator-man, its master, not the *machine-addict*, the servant of the machine. And the type of man who is supreme in a conserving environment will be doomed to perish in the other. The future may well see two different social orders flourishing side by side and breeding two different races of men, leading consequently to the most important division since man arose from certain genera of the Pliocene ape man to our own genus *Homo*. It may be that what can survive is not worthy of survival and that what is worthy of survival cannot survive. If the future of mankind can be "planned", then conscious evolution through training of spontaneity-creativity opens a new vista for the development of the human race.

The eugenic doctrine, similarly to the technological process, is another promise of extreme happiness to man. The eugenic dreamer sees the human race so changed through breeding in the distant future that all men will be born well, the world populated with heroes, saints, and Greek gods; all that is to be accomplished by certain techniques through the elimination and combination of genes. If this should really come to pass the world would be at once glorious, beautiful, and Godlike. But it may be reached at the cost of man as a creator from within himself; it would have,

like Siegfried in the myth, a vulnerable spot into which the thorn of death could enter—a tragic world, a world in which beauty, heroism, and wisdom are gained without effort, in which the hero is in want of the highest reward, the opportunity to rise from the humblest origin to a supreme level. It adds up to the question whether creation in its essence is finished with conception or whether creation does not continue or cannot be continued by the individual after he is born.

The eugenic dreamer and the technological dreamer have one idea in common: to substitute and hasten the slow process of nature. Once the creative process is encapsulated in a book it is *given*; it can be recapitulated eternally by everybody without the effort of creating anew. Once a machine for a certain pattern of performance is invented a certain product can be turned out in infinite numbers practically without the effort of man. Once that miraculous eugenic formula will be found a human society will be given perfect and smooth at birth, like a book off the press.

In the face of the two vehicles of thought and power, eugenic rule and machine rule, man ought to call to mind their meaning: that they both aim to remove the center and the rule from within him, the one into a process before he is conceived, the other into a process which is conserved, both aiming to make him uncreative. Technology may be able to improve the comfort of mankind and eugenics the health of mankind, but neither is able to decide what type of man can and should survive.

It is from the actual embodiment and performance of man within the psychological cross-currents which turn upon him from birth to death—that is, how he stands up in the psychogeographical test—that a decision, if any, can be made. The conclusion we can draw from a survey of the position of man as a biological being in the world of today is that thrown into an industrial environment he does not stand up well in the conflict with the machine. The solution of this conflict lies in an heroic measure, not to surrender to the machine, not to halt its development, but to meet it on even terms and to resort in this battle to resources which are inherent within his organism. Beyond the controversy, destruction of the unfit or survival of the fit, is a new goal, the survival of a flexible, spontaneous personality make-up, the survival of the creator.

Another tragic insufficiency of man is his failure to produce a well integrated society. The difference between the social structure in which he functions and the psychological structure which is an expression of his organic choice and the tension arising between the two constantly threaten to disrupt the social machinery so painfully built up by him. It was from a study of the integrating and disrupting forces in the development of society, by which means they operate and by what techniques they can be controlled, that these inner disturbances were disclosed as a permanent feature of social organization. We found it characteristic for the most differentiated as well as for the least differentiated groups. It must have been an attribute of human society since its early days. The weakness of human society appears to have the same cause as the weakness of the individual organism. The question is therefore not only the survival or passing of the present form of human society but the destiny of man. As all races suffer from a common insufficiency in this respect they are going to live or perish together. An alternative and a solution may come from the conclusion that man has resources which are inherent in his own organism and in the organization of human society and which he has never used beyond the embryonic stage—his spontaneity-creativity. To bring these to full development requires the concentration of all agencies—technological, social and eugenic.

“Zoomatics” and the Future of Man’s World

Broadly viewed, this book deals with two social issues, the relation of man to man and the relation of man to certain peculiar products of his mind, which when separated from him, can function independently. It boils down to an appraisal of the positive forces which man has at his command to meet two threats, the aggression coming from man and the aggression coming from “robots.”* The answer to the first was *sociometry*. The answer

* Robot derives from a Polish word *robota*, to work. My idea of the “zootechnical animal” (1918) was popularized a few years later by Karl Czapek in a play “Rossom’s Universal Robots,” 1921; he coined the term robot. The term is not adequate as in the zootechnical animal not only work but also destruction is implied. Thus in my definition the working robot can become ferocious and vice versa. A better term than robot might have been genie. According to the Arabic use there were good and bad spirits among them who assumed the form of animals, giants and so forth. The robot is really a “zoomaton,” zoo, from Greek *zoon*, animal (zoo, live), automaton, a Greek word, neut. of automatos, autos, self, mao, strive after.

to the second was *creative revolution*, based on a theory of spontaneity. However, both have to work hand in hand in order that either should be effective.

The meaning of the title of this book WHO SHALL SURVIVE? is the survival of creativity, of man's universe. *The survival of human existence itself is at stake*, not only of the fit;** fit and unfit are in the same boat. These new enemies are common to all men, not only to one or another group; they are threats to the survival of the total universe of men. These odd enemies are *technical animals* which can be divided into two classes, cultural conserves and machines. The more popular word for them is robots.

A descriptive classification of the various types of robots man has invented should precede their dynamic analysis. One type can be defined as the domesticated robot, the plow, the pen, the book, the typewriter; another type can be defined as the enemy robot, the gun, the rocket, the atomic bomb. Then there is the mixed form of robot, as a knife, a fire, steam engine, the automobile and the airplane, which can be used for and against himself. But because of the non-human character of the robot it can easily be turned from one function into another, the automobile can be turned into a wartank, a working knife can be turned into a weapon, the warming fire turned into a means for destruction. Many of the domesticated robots are blessed with the attribute of becoming labor-saving devices, which has, however, the unpleasant consequence that they at times reduce the need for creating, promoting with leisure also inertia. Robots are more precise and reliable than animals and human beings. Many of the robots have also the attribute in common of being able to affect human beings or other targets "at a distance," a book, a radio or a television sender can entertain or teach at a distance, like a gun, a rocket and an atomic bomb can kill people and destroy at a distance. The book is a robot par excellence. Once off the press, the parent, the producer, the author is immaterial; the book goes to all places and to all people, it does not care where it is read and by whom. Many robots have further in common the attribute of comparative immortality. A book, a film, an atomic bomb, they do not perish in the human sense, the same capacity is always there, they can be

** Fit and unfit, Darwin's survival of the fittest, have become increasingly "psychagogic" terms.

reproduced *ad infinitum*. A book may have to be reprinted, a film copied on and off, but if anything perishes it is not their essence but some material entourage. Our human world is increasingly filled with robots and there seems to be no end to new forms and new developments. Since man came out of the jungle, its master, he did not have a similar maze of threats to face—the jungle of robots.

The racial revolution and World War Number 2 have divided mankind into several camps, one fighting the other. But the invention of the atomic bomb has given us an excellent didactic lesson of how foolish interhuman wars are and how unstable and unsafe is the basis of all human existence. We need one another but continue to fight each other. An enemy has appeared on the horizon which is an enemy to *all men*, which may make an end to all races, superior and inferior, fit or unfit, old and new. It is as if mankind has been awakened from a dream in which it indulged in the chronic and comparatively innocent war plays of its pre-bomb era. Shaken, it finds itself face to face with a *reality of the present and of the future*, the atomic bomb and its kins to come, unhuman but not unreal, unliving but not unc cosmic. The answer to this great emergency (which has been anticipated in smaller doses in the course of human evolution and of which the invention of the fire, of the tool and of the book are outstanding examples) does not lie in palliative measures like counter-robots, an international police or a world society (which are, of course, fine things to aim at). The countermeasure lies in a cold appraisal of the situation, a systematic study of the causations underlying the invention of mechanical devices, the origin of the robot in human nature and beyond it, a careful calculation of the "socio-atomic organization of mankind." In other words, we should bring the problem into full scientific consciousness and develop parallel with sociometry a zootechnique, a science of the technical animals.

The invention of robots is a skill of *homo sapiens*. The reason for their origination is mysterious; perhaps "when man found himself failing in his struggle for maximum creativity he divided from his will to create his will to power"*—and now his will to *have* power turns against his will to create. Why should man want

* See J. L. Moreno's Commentary to "The Words of the Father," Beacon House, New York, 1949, p. 181.

robots? It is perhaps the same reason, in reverse, as the one which at an earlier period made us want a God to whom *we* were robots. Therefore, if we could understand what we mean to God, we could understand what robots mean to us. Our relationship to God may be simply this—he needs a lot of helpers in order to put his creation over. Man too, has a program of living, of creation on a minor scale, he needs helpers and weapons to defend himself against enemies. But all animals do that without robots, they just multiply themselves. The primitive ancestors of our species, too, were contented with biological offsprings. But the biological robots of animal reproduction do not satisfy us men “entirely.”

There must be a deeper and additional reason why we wanted and created the technological kind. An analysis of spontaneous-creative processes broadened my understanding of the problem. Infants, immediately after birth demonstrate that the less spontaneity a being has the more it requires some one who has it, in order to survive. The infant lives on borrowed spontaneity. The humans who are at the beck and call of a helpless, crying infant, who come and carry, feed and comfort it, I call auxiliary egos. By auxiliary ego I do not mean the total person of the mother or father, for instance, but the “role” it has for the infant. Everything, however, which is outside of that role, frightens the child. An excess of spontaneity which that person turns upon the infant beyond or outside of the role appears to be an irritating factor. The infant wants its auxiliary egos perfect, that is, to have all their ready spontaneity available for him, the infant, and none for the egos, themselves. This offers a clue for understanding the relationship between the idea of the auxiliary ego and the idea of the robot. If the auxiliary ego could concentrate and conserve all its spontaneity for one function, the role which satisfies the needs of the infant would not permit any diversion of spontaneity for himself, he would be less real and human, but a more perfect auxiliary ego. These observations were confirmed by the attitude which children show towards dolls. The doll does not have the often unpleasant *counter-spontaneity* which real human beings have, but it has still some physical and tangible reality which pure fantasy companions do not have. In the half real, half mechanical doll world the child can act as an uninhibited ruler. Here he gets the first taste of the robot which he can destroy at will and which may

one day go out and act as decreed by him. Dolls seem to make the child free—independent from other children and from adults. One can divide the *doll robots* as fulfilling two functions: the doll which represents a companion and friend, a “mechanical role-player,” a *domesticated* automaton; and then the doll as the object of unlimited aggression, the mechanical role-player who is fought and killed without having a defense, an *enemy* automaton. I have described elsewhere* how playing and long preoccupation with dolls encourages the child to treat animals and human beings like robots. In psychodramatic procedure we are using the auxiliary ego to do this consciously and systematically. The auxiliary ego sacrifices his own ego and produces in accord with the requirements of the patient. He extends the universe of the patient so that the patient can find new situations and new associates. The robot, like the auxiliary ego, makes man free from man and gives him an artificial sense of wellbeing and power. It too, extends the range of megalomaniac experience to a new climax. But that is the limit of the similarities between the two. Behind the role-giving auxiliary ego is a warm, spontaneous being. The robot is lifeless. It is the same at every instant, it does not grow, it does not change. Once upon a time we envisioned our God as the one who could destroy us any time he wanted to. Robots, too, can give a single man the power to rule and perhaps to destroy the universe instantly. *But robots cannot produce an ounce of spontaneity.*

A human infant results from the conjugation of a man and a woman. A robot results from the conjugation of man with nature itself. In both cases the offspring takes over some feature from both parents. In the robot, for instance, there is some feature of the man-producer and some feature of natural energy modified by him.

The *similarities* in “organization” between organisms and machines in the broadest sense of the word—from the zoomaton, the robot and the calculating machine to the conserved cultural products—is therefore not surprising, it has a simple explanation;

* See “Towards the Curriculum of an Impromptu Play School,” *Impromptu Magazine*, No. 2, 1931 Beacon House, New York. Also “Sociometry and the Cultural Order,” *Sociometry Monograph*, No. 2, Beacon House, New York, 1943, and “The Theatre of Spontaneity,” German original 1923; Beacon House, 1946.

they are of the same parent. They are "siblings" of a kind, there is an odd and deep-seated sibling rivalry between them. The *differences* in organization between organisms and machines comes from the fact that their "other" parent is of a different order. The misunderstandings of all types of machine theory is due to a neglect of their common ontology, the doctrine of spontaneity-creativity.

The control of the robot is complicated for two reasons, the one reason is that the robot is man's own creation. He does not meet it face to face, like he did the beasts of the jungle, measuring his strength, intelligence and spontaneity with theirs. The robot comes from within his mind, he gives birth to it. He is confounded like every parent is towards his own child. Rational and irrational factors are mixed therefore in his relationship to robots. In the excitement of creating them he is unaware of the poison which they carry, threatening to kill his own parent. *The second reason is that in using robots and zoomatons man unleashes forms of energy and perhaps touches on properties which far surpass his own little world and which belong to the larger, unexplored and perhaps uncontrollable universe.* His task of becoming a master on such a scale becomes a dubious one as he may well find himself more and more in the position of Goethe's Sorcerer's Apprentice who could unleash the robots but who could not stop them. The apprentice had forgotten the master's formula, we never had it. We have to learn this formula and I believe it can be learned.

The fate of man threatens to become that of the dinosaur in reverse. The dinosaur may have perished because he extended the power of his organism in excess of its usefulness. Man may perish because of reducing the power of his organism by fabricating robots in excess of his control.

The conclusion is that as parents and creative agents we produce more perfect robots than we produce babies. As our perfectionism has failed us again and again in its application to us as biological and social beings, as individuals and as a society of individuals, we give up hope and invest it in zoomatons. The pathological consequences are enormous. Man turns more and more into a function of cultural and technological conserves, puts a premium on power and efficiency and loses credence in spontaneity and creativity. The

two countermeasures suggested are the sociometric and sociatric approach to group relations and spontaneity training.

Man has never recognized and used in full the power pent up in the millions of social atoms continuously formed by him and his fellowmen. If he would recognize his power, robots like the atomic bomb would be to a "sociometrically integrated mankind" what a doll is in the hands of a child. The use of physical atom energy can be directed and controlled by "social atom energy."

A system of society must be realized to which all individuals belong spontaneously, not only "by consent" but as "initiators"; without exception, not 99.9 per cent, but literally and numerically *all individuals alive*. The "one" individual left out may turn out to become the singular *scientist-criminal* using means of lethal destruction, not towards one or another fellow man (Cain vs. Abel) not one ethnic group against another (racism) but towards the total species of man, his total world.

Man must take his own fate and the fate of the universe in hand, on the level of creativity, as a creator. It is not sufficient if he tries to meet the situation by technical control—defense weapons—nor by political controls—world government—he should face himself and his society in *statu nascendi* and learn how to control the robot not after it is delivered, but before it is conceived (crea-tocracy).

I have often described the revolutionary period during the last hundred and fifty years in terms of three phases: the economic, the psychological and the creative revolution. In economic ideology the robot was greeted as a benevolent, labor saving and comfort bringing agent. It made the poor and the rich the owners of technical slaves. To some it seemed to hold promise of solving the class conflict. In the ideology of the psychological revolution—at least in its most recent demoniac form, using racial and political phraseology to cover up psychological causations—the robot became an agent of destruction. The number of men could be reduced without loss, now that the kind and number of robots could be multiplied without limit. In the ideology of creative revolution the robot is finally seen in relation to the creative act itself and put in his place.

Could we imagine a congress appropriating two billion dollars

for "social atom" research? Maybe it is not appropriated and will not be because what matters is not money. Mankind may need still more serious setbacks before it comes to its "creative" revolution. Perhaps it is unavoidable that the present human civilization be destroyed, that mankind be reduced to a handful of individuals and human society to a few scattered social atoms before a new rooting can begin. Christianity too, has not been helped by mass baptism of babies; fewer but self-realized Christians might have meant more true Christianity.

The battle between zoon (living animal) and zoomaton (mechanical animal) approaches a new peripety. The future of man depends upon counterweapons to be developed by somiometry, sociatry, bioatry and similar disciplines.

The law of survival has three categories, a) the category of the strongest, b) the category of the fittest, and c) the category of the creator. The fittest has an enormous "maintenance" value for our biosocial system. The strongest is a catalyzer of its defenses and hidden spontaneities, but the creator is the *sine qua non* of all survival. Without him the fittest would have nothing to maintain and the strongest nothing to exploit.

Zoomatics and Cybernetics

It is not at all surprising that a science of automatic devices should have been started from the two opposite ends of conceptualized thinking, the one from the point of view of the machine, dramatized in our civilization by the emergence of the printing press and the book ("the cultural conserves"), the automata of Descartes and the calculating machine of Leibnitz—the other from the point of view of the creator, the theory of spontaneity and creativity; it is also not at all accidental that the engineering variety of zoomatics called cybernetics should arrive in our century thirty years later (1947) than the creativistic variety (1917), which has been anticipated by the writers of the New Testament in their damnation of the scribes. As usual, Mephistopheles follows the footsteps of the Godhead.

It is because of the *similarity* in organization and function between robots and human organisms that I called the former zootechnical animals and the science dealing with them zoomatics.

It seems to me that zoomatics, which emphasizes the semblance between mechanism and organism, is a happier term for this science than cybernetics, which means steersman. The concept "steersman" is misleading as in the last analysis the robot does not steer, but it is "steered". It lives from "borrowed creativity". It conveys the impression that *perpetuum mobile* is possible whereas actually no automaton can ever become a genuine steersman, that is, a creator. There are organisms which act at times like automatons but there are no automata which can forever operate without the occasional push of a creative agent.

If the human brain has much in common with calculating machines—it is because they are of similar parentage, they are "step" siblings. The means of communication in robots and organisms connecting the various parts of such a system with one another have comparable features. We sociometrists have called the communication processes taking place between actors in the psychosocial networks created by them "chains of warming up"; mechanical engineers have called the communication processes within automatic mechanisms "chains of feedback". An illustration of a two-way feedback is a telephone system sending and receiving messages. It is the mechanical equivalent of the two way warm up; but they are not identical. It is thoughtless to transfer terms describing sheer mechanical phenomena to spontaneous human relations. To substitute warming up by feedback is an oversimplification; it may appeal to the academicians as another "semantic withdrawal from reality".

The Underpopulation of the Universe

Malthus' position has been that the human universe is overpopulated—the earth has not enough resources to feed ever-increasing numbers of people; reckless exploitation of the earth's resources will result in poverty, sickness and death.

My thesis is to the contrary, that the universe is "under" populated. *The answer to Who Shall Survive? is that everyone should survive.* The supreme imperative of survival is of first importance, the means of survival is of second importance.

Malthus deals with the "means" of survival and arrives at a desperate conclusion. I look at the "origins" of life and survival; the

conclusion is equally desperate but the outlook is different. Let us look at the first universe first, at the source of life, before we look at the second universe, at the means for living. The infinite spaces and the starry sky above us have been symbols to our ancestors that there is a place for everyone to live. They have been a perennial challenge to the inventiveness of man to create the means necessary to the survival of all. The modern advocacy of preventing conception of life as a palliative measure and as a human weakness is understandable. But its advocacy as a first, good and ethical principle in itself may be considered a symptom of a profound degeneracy of our ethical value systems. We should be equally generous towards the life which is coming up as we are, or should be, towards the life which is going out. Our ideal standard should be to let as many people as possible be born and let them live as long as possible. But if the resources of the earth and the inventiveness of the scientific mind should not be able to feed an evergrowing population we should honestly meet the question what alternatives there are for humanity.

In principle at least, there is an alternative to birth control which we should bring to our consciousness as a categorical imperative even if it would never be realized: *let everyone be born and let us "share" with them what there is to be had.* Let us rather reduce the length of life of the existing populations in order to permit everyone who is conceived to be born. In the sense of the *imperative of unlimited birth* even the Catholic position of rhythmic birth control is unethical and in essence no different from all other forms of interference. Instead of countering overpopulation by prevention of conception and birth control we could just as well contravene by "preventing longevity." I cannot imagine any less popular recommendation than preventing longevity at the time when these lines are written, in a Western democracy, in the middle of the twentieth century. Prolonging life to a maximum has become a conscious objective of a science of geriatrics and is supported by the enthusiastic consensus of all good men who look up to science to give them a modest substitute for true immortality in the hereafter as promised them by religion. But if I would have a mind à la Swift I could well imagine a world of a reversed order, opposite to ours, in which ethical suicide of people after 30 or 35 as a religious technic of countering overpopulation is just as

natural as birth control has become in our culture. In that society the love of life would be carried to its extreme. "Make space for the unborn, make space for the newborn, for everyone born. Every time a new baby is born make space for him by taking the life of an old man or an old woman."

In principle the problem of overpopulation can be met in four ways, by *laissez faire* on both ends, unlimited birth and unlimited death; by cutting in the beginning, birth control; by cutting at the end, death control; or by cutting at *both* ends, birth control *and* death control. The modern trend has been drifting away from the principle of "naive" creativity, towards the principle of calculated manipulation. But if manipulation is the score, the question is open as to what is more ethical in the end: manipulating with birth or manipulating with death.

One can take the stand that to encourage and foster longevity at all cost but to reduce the number of children to be born is a form of "biological capitalism," to give a share of life only to those who have had the chance of being born and to suppress the masses of the unborn. In that "other" culture which may never have existed on earth except in the faint approximations of some primitive religious cultures, the love of the unborn is the highest commandment.

If the two and a half billion individuals now living would live at the rate of 30 to 35 years only, two and a half billion more children could be born without any change in the abundance or scarcity rate. It means that if there is not enough food for new people to be born let so many people die instead. *There is a higher form of "bioatric" and sociometric democracy in which the unborn, the living and the dead are partners*—instead of keeping the unborn and the dead out of partnership.

Sir Francis Galton proposed eugenics, "to endow or improve the inborn qualities of future generations." I propose sociogenics, "to study and prepare conditions in the universe that everyone can live and that no one is prevented from being born."

Man has learned to defer and hinder birth but the question is whether mass prevention is not a dangerous manipulation with the two greatest factors operating in human evolution—the factor of chance and the factor of spontaneity—creativity. We are ig-

norant, of course, either way, but manipulating chance and interfering with spontaneous productivity may have incalculably harmful consequences upon the evolution of the universe. Preserving old people en masse at the cost of newly born en masse might well develop a race of human white elephants, a biological scarcity may follow a biological abundance. This is a challenging hypothesis, to increase the number of births instead of postponing the hour of death indefinitely. Our genetic crisis and our cultural crisis are closely linked.

The principle of a sociometric and sociogenic democracy—is a commonwealth in which the equality of opportunity is extended to the unborn; it includes and gives equality of rights to three classes of people, the unborn, the living and the dead. All men are equally unborn before they are born. Sociometry has discovered many new types of proletariat but the greatest and oldest proletariat of all is the proletariat of the unborn. Sociometry joins hands here with bioatry; share the biological as well as the social wealth with all beings, born or unborn, and distribute it among them.

The possibility of a trend towards a reproductive impotency of the human race should be included in any survival analysis. The real issue for any earnest student of the survival potentialities of mankind is the *reproduction capacity (rc) of the human race versus the productive capacity of the earth (pc)*. The emphasis of the social biologists, although no one should doubt their figures, is onesided. In all their calculations and deliberations they leave out the rc of the human race. Rc may now be comparatively high but we should consider a slowing up of the rc as a possibility. If such a situation should ever develop I can see all the biological doctors getting together and worrying about how to cure this terrible condition. Just as a gradual decrease and loss of rc can happen to any individual why could it not happen to a species? The relentless acceleration in the growth of human numbers which is frightening some today may one day be reversed into a relentless reduction in growth, as in the story of Genesis of the seven lean years after the seven fat years. The vitality of human reproduction is hardly studied. It is taken for granted.

Sexual intercourse is increasingly becoming an activity independent from reproduction. The growing division of the repro-

ductive from the sexual function in our mores should be part and parcel of a dynamic population theory; the current theories pay little or no attention to the creativity, productivity and spontaneity of the human race, but most attention to methods by which they can be checked. A measure of this division of the reproductive from the sexual function is the number of orgasms per conception. An experiment eliminating all forms of birth control, with different populations and at different points in time, may show whether the ratio of orgasms and conceptions of the human race is changing.

According to spontaneity research of the sexual act, the warming up process towards orgasm develops into two different directions, one with the goal of conception, the other with the goal of avoiding conception. If this division attains more and more a permanent character and becomes a cultural pattern the psychosomatic characteristics of the rp orgasms may differ more and more from sa orgasms. The dilemma of the future may turn out to be, instead of human fertility and overproduction human "in" fertility and underproduction.

Nature's Planning and the Planning of Science

It has helped us in the beginning of the investigation to think of mankind as a social and organic unity. Once we had chosen this principle as our guide, another idea developed of necessity. If this whole of mankind is a unity, then tendencies must emerge between the different parts of this unity, drawing them at one time apart and drawing them at another time together; these tendencies may be sometimes advantageous for the parts and disadvantageous for the whole or advantageous for some parts and disadvantageous for other parts; these tendencies may become apparent on the surface in the relation of individuals or of groups of individuals as affinities or disaffinities, as attractions and repulsions; these attractions and repulsions must be related to an index of biological, social, and psychological facts, and this index must be detectable; these attractions and repulsions or their derivatives may have a near or distant effect not only upon the immediate participants in the relation but also upon all other parts of that unity which we call mankind, the relations which exist between the different parts

may disclose an order of relationships as highly differentiated as any order found in the rest of the universe.

Whether in the end this guide will be proved to be a universal axiom or a fiction, it has aided us in the discovery and demonstration of the tele, the social atom, the sociodynamic effect, and the sociometric network of communication. It may be permissible to let the fantasy run ahead of demonstrable proof and derive another necessity which seems to follow logically from the conception of mankind as a correlated unity. Just as we have seen the individual in the sociometric domain as the crossing point of numerous attractions and repulsions which at various times shrink and expand and which are not necessarily identical with the relations within the groups in which he actually lives but breaking through group-life lines, it may be that also in the eugenic domain an individual cannot be classified but as a crossing point of numerous morphological affinities and disaffinities which are not necessarily related to the individuals with whom he actually propagates the race, but that they break through racial lines and the different levels of social organization. It may be that certain individuals belong to the same *eugenic group*, due to selective affinities for which an index of eugenic facts must exist, and that they do not belong to all other groups, at least not with the same degree of selectivity. It may be also that the balances and imbalances we have found within the social atom exist in some fashion also in the gene-atoms and that once such an evidence is secured a basis for eugenic classification similar to our sociometric classification will be won.

Since Linnaeus advanced the theory of the origin of the species by hybridization and Mendel's discovery of the laws of inheritance, it is assumed that the bringing together of many diverse genes by hybridization and their various interactions are largely responsible for the increase of complexity found in the evolution of organisms. But the causes for successful and unsuccessful hybridization are in doubt. The beneficial and the dysgenic result of the meeting of differently constituted germ plasms may be due to morphological affinities and disaffinities operating among the genes themselves or among complexes of them. And upon these affinities and disaffinities may depend the pooling of appropriate or inappropriate hereditary factors contributed to the offspring by the two parents.

As long as the nature of eugenic affinities is not established by biogenetic research, we shall assume two practical rules: that psychological nearness or distance is indicative of eugenic nearness or distance and that clinical studies of crossings lead to a preliminary classification of eugenic affinity. We may have to consider not only changes in the genes but changes *between* the genes—whatever mutation may have taken place in a gene and for whatever reason, mechanical, chemical, etc. If this mutation should be favorable the genes must be attractive to one another, that is, must correspond to changes in some other genes. In other words, the genes must be able to produce a functional relation; morphological affinities and disaffinities between them may exist.

It can be doubted whether the attraction of one individual towards another and pairing inclinations are a fair index of morphological affinity and conversely, whether repulsion of one individual for another and disinclination to mate are an index of sterility or reflecting a dysgenic factor. Our opinion is that as long as no better knowledge is available, affinities of individuals for one another should be considered a practical index. It is not known to us if a thorough investigation of the relationships existing between sociometric affinities and disaffinities and the eugenic reflections of them has ever been made. The more one considers sociometric processes as a fair index for bodily and social changes and the more one considers them as an index, not only for the needs of the individual but also for the needs of the kind, the more will one be inclined to expect that the factor of spontaneous choice and spontaneous clicking is not a random experience but an inherent expression of the whole organism. A definite relation may exist between gene effect (if we call "gene effect" the reflection of one gene upon another and upon the individual characters) and tele effect.

The scant clinical evidence as far as available today appears to give support to the hypothesis. We have the one extreme, a point of view held by many eugenic writers, that the physically and mentally abler members elevate the race through propagation and that the physically and mentally inferior cause the race to regress through their propagation, and the other extreme, that members of the superior class in general produce better offspring with members

of the inferior class (and members of one race with members of another race) than when they remain within their own sphere; both extremes appear to find a point of coincidence in the hypothesis of eugenic groups, micro-biological relations which are not identical with the macro-biological groups as they appear on the surface.

From the point of view of such a biometric or eugenic classification the constructive approach of biological planning comes into a new light. Similar to therapeutic assignment in social groups *eugenic assignment* to eugenic groups now looms as a possibility. Thus the notion of the unfit, at least for a large number of those who are now considered in this category, becomes relative, as numerous groups of varying eugenic value are uncovered. Some groups among those today classified as unfit for propagation may be found unfit when in relation to certain groups, but fit in relation to other groups, just as we have found in respect to populations that some groups which foster disintegration and decline in certain communities aid in the fruitful development of others. It is a foregone conclusion that if this be the case our present palliative measures such as sterilization will be discarded or undergo modification.

We may have gone too far with our disrespect for nature's wisdom, just as in times past we went too far in our respect for it. It may be demonstrated in the end that the slow and "blind" methods of nature's planning, however wise they have appeared at one stage of our knowledge and however deficient in parts at another stage of our knowledge, are true, taken as a totality. A new appreciation may then arise of the sense of the old myth which all great religions have brought forth in remarkable unison, the myth of the father who has created the universe for all, who has made its spaces so immense that all may be born and so that all may live.

**THE SOCIOMETRIC SYSTEM AND ADVANCED
SOCIOMETRIC THEORY**

SOCIOMETRIC UNIVERSALIA

Sociometric universalia are the most elementary social relations. They exist independent of a specific cultural context; they are found in all societies although they vary widely in organizational development. They may also be called social "axioms".

Physical and cultural relativism have overplayed their hand. The position taken by the sociometric system is that the social universe is held together by a solid body of forms and structures. The existence of sociometric universalia is self evident. They do not require the experimental need for proof. They require to be discovered. Once discovered, they can be verified by everyone without great effort. It is, however, of importance that they are identified, like the motions of the sun and the moon, like the source of a river, the course it takes and its locus of termination. They are home-spun truths but the indispensable prerequisite knowledge for any type of social system to be constructed.

Social axioms are discovered, their precursors can be found in non-human groups. The scientific method steps in to explore the forms they take and to study their variations. Some of the axiomatic structures are 1) the acquaintance atom, 2) the social atom, 3) the cultural atom and 4) the sociometric network.

It may be well to point out the difference between sociometric axioms like the social atom and Charles Cooley's primary group. Cooley's primary groups are the closest face to face groups; an example is the family. The social atom is rarely a face to face group in its entirety, some parts of it are invisible. Social atoms and sociometric networks are *primary structures*, but they are not necessarily primary groups. A primary group, like the modern family, is not a social axiom, it does not appear in all societies; the nuclear part of a family, f.i., mother and child, are usually the essential *part* of a social atom, but such a dyad never exists in isolation.

1. Every individual has, in a given moment of his life, a certain

number of individuals with whom he is acquainted; this is his acquaintance volume. An acquaintance is an individual who can be identified as having been met before; the knowing may consist merely of identifying his face when he passes by, or his name when people talk about each other. You may have talked with him but once or been present when someone talked to him. The acquaintance volume of individuals may change from birth to death in number, in range, in geographical distribution. It may extend and shrink. If all the acquaintances of all the individuals of a group are added up you obtain the acquaintance matrix of this group (AQM). The acquaintance matrix is like the social protoplasm of a group. Unless he is your acquaintance first, however vaguely and of short duration, you cannot develop a more intensive relationship with him. You cannot invite him to your house or fall in love with him. There are blind acquaintances, just as there are blind dates. It may happen occasionally that the moment of acquaintanceship and the moment of emotional partnership are one and the same.

2. Every individual lives in a social atom formed around him from the moment of birth on. The partners in his social atom are a *special* kind of acquaintanceship. Some feeling or interest develops between them, either one way or both ways.

Every society consists of a large number of social atoms. They are their lowest common denominators. They are the seeds from which societies grow and when they begin to disintegrate these societies perish sooner or later. They can be identified with every type of society, the most primitive and the most modern.

3. The cultural atom is the personalized modification of the general role cluster which dominates a particular culture. Every individual participates in a cluster of social roles which vary with the culture in which he lives. There are certain roles, the psychosomatic roles, which are universal. They are found in all cultures, the role of the eater, the role of the eliminator, the role of the sleeper, the role of the breather, the role of the soundmaker, the role of the walker. Every culture consists of a large number of cultural atoms; they are their lowest common denominators.

4. Every society is traversed and held together by networks of communication of which sociometric networks are the elementary model.

SOCIOMETRIC STATISTICS OF AGE AND SEX GROUPS

The study of age groups which the second book of this volume presents in sociometric relations is here subjected to statistical treatment.

In order to ascertain if a reliable difference exists between the group per cents of intersexual attractions we have used the method of dividing the difference between the two respective group per cents by the $P.E._{Diff}$. As the table below indicates, there is an unreliable difference between the percentages of intersexual attractions in the two different groups of kindergarten children, the two groups of 1st Grades, of 5th Grades, of 6th Grades, and of 7th Grades. In these five instances much the same factors have evidently entered into the reactions of the children. In the other four instances, the two sets of 2nd Grades, of 3rd Grades, of 4th Grades and of 8th Grades, on the other hand, a reliable difference is found to exist. Factors which made for a wider difference in reaction must have been present. Tracing what these may be, we find several which have a very direct bearing upon the test results. The turnover of population in this Public School is not a uniform one. This means that the children who transfer out of this school are not replaced by children of like age level. The average age level of the children in the 3rd Grade, for instance, may be higher or lower one year than it was the year before, and the intersexual attractions of children are directly dependent upon their age level. Also the number of children in any class of the 3rd Grade, for instance, varies from one year to another. There may be 34 children in one class, 45 in another, and 49 in still another. The proportions of boys to girls within each class as well as the respective class populations affect the results very considerably. In order to have two populations under like conditions we should have the same proportions of boys to girls in the different classroom groups of each grade, the same size of population within each of the classroom groups comprising each grade respectively, and the age levels of the two populations not differing to any appreciable degree within any of the classroom groups comprising each respective grade. Another factor affecting the findings is the length of time the children have had the opportunity to associate with one another.

DIFFERENCE BETWEEN THE TWO GROUP PER CENTS OF INTERSEXUAL
ATTRactions EXPRESSED IN TERMS OF THE PROBABLE ERROR.

Grade	Number (or Population)*		1st Test	2nd Test	Differ- ence %	P.E. _{diff.} %	Diff. <hr/> P.E. _{diff.}
	1st Test	2nd Test	Per Cent of Intersexual Attractions	Per Cent of Intersexual Attractions			
Kindergarten	55	66	25.	27.	2.	4.	.5
1st Grade	102	167	27.	21.6	5.4	4.	1.4
2nd Grade	177	177	16.5	25.8	9.3	2.5	3.7
3rd Grade	131	153	8.5	19.8	11.3	2.6	4.3
4th Grade	159	183	2.5	8.9	6.4	1.4	4.6
5th Grade	103	198	5.5	3.9	1.6	2.	.8
6th Grade	174	187	4.1	1.1	3.	1.1	.3
7th Grade	198	255	3.	3.4	.4	.8	.5
8th Grade	203	226	8.	1.6	6.4	.1	6.4

* The actual number of children tested in the 1st and 2nd tests made of the Public School grades was far larger than the figures presented above indicate. For quantitative and statistical analysis of the findings all choices of children who were not present at the first giving of the test in each instance were excluded. This was done in order that all participants' choices should, as nearly as possible, have been made under the same conditions.

If, for instance, at the time one test is made there are more children in the 2nd Grade who have gone to school together or lived near each other than there are in the same grade at the time a retest is taken, all other factors being equal, this would make for a difference in reaction between the two populations. Also, the time at which two tests are made of different populations ought to be the same: if the test is given in one case the first week of the third month the school is in session in the second half of the school year, it should be given at the same time in any second case in which we wish to compare the respective findings. In our two tests of Public School populations the first test was made one month later in the school year than it was in the second test. While this is not a very wide discrepancy, it may be wide enough to affect the findings to some degree.

It is, however, highly interesting that, despite all these factors which may enter and cause some difference between the findings at any grade level, the coefficient of correlation (product-moment method) between the two series (Kindergarten to 8th Grade) of group per cents of intersexual attractions is .80. This high correlation makes it clear that essentially the same tendencies in ref-

erence to intersexual attractions must be present in the two different populations. This finding is of importance as it is objective evidence that frequencies in respect to intersexual attraction among children from 4 to 14 years of age do not fluctuate widely from one population to another, but follow closely the same general rules. Further, it is proof that we have in the sociometric test a device which is reliable as an instrument for measuring such social phenomena. This consistency with which the sociometric test measures what it purports to measure can also be noted upon examination of Table 2 and Table 4 (see pp. 131 and 133). The group per cents of Isolated and the group per cents of Mutual Pairs in the two series found in the two respective populations of school children in general parallel each other very closely.

SOCIOMETRIC STATISTICS OF A COMMUNITY STRUCTURE

We may now turn to other findings presented in this volume. The attempt to measure the sociometric relations within a group compared with those found within other groups whose population is of a similar composition (see page 251, Ratio of Attractions), the attempt to measure the relations between such groups (see page 253, Index of Relative Popularity) and the attempt to measure the relations with a group compared with the relative attraction the group has for itself in contrast to the attraction it has for outside groups (see p. 249, Ratio of Interest), make up three criteria by which the position of a group within the community and the structure of the group itself have been "ranked." In order to ascertain if any relation exists between these three rankings, we have calculated the coefficient of correlation (by product-moment method) between each of them. They are found to be as follows:

Between Ratio of Interest and Ratio of Attractions -----	r	.20	± .17
Between Ratio of Interest and Index of Relative Popularity -----	r	.375	± .13
Between Ratio of Attractions and Index of Relative Popularity -----	r	.07	± .17

Each Probable Error is, of course, very large, due to the smallness of the series, 15. (There are about 30 members in each cottage, but here we are interested only in the relations of the 15* groups of individuals.)

The correlation between the two series expressing the Ratio of Interest each group has for itself and the Ratio of Attractions within the group is so small (.20) as to be unreliable. It may be concluded that the factors which enter into these two ratios are different and have practically no relation to each other. A group which receives a high ranking in one of these two ratios may or may not receive a high ranking in the other. We note an even greater absence of correlation between the two series expressing the Ratio of Attractions within each group and the Index of Relative Popularity (.07). The same conclusions may be drawn in respect to these two ratios as just mentioned above. However, between the two series expressing Ratio of Interest and Index of Relative Popularity we find the very rare negative correlation. This inverse relation is appreciable and indicates a considerable probability that any group which has a high Ratio of Interest for itself will have a comparatively low Index of Relative Popularity.

In view of the phenomenon of emotional expansiveness and emotional shrinkage, and in view of the tendency of the social atom towards maintaining an equilibrium, the negative relation between Index of Relative Popularity and Ratio of Interest gains a special significance as it is quantitative proof of the ambivalent character of emotional expansiveness. The more emotional energy a number of individuals spend within their own group, the less appears to be available to be spent outside of it, the less attention is paid by them to other groups of individuals in the community, the less attention is paid to them in return, and the less becomes their popularity.

As the development of a Social Quotient of a group is dependent, among other things, upon our knowing first whether the different criteria selected as indicative of the group's social relations are indeed different or whether they overlap each other so that a group which ranks high in one is bound of necessity to rank high in

* There are 16 cottages but we omit C5 from our calculations as C5 does not appear in Table 12, p. 251.

another, the indications of the coefficients of correlation are significant. It appears that the three ratios used for ranking a group are three *different* things, each measuring another aspect of social relations.

SOCIOMETRIC MEASUREMENT OF SOCIAL CONFIGURATIONS BASED ON DEVIATION FROM CHANCE

This section presents techniques for the measurement of social configurations. It discusses the statistical significance of sociometric procedure, its validity and reliability. Deviations from chance are taken as a reference base in the measurements. Quantitative analysis of choices is used as a method of studying the frequency distributions of choice. Statistics of configurations are found to be fundamental to the measurement of social organization. Statistical calculations confirm the evidence for the socio-dynamic effect and the network. Constructs of sociometric scales are given as suggestive schemes.

The chief hypothesis to be tested is the existence of and the degree to which a hypothetical factor, "tele," operates in the formation of groupings. Other hypotheses to be discussed are the *socio-dynamic effect* and the *psychosocial network*.

Sociometry deals with social configurations, aggregates of individuals. Owing to its specific characteristics, this field demands a new statistical treatment. It was evident from the start that existing statistical techniques could not be automatically transferred from other fields to this new field. The problem is, therefore, what kind of statistical methods can be constructed for the purpose. A critique of sociometric procedures is first advisable to clarify the direction in which to search.

Sociometric Procedure

There are two forms of experimental procedure which may be considered here. One is a procedure which is carried out in a laboratory. The potentialities of life are in this case reconstructed in a comparatively artificial situation. The effect is to bring the

participating individuals with maximum closeness to the experimental situation. The other type is entirely different. *The experimental procedure is so constructed that it is able to become the life pattern itself, the one in which the individuals live and act.* The laboratory is gone. This procedure is continuously molded and remolded through critical evaluation and thus brought nearer and nearer to an identity with the life setting. Finally, only the historian of the procedure may be aware that the frame of the setting and the life pattern have ever been two different things. The experimental setting has become a social institution.

The closer a procedure is to the "psychodramatic" life setting the more accurate and comprehensive will the fact-finding become. Studies can be carried out at different distances from the life setting and from the point of view of comparative research each may have a special value. There are methods in which the investigator elicits from the subjects verbal or non-verbal responses in regard to their inter-personal relations or can use observational methods for their study. In these instances, the test groups, that is, the sum of individuals composing them, remain in a research status. Such methods fall under the general category of a *research sociometry*.* They have to be differentiated from other methods in which the subjects' responses and desires are made active and put into operation. Because of the fact that the individuals forming the group know in advance the meaning of the procedure and accept it, they can make it their plan of action, they are identical with it. *They are in full consciousness operators in their own behalf.* Such methods fall under the general category of *operational sociometry*. In addition to operational sociometry which is often carried out for pure research objectives, procedures have been developed which have therapeutic aims exclusively. *Assignment therapy* in which the factor of spontaneous choice is merely one contributory factor illustrates the therapeutic aspect of sociometry.

The most characteristic feature of sociometric procedure in its operational form is that it tries to warm up the individuals to the experimental setting, until the experimental setting and the life pattern of the individuals have become one and the same thing.

* Research Sociometry and "Near Sociometric" procedures are not identical notions. Near sociometry is an evaluation of procedure and results. Research sociometry is a classification of method.

The experimental setting is a construct of our mind, its frame is known and its propensities can be visualized, but the life pattern in which these individuals interact is unknown. With the sociometric device we succeed in penetrating a domain which otherwise would remain incomprehensible.

When operational techniques are applied, something happens not figured on at the start. The procedure used in time changes the position of individuals and the structures which we are trying to measure and thus what we try to measure escapes our test. The longer the sociometric procedure is applied, the better we understand the changes of the structure, and the more accurate and complete our knowledge becomes.

To classify operational apart from research methods is an aid in considering more specifically the distance which the frame of an experiment has from the life pattern. Such distance may account for the great difference in results obtained. The nearer to the psychodramatic life scene the frame is constructed, so that it may reach into all manifest and fantasy levels of inter-personal relations, the better will be the opportunity to get the data required. The greater the distance of the construct from the life pattern, and the more rigid it is as such, the less adequate and complete will be the data.

It is evident that a simple procedure setup and the complex inter-personal pattern which it attempts to reach are by no means always congruent. A "choice" may never emerge in the activities of an individual, or the warming-up to a clear and decided feeling of preference may emerge only in a limited number of cases, and where it emerges it may remain inconsequential because of a lack of decisive action towards the person desired. The choices may often be half-conscious, often mere wishes. A person may not know towards whom he is "drawn." Sociometric tests therefore, ought to be constructed more and more in such fashion that they are able to embrace as far as possible the full complexity of the actual interrelations existing in the population. The more flexible the procedure is made, the more it becomes capable of tapping these concrete actualities.

When, however, the complexities of a social aggregate reach the

most comprehensive patterns of living, with all the implications of the fully mature mental process, statistical treatment may tend to over-simplify the procedure and the data to such a degree that the resulting statistical findings become impermissible and unscientific. This is why techniques of presentation derived from the arts, such as the psychodrama, seem sometimes more appropriate than statistics.

Chance Experiments

A population of 26 was taken as a convenient unit to use in comparison with a chance distribution of a group of 26 fictitious individuals, and three choices were made by each member. For our analysis any size of population, large or small, would have been satisfactory, but use of 26 persons happened to permit an unselected sampling of groups already tested. Without including the same group more than once, seven groups of 26 individuals were selected from among those which happened to have this size population. The test choices had been taken on the criterion of table-partners, and none of the choices could go outside the group, thus making comparison possible.

The chance experiments were set up as follows: Fictitious individuals—Mr. 1, Mr. 2, Mr. 3, etc. to Mr. 26,—were written on ballots. The chance ballots, except that for Mr. 1, were placed in a shuffling apparatus and three drawings were made for Mr. 1's choosing—the first drawing being called his 1st choice, the second drawing being called his 2nd choice, and the third drawing, his 3rd choice. The three ballots were then replaced in the shuffling apparatus and drawings similarly made for Mr. 2, Mr. 3, etc. The 26 fictitious individuals, each having three choices, produce 78 blind choices. Seven such chance tests were made, using a total of 546 choices, the same number as in the sampling of actual sociometric tests. An analysis of the chance choices is recorded in Table 1. Analysis of the chance structures is recorded in Table 3. An analysis of the choices resulting from the sampling of seven cottage groups is given in Table 2. An analysis of the actual structures is recorded in Table 4.

TABLE 1
CHANCE EXPERIMENTS WITH THE SOCIOMETRIC TEST STATISTICAL ANALYSIS
OF THE CHOICES

<i>No. of Choices</i>	0	1	2	3	4	5	6	7	8	9
Chance Balloting 1	2	4	4	4	8	2	2	—	—	—
Chance Balloting 2	2	3	6	3	8	3	—	1	—	—
Chance Balloting 3	1	1	10	5	4	4	1	—	—	—
Chance Balloting 4	—	3	10	5	2	4	2	—	—	—
Chance Balloting 5	3	5	2	9	2	3	2	1	—	—
Chance Balloting 6	1	3	8	5	5	1	2	1	—	—
Chance Balloting 7	2	2	5	8	5	2	2	—	—	—
Total.....	11	21	45	39	34	19	11	3	—	—
Average	1.6	3.0	6.3	5.6	4.9	2.7	1.6	.4	—	—

TABLE 2
ACTUAL SOCIOMETRIC TEST
STATISTICAL ANALYSIS OF THE CHOICES

<i>No. of Choices</i>	0	1	2	3	4	5	6	7	8	9	10	11
Test 1	4	7	4	3	—	2	2	2	1	—	1	—
Test 2	6	3	4	3	2	4	1	1	1	1	—	—
Test 3	5	4	3	4	4	1	2	1	2	—	—	—
Test 4	3	5	4	6	3	1	—	3	—	1	—	—
Test 5	7	3	5	1	2	4	—	2	—	1	—	1
Test 6	3	2	5	8	3	2	2	—	1	—	—	—
Test 7	7	5	5	1	2	—	1	1	1	1	—	.2
Total	35	29	30	26	16	14	8	10	6	4	1	3
Average	5.0	4.1	4.3	3.7	2.3	2.0	1.1	1.4	.9	.6	.1	.4

TABLE 3
STATISTICAL ANALYSIS OF CONFIGURATIONS OCCURRING IN CHANCE

	<i>Isolated</i>	<i>Unrecip- roated</i>	<i>Mutual</i>	<i>Chain Relations</i>	<i>Closed Structures (triangles, etc.)</i>	<i>Leader Struc- tures</i>
Chance Balloting 1	2	68	5	—	—	4
Chance Balloting 2	2	74	2	—	—	4
Chance Balloting 3	1	64	7	2	—	5
Chance Balloting 4	—	72	3	—	—	6
Chance Balloting 5	2	68	5	2	—	6
Chance Balloting 6	1	70	4	1	—	4
Chance Balloting 7	2	70	4	1	—	4
Total	10	486	30	6	0	33
Average	1.4	69.4	4.3	0.9	0	4.7

Study of the findings of sociometric tests showed that the resulting configurations, in order to be compared with one another, were in need of some common reference base from which to measure the deviations. It appeared that the most logical ground for establishing such a reference could be secured by ascertaining the characteristics of typical configurations produced by chance balloting for a similar size population with a like number of choices. It became possible to chart the respective sociograms of each experiment, so that each fictitious person was seen in respect to all other fictitious persons in the same group; it was also possible to show the range in types of structures within each chance configuration of a group.

TABLE 4
STATISTICAL ANALYSIS OF CONFIGURATIONS OCCURRING IN ACTUAL
SOCIO-METRIC TESTS

	<i>Isolated</i>	<i>Unrecip- rocated</i>	<i>Mutual</i>	<i>Chain Relations</i>	<i>Closed Structures (triangles, etc.)</i>	<i>Leader Struc- tures</i>
Test 1	4	54	12	4	1	8
Test 2	6	48	15	1	1	8
Test 3	5	56	11	4	—	6
Test 4	3	46	16	2	2	5
Test 5	7	48	15	1	2	8
Test 6	3	44	17	2	1	5
Test 7	7	62	8	2	—	6
Total	35	358	94	16	7	46
Average	5	51.1	13.4	2.3	1	6.6

As soon as the results of chance balloting were secured, the problem of the theoretical computation of the data arose.*

"Under the conditions of this study the probability of a certain child's being selected by any other child is $p = \frac{3}{25}$

The probability of not being chosen is :

$$q = 1 - p = \frac{22}{25}$$

The two values, p and q , are basic for the whole analysis.

The *first* question to be answered reads: What is the probable number of children who, by mere chance selection, would be picked

* This quotation from page 628 to bottom of page 630 is an analysis made by Paul F. Lazarsfeld.

out by their fellows, not at all, once, twice, and so on? The corresponding probabilities can be derived from the binomial formula.*

The first ten members of the series $(\frac{22}{25} + \frac{3}{25})^{25}$ have been computed and give the following values :

$\binom{22}{25} = .0409$	$53130 \binom{22}{25}^{20} \binom{3}{25}^6 = .1023$
$25 \binom{22}{25}^{24} \frac{3}{25} = .1395$	$177100 \binom{22}{25}^{10} \binom{3}{25}^6 = .0465$
$300 \binom{22}{25}^{28} \binom{3}{25}^2 = .2281$	$480700 \binom{22}{25}^{18} \binom{3}{25}^7 = .0172$
$2300 \binom{22}{25}^{22} \binom{3}{25}^3 = .2383$	$1081575 \binom{22}{25}^{17} \binom{3}{25}^8 = .0053$
$12650 \binom{22}{25}^{21} \binom{3}{25}^4 = .1787$	$2042975 \binom{22}{25}^{16} \binom{3}{25}^9 = .0014$

The general formula for n children, each child being permitted a choices, reads :

$$(p + q)^{n-1}$$

$$p = \frac{a}{n-1} \quad q = 1 - p$$

The *second* question to be answered reads : How many mutuals are likely to occur ; mutuals being two children who select one another.

The chance that two specific children choose one another is:

$$p^2 = \left(\frac{3}{25}\right)^2$$

That one child is “mutually” chosen by any other child is 25 times as probable. With 26 children in the group, the number of mutuals will be :

$$m = \frac{26 \times 25}{2} \left(\frac{3}{25}\right)^2$$

as the mutual choice of A by B, and B by A, give the same “mutual.” Under the condition of this experiment the probable frequency of “mutuals” originating by chance is then : $m=4.68$.

The general formula for “ n ” children, each making a choices by chance, is:

$$m = \frac{n(n-1) \cdot p^2}{2} \quad p = \frac{a}{n-1} \quad a = \text{no. of choices}$$

* C. H. Forsyth, *An Introduction to the Mathematical Analysis of Statistics*.

The *third* question to be answered reads: "How many unreciprocated choices can be expected on a mere chance basis?" An "unreciprocated" between two specific children has the probability:

$$p = \left(\frac{3}{25}\right) \cdot \left(\frac{22}{25}\right)$$

By the same reasoning we used in the previous problems, we derive therefrom the probable frequency or "unreciprocated" among 26 children as:

$$u = 26 \times 25 \times \frac{3}{25} \times \frac{22}{25} = 68.64$$

(The fraction, 2, is to be omitted here because an unreciprocated choice of A by B is to be counted separately from an unreciprocated choice of B by A.)

The general formula for the probable frequency of unreciprocated choices originating by mere chance is:

$$u = n(n-1)pq$$

$$p = \frac{a}{n-1} \quad q = 1-p$$

The chi-square test was applied in comparing how much the computed chance values and the experimental chance values (E) differ. For the purpose of the test the computed chance values were figured for the case that there were 7 repetitions, as in the original chance experiments. The test value (see II, chapter 4) is:

$$\chi^2 = \frac{(E-C)^2}{C}$$

For this table the chi-square value is 4.055, which corresponds to a probability of 85%. That means that in five out of six chance experiments we are likely to get a distribution which deviates even more from the computed one than the one obtained in the chance tests. As a result of the close fit of the chance experiment with the theoretical distribution we have, of course, an equally close matching when it comes to the figures for "mutuals" and for "unreciprocated" choices.

By an extension of the considerations carried through in the foregoing examples, we could get the probable values for any other choices, for instance three or more children forming a ring, or one child being selected by a great number of children, but selecting none of them on her part, and so on."

Theoretical analysis, secured by carrying out the binomial expansion $(\frac{22}{26} + \frac{4}{26})^{25}$ and multiplying by the number of persons, 26, gives the following findings:

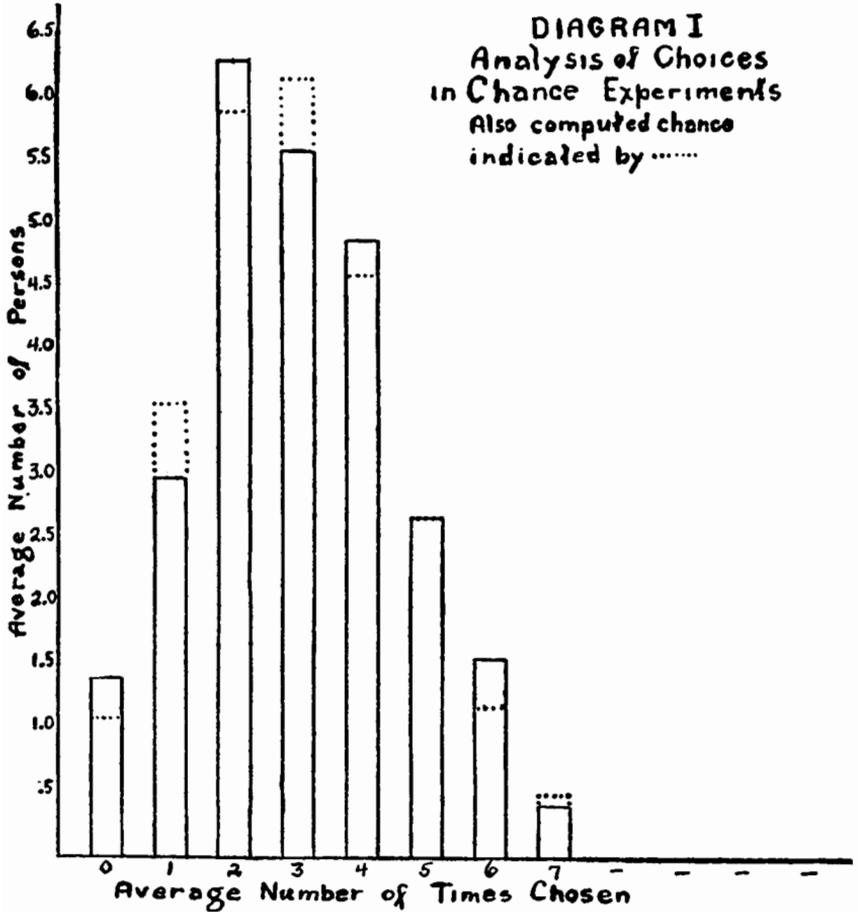
No. of Times Chosen	0	1	2	3	4	5	6	7	8
									or more
No. of Persons	1.1	3.6	5.9	6.2	4.6	2.7	1.2	0.5	0.2

The average number of mutuals in the chance experiments is 4.3; see Table 3. The theoretical findings show 4.68 under these conditions of 3 choices within a population of 26 persons. The number of unreciprocated structures in the chance experiments is 69.4; see Table 3. The theoretical results show 68.64 under the same conditions. The experimental chance findings so closely follow the theoretical chance probabilities that only the experimental findings will be used for comparison with actual sociometric findings.

**Comparison of Actual Sociometric Findings
With Chance Experiments**

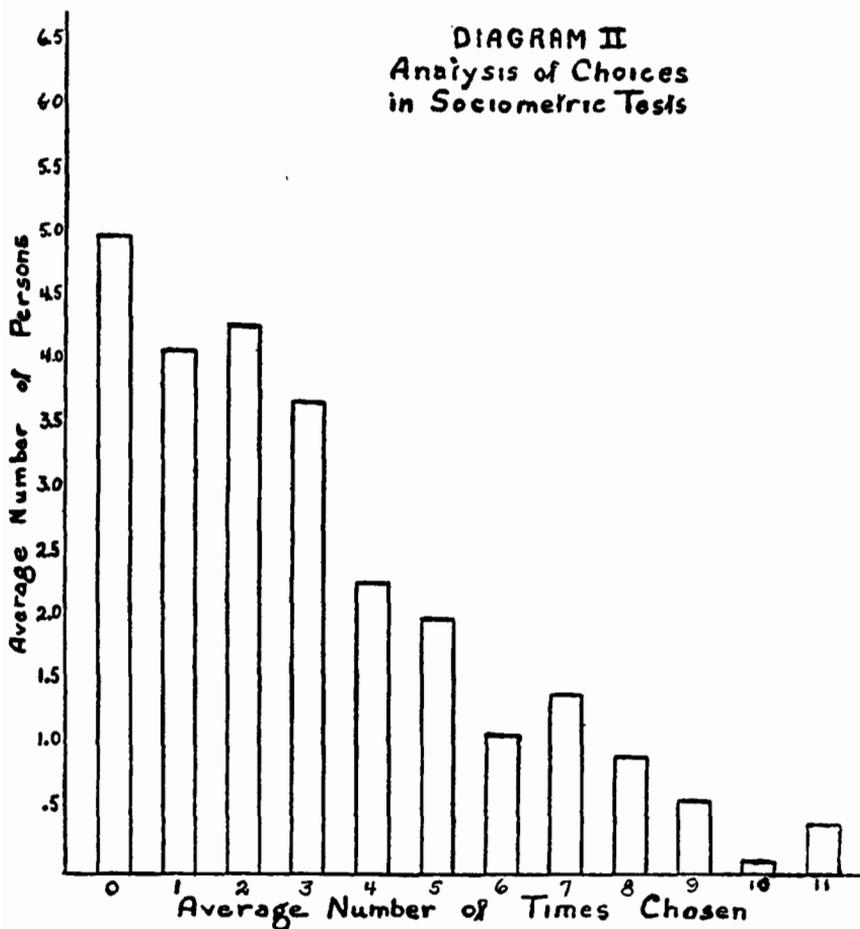
Study of the actual frequency distribution of the seven different social configurations shows that the two extremes are more excessively developed than in chance. See Diagram I. The number of isolates and others at the lower end of the distribution are many more than they are in chance. There are fewer in the middle portions of the distribution who are moderately well-chosen than there are in the chance experiments. But the number who are over-chosen are many more than in chance, not only in number but in their volume of choices received. Whereas in chance one can seldom be chosen more than six times, the actual tests show persons chosen 7, 8, 9, 10, and 11 times. In fact, the range is practically 5 points greater in the actual distribution than in the experimental chance distribution. On the other hand, the probability to receive no choice at all is much greater than in chance. See Diagrams II and III.

A greater concentration of many choices upon few individuals and of a weak concentration of few choices upon many individuals skews the distribution of the sampling still further than takes place in the chance experiments, and in a direction it need not necessarily take by chance. This feature of the distribution is an expression of the phenomenon which has been called the *sociodynamic effect*.



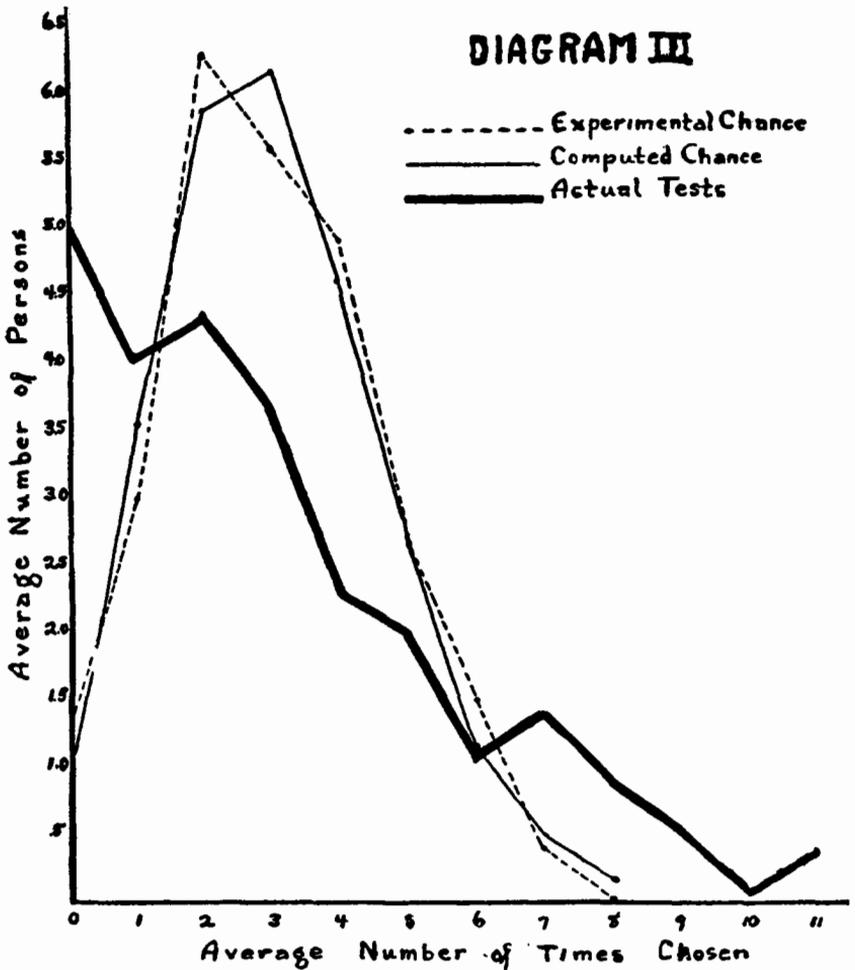
The chance distribution seen as a whole is also normally skewed, but the middle portions are higher and the extremes less pronounced. The actual frequency distribution compared with the chance frequency distribution shows the quantity of isolates to be 250% greater. The quantity of overchosen individuals (receiving 5 or more choices) is 39% greater, while the volume of their choices is 73% greater. Such statistical findings suggest that if the size of the population increases and the number of choices remains constant, the gap between the chance frequency distribution and the actual distribution would increase immensely. If 500 individuals with five choices each were compared with the corresponding chance structure under these conditions, there may be

DIAGRAM II
Analysis of Choices
in Sociometric Tests



shown a gap vastly greater than the one here reported for 26 individuals with three choices.

Comparison of the chance sociograms with the actual sociograms shows other differences. The probability of mutual structures is 213% greater in the actual configurations than in the chance and the number of unreciprocated structures is 35.8% greater by chance than actually. The more complex structures, such as triangles, squares, and other closed patterns, of which there are seven in the actual sociograms, are lacking in the chance sociograms. Even structures of chain-relations are found only in six instances and in each instance the reciprocations connect no more than three individuals (i.e. A and B mutually choose each other



and B and C reciprocate each other). In the actual configurations, the number of chain-relation structures consisting of three persons each is 9; the number consisting of four persons is 2; the number consisting of five persons is 4; and there is one chain-relation structure consisting of 8. Linked to various members of these chains here and there other mutual structures branch out.

Contrast Between Quantitative and Structural Analysis

The question has been raised whether all structures of which a configuration is composed have to be determined or whether a

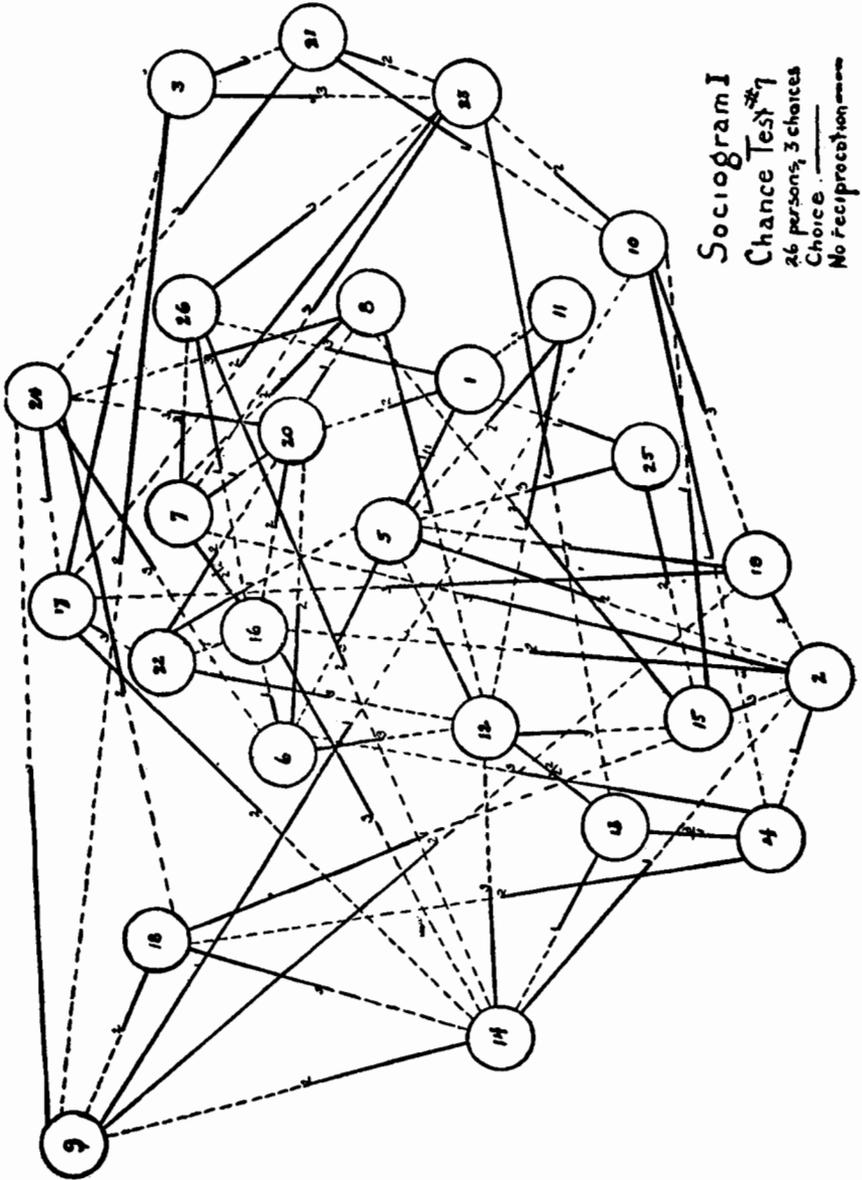
minimum of crucial structures can be a reliable index of their measure. But if only the isolates in each configuration were counted up, this would be an insufficient basis of comparison. It would not be known if the remainder consists of choosing but unreciprocated persons or whether it consists of pairs. If, on the other hand, only the number of mutual pairs were counted up, this also would be an unreliable basis of comparison. It would not be known whether the remainder of the configuration consists of entirely unchosen ones because their choices go to those who form the pairs, or whether the individuals who form the pairs are practically isolated from the rest because they choose each other but are cut off from others. The number of chain-relations, squares, triangles, etc., seems to depend largely upon the number of mutual pairs. This needs some further explanation. There may be many mutual pairs in a sociogram and no chain-relations or more complex structures. On the other hand if there are many complex structures, then a relatively large number of pairs is present. Hence, in order to be adequate this statistical technique has to treat social configurations as a whole. Statistics of single structures apart from the configuration as a whole may offer a distorted view of the whole.

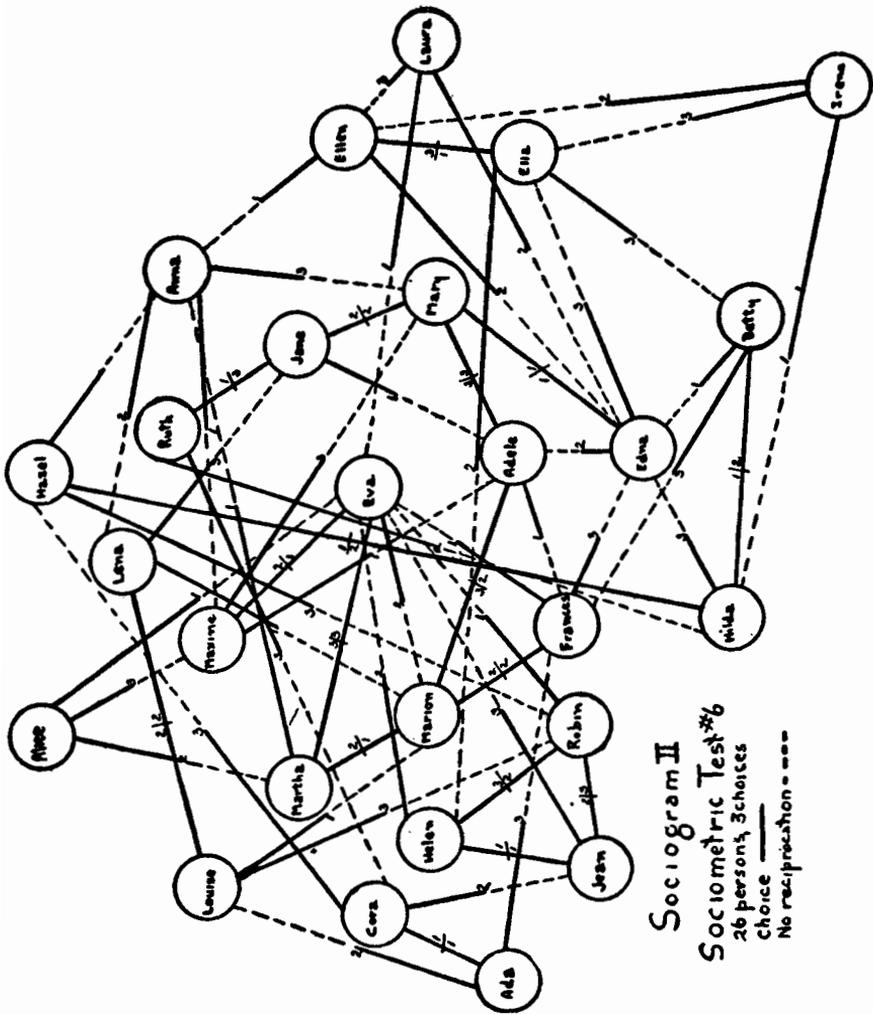
If we select from Table 1 and Table 2 two populations which have almost identical quantitative results, the selection of Choice Ballot No. 7 and Sociometric Test No. 6 is suggested. They have the *same* number of persons who receive 1 choice, the same number receiving 2 choices, the same number receiving 3 choices, a like number receiving 5 choices, and a like number receiving 6 choices. There is only one more person receiving no choice in the Sociometric Test No. 6; only 2 more receiving 4 choices than in Chance Ballot No. 7; and the only other difference is that the range of receiving stops at 6 in the Chance Ballot No. 7, while one person receives 8 in Sociometric Test No. 6.

The structural analysis of the configurations produced by the choices shows a fundamental contrast, a contrast which is not heralded by mere choice analysis. Chance Ballot No. 7 produces the following structures: 2 isolated, 70 unreciprocated, 4 mutual relations, 1 chain-relation, no closed structures, and 4 leader structures (persons receiving 5 or more choices). Sociometric Test

No. 6 produces 3 isolated, 44 unreciprocated, 17 mutual relations, 2 chain-relations, 1 closed structure, and 5 leader structures.

Just as the tabulation of structures is superior to the tabulation of choices, sociogram reading is able to add new information to





the tabulation of structures. It aids in uncovering still farther-reaching differences. Examining the sociograms of these configurations (see Sociograms I and II), we find that the chain-relation structure build by the Chance Ballot No. 7 consists of 3 persons (Person 4 and Person 13 and Person 12), while the chain-relation structures produced by the Sociometric Test No. 6 in one instance consists of 3 persons (Hazel, Hilda, Betty), and in the other of 8 persons (Maxine, Eva, Martha, Marion, Adele, Mary, Jane, and Ruth), with other mutual-relations linked to members of this structure (Marion and Mary are mutual respectively with

Frances and Edna). The closed structure is found to involve none of these individuals but to be a closed triangle of three different persons (Helen, Robin, and Jean). Only two of the leader individuals in the Chance Ballot No. 7 configuration have a mutual-relation structure with anyone (Person 5 and Person 12 have one each), whereas in the sociogram of Sociometric Test No. 6 two leader individuals (Mary and Marion) are seen to have three mutual structures (the maximum possible since only three choices are allowed), two other leader individuals (Adele and Eva) have two each, and the other leader (Edna) has one.

This is a significant illustration of the value of the sociogram in sociometric work. It proves to be not merely another means of schematic representation of data, but an invention for exploratory aims. It is an accurate reproduction of the results of a sociometric test on the level of inquiry and can be well compared with the constructs in the geometry of spaces. It accomplishes our original search for a spatial science which would do for ideas, things, and persons what the geometry of spaces accomplishes for geometrical figures. A construction problem in geometry when formulated analytically is found to be equivalent to that of a system of simultaneous equations. A construction problem in sociometry when presented as a sociogram, is also found to be analogous to a system of simultaneous equations. Geometry deals with the properties of physical space, sociometry deals with the properties of social space. From the early beginnings of sociometric work, charting the data in the form of a sociogram and following the sociogram as a trail has led from one discovery to another, to the tele, to the social atom, the network, and in this paper to a method of its own statistics.

The comparisons given above illustrate that it is necessary to approach sociometric material in its intrinsic form, that is, in the form of the social configurations themselves, and not in the form of their single elements. *Quantitative analysis of choices is of limited value: it appears as an artificial and abstract view of the configurations studied. Structural analysis of the configurations as such gives a better picture.* Such statistical treatment is applicable also to other types of configurations, for instance, to aesthetic configurations, configurations of musical tones, of colors, etc.

Interpretation

The Sociodynamic Effect

The statistical analysis gives new clues for the interpretation of the theory of the sociodynamic effect. A distortion of choice distribution in favor of the more chosen as against the less chosen is characteristic of all groupings which have been sociometrically tested. It might be anticipated that increasing the chance probability of being chosen by allowing more choices within the same size population and thus lessening the chance probability to remain unchosen will gradually bring the number of unchosen to a vanishing point and likewise reduce more and more the number of comparatively little chosen.

However, in actuality, this does not take place. Instead a persistent trend in the opposite direction is observed. The further choices allowed go more frequently to the already highly chosen and not proportionally more to those who are unchosen or who have few choices. The quantity of isolates and little chosen comes finally to a standstill whereas the volume of choices continues to increase for those at the upper end of the range. It appears on close analysis that once certain individuals become highly overchosen that they begin to draw the choices of many members of the community less and less as individuals and more and more as symbols. The "*surplus*" choice becomes analogous to the *surplus value* observed by Marx in the process of production and accumulation of capital. It is at times a pathological distortion beyond the normal process of differentiation.

The sociodynamic effect apparently has general validity. It is found in some degree in all social aggregates, whatever their kind, whether the criterion is search for mates, search for employment, or in socio-cultural relations. It is found in populations of children as soon as they begin to develop societies of their own, as well as in adult populations, in groups of various levels of chronological age and mental age and in populations of different races and nationalities. Its effect may change in degree, but it is universally present, appearing like a halo effect inherent in every social structure. It may be pronounced where differences of any sort are intensely felt by the participants, whether these are aesthetic dif-

ferences, racial differences, sexual differences, economic differences, cultural differences, or differences between old and young.

An example of the degree of distortion which the sociodynamic effect has contributed within the seven cottages of 26 individuals each (182 persons) is the following: 20% of the population have to be satisfied with no choice at all; 35% of the population have to be satisfied with 5% of the choices; on the other hand, 2% of the population control 8% of the choices, 8% control 23%, and 25% control 58%. (See Table 2, p. 627.)

The frequency distribution of choices shown by sociometric data is comparable to the frequency distribution of wealth in a society. Extremes of distribution are accentuated. The exceedingly wealthy are few; the exceedingly poor are many. The question can be raised whether the similar characteristics of the economic and sociometric curves are accidental occurrences or whether they are both expressions of the same law, a law of sociodynamics.

Network Theory

There are certain structural processes observable in the groups studied which are best explained if it is assumed that networks exist. One of these structural phenomena is the chain-relation. Chain-relations are rarely found in structures formed by children of kindergarten and first or second grade age, but develop at times gradually with an increased number of mutual pairs. Increase in pair structures does not force the formation of chain-relations. In young children's groups, for instance, pair-structures appear frequently without connection with any other pair-structures. However, among the individuals who develop a pair-structure there are some who as they mature in this capacity develop a special characteristic. After they have developed the ability to click with one partner, this partnership does not remain a singular case, but similarly they develop the sense to click with other persons who like themselves have developed a similar *sense* for inter-personal choice. And thus chain-relations emerge and extend. This phenomenon appears hand in hand with the maturation and differentiation of social organization. It is a process of structural growth.

The occurrence of these chain structures cannot be explained solely as a reflection of sociodynamic effects. Outside of a par-

ticular chain formation not only isolated or little chosen individuals but also pair structures or even leaders may remain left out. Another group dynamic process must therefore stimulate chain formation.

It has been seen that the individuals, who in the sociometric study of a whole community, form a social aggregate around one criterion form other social aggregates around other criteria and that the individuals who produce structures of chain-relations in one aggregate may produce them in other aggregates. If these chain-relations are traced as they cross through the boundaries of each particular aggregate, a new and larger configuration is seen developing,—a psychological network. The simple fact that individuals are more attracted to some individuals and not to others has many consequences. It leaves out those with whom reciprocal relations have not been established and even within the same group there may be formed different networks which do not cross or break through one another.

The dynamic meaning of chain-relations in social structure is better understood in view of a network hypothesis. The chain-relations in each aggregate are often not only contributing to network formation but are themselves a network effect. As chain-relations develop between different social aggregates, existing networks stimulate and increase the development of chain-relations in each single structure.

The relationship between sociodynamic effect and the development of networks appears to be complex. Sometimes its effect is simply negative. The greater the sociodynamic effect the larger the number of isolates and the larger the number and volume of most chosen, the less choices are free for chain-relations and network formation.

This analysis increases understanding of an obscure phenomenon, the beginnings of social organization. A minimum of both sociodynamic effects and networks is necessary for social organization to function with a reasonable degree of differentiation. Without them, not only the state but society itself withers. We mean society as we find it at the present stage of evolution. But types of society, free of sociodynamic effect, can be constructed in which several individuals *share* in a choice, several individuals sharing a single individual. This is not paradoxical, at least not

to some of our most characteristic feelings. In our chief religions, millions of people are sharing in the love of a single person, God.

Tele

The study of the cohesion of forces within a group can be made through an analysis of choices made and choices received, the choices going to individuals inside and to individuals outside of this constellation. A different study of cohesion is based upon the configurational aspect. It considers, instead of single elements, choices, the inter-personal structures and the degree of cohesion produced by them. Cohesion would be very low, for instance, if a large number of choices going to the individuals of a group were unreciprocated. There would be a surplus of choices within the constellation but a *loss* of tele.

Tele has been defined as "an inter-personal experience growing out of person-to-person and person-to-object contacts from the birth level on and gradually developing the *sense* for inter-personal relations," also as a sociometric structure: "that some real process in one person's life situation is sensitive and corresponds to some real process in another person's life situation and that there are numerous degrees, positive and negative, of these inter-personal sensitivities." The tele process is "an objective system of inter-personal relations." It would be important to retest the hypotheses formulated here of tele, the sociodynamic effect and networks in different contexts through other measurements than the sociometric methods used here. These factors must influence the findings of any kind of social phenomena studied, whether studied through public opinion polls, social distance tests, attitude questionnaires, etc.

That the teleprocess represents an objective system can be deduced indirectly through quantitative calculations. A study of the two sociograms on pages 631 and 637, shows that the number of clickings between the actual individuals forming Sociogram 2, is very much higher than the number of clickings between the individuals forming Chance Sociogram 1. The factor responsible for the increased trend towards mutuality of choice far surpassing chance possibility is called tele. A close analysis of the two sociograms indicates still further the forms in which this factor, tele,

operates. Not only that the number of pairs formed in actuality are higher than in chance, but in actuality the trend is stronger for a first choice to draw a first choice; for a second or third choice to draw a second or third choice. Whereas in chance, even where pair relations happen they are incongruous. These findings gain support from our studies of the evolution of children groups, from a simple level to a higher level of differentiation. In the kindergarten and early grades of a public school, the quantity of unreciprocated choices is higher than found in the 4th, 5th or 6th grade levels—but far closer to what is found in chance. Correspondingly the number of clickings or pair-relations is far smaller in these early grade levels than found later on and therefore far closer to chance probability. On the basis of the quantitative aspect of the tele factor discussed above, one may conclude that when the tele factor is very weak as in early infancy and childhood, the factor of chance is far more responsible for the inter-personal sociogram resulting. The stronger the tele factor becomes in later childhood and adolescence, the more it affects and shapes the structure and the weaker is in turn the influence which pure chance has upon it.

If the tele process were a *subjective* system, as transference, hit-or-miss guessing or vague intuitions, the amount of clicking and of chain and network formation in the configurations studied would not develop beyond chance. The increasing number of pair and chain relations with increasing maturity of the participants and the age of the configuration in which they are, suggest that an objective social process is functioning, with transference as psychopathological outgrowth and empathy as aesthetic outgrowth.

The tele process may show many varieties of tele. Some of them are illustrated in the diagrams, p. 296-298. The attraction of A for B is responded to by an attraction of B for A in the same life situation. This is *simple tele*.

If the attraction between two persons occurs on the same level of preference, then the simple tele can be called *congruous*. A chooses B first; B chooses A first. If the attraction between two persons occurs on different levels of preference then the simple tele can be called *incongruous*. A chooses B first; B chooses A third.

The attraction of A for B may not be for B's real ego, but for

his alter ego, for some role or symbol which he represents—the role of the physician, the priest, the judge, etc. B, in turn, may not be attracted to A's real ego, but to a role he represents, for instance, the role of the scientist. This is *symbolic or role tele*.

A is attracted towards an object which, in turn, is useful to him, for instance, any food towards which A reaches spontaneously and which, in turn, satisfies his needs and benefits his health. This is *object tele*.

In all these three cases, the attraction is *positive* from both sides whether the sides are the two egos of two persons, two roles of these two persons, or a person and an object.

A form of attraction can take place which is *positive* for the one person, but not shared by the other person. It is unreciprocated. A chooses B. B does not choose A. A chooses B in a certain role. B does not choose A either as an ego or in any role. This is *infra-tele* for persons and roles. There can also be an *infra-tele* for objects. Developments in the tele process which can be classified as aesthetic formations are, for instance, the *Einfühlung* (empathy) of an actor into his part, the assimilation of an object, as a portrait. Empathy is positive but the process of reciprocation does not enter into its meaning.

There are developments in the tele process which can be classified as psychopathological formations, for instance, a person A, when in relation to a person B, sees B in a role which B does not actually experience, a role which A *projects* into B. It is a delusion of A, a projected symbol. This is *transference*.

A person A may be attracted to an object, for instance, a food, but not for what it actually is and not for what effect it may have upon his body, but as a symbol. He may attach to it a certain mystical significance which is entirely subjective, a delusion. It is a pathological attraction and may be definitely harmful to him. This is an *object transference*.

The quantitative study of transference effect upon social structure is possible through comparing a group of insane persons with a group of normal persons under the same conditions. Studies of groups of insanes reveal that the sociogram produced by them is neither all transference nor all tele. It is a mixture of both. The structure of an insane group will probably appear below the tele

level but above the chance level. As far as it was above chance, it would account for the degree to which true tele processes are mixed in processes of transference and delusions.

Discussion of Sociometric Scales

In the course of configurational statistics, the idea of comparing one social aggregate with another from the point of view of the degree of integration, the comparative strength of cohesion which holds individual members together, arose as soon as the first sociometric studies were made. Rough rankings of different groups studied were made according to degree of integration.

(a) Scales on the Basis of Choice Analysis

A sociometric scale can be worked out on the basis of the quantitative analysis of the choices made by the participating individuals. The general formula for the concentration of *inside* choices (Ratio of Interest) for any population is

$$\frac{Y}{N \times X}$$

in which N equals size of population in the group; X, the number of choices per individual, and Y, the number of choices sent inside the group by its members. (See Diagram IV). This technique was first introduced in the study of the Hudson community. Every group in the community was to greater or smaller degree the focus of choices coming from members *inside* a particular group or from members *outside* of that group. The degree of the concentration of the choices varied from group to group and a scale was worked out showing how the different groups rank. For a group, Cottage 8, with 26 members each having five choices, 100% concentration of the in-group members would have been 130 choices, but the actual concentration found as contributed by its members was 43 choices, i.e. 33%, the Ratio of their Interest. For Cottage 1, for instance, the concentration was but 29%, for Cottage 13, 66%, etc.

The general formula for the concentration of *outside* choices upon a given group (Ratio of Attraction) within a larger population is

$$\frac{Y'}{(N' - N) \times X}$$

in which N' equals size of the total population and Y' equals the number of choices sent inside the group by members of the outside population.

Next, the total concentration of choices in a group from its own members *and* outside population members can be expressed by the formula

$$\frac{Y + Y'}{(N' + N) \times X}$$

[See Diagram V.]

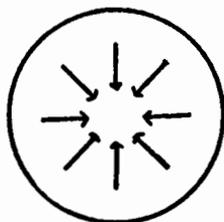
As a hypothetical norm for the concentration of choices within a group can be considered the sum of choices available to the members of a given group. Thus for the given group, Cottage 8, the number would be 26 times five, or 130 choices. To satisfy this norm it is required that if only 43 choices come from inside members, 87 choices should come from outside members. The formula for this norm reads

$$N' \times X = Y + Y'$$

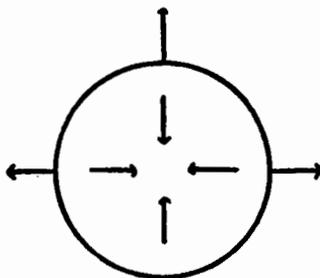
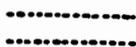
The direction taken by choices of outside members and the degree of concentration they show upon a certain group are inconclusive in regard to what effect it may have upon the members of that group. It opens up many potentialities, but it cannot be inferred that because a higher number of choices enter a group the members of that group are more bound to one another. Concentration of choices upon members of a certain group and cohesion among these members are two *different* things. Statistical comparisons have shown "between the Ratio of Interest and the Index of Relative Popularity (Ratio of Attraction) . . . a negative correlation. This inverse relation is appreciable and indicates a considerable probability that any group which has a high Ratio of Interest for itself will have a comparatively low Index of Relative Popularity." This indicates that the choices going from members of a group to individuals outside it, or the reverse, the number of choices coming to a group from members of other groups is an index for the *diffusion* of choices from the places where they originate in regard to the population as a whole. A different view can be taken in regard to the choices made by members of a group for members of that *same* group, especially drastic if the criterion upon which the choices rest is of a socially intimate nature. The

DIAGRAM IV

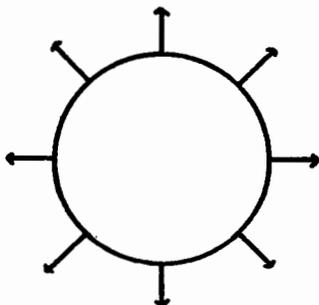
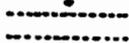
A SOCIOMETRIC SCALE OF A CLOSED GROUP
 (criterion is limited to members of this group)
 Direction and Concentration of Choices as Basis



Maximum Degree of Concentration



Intermediary degrees



Minimum Degree of Concentration

Between the top and bottom sociograms, numerous intermediary levels can be found for degree of choice concentration; as described on p. 645 the various levels of the above scale can be readily determined. These can, of course, be compared with the degree of concentration found by *chance*.

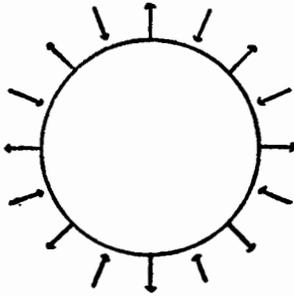
number of choices the individuals who live in the same house have for one another can be more appropriately called an index of the existing cohesion among them than if individuals living in *other*

DIAGRAM V

A SOCIOMETRIC SCALE OF AN OPEN GROUP

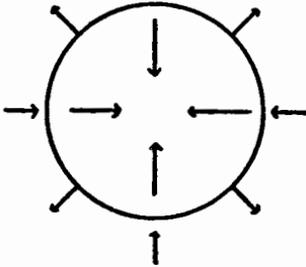
(criterion allows the inclusion of other individuals than the members of this group)

Direction and Concentration of Choices as Basis

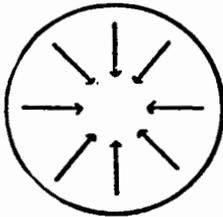
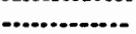


From inside, a minimum of concentration

From outside a maximum of attraction



An equilibrium in attraction and concentration



From inside, a maximum of concentration

From outside, a minimum of attraction

Between the top and bottom sociograms, numerous intermediary levels can be found for degrees of choice concentration and attraction.

houses are choosing them, as the latter choices operate at the time of the test outside of the house in which the persons are living together.

However, even these cohesive forces, the forces holding the

individuals within the groupings in which they are have to be considered critically. They may not produce all *true* cohesion. It has been found, for example, that "a high Ratio of Interest was not in all instances correlated to a high standard of conduct if other factors existed in the organization of the group to counter-affect this. . . . In a certain case a high Ratio of Interest shown for its own group was a disadvantage. The members did not look for other outlets and at the same time there were numerous rejections among themselves."

Quantitative analysis of choices is *one* aspect in the study of cohesiveness, but it gives a comparatively artificial picture of the actual events within a social configuration. Far more crucial than to say that so and so many choices come in to members of a certain group is how they respond to these choices, how they reciprocate, whether they meet them with mutuality or not. Just as we have found in regard to the statistical study of a closed group that structural analysis is more inclusive than quantitative analysis, also in statistical evaluation of an open group, i.e., a group within a larger population, structural analysis is superior to choice analysis. Sociometric scales of groups in a community based on choice frequency alone cannot stand by themselves. They need for adequate statistical interpretation, scales which are based on configurational calculations.

(b) Scales on the Basis of Configurational Analysis

A more precise and comprehensive scale is necessary as a basic reference for all possible types of configurations in regard to organization and degree of cohesion as they may be found in the community. It would make possible not only the comparison of one social aggregate with another, but the determination of its precise position in relation to other configurations of the same size population under the same conditions. Besides the value of such a scale for research, it would have a value also as a basic reference for operational and therapeutic experiments based on sociometric techniques. In control studies presented elsewhere, structural developments were compared as they happened when placements were made as indicated by the sociometric test as against chance placements. The reliability of the placements made could accordingly

be studied with greater accuracy if not only position developments of individuals were compared but configurations as wholes.

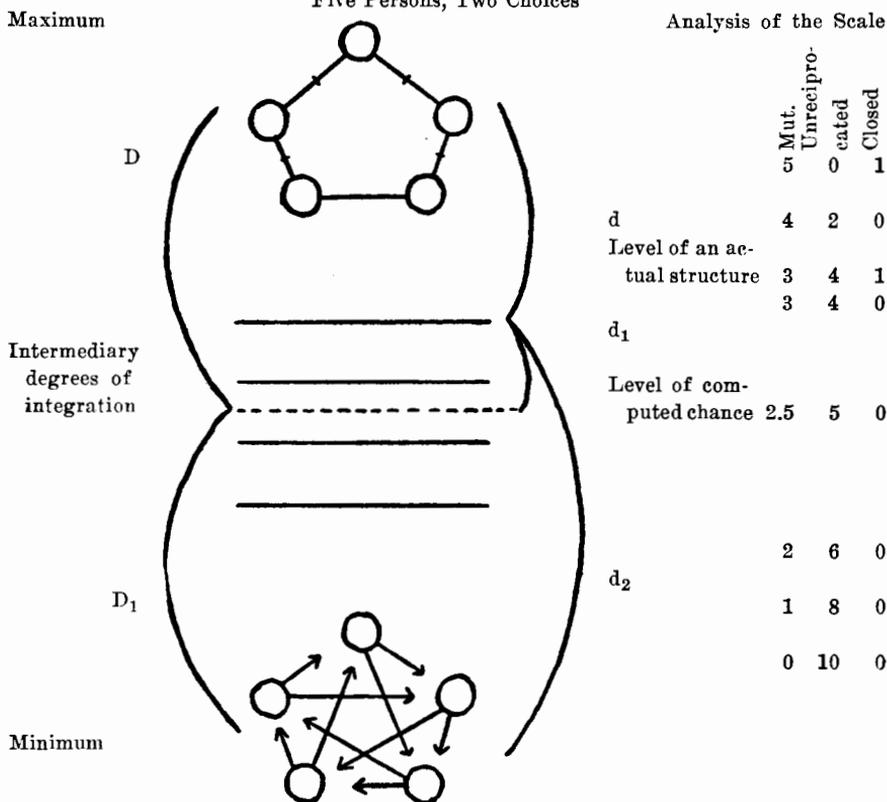
If the deviations in a configuration which take place in chance were taken as the normal points on a scale, we have a reference base from which to measure the deviations which take place in actual configurations. Until norms can be established for actual populations, it would appear that such a chance reference base provides a useful measuring rod. It is understood that each chance level must be computed on the basis of the given conditions for that population.

If a population of a given size with a given number of choices were to produce a configuration in which every choice going out from a person is reciprocated by another person of that population, the sociodynamic effect would be zero. If that same population were to produce a configuration in which every choice going out from a person remains unreciprocated, the socio-dynamic effect would likewise be zero. These two theoretical possibilities represent respectively the maximum degree of cohesion and the minimum degree of cohesion. For these two levels, chance probability in the distribution of choices does not provide. Nevertheless, it is within this wide range that actual configurations must fall in one or another intermediary stage. Although the mathematical working out of these intermediary stages is complex, it can be done with precision. A theoretical construct of a sociometric scale simplified for the purpose of illustration is given in Diagram VI.

A series of configurations, as indicated in the construct, differs in the essential respect from a series of single elements in that it is multi-dimensional. On one point of the scale there is not only one solution but many. Also on each level of the scale there can be many sociotropic varieties (factorial n) all having the same level of integration. Two sociograms are sociotropic if they are formed by the same persons and have the same sociometric properties, seen as total configurations. They may differ in the position one or the other individual may have within them.

In the example used for the construct on p. 651, five persons can produce 120 sociotropic varieties by a shift of position. The scale opens the way of learning whether the maximum degree of integration is also the best therapeutic level of a social aggregate. It may well be that they vary considerably.

DIAGRAM VI
THEORETICAL CONSTRUCT OF A SOCIOMETRIC SCALE
(On Configurational Basis)
Five Persons, Two Choices



The Scale is illustrated by configurations produced by 5 persons with 2 choices each. Six main levels of integration are indicated in the diagram. Only the top or maximum level of integration and the bottom or minimum level of integration are drawn. The intermediary degrees are indicated by a straight line. The composition of each degree, however, is presented in the analysis to the right of the Scale.

Each of the six levels has, due to the possible shifting of the 5 persons and 2 choices, 120 sociotropic varieties. Sociotropic varieties are of the same level of integration although the position of the individual members may differ.

- D — Deviation of maximum from chance.
- D_1 — Deviation of chance from minimum.
- d — Deviation of maximum from average actual.
- d_1 — Deviation of average actual from chance.
- d_2 — Deviation of average actual from minimum.

As in statistics of single elements, it appears possible that, after a sufficiently large number of different populations have been tested and their configurations determined, the field worker will be able to predict the position of a group on a sociometric scale when ap-

proaching a new community before testing it. He will become able to predict approximately the range within which the configuration of this community will fall. Yet, however large the sampling of configurations taken from a given population is, and however accurate the prediction of the possible configuration of the untested part of this population may become, the rest of the population has nevertheless to be actually tested if a transaction of useful treatment of this part should be contemplated. The slightest variation in the untested part of this population may concern a number of individuals, however few. Types of sampling can become useful for prediction purposes from a tested to an untested part, but it is not permissible to assume this automatically for treatment purposes.

AUTHORITATIVE AND DEMOCRATIC METHODS OF GROUPING

A simple illustration of sociometric technique is the grouping of children in a dining room.

In a particular cottage of our training school live 28 girls. In their dining room are seven tables. The technique of placing them around these tables can take different forms. We may let them place themselves as they wish, and watch the result. A girl "A" seats herself at table 1; eight girls who are drawn to her try to place themselves at the same table. But table 1 can only hold three more. The result is a struggle and somebody has to interfere and arrange them in some arbitrary manner. A girl "B" runs to table 2, but nobody attempts to join her; thus three places at the table remain unused. We find that the technique of letting girls place themselves works out to be impracticable. It brings forth difficulties which enforce arbitrary, authoritative interference with their wishes, the opposite principle from the one which was intended; a free, democratic, individualistic process.

Another technique of placement is one applied strictly from the point of view of the authoritative supervisor of the dining room. She places them in such a fashion that they produce the least trouble to her without regard to the way in which the girls themselves feel about the placements. Or she picks for each of the seven tables a

leader around whom she groups the rest without regard to the leader's feelings about them and without consideration of whether the "leader" is regarded by the girls as a leader.

Sociometric Method of Grouping and Regrouping

A more satisfactory technique of placement is to ask the girls with whom they want to sit at the same table, and, if every table seats at least four, to give every girl three choices; to tell them that every effort will be made that each may have at her table at least one of her choices, and, if possible, her first choice. Every girl writes down first whom she wants as a first choice; next, whom she wants as a second choice if she cannot receive her first choice; and last, whom she wants as a third choice if she cannot have her first or second choice. The slips are collected and analyzed. The structure of affinities one for another is charted. The best possible relationship available within the structure of interrelations defines the *optimum of placement*. This is the highest reciprocated choice from the point of view of the girl. The order is as follows: a subject's first choice is reciprocated by a first choice, 1:1; a subject's first choice is reciprocated by a second choice, 1:2; a subject's first choice is reciprocated by a third choice, 1:3; a subject's second choice is reciprocated by a first choice, 2:1; 2:2; 2:3; 3:1; 3:2; 3:3. Where there is no choice that meets with a mutual response, the first choice of the girl (1:0) becomes her optimum, that is, from her point of view, the best placement for her available within the structure.

TABLE A
SOCIOMETRIC STUDY OF SEATING ARRANGEMENTS IN A DINING ROOM

Section 1. Previous Seating Arrangement		
Table 1	Table 3	Table 5
Belle	Flora	Anna
Dorothy	Pearl	Harriet
Angeline	Ida	Grace
	Evelyn	Edith
Table 2	Table 4	Table 6
Beth	Clarissa	Kathryn
Rose	Helen	Lena
May	Gladys	Ellen
		Mary

These two simple rules guide each placement. As Table A illustrates for a specific group, they can be called into effect with a high degree of efficiency. Even in instances in which a number of girls do not receive their optimum, they can receive their second very often.

This procedure has two phases: analysis of the choices and analysis of placement. The analysis of choices discloses the structure of the group and the position of every girl within it. It discloses how many girls are wanted spontaneously by all three partners whom they want at their table, how many are wanted by two of the three partners whom they want at their table, how many are wanted by one of the three only, and how many by none of the three. It discloses the high percentage of girls who have to make some adjustment to the group because they cannot get what they want.

A technique of placement has been worked out to help the girls as far as possible where their spontaneous position in the group stops them in a blind alley. Their criss-cross affinities as charted in a sociogram are simple, direct guides which a technique of placement can intelligently use. The attempt is made to give every girl of the group an optimum of satisfaction. We consider as the optimum of satisfaction the duplication for a girl of such a position in the placement as is revealed to be the most desired by her in accordance with the actual structure presented in the sociogram. (See Table A for details of application to a specific group.)

The tabulation of placement is figured out. It indicates the seating which has been calculated for every cottage. (See Table B.)

We find that sometimes it is possible to be efficient up to 100%; on the average we are able to give an optimum of satisfaction to more than 80% of the girls. Considering that the percentage of girls who would reach this optimum if left to their own devices is on the average not higher than 25 to 30%, the help coming from sociometric technique of placement is substantial.

It is a matter of principle with us to give every girl the best possible placement regardless of what her record may be or what experience the housemother may have had in regard to any two girls who want to sit at the same table. We do not begin with prejudice but wait to see how their conduct turns out. Occasion-

TABLE A -- Section 2

	Choice Analysis*																											
	Individual Analysis of Reciprocated Choices									Individual Analysis of Unreciprocated Choices																		
										Outgoing			Firsts					Incomings					Thirds					
	1:1	1:2	1:3	2:1	2:2	2:3	3:1	3:2	3:3	1:0	2:0	3:0	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	
Belle	<i>1</i>	—	—	—	<i>1</i>	—	—	—	—	—	—	<i>1</i>	<i>1</i>	—	—	—	—	—	—	<i>1</i>	—	—	—	—	<i>1</i>	—	—	—
May	<i>1</i>	—	—	<i>1</i>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	<i>1</i>	—
Mary	—	—	—	—	<i>1</i>	—	—	—	—	<i>1</i>	—	<i>1</i>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Flora	—	<i>1</i>	—	—	—	—	—	—	—	—	<i>1</i>	<i>1</i>	—	—	—	—	—	<i>1</i>	—	—	—	—	—	—	<i>1</i>	—	—	—
Lena	—	—	—	—	—	—	—	—	—	<i>1</i>	<i>1</i>	<i>1</i>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dorothy	—	—	—	—	<i>1</i>	—	—	—	—	<i>1</i>	—	<i>1</i>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Kathryn	—	—	—	<i>1</i>	—	—	—	—	—	<i>1</i>	—	<i>1</i>	<i>1</i>	—	—	—	—	—	<i>1</i>	—	—	—	<i>1</i>	—	—	—	—	—
Ida	—	—	—	—	—	—	—	—	—	<i>1</i>	<i>1</i>	<i>1</i>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Edith	—	—	—	—	—	—	—	—	—	<i>1</i>	<i>1</i>	<i>1</i>	—	—	—	—	—	—	—	—	—	—	—	<i>1</i>	—	—	—	—
Beth	—	—	—	—	—	—	—	—	—	<i>1</i>	<i>1</i>	<i>1</i>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ellen	—	—	—	<i>1</i>	—	—	—	—	—	<i>1</i>	—	<i>1</i>	—	<i>1</i>	—	—	—	—	—	—	—	—	<i>1</i>	—	—	—	—	—
Anna	<i>1</i>	—	—	—	<i>1</i>	—	—	<i>1</i>	—	—	—	—	—	—	<i>1</i>	—	—	<i>1</i>	—	—	—	—	<i>1</i>	—	—	—	—	—
Helen	—	<i>1</i>	—	—	—	<i>1</i>	<i>1</i>	—	—	—	—	—	—	—	<i>1</i>	—	—	—	—	—	—	—	—	—	<i>1</i>	—	—	—
Evelyn	—	—	—	—	—	—	—	—	—	<i>1</i>	<i>1</i>	<i>1</i>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Angeline	—	—	<i>1</i>	—	—	<i>1</i>	—	—	—	—	—	<i>1</i>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Rose	<i>1</i>	—	—	—	<i>1</i>	—	—	<i>1</i>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Harriet	—	—	—	—	—	—	—	—	—	<i>1</i>	<i>1</i>	<i>1</i>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Pearl	—	<i>1</i>	—	—	—	—	—	—	—	—	<i>1</i>	<i>1</i>	<i>1</i>	—	—	<i>1</i>	—	—	—	—	—	—	<i>1</i>	—	—	—	—	—
Gladys	—	—	—	—	—	—	—	—	—	<i>1</i>	<i>1</i>	<i>1</i>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Clarissa	—	—	—	—	—	—	—	—	—	<i>1</i>	<i>1</i>	<i>1</i>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Grace	—	—	—	—	<i>1</i>	—	—	—	—	<i>1</i>	—	<i>1</i>	—	—	—	—	—	<i>1</i>	—	—	—	—	—	<i>1</i>	—	—	—	—
Total	4	3	1	3	6	2	1	2	0	13	10	18	4	2	3	4	0	2	2	6	0	0	6	2	6	4	0	
Total	—	8	—	—	11	—	—	3	—	—	41	—	—	—	13	—	—	—	—	10	—	—	—	—	18	—	—	

Note: The italicized "1's" are used to indicate that these choices were satisfied in the placement.

* This is the analysis of the second testing of Cottage 2. See Table C, Section 2.

† 1, 2, 3, 4, 5, indicate the number of incoming choices, firsts, seconds, or thirds, which are unreciprocated by the person chosen.

TABLE A — Section 3
 SOCIOMETRIC FINDINGS

Population 21		
<i>Number of girls receiving in the test:</i>	<i>No. of Girls</i>	<i>Pct. of Girls</i>
3 reciprocated choices	3 or	14.3%
2 reciprocated choices	3 or	14.3%
1 reciprocated choice	7 or	33.3%
No mutual choice but chosen	1 or	4.8%
Isolated (unchosen)	7 or	33.3%
	21	100. %

TABLE A — Section 4
 PLACEMENT ANALYSIS

Population 21		
<i>Number of girls receiving in the placement (at her table):</i>	<i>No. of Girls</i>	<i>Pct. of Girls</i>
One reciprocated choice (or more)	11*	52%
Unreciprocated first choice (or more):		
No mutual choice but chosen in the test	1 or	5%
Isolated (unchosen in the test)	6 or	29%
Number of girls who receive "optimum"	18	86%
Of the remaining three girls,		
Number who received 2nd from optimum	1 or	5%
Number who received 3rd from optimum	2 or	9%
	21	100%

* Twelve reciprocated choices were satisfied in the placement but one of these (Helen's) was not the girl's optimum choice.

ally we see that two or more girls who have affinities for each other do not behave to advantage for themselves or for others. Then a different placement may be more desirable for them and this is based on finding as presented elsewhere. See sections on Racial Quotient, Sex, and Psychological Home.

We have noted that the girls' own spontaneous choices may deadlock them in a certain position, and we can well visualize that they may be forced in actual life to make an adjustment which is very arbitrary and deeply against their wishes. These "deadlocks" are not something which every individual outgrows spontaneously, but are something which works like a social destiny for the ma-

TABLE A — Section 5
NEW SEATING ARRANGEMENT

Table 1	Table 2	Table 3
Belle*	Helen‡	Kathryn*
Anna*	Angeline*	Pearl*
Edith*	Gladys*	Grace†
Harriet*		Ida*
Table 4	Table 5	Table 6
Flora*	Dorothy*	May*
Ellen*	Mary*	Rose*
Lena*	Beth*	Clarissa‡
Evelyn*		

* Denotes the individual is receiving optimum placement.

† Denotes the individual is receiving 2nd choice from optimum.

‡ Denotes the individual is receiving 3rd choice from optimum.

Note — Of the isolated girls all but one receives optimum placement.

majority of individuals. It was therefore of great interest not only from a practical but also from a theoretical point of view to study whether the technique of placement would have for the girls a significance beyond the temporary aid it gives them. If, through our intermediation, they can mix during their meal time with girls who appeal to them and learn to choose better the next time, if the technique helps them to facilitate and train and improve their social spontaneity and to break the deadlock more rapidly than if left to their own devices, then the service of such a procedure may find many applications.

The sociometric test in regard to table choices is repeated every eight weeks. To estimate accurately the progress, or regression, or standstill of social interrelations, we have calculated the findings and made a comparative study. See Table C.

Table C presents the outcome of the test in three successive testings eight weeks apart, a period of twenty-four weeks. In the first test, of the 327 girls who participated, 23.9% succeeded in having their first choice reciprocated by a first choice (1:1); 11.9% succeeded in having their first choice reciprocated by a second choice (1:2); 10.4% succeeded in having their first choice reciprocated by a third choice (1:3). In the second test, of the 317 girls who participated, 27.1% succeeded in having their first choice reciprocated by a first choice; 15.1% succeeded in having their first

TABLE B
EFFICIENCY OF PLACEMENT ATTAINED THROUGH SOCIOMETRIC TECHNIQUE
First Test

<i>Cottage</i>	<i>Popu- lation</i>	<i>No. who could receive opti- mum place- ment without socio- metric aid*</i>	<i>No. receiving optimum place- ment through sociometric aid†</i>	<i>Efficiency in placement</i>	<i>No. receiving no choice in placement</i>
1	21	4	16	76%	0
2	24	4	17	71%	0
3	19	4	14	74%	1
4	21	6	18	86%	0
5	31	4	23	74%	1
6	29	10	24	83%	1
7	30	3	26	87%	0
8	26	4	23	88%	1
9	28	10	23	82%	0
10	38	4	38	100%	0
11	29	4	24	83%	2
12	27	6	24	88%	0
13	29	8	24	83%	0
14	25	8	21	84%	1
A	20	4	15	75%	0
B	17	6	13	77%	0
First Test	414	89	343	82%	7
Summary of 2nd Test	404	96	340	84%	7
Summary of 3rd Test	397	122	338	85%	4

* Number who receive optimum spontaneously, a mutual first choice (1:1). They could be placed without sociometric aid.

† The girls who receive second or third from optimum placement are not included in calculating efficiency, only those who receive optimum.

choice reciprocated by a second choice; and 11.4% succeeded in having their first choice reciprocated by a third choice. The total success in the first test in getting a mutual choice of any sort in response to the first choice was for that population 46.2%. The success in the second test, was for that population 53.6%. The difference of 7.4% is the *increase* in the efficiency of the girls from the first to the second test in finding their first choices reciprocated *without* outside aid. The increase in efficiency from the first to the second test in regard to 1:1 mutual choices is 3.2%; in regard to 1:2 mutual choices it is also 3.2%; and in regard to 1:3 mutual

TABLE C—Section 1
ANALYSIS OF TABLE CHOICES OF THE COTTAGE POPULATIONS

Cottage‡	Population	First Test—8 Weeks Later										—Unreciprocated Choices†—			
		—Reciprocated Choices*—									Total	Firsts	Seconds	Thirds	Total
		—First—			—Second—			—Thirds—				1:0	2:0	3:0	
1:1	1:2	1:3	2:1	2:2	2:3	3:1	3:2	3:3	1:0	2:0	3:0				
1	21	4	4	4	4	4	3	4	3	4	34	9	10	10	29
2	24	4	3	3	3	2	1	3	1	4	24	14	18	16	48
4	21	6	2	0	2	2	2	0	2	4	20	13	15	15	43
5	31	4	3	3	3	4	0	3	0	4	24	21	24	24	69
6	29	10	3	5	3	2	5	5	5	0	38	11	19	19	49
8	26	4	2	2	2	2	3	2	3	4	24	18	19	17	54
9	28	10	2	1	2	8	2	1	2	6	34	15	16	19	50
11	29	4	3	5	3	4	2	5	2	4	32	17	20	18	55
12	27	6	3	6	3	4	1	6	1	0	30	12	19	20	51
13	29	8	5	1	5	4	3	1	3	8	38	15	17	17	49
14	25	8	3	1	3	2	5	1	5	4	32	13	15	15	43
A	20	4	4	2	4	4	3	2	3	2	28	10	9	13	32
B	17	6	2	1	2	4	2	1	2	2	22	8	9	12	29
Total	327	78	39	34	39	46	32	34	32	46	380	176	210	215	601
Average		.239	.119	.104	.119	.141	.098	.104	.098	.141	1.16	.538	.642	.657	1.84
Sum of Averages			.462			.358			.343		1.16		1.837		1.84

* 1:1, indicates a subject's first choice is reciprocated by a first choice; 1:2, indicates a subject's first choice is reciprocated by a second choice; 1:3, indicates a subject's first choice is reciprocated by a third choice; 2:1, indicates a subject's second choice is reciprocated by a first choice; etc.

† 1:0, 2:0, 3:0, indicate first, second or third choices, respectively, which were not reciprocated.

‡ Cottages 7 and 10 are omitted because they are not comparable, being larger in population and of a different race. Cottage 3 is omitted because many vocational assignments are such that few members are in the cottage for meals together.

TABLE C — Section 2

Cottage	Population	Second Test — 16 Weeks Later									Total	Unreciprocated Choices			Total
		Reciprocated Choices										Firsts	Seconds	Thirds	
		First			Second			Thirds				1:0	2:0	3:0	
		1:1	1:2	1:3	2:1	2:2	2:3	3:1	3:2	3:3					
1	20	4	7	4	7	2	1	4	1	2	32	5	10	13	28
2	21	4	3	1	3	6	2	1	2	0	22	13	10	18	41
4	18	4	4	0	4	2	3	0	3	0	20	10	9	15	34
5	31	6	6	3	6	2	4	3	4	6	40	16	19	18	53
6	30	10	3	1	3	4	4	1	4	2	32	16	19	23	58
8	25	6	3	5	3	4	3	5	3	0	32	11	15	17	43
9	28	14	2	2	2	8	4	2	4	6	44	10	14	16	40
11	28	4	3	6	3	4	3	6	3	0	32	15	18	19	52
12	26	4	3	2	3	6	1	2	1	4	26	17	16	19	52
13	27	8	6	1	6	4	6	1	6	6	44	12	11	14	37
14	26	8	3	5	3	6	4	5	4	2	40	10	13	15	38
A	19	10	3	3	3	6	5	3	5	6	44	3	5	5	13
B	18	4	2	3	2	2	3	3	3	0	22	9	11	12	32
Total	317	86	48	36	48	56	43	36	43	34	430	147	170	204	521
Average		.271	.151	.114	.151	.177	.136	.114	.136	.107	1.36	.464	.536	.643	1.64
Sum of Averages			.536			.464			.357		1.36		1.643		1.64

TABLE C—Section 3

		Third Test—24 Weeks Later													
		Reciprocated Choices									Unreciprocated Choices				
Cottage	Population	First			Second			Thirds			Total	Firsts	Seconds	Thirds	Total
		1:1	1:2	1:3	2:1	2:2	2:3	3:1	3:2	3:3		1:0	2:0	3:0	
1	16	6	4	2	4	2	1	2	1	0	22	4	9	13	26
2	24	8	2	0	2	0	1	0	1	4	18	14	21	19	54
4	22	10	4	1	4	4	0	1	0	2	26	7	14	19	40
5	28	8	4	3	4	2	2	3	2	4	32	13	20	19	52
6	31	14	4	1	4	8	2	1	2	4	40	12	17	24	53
8	25	4	5	4	5	0	1	4	1	0	24	12	19	20	51
9	23	8	3	4	3	2	4	4	4	6	38	8	14	9	31
11	29	2	1	2	1	2	6	2	6	0	22	24	20	21	65
12	23	12	1	1	1	4	2	1	2	2	26	9	16	18	43
13	28	8	1	1	1	2	5	1	5	4	28	18	20	18	56
14	25	8	5	0	5	2	4	0	4	0	28	12	14	21	47
A	19	10	4	4	4	8	1	4	1	4	40	1	6	10	17
B	19	8	4	4	4	2	2	4	2	2	32	3	11	11	25
Total	312	106	42	27	42	38	31	27	31	32	376	137	201	222	560
Average		.340	.135	.087	.135	.122	.099	.087	.099	.103	1.21	.438	.644	.711	1.79
Sum of averages			.562			.356			.289		1.21		1.793		1.79

TABLE D

Comparative study of table choices with average difference between the findings of successive tests when the tests are given at intervals of eight weeks, with choices put into operation immediately after each choosing.*

	Population	Reciprocated Choices									Unreciprocated Choices				
		1:1	1:2	1:3	2:1	2:2	2:3	3:1	3:2	3:3	Total	1:0	2:0	3:0	Total
1st Test:															
Sum	327	78	39	34	39	46	32	34	32	46	380	176	210	215	601
Average		.239	.119	.104	.119	.141	.098	.104	.098	.141	1.16	.538	.642	.657	1.84
Sum of Averages			.462			.358			.343		1.16		1.84		1.84
2nd Test:															
Sum	317	86	48	36	48	56	43	36	43	34	430	147	170	204	521
Average		.271	.151	.114	.151	.177	.136	.114	.136	.107	1.36	.464	.536	.643	1.64
Sum of Averages			.536			.464			.357		1.36		1.64		1.64
3rd Test:															
Sum	312	106	42	27	42	38	31	27	31	32	376	137	201	222	560
Average		.340	.135	.087	.135	.122	.099	.087	.099	.103	1.21	.438	.644	.711	1.79
Sum of Averages			.562			.356			.289		1.21		1.79		1.79
Difference Between Averages in 1st and 2nd Tests		.032	.032	.010	.032	.036	.038	.010	.038	-.034	.194	-.074	-.106	-.014	-.194
Difference Between Averages in 2nd and 3rd Tests		.069	-.016	.027	.016	.055	.037	-.027	-.037	-.004	-.150	-.026	.108	.068	.150
Difference Between Averages in 1st and 3rd Tests		.101	.016	-.017	.016	-.019	.001	-.017	.001	-.038	.044	-.100	.002	.054	-.044
			.100			-.002			-.054		.044		-.044		-.044

* For routine purposes we have carried totals to the 3rd decimal place, but it was not considered wise at this time to apply the more complex statistical methods such as the computation of critical ratios.

choices it is 1 per cent. In other words, the increase in efficiency shows up most in the 1:1 and 1:2 choices but is less noticeable in the 1:3 choices. In regard to second choices, the increase in efficiency is 10.6 per cent, and for the third choices, 1.4 per cent. The total increase in mutual choices is 19.4 per cent from the first test to the second test.

In consequence of this increase in responses to first choices, there is a corresponding decrease from the first to the second test in outgoing choices which remain unreciprocated, a decrease of 19.4 per cent.

When we examine the findings of the third testing, we see the amount of mutuality of first choices still increasing, 2.6 per cent more than in the second test, but a falling off for second and third choices. What this means is the accumulation of benefit going to the first choices, as we see when we examine the number of unreciprocated first choices in the first testing, 53.8 per cent, and number in the third testing, 43.8 per cent, a difference of 10 per cent. See Table D, p. 662.

To see whether these choices are being more broadly spread throughout the various cottage groups we calculated the percentage of isolated girls in each group for each period. For the first period the isolated girls are 17.6 per cent of the total number, and for the third period, 14.8 per cent, a decrease of 2.8 per cent.

The question is whether the findings in this period of twenty-four weeks presents a significant trend. This question cannot be answered except through further testing. It appears reasonable to assume that the placement technique should increase the spontaneous efficiency of choosing. The procedure brings a number of isolated girls into contact with wanted girls who under normal circumstances may not pay any attention to them. The unchosen girl sitting beside her favorite has an opportunity to show herself to better advantage and to win the person she wants as a friend. Similar relationships of all sorts develop through our "shuffle," which lays the ground open for potential clickings to take place. Without the use of this placement technique the girls who know each other well get to know each other still better and the newcomers tend to be excluded.

Control Study I

A *control series* of tests given at intervals of six weeks over a period of eighteen weeks to one cottage, with a population of 22 girls at the time of the first testing and 23 at the time of the third testing, is reported in Table E (p. 665).

The placement procedure was not allowed to go into effect during this period. The findings indicate a continuous fall in the mutuality of choices—for first choices a decrease of 10.3 per cent; for second choices, 14.2 per cent; and for third choices, 31.9 per cent—together with a continuous rise in unreciprocated choices amounting to 56.4 per cent. While this is a very small group, it suggests the needs for sociometric placement technique and supports the trends mentioned above.

Since these sociometric control studies were made in 1935 a growing number of similar studies have been undertaken by various investigators. They corroborate my original hypothesis that *sociometric choices and decisions, when carried into action by the participants, 1) benefit the material inquiry, that is, the truth value of the responses obtained, and 2) increase the social cohesion, morale and power of their groups.*

It must be added that what is a criterion of choice for the participants in one culture may not be a criterion in another. Criteria, to be comparable, must have an *equivalent* power of motivation and when the choices are consummated in action, the social catharsis must be equally deep and strong. One of the problems running through this book is the composition of tele, what factors of the tele enter into choice making and what their psychological and sociological meaning is. The factors of tele which enter into choice making are age, sex, race or ethnic character, competence, or skill, etc. Simple forms of factor analysis have been applied to sociometric materials. But a more comprehensive analysis is needed. It should include not only the psychological and sociological factors like age, sex, ethnic character, etc., but also actional factors like warm up, acting out and “omnipathy” and “omnitele” of whole groups.

The two groups contrasted in Table A (p. 655-656) and Table B (p. 658) consist of the same individuals. It is as if we would have two test tubes, A and B, each containing the same material,

TABLE E

Sociometric Control Study with average difference between the findings of successive tests when the tests are given at intervals of eight weeks, with choices not put into operation.*

	Population	Reciprocated Choices									Unreciprocated Choices				
		Firsts			Seconds			Thirds			Total	1st's	2nd's	3rd's	Total
		1:1	1:2	1:3	2:1	2:2	2:3	3:1	3:2	3:3		1:0	2:0	3:0	Total
1st Test:															
Sum	22	6	1	1	1	2	3	1	3	4	22	14	16	14	44
Average		.273	.0454	.0454	.045	.091	.136	.045	.136	.182	1.000	.636	.727	.636	2.000
Sum of Averages			.364			.273			.363		1.000		2.000		
2nd Test:															
Sum	23	6	0	2	0	4	0	2	0	2	16	15	19	19	53
Average		.261	0	.087	0	.174	0	.087	0	.087	.696	.652	.826	.826	2.304
Sum of Averages			.348			.174			.174		.696		2.304		
3rd Test:															
Sum	23	5	0	1	2	1	0	1	0	0	10	17	20	22	59
Average		.217	0	.044	.087	.044	0	.044	0	0	.436	.739	.869	.956	2.564
Sum of Averages			.261			.131			.044		.436		2.564		
Difference Between Averages of:															
First and Second Tests			-.016			-.099			-.189		-.304		.304		
Second and Third Tests			-.087			-.043			-.130		-.260		.260		
First and Third Tests			-.103			-.142			-.319		-.564		.564		

* For routine purposes we have carried totals to the 3rd decimal place, but it was not considered wise at this time to apply the more complex statistical methods such as the computation of critical ratios.

but only B is exposed to reagent X. The reagent is the sociometric test. Table A tabulates the seating arrangement of a group of 21 girls around 6 individual tables, just *before* the test is given, Table B *after* the test is given. A represents the control group, B the experimental group.

The A group can be considered an "experiment of nature." Several factors may have entered into producing this particular seating arrangement. The use of authority by the housemother, however pronounced it may have been, is only one factor influencing the seating order; a fair degree of influence of the girls upon her decisions may have been exercised. Favorites of the housemother may have had on and off a perverse influence in passing privileges to their own favorites among the girls so that they could sit wherever they liked. However rigid, it is a natural situation in which some of the spontaneity of the subject-individuals passes through as it is often observed in autocratic regimes. It can be assumed that the larger the number of individuals is, the weaker is the housemother's hold upon them and the more she has to give in to let them have their own choices. Some "tele" must have operated in the situation.

As the hypothesis to be tested is the degree to which a hypothetical factor, tele, operates in the formation of groups, it was assumed that some tele must operate in every natural grouping, therefore also in grouping A. But it was not possible to differentiate without further inquiry who among the girls sitting around the six tables were tele choices and who were not. Table B shows a grouping of the same individuals vastly different from the natural group A. Via the sociometric test the truly wished arrangement, the genuine tele choices have been made fully visible. The twenty-one individuals disclose twenty-four different ways of preferred pairing, a fact which is used in the arrangement around the tables itself, to give every individual an optimum of satisfaction.

A comparison of the group in the natural situation with the group in the experimental situation can now be made in order to determine how much tele operated already in the natural situation. It discloses that four times a pair of individuals are seated together as if they would have been given their choice. It indicates, however, that the tele factor operates in the experimental group in a degree six times greater than in the natural situation.

Control Study II*

It happened during 1934, in part due to an influx of population beyond the capacity of our little community, that sixteen new girls had been placed in one or another cottage without going through the usual sociometric process. These sixteen girls represent an unselected group. As it is a rare occasion in Hudson that girls are placed in a haphazard, hit-or-miss fashion, we felt that this material might answer some questions that we have had in the back of our mind since the beginning of our work here.

The group position development of these sixteen non-tested girls was followed up according to our routine for the whole community, continuously every eight weeks. Here are presented the first 32 weeks of their social evolution in whatever cottage they were placed. We tabulated the number of girls who were unchosen or isolated, the number of girls who were chosen but who did not reciprocate any choice, and the number of girls who had one or more mutual choices. See Table F.

For several years at Hudson the assignment of newcomers to a cottage has been made upon a sociometric basis. The factors entering into sociometric assignment are numerous—the psychological organization of every cottage, the sociometric saturation point for minority groups within them, the social history of the new girl, to mention a few. But the most important single factor is the factor of spontaneous choice. The affinity of a girl for a certain housemother and of that housemother for her, and the affinity of the newcomer for a key girl of a particular cottage, and of that key girl for her, have been crucial in our consideration of adequate assignment.

The simple procedure of inviting the housemothers and the key girls to visit the newcomers in the Receiving Cottage soon after their arrival furnishes us with ample information concerning the spontaneous immediate attraction they may feel for each other. In the early routine of this procedure we were compelled to give the findings some ranking, however arbitrary. We gave preference, for instance, to the stronger affinity (first choice) over the weaker affinity (second or third choice). We gave a mutual choice preference over a one-sided choice. We gave a mutual first

* This "Control Study of Sociometric Assignment" was made by Helen Jennings, under the supervision of J. L. Moreno (see *Sociometric Review*, 1936).

TABLE F

Prepared in collaboration with H. Betty Janaske
 Comparison of the psychological positions of girls placed sociometrically
 with girls placed hit-or-miss.

	Control Group			
	16 non-tested girls assigned to cottages without sociometric procedure, hit-or-miss.			
	8 weeks	16 weeks	24 weeks	32 weeks
Isolated	4	6	6	4
Chosen but without any mutual choice	8	4	6	4
Receives mutual choices, one or more	4	6	4	8
	Group A			
	16 tested girls assigned to cottages on the basis of sociometric procedure; they do not show maximum but some lesser degree of affinity with housemother and with key girl.			
	8 weeks	16 weeks	24 weeks	32 weeks
Isolated	3	4	3	2
Chosen but without any mutual choice	8	5	3	1
Receives mutual choices, one or more	5	7	10	13
	Group B			
	16 tested girls assigned cottages on the basis of sociometric procedure; they show maximum affinity, mutual first choices with housemother and with key girl.			
	8 weeks	16 weeks	24 weeks	32 weeks
Isolated	0	1	1	0
Chosen but without any mutual choice	5	3	1	0
Receives mutual choices, one or more	11	12	14	16

choice preference over a mutual second or third choice. We gave a mutual first choice of the new girl with the housemother and the key girl of that cottage preference over another new girl's mutual first choice which was only with the housemother or only with the key girl. We used this ranking as a working hypothesis, meanwhile gathering the data and awaiting an opportune moment to

determine its validity. It is for this purpose that this control study has been made.

For the sake of comparison with the sixteen non-tested girls we took an unselected group of thirty-two girls who had arrived in Hudson afterward. We took the 16 optimal which followed the non-tested, respectively, and the 16 non-optimal which followed, respectively. Sixteen of them had a mutual first choice with a housemother and her key girl and had accordingly been placed in the cottage thus selected. The other sixteen had affinities of lesser rank and had been placed accordingly. As a matter of routine the group position development of these two groups of tested girls had also been followed up every eight weeks. A like stretch of time, the first 32 weeks of their stay in Hudson, is represented in their group positions. The tabulation of the positions to which these girls climbed, compared with those of the non-tested girls is given in Table F, p. 668.

The findings show that the girls who were placed on the basis of the test (a) find a better position in the group from the start. The non-tested control group starts with four isolated; the tested group A, who had some degree of affinities though less than maximum, starts with three isolated; and for the tested group B, who had maximum affinities, the number of isolates at the start falls to zero. The control group starts with eight of the girls being chosen but without any mutual choice, the tested group A starts with eight in this position, but the tested group B shows only five of the girls chosen without any mutual choice. Finally, in regard to the most important factor, the mutuality of choice, only four of the control group receive from the start one or more mutual choices, while for the tested Group A the number is five, and for the tested group B, the number is eleven, who secure this position.

The tested girls undergo (b) a quicker social evolution and integration than the girls who had been placed in a cottage without a test. At the end of the 32-weeks period, of the sixteen girls in each group, the control group shows four isolated girls, the tested group A, only two, and the tested group B, none. The control group shows only eight girls receiving mutual choices, but the tested group A shows thirteen girls, and the tested group B, all sixteen girls receiving one or more mutual choices. The findings show also a marked difference between the two groups of tested

girls, A and B. The girls who had a mutual first choice with housemother and with key girl in the sociometric test given to them in the receiving cottage and who had been placed in the chosen cottage with them made a far better showing in the positions attained by them in their respective cottages than did the tested girls of Group A who had been placed on lesser degrees of affinity for their housemother and key girls. A certain number of isolates persists tenaciously for the tested group A; at the end of 8 weeks, three isolates, at the end of 16 weeks, four isolates, at the end of 24 weeks, three isolates, at the end of 32 weeks, two isolates. In contrast, the tested group B has at the end of 8 weeks, no isolates, at the end of 16 weeks, one isolate (due to the paroling of her mutual choice), after 24 weeks, one isolate (the same girl who lost her friend through parole), and after 32 weeks, no isolates. Accordingly the tested group B shows from the start a rapidly increasing growth of mutual choices.

1. The greater the original affinity between the newcomer and the prominent members of the group (in this case housemother and key girl) the better will the newcomer be accepted by the whole group.

2. Sociometric assignment protects the newcomer against social blocking at an early stage.

3. Hit-or-miss assignment appears to facilitate social blocking and often firmly establishes an isolated position.

4. It appears desirable that only the fewest possible individuals should be compelled to make an adjustment—and even they as little as possible. As this study shows, much depends upon how much adjustment the individual himself can make without harm. Much depends upon the discrepancy between the position the individuals have in the group and the position they want. Many have to make some concession which is not entirely or not at all spontaneous. The adjustment so glorified in the textbooks of today is a cruel word. It means that the majority of individuals have to resign from something, that they have to sacrifice this or that aim, apparently sometimes for no good reason.

5. A survey has been carried out covering over one hundred individuals. The results appear in the general the same as above.

Discussion and Comments

A problem which often recurs is that sometimes girls remain over to whom no satisfaction can be given in the placement. In placing a population of 412 girls on the basis of the first testing reported here, only seven girls (or 1.7 per cent of the population) received none of their three choices. (In the second testing, 1.7 per cent, and in the third testing, 1 per cent of the population received none of their three choices.) To these seven girls individually an explanation is given that to give them any one of their choices would block the choices of a great many other girls in the cottage; they are asked to accept the situation with the understanding that at the next choosing (8 weeks later) if it is necessary that any girl go without her choices for the sake of the majority of the girls, other girls than they will be asked to do so. The girls are told who these girls are who want to sit with them but whom they did not choose. They are glad to find themselves thus chosen, and take with a good spirit the placement they are asked to accept. They render a service to less well adjusted and little chosen or isolated girls who choose them.

The argument may be raised that it matters very little with whom a girl sits at the table. The question whom one has at his table during meal time may rightly seem so very insignificant to a person who lives in a great city and has the opportunity to mix freely with everyone and has plenty of time at his disposal. But in an institutional community where the number of acquaintances one can make is strictly limited, and where a certain amount of routine is necessary, free association during meal time with the person you desire to be with is of great social value. We have made similar observations in the dining rooms and dormitories of colleges.

Another argument may be raised that for most people what they eat is more important than with whom they eat. This is partial truth which is valueless as long as it remains unqualified by quantitative analysis. Our social atom studies showed that there are people in whom the preferential feelings toward other *persons* are especially articulate and that there are people in whom the preferential feelings toward *things* are especially articulate. This we have observed frequently also in our placement studies. We found here and there girls who crave to sit at a table where they know

the waitress is in the habit of giving special favors.

Another argument may be raised that a wanted and perhaps superior girl, although she may have received one or two of her choices, may have to tolerate as a third partner an isolated girl who chose her but whom she violently rejects. In reply to this it can be said that the wanted girl, exposed to chance, may not have received even the two friends whom she wanted; also it may be an important part of her training to expand her emotional experience also toward people who do not appeal to her so much as others. An increase in emotional flexibility should not decrease her preferential sensibility.

Sociometric techniques of placement overcome the lack of system which is seen in the picking of roommates generally, especially in colleges. A haphazard procedure appears satisfactory to the individuals who associate themselves readily, but it is totally inefficient for the majority of those who have a hard time to find the partner they want. The following explains the technique as applied to colleges.

Let us suppose that the whole student population is 240, and that their dormitory arrangements are such that to each bedroom are assigned two students. Each student is given three choices. The choices are analyzed and charted. Sixty students, let us say, form first choice mutual pairs. They are eliminated from the contest. The remainder of one hundred and eighty are called to a second meeting. They go through the same process. This time, let us say, one hundred and twenty students form first choice mutual pairs. They are then eliminated. The remainder of sixty students are called to a further meeting. They go through the process again. Should still some of the students remain unchosen, these are called to a further meeting, and so forth, until everybody has found a partner.

In this variation of our placement procedure, the "adjuster" is eliminated. He doesn't interfere; he does not make any suggestion beyond stating the actual findings. He states the positive findings, the pairs formed. He does not state the negative findings. The adjuster here is merely a charter. He gives information beyond stating the pairs only when he is asked to do so. One or another student who did not succeed in receiving his partner may want to

know what his position is in the group. He may find, for instance, that although his first and second choice remain unreciprocated, he is chosen first by two and second by three students to whom he had paid little attention. This may urge him to think more clearly about his relation to his co-students and also prepare him better for the next shuffle. The charting is repeated, of course, after each meeting.

This variation of sociometric technique seems a happy combination of complete *laissez-faire* and of placement aid. Information or aid is only given if a student asks for it. Otherwise it is withheld. The same procedure can be used in every type of group.

CURRENT TRENDS IN SOCIOMETRY

1942 - 1952

I.

In recent years five centers of research in experimental design have developed which have given attention to a sociometric orientation. The first in line was the original Sociometric Institute (now Moreno Institute), formally established in 1942, which grew out of small committees since 1934; next in line was the Research Center for Group Dynamics at the Massachusetts Institute of Technology, formally established in 1945; the third was a group of workers within the newly established Department of Social Relations at Harvard University in 1946; the fourth was the Tavistock Institute of Human Relations in 1947; the fifth, the recently established Laboratoire d'Experimentation Sociometrique et Psycho-Sociologique at the Sorbonne. There are other units on the way promising rapid crystallization, as the Department of Graduate Sociology at New York University. There are several centers of sociometric research which are outstanding in field work rather than laboratory experimentation, to mention, e.g., two among them: the team of workers at the University of Seattle, Department of Sociology, under the leadership of George A. Lundberg, the other at the Michigan State College, under the leadership of Charles P. Loomis. These research groups have a common bond, as they were all anticipated by the New York In-

stitute, largely employing the same group of methods and techniques and similar theoretic orientation; but they developed these procedures in part along different tracks, each under independent leadership. It is the purpose of this discussion to point out that the source and the goal of the various research centers are the same, however different the semantics and the form of experimental design used by one worker or another.

The first question which is still puzzling many is: when does "scientific" thinking begin? The line between scientific and non-scientific thinking cannot be sharply drawn; if we should limit, for instance, scientific thinking to the formulation and testing of hypotheses we may assign a large volume of research of little value to "science" and the most powerful and productive thinking to "non-science." This does not make sense. What differentiates scientific from non-scientific behavior are the initial steps, the direction and the "goal" of the undertaking. The consensus is growing that scientific thinking embraces all phases of an idea, from its first flashes through the stages of crystallization up to a principle which is universally accepted.

The policy of SOCIOMETRY has been since its inception to sponsor a most flexible approach so as to permit every possible experimental design a place in the sun. Two general requirements are here set forth as our mentors: 1) the experimenters should demonstrate, in their reports of experimental research, a discriminating sense in the construction of hypotheses to be tested, that they are searching for an *hypothesis of "choice"*. They should demonstrate full knowledge of the theoretical involvements of the techniques used by them; otherwise they may be accused of ignorance or, which is worse, tempted to formulate generalizations which are unwarranted; 2) the experimenters should be aware, not only of the variety of techniques they are actually using for a specified purpose, but have experience with the related and modified techniques in that area; otherwise they can ill afford to use for that particular task the techniques they are using. It is a desideratum that there must be for a particular hypothesis a *technique of "choice"*; this technique of choice must be pointed out and compared with other techniques which might have been used.

These requirements may be illustrated further by reminding the experimenters that they should master the principles of material

inquiry of sociometric theory; for instance, they should know what it means in theoretical terms, a) to add or leave out criteria in a sociometric test, b) to extend or limit the number of choices allowed, c) to extend or limit the number of rejections allowed, or d) to leave unrestrained or limit the spontaneity of the individual in the expression of choices and rejections; in other words, to assess adequately the effects which a relatively contrived sociometric test has upon the results. What is said here about the sociometric test is equally important for the setting up of contrived situational tests and psychodramatic experiments; for instance, what consequences it might have for the result of, a) the *actors* are entirely excluded from the setting up of the experimental design, or b) if they are excluded only from knowing the factor which is under examination, or c) if the *observers* are entirely or partly excluded from the setting up of the experiment, or d) if they are indoctrinated into the meaning and objectives of the experiment or whether they are purposely left ignorant of them or e) if the *director* of the investigation has been tested or not as to his sensitivity for the experimental problems and f) if he is aware or unaware of the "immediate" dynamics involved in the spontaneous interaction of the actors used in the experiment, etc.

An important aspect in the current trends in sociometric research is the development of "vehicles" for experimentation which in itself marked a revolution in laboratory design. All "sociometric laboratories" (all laboratories may be called sociometric if engaged in sociometric test- and small group-research, interaction analyses, situation tests, psychodrama research, etc., in contrast to "sociometric field work"), have the following vehicles in common: a) an actorial vehicle of some sort, that is, a place for the actors and where the actors operate. The idea of such a vehicle, consciously constructed for "research" aims, was first used in the laboratory of the Viennese Stegreiftheater.* This may be a regularly structured stage as at the Theater for Psychodrama at the New York Institute or like the one at the Psychological Laboratory, Harvard University, or it may merely be a platform or any space clearly separated by some designation for action, an architectural correspondent to the concept of an actor's world; b) an observer's or spectator vehicle, a spot especially designated to give the observers special sites; it may be an audience of observer-spectators, as in

a Theater for Psychodrama. The audiences in a Theater for Psychodrama may have certain places set aside for specialized observers; the observer may have his position in front of the actorial vehicle or hidden behind a screen; c) sound recording devices,[†] open or hidden, other mechanical recorders like motion pictures, or human recorders like stenographers or stenotypists.

These various developments in sociometric research are seen from the higher platform of their overall objectives, beyond the differences in semantics and emphases. The comments and criticisms which are forthcoming in this limited survey are made forthright, without mincing words; otherwise they would not be helpful to the experimental investigators. We do not have any bias for one or another development now in progress, as, beyond hunches, we do not have any certainty as to which of them will prove to be the most productive in the end.

II.

One of the difficulties in the development of sociometry has been the rapid assimilation of its techniques, operations and methods and the parallel ignorance of and resistance against its theories. This has proven to be unfortunate, not only for the formulation of significant hypotheses, but also for the further refinement of the techniques themselves. One could follow with amusement how rapidly sociometric techniques such as the sociogram, the sociometric test, small group analysis, role playing, psychodrama and sociodrama were taken for granted *as techniques*, but their theoretical background, the concepts of the actor *in situ*, the alter or auxiliary ego, spontaneity, creativity, tele, warming up, social atom, psychosocial networks of communication, sociodynamic effect, etc., were taken lightly, ignored or smuggled into literature without reference to the source. This would not be so serious if these hypotheses would have developed independently from sociometric techniques, but as it is they developed and they were imposed by empirical evidence; they have been the result of rigorous thinking in working through the material gathered. This circumstance is unfortunate for yet another reason. The theories and concepts

* See "Das Stegreiftheater," 1923.

† The use of "sound" and motion picture recording devices for the objectification of psychological and social research was first advocated by me in 1932.

which I introduced do not only give important clues for significant hypotheses, they are also important *prerequisites* for the proper use of the techniques and for the setting up of productive experiments. Especially in the early phases of a young science one cannot neatly differentiate technique from theory but this is exactly what happened frequently in reported field work, techniques were separated from their meaning and used mechanically. In disregard of theoretic considerations some workers began to make sociograms in a sociological vacuum, asking people like in a parlor game whom they like and dislike and then drawing the lines between them. Others began to introduce role playing as a "cold" research design, as if it would be possible to manipulate human beings like guinea pigs.

Of the several directions of research initiated by sociometry five areas of experiment and conceptualization have aroused particular interest in recent years; one is group dynamics, the second is interaction analysis, the third is sociometric perception, the fourth is the theory of action and the fifth is the formation of groups in *statu nascendi*. They are all commendable extensions and encouraging signs of spreading effort to enlarge our experimental equipment and to combine it with a large theoretic framework, but they have certain shortcomings in common: a growing withdrawal from social reality, due, it seems, to a lack of imagination to translate the actual conditions of the group into experimental design and theoretical formulations and to an inability to operate with abstractions within the extremely concrete. Certain students, following the model of older sciences break up the concrete social situation into an indefinite number of little problems, each to be exposed to experimental investigation. This sounds like good scientific laboratory logic but the difficulty is that when these little pieces are broken away from their social context they lose the significance they had *in situ*. What one studies then is not the material in its living form but in various stages of distortion or disintegration. Who is going to tell us *post festum* whether the processes tapped in the contrived or reduced experimental design correspond to some analogous processes in living social action, and where is the mind which will be able to resynthesize the living social aggregate? It is easy to take the dynamic sequence of interactions apart but it is hard to put them together again. I can well understand the despair of the laboratory investigator faced with

the complexity of social life, withdrawing from it and parcelling it into numerous problems to examine them separately. "Social life is so complicated," he might say to himself, "we must oversimplify our technique in the hope that the errors made will some day be corrected by the results of cumulative experiments." We can also well see the despair of a theoretician who goes to the extreme of pulling many contemporary strands of thought together and building a large conceptual system so as to give the experimenter the pigeon holes to which he can return after the hypotheses are tested. It may be comfortable to have a complete system of relationships formulated in advance of empirical testing and to have the hypotheses to be tested handed to one by a scientific god.

One may take an optimistic view and think that having a system, however conjectural, is better than having none, that the social world is far less complex than it looks and that the number of hypotheses to be tested is not as large as one might suspect. But the opposite is just as great, if not greater a probability, that the number of contrived hypotheses which we will go on constructing in a comparative social vacuum will be bewilderingly large, going into thousands of theoretical gadgets. This would have been a fair risk to take before the advent of sociometry but since then we have several tracks to travel on and a compass to guide us; theory and practice can be combined with a fair degree of safety. Let us not construct—at least for a while—more theory than we need for the voyage, let us not continue the voyage beyond the point to which the theory has charted the way. We have hardly begun to travel a little more safely than heretofore on an uncharted social sea. Do we still need as badly as in the past the breathless riders charting formalized systems of hypotheses far in advance of action? They may distract the captain's mind from the task ahead into dreams of distant shores. It boils down to the well-nigh classic difficulty which one encounters when setting up group and interaction experiments in which human beings are the essential protagonists. It may be appropriate to assume the allures of the puristic, detached scientific investigator in a more advanced stage of a science, but in a science which has hardly started to walk, such allures are unfortunate and unproductive. One can appreciate the need to get an experimental design simplified in order to obtain

data which can be easily manipulated. Such manipulations are acceptable in an advanced science like physics or chemistry where there is a sufficient backlog of well established knowledge so that a trespass is easily recognized; there are danger signals which stop the experimenter if he is on a false track. Imagine for a moment that Freud would have started with the study of association technique in a psychological laboratory instead of in the comparatively human situation of "the medical office." The result would have been a distinguished and elaborate scientific corpse. We are, in group research and interaction dynamics, in a similar position today as psychodynamics about thirty years ago. Until recently we had only two alternatives, the clinical method, maintaining the contact with social reality, however primitive the analysis of the scientific data might have been, or the laboratory method, overly scientific but sterile. But now we have a way out, a third alternative between these two extremes, the inhumanity of the experimental laboratory and the overhumanity and magic of the medical office; this way out is the sociometric revision of the experimental method. It has been my tendency, therefore, as much as possible to approximate in the construction of an experiment the life situation itself and even brazenly to *magnify* rather than to reduce its complexity. I could then afford to build my theoretical framework in such a manner that it did not lose contact with social reality. Some of the safest achievements of sociometry have come about this way; take, for instance, the deviation from chance study of social configurations or the study of spontaneous and planted rumors and the consequent formulation of the network and communication hypothesis, significantly applied by Charles P. Loomis* and recently confirmed.†

SOCIOMETRY AND GROUP DYNAMICS

The time has come to point out some of the errors which have been made in the course of the history of sociometry and which have added greatly to the confusion as to what sociometry represents. One of the red herrings was the blanket "assumption that

* See Loomis, Charles P., and Davidson, Dwight, "Sociometrics and the Study of New Rural Communities," *Sociometry*, Vol. II, 1939.

† Festinger, Leon, Schachter, Stanley, and Back, Kurt, *Social Pressures in Informal Groups*, Harper & Brothers, 1950.

an individual's sociometric score, whether calculated by the crudest or by the most refined techniques, is a measure of his acceptance *by the group*." This is, "if not a fallacy, at least a not wholly true interpretation of sociometric facts."*

Obviously, an acceptance by a group is not possible. The group is a we, but it is not someone who can answer questions or someone who can accept or reject. However important it is to separate the sociological from the psychological plane of systematization, we should not mix up this methodological problem with the elementary problem of inquiry: whom to choose as an associate in a specific activity.

Another red herring has been the so-called group decision advocated particularly by Kurt Lewin. Just as a group cannot accept or reject an individual, a group cannot make decisions. It is an unfortunate and misleading phrase.

As the theory and practice of what might be called group decision stems in essence from sociometry and is closely related to "sociometric group action" and "sociodrama", let us take an illustration from our own literature and consider the theoretical principles involved in sociometric group action and sociodrama. The first principle is the active and full group or *audience participation*. "Die Teilnahme des Publikums: Die Wandlung der Zuschauer in Zuschauerspieler, des Zuschauerraumes in ein Zuschautheater versetzt die Regie in ein neues Versuchsfeld. Die Teilnahme des Publikums muss von Willkür befreit sein."[†] "The participation of the audience must be gradually freed from chaos and lawlessness."* "The total population is invited to a meeting and addressed in respect to the question of how the population can be selected for the new community." . . . "It is easy to gain the cooperation of the people tested as soon as they come to think of the test as an instrument to bring their wills to a wider realization,

* It is a pleasure to read this honest admission of Northway in her book *A Primer of Sociometry*, pp. 38-39, that she is "at least partly responsible" for this misconception. I remember having protested repeatedly but the vogue was too strong and so I let it go, hoping that experience and time will cure the mistake.

† See *Das Stegreiftheater*, 1923, p. 12, *The Theatre of Spontaneity*, p. 23, Chapter "Die Teilnahme des Publikums" (Audience Participation). Here the concept of audience participation is discussed in the context of roleplaying and sociodrama. I refer here to the German edition of the book with which Lewin was acquainted before he came to the USA.

that it is not only an instrument for exploring the status of a population, but primarily an instrument to bring the population to a *collective self-expression* in respect to the fundamental activities in which it is or is about to be involved."*

The second principle is *the warming up of the participants in the direction of action*, the linking up of motivation with action. A sociometric test fixes the act of choice and the expected change and realization of choice into the actional drive of the participant; the warm up to the sociometric choice carries the participant through into action. "I have developed two tests in which the subject is in action for his own ends. One is the sociometric test. From the point of view of the subject this is not a test at all and this is as it should be. It is merely an opportunity for him to become an active agent in matters concerning his life situation. . . . The second test meeting this demand is the spontaneity test. Here in a standard life situation the subject improvises to his own satisfaction."† . . . "Sociometry in communities and the psychodrama in experimental situations make a deliberate attempt to bring the subjects into an experimental state which will make them sensitive to the realization of their own experiences and action-patterns. . . . *In the social sciences, the subjects must be approached in the midst of an actual life-situation and not before or after it.* They must be truly themselves, in the fullest sense of the word. . . . It is evident that *the situation to be measured must be caught in statu nascendi and the subjects warmed up to it.* This emphasizes the enormous importance of the concept of the Moment for all conceptual thinking relevant to the preparation of truly genuine experiments in human societies."‡

The relation between motivation and action is the crux of dynamic sociometry and dynamic sociodrama. The linkage between motivation and action is cemented by the warm up to an act of choice which has, in dynamic sociometry, the character of a

* See *Who Shall Survive?*, First Edition, 1934, pp. 356 and 341. I am purposely quoting from the first edition here because it is the one with which Lewin was acquainted many years before he became active in sociometric research and group dynamics.

† See *Who Shall Survive?*, First Edition, p. 15.

‡ See "A Frame of Reference for Testing the Social Investigator," *Sociometry*, Vol. III, No. 4, 1940, p. 317; this too, was written long before Lewin published his study on group decision, "Forces Behind Food Habits and Methods of Change," *Bull. Nat. Res. Council*, 1943, 108, 35-65.

resolution, in sociodrama the character of social integration and cohesion.

There must be some factors in tele which make choice making *in expectancy of forthcoming action* much more significant than without it, and also more effective when a large number of individuals are involved, than when choice and action is to be taken by an individual alone. *The psychology of action cannot divorce the act from the actor, the actor in situ, and the single actor cannot be separated from the ensemble of actors in situ.* A decision making in groups, whether it is made in religious, political or industrial settings, without the application of sociometric and sociodrama methods cannot be comprehended. That may be the reason why the group dynamic workers have promptly appropriated, as if by an act of group decision, roleplaying and sociodrama for their research.

The third principle is *the result of the meeting* which I have called the "omnitele", the *consensus* of the group, a catharsis of integration, a social learning process obtained through rapid clarification and action insight. This is what Lewin calls group decision. But the question is not the name which is given to this experience, the question is how this process manifests itself, what consequences it has and how it is measured. The effect of the consensus becomes visible in the life situation later, in situations in which the social problems treated in the session come to a test.

If, at the end of a sociodrama session a vote is taken and if in a group of one hundred participants there is but one dissenter, then there is no "group" decision. As it happens rarely in sociodramatic sessions that there is unanimous decision on any social issue, group decision, understood as the complete approval of all participants is a fiction. One way to measure the warm up of a group to its gradual and growing participation and integration is neither voting nor the magic assumption of a unanimous decision; it is the securing of the sociogram of the group taken at short intervals in crucial stages of the session, either by keen observers or through actual testing before the meeting begins and after the session is ended.*

Sociometric research and conceptualization has had a beneficial effect upon the construction of experimental design; the designs

* See "Sociometry and Sociodrama in Industry," by J. L. Moreno and Edgar Borgatta, *Sociometry*, Vol. XIV, No. 1, 1951.

have become more lifelike and more rewarding. But the traditional cultural lag of the academician and the old time laboratory experimenter is by no means resolved in the new sociometric laboratory. It may be helpful to demonstrate this point with recent work. There are two current deviations from these *sociometrically adequate* experimental designs, the *contrived* experiment, the limitations of which are known, and the *ill-designed* experiment of whose limitations the investigator himself is unconscious; it is ill-designed because of its poor analytic preparation. A good illustration is Lewin's experiment with democratic and autocratic atmospheres which I have confronted elsewhere with an earlier experimental design of my own, dealing with the same problems. The question I tried to answer in my own mind was: which direction of research is more productive? Upon analytic examination I concluded that Lewin's approach is logically more elegant, but falls short in its prerequisites, it is an eye-wash. He made two errors; he failed first because of insufficient material inquiry into the sociometric situation. With the advent of sociometry the group as a dynamic structural unit was discovered. In the equating of the two groups preparatory to the study of the two atmospheres, this had to be taken into account. As the equation was inaccurate, the very foundation of the experiment was shaky. The second error in design was that the one who was supposed to take the part of the autocratic leader may have been better suited to being a democratic leader or no leader at all, and the one who was supposed to take the part of the democratic leader may have been better suited to being the autocrat; no one knew. In other words, the assignments most important for the development of the two atmospheres had been made without the necessary selections, classifications and role preparations. My experiment, on contrast with this, was done naively, without any pretense of logical elegance; but we had direct, empirical evidence that the housemothers, by inclination, appointment and operation played authoritative roles towards their wards in the cottages and that the sociometrists counteracted with democratic roles.*

* See Moreno, J. L., "Experimental Sociometry and the Experimental Method in Science," in *Current Trends in Social Psychology*, 1948, Edited by Wayne Dennis, published by the University of Pittsburgh Press, Pittsburgh, Pennsylvania; see also, *Sociometry, Experimental Method and the Science of Society*. Beacon House, 1951.

GROUP PSYCHOTHERAPY AND GROUP MEASUREMENT

In order to standardize the analysis of group psychotherapy sessions, use of quantitative techniques appears to be indispensable. They provide the audience with a set of structural facts and viewpoints which cannot be obtained by direct observation alone. We are thus enabled to consider the total output of the session and to compare it with preceding and future sessions.

Available measures include the following:

1. *Group Time Index*

a) A group might be given the following instructions: "Each of you will be allotted six minutes of the available session time. Fill out the questionnaire before you which contains the following questions: Do you want to use the time allotted to you? Do you want to give any part of it to someone in the group? If so, to whom? Why?"

Tabulating the results of such a questionnaire can give the audience analyst important insight into the interest patterns of the group.

A similar type of analysis can be made by reviewing the electric recording of a session where such allocation of time is made informally by group members during the course of a session. Thus, in a group consisting of fifteen members, an equal distribution of time in a 90-minute session would obviously involve an allocation of six minutes to each member. In re-playing and analyzing the recording of such a session recently held at Beacon, New York, however, the following time distribution was found:

<i>No. of individuals</i>	<i>Group time</i>
1	20' (F)
1	15' (B)
1	10' (N)
3	6'
6	4½'
3	0'
—	—
Total 15	90'
Table I	

Three members ("stars") took up half of the total session time, three remained silent, and three used exactly the "normal" period of time. This, of course, is not presented as a definitive statement

of probable time distributions in all such sessions; it is presented merely for the purpose of illustrating another possible approach to quantification in connection with audience analysis.

b) *Degree and quality of group participation:*

Table II is concerned with the frequency of spontaneous participation and the initiation of new ideas.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Frequency	0	5	2	2	0	8	1	3	0	1	0	2	2	4	3	1
		×				×								×		
Initiation of new ideas		1				1		2		1				1		1

In this particular session, the three "stars" of Table I (B, F, N) were also the most frequent participants; they spontaneously got up and rendered opinions or reflected on the situation. However, the individual who initiated most new ideas was a non-star (H).

2. *Group Process Analysis*

The verbal and actional content of a session may be analyzed along the following lines:

(a) *Language Analysis*

This may consist of simply counting the total number of words used by each participant throughout the entire session and in combination with each specific situation.

(b) *Topical Analysis*

For each group session the introduction and the development of topics may be tabulated. In the pre-enactment discussion a variety of topics are usually introduced by the group members. In the enactment period a topic which is focal for the group is developed further, with introduction of collateral topics. In the post-enactment discussion the audience elaborates on several of the previously introduced themes.

(c) *Display of Psycho-motor Activity and Effect*

Categories may be developed for the purpose of tabulating the extent to which members engage in such activities as laughing, crying, falling asleep, coming late, leaving before the end of the session, changing seats, etc.

3. *Social Cohesion*

Measures of the degree of social cohesion and of the group structure can be obtained in each session by sociometric tests about

various criteria. For example, one such criterion may be on the use each group member wishes to make of the available session time (see under a). Another criterion may be: "On which group member would you call as the most (least) helpful, if you were in trouble? Give three choices in order of greatest as well as least preference." A comparison of the sociograms for a number of consecutive sessions would give a graphic picture of the changes in group cohesion, which, in turn, would reflect the therapeutic process of the group while under treatment.

INTERACTION ANALYSIS

Let us also take a look at the work of Robert F. Bales.* Whereas Lewin's errors appear openly, Bales' errors are hidden, he leaves certain prerequisites unanalyzed and undiscussed. As the interaction studies by Bales have admittedly been stimulated by group psychotherapy and role playing situations, let us compare the method described by him with the procedures in a typical psychodramatic situation. Bales reports "The observers appear to be looking through windows; these are a row of three one-way mirrors. In the room on the other side of the glass is a group of people engaged in solving a chess problem. They know that they are being observed; that is, they have been told that the mirrors are transparent from the other side and that the observers there have sound recording equipment. The observers, however, are not visible to the subjects. When the subjects look, they simply see themselves reflected." The observer has a set of categories before him and scores.

The method as described up to this point does not differ from certain psychodramatic experiments as we have executed them and the technique of interaction analysis is similar to the one used by me in my Stegreiftheater experiment and continued in Hudson. It is not pertinent to the method whether the observers are visible or not visible to the subjects. The difference is in what Bales does *not* tell us about the subjects or what he does *not* know

* See Bales, Robert F., *Interaction Process Analysis*, Addison-Wesley Press, Inc., 1950. The above comments are strictly limited to *this* publication of the author.

or consider important; we do not receive a self-evaluation of the actors in action. We understand what significance the situations have for the observer, he is anxious to see whether the interactional behavior of the subjects fits into a set of categories he has constructed. But we are not told and we do not know whether the situations have any *significance for the actors*. How do the actors get into the Harvard laboratory? Are they total strangers to each other? Or are they acquainted? What is the criterion of their selection? We are told that they are engaged in solving a chess problem. Are they chess players? Are they skilled or unskilled at chess? Is competence in chess playing a criterion in their selection? Why should they play chess? They may not be warmed up to it; they may be warmed up to taking a stroll in the garden, smoking or drinking coffee, dancing or getting into a heated argument over baseball. Who decides what they should do? If the situations are structured for the actors in advance, we are not specifically told that they are. In contrast to Bales' procedure, the experimenter in a sociometric situation would give us as complete a picture of the actorial setting as possible, comparing in completeness the picture of the observers' setting. He would tell us what the relationship is between the situation and the actors. Are they hired, professional alter egos, or volunteers? Are they students or patients who have problems of their own to solve? In other words, the sociometrist or psychodramatist does not limit his concern to the observer and to *his* objectives. He is as much concerned with the actors and their objectives. The spontaneity states of the actors, their warming up, the differences in warming up from act to act are foremost in his mind. It is fundamental for research reasons that we are fully cognizant of the external and internal setting in which the actors themselves operate. Further, *after he knows of the total situations of the actors, he may be in a better position to "parcel out" one or another special problem for experimental design; he may parcel them out more intelligently.* In Bales' method, the observer resembles too much the totalitarian observer in animal experiment. In the sociometric and psychodramatic situation he is only a *part* of the whole setting. Bales is particularly worried whether the scoring is done correctly by the observers; the actor's world he treats as if it would be outside of his orbit, as an indispensable evil. It is a science of the observer,

it is not a science of the actor and of action. It is the observer's and not the actor's frame of reference, it is an experimental design to suit the observer but not to suit the actor. This criticism by no mean invalidates the possible value of Bales' categories, only experience will tell us whether they give a meaningful interpretation to the interaction process of any two people.

The criticism serves merely to point out that Bales operates crudely, with an *incomplete* theory of action and *without* a theory of spontaneity, without giving research status to the actor-subject. At this stage of the development of action and group techniques an *incomplete* theory of the actor is a serious shortcoming of experimental design. It can easily lead to an ill-designed experiment and to analytically ill-considered generalizations.

CRITIQUE OF SOCIAL SYSTEMS

Two Schools of Role Theory*

Role, originally an old-French word, which penetrated into medieval French and English, is derived from the Latin "rotula" (The little wheel, or round log), the diminutive of rota-wheel. In antiquity it was used, originally, only to designate a round (wooden) roll on which sheets of parchment were fastened so as to smoothly roll ("wheel") them around it since otherwise the sheets would break or crumble. From this came the word for an assemblage of such leaves into a scroll or book-like composite. This was used, subsequently, to mean any official volume of papers pertaining to law courts, as in France, or to government, as for instance in England: rolls of Parliament—the minutes or proceedings. Whereas in Greece and also in ancient Rome the parts in the theatre were written on the above-mentioned "rolls" and read by the prompters to the actors (who tried to memorize their part by heart), this fixation of the word appears to have been lost in the more illiterate periods of the early and middle centuries of the Dark Ages, for their public presentation of church plays by laymen. Only towards the 16th and 17th centuries, with the emergence of the modern stage, the parts of the theatrical char-

* See "Theory of Roles," p. 75-79.

acters are read from "roles", paper fascicles. Whence each scenic "part" becomes a role.

Still, we observe here the interesting phenomena that to the word "role" clings the meaning of being something theatrical; external—so to speak—(the role is "*played*") ; in contrast to the older word "persona" which now has come to mean the fullness of an individual's character, its wholeness of feelings, thoughts, actions and thus has become more complex, "intransparent".*

This definition and analysis makes clear that the term "role" came into the sociological vocabulary via the drama and a technological conserve, the book. According to its etymology, *role* is the unit of "*conserved*" behavior.

In a recent seminar a student ventured the following statement: "Before 1935 there were two schools of role theory developing independently, side by side, and presenting opposite views, the Meadian and the Moreno schools". It is accurate to point out a contrast but it is rather due to trends of thought than to two individual workers. The American trend is most adequately presented in G. H. Mead's *Mind, Self and Society* (1934) with Charles H. Cooley, Robert E. Park and Leonard Cottrell holding similar views. The European trend is marked by my book *Das Stegreiftheater* (1923), further developed in the first edition of this book (1934) and in my "Psychodrama and the Psychopathology of Interpersonal Relations" (*Sociometry*, 1937). (Ralph Linton and others entered the field *after* these two trends were established.) The differences are of importance because the one trend developed *the idea of roletaking*, the other *the idea of roleplaying*. As the two terms are often used interchangeably a discussion of the origin of each concept and their meaning is necessary. Mead's concept of roletaking and my concept of roleplaying mean two different approaches. Mead's thinking was influenced by social behaviorism of the 1920's. He discovered the role and roletaking, taking the role of the other, a process of taking and interiorating the role unto the self, making it readily accessible in societal situations.

These roles, in order to be socially effective, must be already formed, available for immediate release, finished products, or, as I

* We are indebted to J. I. Meiers for this quotation. See "Three 'Word Histories' Important in Psychodrama, *Persona—Role—Spontaneity*," *Sociatry*, Vol. I, 1947, p. 240.

often suggested, they approximate "role conserves". My view started from a position exactly opposite to this; first of all, the role which Mead had to discover was already given "free of charge" in the dramatic productions of the theatre which I encountered. The ideal representations of role conserves are found in the written plays of Shakespeare, Goethe and Moliere and in the approximations of role conserves in life itself. My role theory began with a *critique* of the role conserve which was the sharper the more rigid and unyielding the role conserves appeared to be. Entering a legitimate theatre meant to witness the most rigid and unyielding presentations of role conserves one can imagine. The moment of creation was not free and *spontaneity was forbidden to the roleplayer*. The exceptions did not change the rule because such were the intentions anyway. It is here where I noticed first the resistance of the roleplayer against the role conserve, the resistance of the living actor who resented the playing of roles written by a playwright and imposed upon his spirit. I remember the struggle in Eleanora Duse between herself as a private *dramatis persona*, and the roles which she had to impersonate; the struggle between the role concepts created by the playwright and the concepts she had of these characters. Parallel with this I observed the resistance of people against some of the roles which society coerces them to play and particularly against their conserved form. I posited therefore the idea of role spontaneity vs. role conserve, playing a role spontaneously, modifying it and warming up in ever-novel situations, in contrast with roletaking, the rendering of a role which is already formed and established. *The objective of revolutionary role research became then to study roles in statu nascendi and in locus nascendi*. The role was frequently found *alien* to the self, as it is often to the living actor, not identical with it, as in roletaking. "Die Rolle steht ihm als Individuum gegenüber. . . . Sein Verhalten ist nicht arteigen, schöpferisch, sondern umschöpferisch. Die Aneignung der Rolle durch den Schauspieler verläuft *zentripetal*." (*Das Stegreiftheater*, p. 27.) For this resistance against role conserves and stereotypes one may have several explanations: 1) We live in a changing world, a new set of roles is emerging, trying to push the old ones out of existence. 2) Within a given society one set of roles represents one ethnic group, the other set of roles another ethnic group, both struggling for dominance. 3) There

is another hypothesis which does not exclude the validity of the other two explanations: just as the infant exerts resistance against the assimilation of organized and syntaxed language, he exercises a resistance against the social role cluster with which he is confronted during childhood and adolescence. I have described three sets of roles which an infant assumes in the course of his early development, psychosomatic roles, psychodramatic roles and social roles. If the relation of roletaking to the self is a criterion, they can be differentiated as follows: a) taking *own* role; this is the case in the role of the eater, the soundmaker, the eliminator, the breather, the sleeper and the walker—the psychosomatic roles; b) placing the idea of a role in the other, in another self, God, angel, ghost, etc.,—psychodramatic roles; as the infant grows up the psychodramatic and social roles form various combinations; c) taking the role of the other, in social roles.

Every roletaking must have been, *in statu nascendi*, a form of roleplaying. The more the role became a conserve, the less spontaneity was necessary to release it. Whenever we learn new roles we exercise roleplaying but there is always the tendency present to learn how to play the role with the minimum of effort. It is significant that psychodrama, sociodrama and roleplaying have developed in a rapidly changing world in which many roles have become worn and have either to perish, to be revitalized or to be replaced by new emerging roles which need rapid acculturation. Roleplaying probably renders its greatest service not only in the improvisation of new roles, but in the revitalizing of role conserves. Taking the role of the other is a dead end. The turning point is how to vitalize and change the roles, how to become a “rolechanger” and “roleplayer”. This objective needed the discovery of a new method, the technique of roleplaying.

Last but not least, similar efforts of trying to find points of agreement and disagreement between the work of others and my own, for instance of Bergson and Freud, can be made, perhaps with the same amount of justification. A Bergsonian could make it plausible that my work provides the clinical foundations for “L’Evolution Creatrice” and the “*élan vital*”. Psychoanalysts could argue that psychodrama is on the action level what psychoanalysis is on the verbal level, that the two methods have similar aims. The real and final question, however, is whether out of the

social psychology of Mead, role practice and role training, psychodrama, and sociodrama, sociometry and group psychotherapy could ever have developed—whether out of Bergson's *duree* and Freud's libido and transference method my elaborate system of action and training methods could ever have arisen. As the history of these techniques shows the answer is for all three men in the negative. Their contributions were great and prepared the ground, but it took the theorist and practitioner in one, a theory which grew out of and with practice, a synthesis of actor and observer, to give the new methodologies the peculiar concrete shape they have.

Theory of Action

Out of the "action-centered" climate of this generation which sociometry and sociodrama have helped to prepare theoretic schemes of action have grown which seem to fulfill many expectations. Fragments of a theory of action are scattered throughout many of my publications, but I have never focussed them into a special book exclusively dedicated to it. Because of my seniority in the field of action theory and action technique—and as sociometric theory grew out of my early preoccupation with a science of action—it may be of value to compare Parsons' recent and elaborate effort with my own position. This does not pretend to be a critique of Parsons' scheme, it is a critique *restricted* to the *initial* phase of such constructions and insofar as it reflects upon some current trends in sociometry.

I found that going back to the origins, the *status nascendi* of a work of art or science, is a fruitful way of learning many things about its end result. This is particularly true about theoretical schemes which frequently emphasize their "withdrawal" from empirical reality by saying that they have no direct bearing upon empirical generalizations, nor upon methodology. But, similar to works of art, theoretical schemes do not emerge after a mere first "throw", they are worked over again and again so that their *status nascendi* and many of their early stages become unrecognizable; they are hidden from visibility, they have been censored

and erased, only the final product is left over for public inspection and judgment. If the theoretical scheme is a flawless product of construction like Clark Maxwell's generalizations of electro-magnetic theory—which Hertz could use as stepping stones and prove their usefulness for experimental research soon after their formulation—a voyage “a la recherche du temps perdu”, back to the “trauma” or “victory” of birth is not necessary. But when a theoretic scheme is suspect of flaws in its basic construction—Kierkegaard's critique of the Hegelian system of philosophy is an example—it is worthwhile to look at the sources from which the theoretical scheme drew its blood. Parsons' scheme appears to have been particularly stimulated by two types of sources; the stimulus from one is admittedly the work of Weber, Durkheim, Pareto and Freud. Considering that this theoretical scheme is an action scheme, it is interesting that the authors upon whom he builds his own system are genial observers but certainly not genial actors. The second type of source which can be suspected by a connoisseur, but which is hidden as the references to them are nil or scant, is the empirical and action research of his contemporaries. One could judge that they may have been the greatest immediate influence so that the scheme almost appears “as a theoretical epiphenomenon, an academic abreaction to current action research.” If a theoretic scheme is successful in synthesizing many older theories into a more inclusive system this is a great achievement indeed. In that area Parsons' effort is always interesting, in parts brilliant; but where he tries to swallow the social and action research of our generation, there he is deficient. He might have been wiser to call his social system “A General Theory of Behavior” instead of “A General Theory of Action.”*

FORMATION OF GROUPS IN STATU NASCENDI

Since the early days of sociometry the questions: “What is the structure of *new* groups?” and “What factors enter into their formation?” has been an object of inquiry. In the Parent and Family Test I could observe the profound effect of the first meet-

* See Parsons, Talcott, *The Social System*, The Free Press.

ing upon sociometric choices and decisions and the rapid formation of group structure. Roger Barker[†] made a more systematic study of this problem. It is significant that in recent years the formation of groups in *statu nascendi* again arouses the attention of sociometrists. Particularly revealing is a French study "Selectivity and propinquity"[‡] which points out the high degree of indifference shown by members of a group as to who are their partners in a specific situation. As the atmosphere of that study is highly informal one would expect a considerable amount of spontaneity and tele operating in their choices and rejections of partners.

Here follow some of the hypotheses which old and new researches in this area suggest. 1) The structures of groups formed by total strangers deviate from chance and show a fair degree of organization and cohesion from the start. 2) "Unstructured groups apparently do not exist. The myth of the unstructured group has come into sociometry from the Gestalt and topological schools whose contribution to group research has not been an entirely unmixed blessing. 3) The structure of groups formed by total strangers is influenced by the structure of the groups from which the individual members came; there is a carry-over. 4) An extension of hypothesis 3 is the following one: Social stereotypes or social conserves exercise an insidious influence upon the spontaneous activities and decisions of the members and distort their choices and rejections. 5) The apparent *indifference* and *apathy* frequently found in the choice of partners is of great importance. One of the most neglected aspects of sociometric group research is the dynamics of neutrality. Whereas choice and rejection processes have been studied systematically, neutrality has been persistently ignored although it has been the third member of the original sociometric trichotomy choice-rejection-neutrality. But the effect of physical proximity and propinquity upon interaction is only apparently physical and mechanical; it seems that there is here an old value system influencing interaction rooted in our religious and ethical heritage; it commands: "Try to get along with everyone and accept everyone whom you find in your proximity. Be friendly and try to like everyone whom you happen to

[†] *Sociometry*, Vol. 5, p. 169, 1942.

[‡] See p. 135 in *Sociometry*, Vol. 14, No. 4, 1951.

meet and who happens to be next to you, your neighbors, your coworkers or your life partners.”

CONCLUSION: A SCIENCE OF PEACE

As we enter into the second half of the twentieth century social scientists everywhere are in a mood for helping. Everyone wants to do therapy however remote from its strictly medical meaning. The advent of group psychotherapy and sociodrama may have prepared for such a mental climate. There is a trend in sociology towards a “clinical sociology” and “sociatry”, in anthropology towards “anthropotherapy”, in theology towards “theotherapy”. Sociometry sits at the controls, watching the trends and seeing to it that the trend does not go astray into the prejudiced waters of “the applied”. Beyond all therapy the trust has been growing that the new objectivity of sociometry which enables us to measure and predict will continue to till the soil for a *science of peace*.

GENERAL HYPOTHESES AND RECOMMENDATIONS
FOR FURTHER RESEARCH

BOOK I

1. Mankind is a social and organic unity. A science of mankind begins by distinguishing mankind from the "human societies". Mankind encompasses all human societies which ever existed but it was not until recently that mankind has entered our awareness as a separate system, a historically growing and tangible actuality.

2. Mankind as a whole develops in accord with definite laws.

3. The tendencies which traverse mankind become apparent on the surface as attractions, repulsions and indifferences which must be related to an index of biological, social and psychological facts.

4. The socio-emotional crosscurrents of plus and minus sign, attractions and repulsions, which flow between individuals and groups are forms of energy distribution. According to sociometric theory there are two forms of energy, "conservable" and "unconservable" energy. An illustration of conservable energy is the law of conservation of energy as postulated by physics, or the "cultural conserve" as described by sociometry. An illustration of unconservable energy is spontaneity. (For extensive discussion, see J. L. Moreno, 1923, 1933 and 1934; William A. White, 1934; J. L. Moreno, 1940; Zerka Toeman, 1944; P. A. Sorokin, 1950; and J. L. Moreno, 1950.)

5. The distribution of energy in social space takes place in accord with the law of social gravitation. The sociometric formula of social gravitation is "People 1 (P1) and People 2 (P2) move towards each other—between a locality X and a locality Y—in direct proportion to the amount of attraction given (a_1) or received (a_2), in inverse proportion to the amount of repulsion given (r_1) or received (r_2), the physical distance (d) between the two localities being constant, the facilities of communication between X and Y being equal.

Including number and distance it reads as follows: People 1 (P1) and People 2 (P2) move towards each other in direct proportion to the amount of attraction given (a_1) or received (a_2), in inverse proportion to the physical distance (d) between locality X and locality Y, the residences of P1 and P2 respectively, the

facilities of communication between X and Y being constant."

"Attraction given" and "attraction received" is provoked and directed by various criteria, sexual, axiological, etc. The misunderstanding that attraction and rejection as defined by sociometrists is exclusively "private" or "emotional" or "liking" and "disliking" has not been entirely dispelled. These terms are adjectives only to *functional* and *operational* processes. (For extensive discussion, see J. L. Moreno, 1934; Samuel A. Stouffer, 1940; John Q. Stewart, 1941 and 1942; E. L. Thorndike, 1942; Raymond E. Bassett, 1946; Paul Deutschberger, 1946; and J. L. Moreno, 1950).

6. The psycho-organic stage of society in which the interactions of the members of a group were physically more intimate preceded the psycho-social stage in which we live (the psycho-organic stage was characterized by the absence of social organs of communication such as the alphabet, language, numbers and mathematics, music and other normative and cultural conserves).

7. The group theory of evolution postulates that a gradual evolution from simpler to more complex social patterns takes place in accord with a sociogenetic law. By simple social patterns we mean sociometrically simple and patterns resulting from a minimum of criteria, as among infants and pre-technological societies. By complex we mean patterns which are sociometrically complex and resulting from a large number of criteria. The larger the number of criteria operating in a society the more is formation of groups stimulated and the greater becomes their complexity. (For more extensive discussion, see J. L. Moreno, 1933 and 1934.)

8. Human society has an atomic structure which corresponds to the atomic structure of matter. Its existence can be brought to an empirical test by means of social microscopy. (For more extensive treatment, see J. L. Moreno, 1932 and 1934; George A. Lundberg, 1937; Georges Gurvitch, 1936, 1937 and 1950; J. L. Moreno, 1945, 1947 and 1950.)

9. The present human society is a preferential system produced, to a considerable extent, by the sociodynamic effect, also called the sociodynamic law. It is divided into a first and second part. *The first part* states that the income of emotional choices per capita is unevenly divided among the members of the group regardless of its size or kind; a comparatively few get a lion's share of the

total output of emotional choices, out of proportion with their needs and their ability to consummate them; the largest number form an average income of choice group within their means to consummate them and a considerable number remain unchosen or neglected. The scores when plotted form a J curve, about two-thirds of the population receiving scores below chance and a relatively few obtaining high scores. Though an equal number would have been expected on the basis of chance, the proportion of isolates was generally greater than the proportion of stars. *The second part* states that if the opportunities of being chosen are increased by increasing the size of the group and the number of choices per capita, the greater volume of choices continues to go to those at the top end of the range (the "stars") in direct proportion to the size of the group and to the number of choices permitted per capita, furthering the gap between the small star group, the average group and the neglected group. The excess "profit" gained by the already overchosen numbers must be ascribed to a chain-communication- and network effect which operates in cases of non-acquaintance (with the chosen individual) in addition to the score based on acquaintance (with the chosen individual). The direct factor is a proximity choice, the indirect factor, a symbolic or collective choice. An individual, A, may score high in his face-to-face group, but because of his "role" (he may be a baseball player, an actor or a senator) his ultimate score may turn out to be a multiple of the proximity and symbolic scores; role corresponds here to what is usually meant by status. (For more extensive treatment, see J. L. Moreno, 1934, 1943 and 1947, Mary L. Northway, 1952.)

10. A truly therapeutic procedure cannot have less an objective than the whole of mankind. (See J. L. Moreno, 1934.)

The hypotheses and postulates presented above cannot be accepted or rejected as articles of faith. The problem is not whether all social scientists agree that there are a number of natural social laws, for instance, a sociogenetic law, but that they investigate the matter by experiments of their own, so that a consensus of scientific opinion is established. If these forms of causation operate within the human group they must be just as verifiable by *other* than sociometric methods. Existence of a sociogenetic law can be easily examined: several parallel studies of the evolution of

spontaneous groupings from birth level up to the ages of sixteen, one in an Indian village, another in a Soviet collectivistic farm, a third among the Australian aborigines, should give comparable or contrary results with tested and re-tested sample studies in the United States. The same scientific attitude must be taken towards all other hypotheses and postulates named above. General socio-metric hypotheses have had great heuristic value by stimulating the productivity of research along specific lines. They have been built upon a large and still growing number of *specified* hypotheses. It is tacitly understood that cultural factors exert a constant influence upon their formulation.

HYPOTHESES. BOOK II

1. The earliest tendencies of structure in the evolution of groups are the stage of organic isolation (identity), the stage of horizontal and vertical differentiation, the stage of fusion of differentiated structures to forms of a new and higher identity, and the stage of cohesion, the integration and stabilization of group structure as a whole on a certain level of development; these are recurrent patterns; there is a halo effect of earlier stages upon later stages; they are found however extensive and complex the groups have become. (J. L. Moreno, 1916, 1918 and 1934; M. Naudry and M. Nekula, 1939.)

2. The formation of groups is not aimless or directed by chance. (J. L. Moreno, 1934.) Demonstration of the autonomous character of social reality, its deviation from chance is given by a social configuration test. (J. L. Moreno, 1938; Joan H. Criswell, 1939; V. C. Johnson, 1939; Uriel Bronfenbrenner, 1943.)

3. Every group has an underlying structure which differs from its overt manifestations. (J. L. Moreno, 1932, 1933, 1934; Helen H. Jennings, 1936; Joan H. Criswell, 1936; George A. Lundberg, 1937; Charles P. Loomis, 1939.)

4. Emotional and social expansiveness develop with age. (J. L. Moreno, 1934; J. McV. Hunt and Richard Solomon, 1942.)

5. Groupal attraction of the sexes develops with age; intersexual attraction begins at 2, is at a high point between 3 to 6 years; declines after the 7th year and reaches a low point between 10 and 11; from 11 to 14 it increases slowly. There is a first heterosexual

cycle between the ages from 3 to 8 years; a first homosexual cycle between the ages of 8 to 13 years; a second heterosexual cycle between the ages of 13 and 18 years; a second homosexual cycle between 14 and 19 years. (J. L. Moreno, 1934; Joan H. Criswell, 1939; Uriel Bronfenbrenner, 1943.) In each of these three cases an entire public school was studied, from the nursery up to the eighth grade. Retests were made and the time variable was considered.)

6. Attraction between racial and ethnic groups develops with age. Children begin early to pay an *excess of attention*, positive or negative, to members of the other sex or another race because of assumed esthetic and physical differences. There is no evidence that prejudice of children of other nationalities and races is caused *exclusively* by parental influence. There are variations. If the children are attracted to their parents or to the adults with whom they live they are attracted to whomever the parents are attracted, they absorb and share their biases. But if they reject their parents they may also reject their biases and reverse their feelings; they may become attracted to those whom the parents reject. As they break away from their attractions to the adults they may spontaneously begin to develop preferences of their own. The causes of these prejudices are increasingly related to the group of peers and to the norms and standards which they establish. Key individuals play a great role in the crystallization of norms. "Tele"-sensitivity for members of another ethnic group emerges at about the same time as that for sexual difference. According to some reports it develops later, according to others, earlier. As minorities grow older they break away from the majority group. (J. L. Moreno, 1934; Joan H. Criswell, 1936 and 1939; Eugene Horowitz, 1938; Marian Radke, 1950.)

7. Social cohesion develops with age. The cohesion of groups formed by children up to the ages of 6 or 7 is poor and weak; negatively it suggests dependence and attachment to parents and adults. During these early years the influence of parents reaches a high point. These conditions are indicated in the sociograms by a high degree of isolation and a low degree of mutual pair formations. The cohesion of groups formed by children from 7 to 8 years up to 14 years is on the increase, the groups become better integrated, the ties between the members are more constant and

stronger; the cohesion of the total group reaches a new high. The reading of the sociograms suggests that the influence of parents and teachers is on the wane, whereas the influence of peer groups grows; the cohesion of groups formed by adolescents between 14 to 18 years becomes stabilized. Their positions in the group foreshadow their future positions in the community at large. (J. L. Moreno, 1934; Douglas M. Moore, 1950.)

8. *A cleavage between groups of children and groups of adults emerges—a social cleavage, from about six to seven years on.* It coincides in our culture with going to school, but because of the potential readiness of the group structures formed at this age such a social cleavage would set in and grow in any other environment, even if there were no schools—as soon as “permanent” contacts with peers becomes possible in one way or another outside of the home. (J. L. Moreno, 1934; Douglas M. Moore, 1950.)

9. *There is a cleavage in formation between the two sexes from about seven to fourteen years, a sexual cleavage;* it reaches the high point of mutual withdrawing when the members of the group are about ten years old. From then on the sexual cleavage begins to wane but some form of it persists throughout the lifetime of groups. In groups of adolescents and adults in which both sexes participate sexual “sub”cleavages are usually found.

10. *There is a cleavage between races or nationalities—a racial or ethnic cleavage.* (J. L. Moreno, 1934; Joan H. Criswell, 1936.)

11. Children have no “spontaneous” aversion for other races and nationalities.

12. Children are attracted to members of the other sex because of esthetic and physical differences.

13. Group structures vary in direct relation to the chronological age of the members and to the duration of existence of the group.

14. Different criteria produce different spontaneous groupings of the same individuals.

15. The spontaneously underlying group structures and the status which individuals have within them have a definite bearing upon the conduct of each individual and upon the conduct of the group as a whole.

16. Formal, rigid groupings which are superimposed upon informal, spontaneous groupings by some authority are a chronic

source of conflict. *Clashes between groups occur in direct proportion to the difference between the freely chosen and the coercive status of their membership.* There is a negative correlation between group structures formed by "democratic"-sociometric procedures and group structures formed by "authoritarian" procedures.

17. There is a correlation between persistent sociometric status and the behavioral norm of an individual; there is also a correlation between the sociometric organization and the behavioral index of the whole group. By means of longitudinal studies the deviations from sociometric norms can be read in the sociograms; anti-social behavior and mental disorders can be foreseen.

18. Remnants of structures from earlier age levels return and are retained in later age levels.

19. Mentally retarded children show "retarded" group structures more frequently than average children. By retarded group structures we mean such structures which show a sociometric organization resembling those which are found among children one or more years younger, for instance, showing a "persistent" rarity of pair formation and of many unreciprocated choices, with a large number of isolates.

20. Stabilization of sociometric status is gradual, there is an early period during which individuals alter their choices frequently; this process slows down in time until a rate of change is attained, relatively constant for the group. It develops from early mobility to final stabilization, a) in proportion to the number of contacts made, and b) if the membership and size of the group remains constant. (J. L. Moreno, 1934; J. McV. Hunt and R. Solomon, 1942.)

21. The greater tendency of girls to form pairs the older they become should be tested on a large sample. It may be a clue to the following hypothesis: The female shows a greater tendency towards socialization than the male, a greater trend towards constancy of choice and the formation of stable groups.

22. The younger the members, the more important is the age of the individual; the older the members, the more important is the age of the group.

23. First choice and first rejection are the most reliable socio-

metric results. Unreliability and instability of choice grows with the distance from the first choice, the third more than the second, the fourth more than the third, etc.

24. Sexual affinities and sexual cleavages in groups of children appear earlier, are greater and more persistent than racial affinities and racial cleavages.

25. Hypothesis of the racial cleavage and racial saturation point : there is a point in group development in which a majority group cannot absorb and hold "additional" members of a minority group. This situation may manifest itself in two ways, a) withdrawal of one group from the other or of both groups from one another (cleavage), b) open friction (hostility and aggression). As soon as the minority increases its influx beyond saturation point either a racial cleavage or a racial conflict ensues.

26. Tele develops with the age of individuals and of groups ; it is weak and undifferentiated in young children. Differentiation takes many forms. As age increases the differentiation of sexual tele rises rapidly. As age increases the differentiation of racial tele rises rapidly from the level of no preference to the level of complete self preference.

27. The lower the sociometric status of individuals the more are they exposed to *injury* from the powerful members and cliques of the group.

28. When the members find full realization of their choices within their group the results do not require further validation. The sociogram is then an expression of the "now and here," an "existential" sociogram.

29. In communities where some of the members live in while others live out, as boarding schools, work settlements, etc., the living-in members tend to have, in proportion to their numbers, more sociometric affinities than the members living out (see Riverdale, p. 168-169).

30. Sociometric status and volume of interaction within a group are related. The higher the sociometric status of an individual the more frequently will he interact with members of the group. If the official norms and the sociometric criteria are identical his sociometric status and the volume of his interaction will tend to rise with the acceptance (identification) with these norms.

But if there is a cleavage between the official norms and the sociometric norms of the group, the sociometric status may rise in one and not in the other, f.i., the volume of interaction may rise only within the informal group and not within the official group.

31. The change in the sociometric status of individuals near the onset of the puberty cycle (which is often observed, see Book II) is due to their sociosexual development.

32. Social distance and sociometric distance are not identical. Social distance expresses the relation of symbolic groups, sociometric distance of concrete groups of individuals. Therefore, the social distance and the sociometric distance of a group may vary greatly.

33. Sociometric status is related to a concrete and specific group only, it does not suggest universal status or universal acceptance.

34. A sociometric score is the number of times an individual has been chosen, rejected or ignored by other individuals for a specific course of action.

35. The sociometric core of a group is the tele structure among the individuals.

HYPOTHESES, BOOK III

1. The sociometric status of an individual is defined by the quantitative index of choices, rejections and indifferences received in the particular group studied.

2. An individual with a lower sociometric status in a group where the group members' average tends toward a higher sociometric status is in a better position for integrating himself into the group than an individual having a high sociometric status in a milieu which averages a low sociometric status.

3. The sociometric status of an individual rises when the individual with whom he is connected by positive tele relations have a higher sociometric status.

4. The emotional expansiveness of communities can be measured by permitting its members unrestrained exercise of choices, to the point where their spontaneity and tele become extinguished.

5. The hypothesis of the sociodynamic effect claims that a) a

number of persons of a group will be persistently left out of productive contact and communication; b) the persistent neglect of some individuals is far beneath their aspirations and persistently favors others, out of proportion to their requirements; c) conflicts and tensions in the group rise in proportion with the increase of the sociodynamic effect, that is, with the increased polarity between the favored ones and the neglected ones. Conflicts and tensions in the group fall with the decrease of the sociodynamic effect, that is, with the reduction of the polarity between the favored ones and the neglected ones. This hypothesis has been brought to an empirical test and confirmed by many investigators. Sociometry is a neutral and objective agent; it does not imply that the sociodynamic effect is good or bad, it does not advocate therapy at all cost, but the questions have been raised whether a society without sociodynamic effect is possible. If such a society has ever existed or may exist in the future, and whether such a society would be superior to the present one. Many religious societies have tried to obliterate the differential character of the group by obliterating perceptions and feelings of differentiation within their own mind, in accord with their value system, that all men are brothers and equals, children of God. Differentiation then becomes a cardinal sin and sociometry the science of the devil. Another alternative is to accept the sociodynamic effect as our fate.

6. Extreme centrifugal (or extraverted) and extreme centripetal (or intraverted) organization of groups renders such groups low in stability and cohesion.

7. The hypothesis of the social atom states that a) an individual is tied to his social atom as closely as to his body; b) as he moves from an old to a new community it changes its membership but its constellation tends to be constant. Notwithstanding that it is a novel social structure into which he has entered, the social atom has a tendency to repeat its former constellation; its concrete, individual members have changed but the pattern persists.

8. Ratio of acquaintance volume to social atom volume.

a) The social atom volume of an individual increases in direct proportion to his acquaintance volume.

b) The individual whose acquaintance volume and social atom volume are constantly identical approximates an ideal sociometric

status; for him no social contact is lost, each turns immediately into a social reality.

9. With every change in the sociometric status of an individual a change in his behavior within the life setting is indicated.

10. Interaction Hypotheses.

The verbal "exchange" of an individual in interaction with others is an index of his sociometric status in the reference group.

11. The ratio of the volume of words given and received by individuals with whom he is involved in significant situations of their reference group increases or decreases in proportion with his sociometric status. If an individual is an isolate or neglected individual in the reference group the volume of words he will speak will be low in comparison with that of his sociometric partners who reject or isolate him. The higher the sociometric status of an individual, the larger will be the volume of words which is expected and accepted from him by other members of the group. The lower the sociometric status of individuals, the lower is the volume of words expected and accepted from them by other members in the group.

12. The higher the sociometric status of an individual, the more frequently he will be permitted to assume initiative in situations; the lower his sociometric status, the less frequently will initiative from him be expected and accepted. The higher the sociometric status of an individual, the more frequently will he terminate and conclude a situation; the lower his sociometric status the less frequently will he terminate and conclude a situation.

13. In the course of interaction between two actors the more warmed up one is the more warmed up the other tends to become. Spontaneity begets counter-spontaneity.

14. In the course of interaction between two actors the initial word volume spoken is a clue to the intensity of the sympathy or dominance of the actor.

15. Warming up Cleavage

In the course of interaction between two actors, if one is quicker on the pick-up than his partner this may obstruct or delay their smooth interaction.

16. The actor who is quick on the pick-up for a present situation and the actor who is persistently warming up towards a non-present goal often bypass one another. The one may have heat

but no endurance and clear vision of a goal. The other may have endurance and aspiration towards a goal but no presence of mind.

17. Indifference and apathy in the verbal communication of an individual towards aggressive verbal behavior of others in a given situation is a clue to a persistently poor sociometric status.

18. Psychodramatic tests have confirmed the hypothesis that the *body position* of the subject in the course of a testing or a therapeutic operation has a constant influence upon the feelings, thoughts and interpersonal responses. As the scene changes the subject may sit on a chair, lie on a couch or in a bed, stand up or move around; each position of the body stimulates a different therapeutic relationship.

19. The skill in the playing of roles is essential for adequate communication and development of the social self.

20. The ability to play collective roles is important for personality formation and adaptation.

21. The hypothesis of sociometric "twins". Identical sociometric status although the "individual" motivations leading up to them may differ widely, have in the majority of cases the same or similar sociodynamic consequences within their social setting. But at times there are fundamental differences. The study of sociometric twins may give us a specific answer to the old question why two brothers who come from the same social soil produce different life patterns, one may turn into a criminal, the other may become a highly conforming bourgeois.

(Identical individual sociograms; identical collective sociograms.)

22. Hypothesis of leadership. Leadership is a function of group structure. The form it takes depends upon the constellation of the particular group. The power index of a leader depends upon the power indices of the individuals who are attracted to and influenced by him. Their indices are again expressed by the number of individuals who are attracted to and dominated by them. The power index of the leader is, however, also dependent upon the psychosocial communication networks to which his referents belong and the position which the networks themselves have within the entire collective within which his leadership is in operation.

23. Hypothesis of constancy of choice. The choice of individuals, although it is of the greatest ethical importance that it be

made by that individual (and not *for* him) is by no means "individual". The individual is rather, consciously or unconsciously, the passage way for important collective values and aspirations. But as this passage way is not an automaton but a live, spontaneous agent, whenever choice emerges there is a meeting between the collective and private forces of the community. It appears that the seat of choice and decision is the cerebral cortex. Although the physiological perspective has no direct bearing upon this research it still points out the importance of "choice training". As choice, decision and action are central elements in the sociometric method, the development of these capacities is enhanced whenever a test is given or an experiment is undertaken by the individuals.

Choices have a tendency to be constant, that is, to be repeated in distant points in time in proportion to the *freedom for spontaneity* the individuals enjoy at the time of the test.

24. Hypothesis of social equilibrium, "sociostasis". If the outgoing and incoming choices of a group are approximately equal (1:1) its organization and the behavior of its members will tend towards equilibrium. This rule indicates the direction which group behavior takes but it does not suggest that 50 in and 50 out is the *optimal* distribution of social feeling in a group. In order to determine this a structural analysis has to be made. The optimum may differ from criterion to criterion and from group to group.

25. Hypothesis of social disorganization. If the majority of the choices go outside (centrifugal) of a group, its organization will tend towards dissolution and the behavior of its members towards irregularities. The trend towards dissolution of a group will increase in direct proportion to the number of outgoing choices and will reach its maximum when all choices are directed towards members of the outgroup and none to members of the ingroup.

26. Hypothesis of social "in-breeding". If the majority of the choices go inside the group (centripetal) its organization will tend towards infiltration because of overlapping of choice and the behavior of its members towards mutual irritation; with an excess of ingroup choices, an overwhelming majority of choices, an excess of ingroup rejections will be stimulated.

27. Hypothesis of sociodynamic decline, social *entropy*. The

cooling off of the emotional expansiveness of the members of a given community or the sociodynamic decline of interest in others has reached its climax when the influx of any new members into the community does not arouse its inhabitants to new choices: the collective spontaneity has reached its zero, its social entropy. Social entropy reaches its maximum when choices and rejections are entirely extinct. Indifference alone prevails. The group spontaneity has "withered away" and is replaced by an aggregation of individuals entirely left to chance.

28. Hypothesis of "ambivalence" of choice. When an individual chooses and rejects another individual in the same test the causes may vary. a) Two or more criteria enter into their relationship and mix up their feelings, for instance, A chooses B because he is sexually attracted to her, but he rejects her because she is a Negro. Here a private and a collective criterion are in conflict and produce an ambivalent choice. Another illustration is: A chooses B as a working partner but he rejects him as a roommate; the ambivalence is explained if the two criteria are separated and two different tests constructed. However, if a vague criterion is used, for instance, "Who is your best friend here?" an ambivalent choice might result. In this manner sociometric analysis is able to resolve so-called unconscious psychodynamics. b) If an individual is attracted to three individuals for the same reason and with equal strength he may put them on the same preference level. He will then have three first choices. But he has to decide upon *one* person whom he actually marries; that may produce some degree of resentment against the one whom he does marry because he could not marry all the three choices, at least in our culture and so ambivalence of feeling ensues. c) The ambivalence is at times due to the mixing up for roles in a sociometric choice, for instance, she is attracted to him as a provider, she rejects him as a lover, she is attracted to him as the father of her child, she rejects him because he is the son of her mother-in-law and she rejects him because he is a half-Jew. We see here that many factors enter into a "choice"; private and collective criteria, physical and axiological criteria. But whatever the dynamic factors are which enter into choice-making, the fact that a specific choice and decision is made by an individual indicates that the quantitative strength is, at least at the time when the test is given, in favor of

the particular individual chosen. d) The ambivalence may be due to internal criteria, to the autotele structure in mental patients.

29. The greater the contrast between official society and the sociometric matrix the more intensive is the social conflict and tension between them. *Social conflict and tension increases in direct proportion to the sociodynamic difference between official society and sociometric matrix.*

30. If a sociometric test is given in a community, the *resistance against participation* and giving a truthful response to the sociometric questions will be the greater, the larger the part of the population which is not included in the test; in Hudson, f. i., the staff was in some instances left out from the tests; they were to be chosen or rejected by the girls, but the staff members themselves were not asked to choose and reject in return. Interviews revealed that this produced uneasiness on both sides. The girls feared that it might leak out that they had rejected some of their own housemothers and other persons in authority and the housemothers resented that they had not been given a chance to express their own feelings towards the girls and the reasons for them and so they expressed them the more intensively, in the grapevines. *In order to break the resistance to participation it is therefore indicated that "all" members of a given population be made subjects and objects of the test.*

31. Resistance against participation in the sociometric test is often due to fear of revealing hostility felt towards certain members of the group; the reasons may be a) religious or ethical, for instance, "it is unchristian to reject another person, and still worse, to say so"; or b) pragmatic, "it may become known that I rejected certain persons and they may retaliate in kind." *If these objections are shared by a large number of individuals of the community, it is preferable to limit the sociometric test to the choice level. The level of sociometric consciousness of a given population determines the safety mark, the extent of the sociometric test (choice, rejection, neutrality).*

32. In order to break resistance against participation in psychodrama situations several techniques can be applied: a) ask the members to present a problem which they have in common, for instance, a group of individuals living in a given housing project, all facing dispossession. *If the members of an audience are di-*

rectly involved in an actual problem, persecuted because of their ethnic characteristics or threatened with dispossession of their homes, etc., their resistance to participation is low, regardless whether they are actors or spectators.

33. If the problem is not *real* but "as if" the resistance to participation decreases with the increase of the number of participants from the audience. "Participation in action" of all members of the audience is then the desideratum.

34. If the members of a group which has reached a mature objectivity of sociometric consciousness, respond freely as to their choice-rejection-indifference towards each other in reference to all social criteria which are active in the community at the moment, the warm up will lead them, by virtue of the dynamics of the situation in which they are involved, to deeper and more inclusive concentrated and articulate revealing of their social situation by means of instruments which are able to mobilize and expose more complicated expression. In other words, the true sociometric test is the basic first step in the unfoldment of ongoing social processes and cannot be bypassed.

35. A community has many "sociometric levels" which can be explored by various sociometric instruments. The *first* level may be reached through a sociometric test—the attraction-rejection-indifference pattern of the community is exposed. The sociogram may show that the community is broken up in three opposing groups; the conflict between these groups represents a *new* sociometric problem which can be explored through a series of sociodramatic tests. A diagram of the community may show that the three opposing groups are due to role antagonisms and role clusters arising from the conflict between an older and a new culture.

36. Place the sociometric investigator into the midst of several populations, not to give a test, but a) to arouse his warm up towards a given population and the warm up of that population towards him; and b) to test his sensitivity for the criteria most significant for it.

The investigator who establishes a rapport, enters into a maximum of involvement with a population and will choose the right criterion in the course of his warm up will provoke a wider and deeper participation of the population than the investigator who

gives the test coldly by means of a mailed questionnaire, for instance, or similar methods which try to reduce his involvement to a minimum.

37. The *size* of the group in group psychotherapy depends upon the emotional expansiveness positive and negative, of the members of the group.

38. Students are warned not to think that being isolated or unchosen is a "bad" situation, or being much chosen is in itself a "good" situation. Such thinking might lead to a "sociometric astrology". Sociometric findings are clues and guides for further investigation, they are not like the fixed position of a peck order. There are voluntary isolates whose air of determined withdrawal may instantly kill the tele towards them in the mind of their partners. They do not choose and they tell you by their manner or even overtly: "Do not choose me, I prefer to be alone." Furthermore, do not assume that the total structure of a group is "good" or "bad" because its cohesion is high or low. It often depends upon the criterion around which the group is formed. In a work group, for instance, in which teams of two are of advantage for greater productivity (see Handicraft group, p. 279), the twelve members forming six sociometric pairs represent an excellent operational structure.

The study of involuntary isolates or unchosen ones who make choices but *whose choices persistently remain unreciprocated* suggests that they suffer from states of anxiety and insecurity. They frequently do not have the spontaneity to respond adequately to a situation in which they find themselves unwanted. Their anxiety rises and when they try again and again unsuccessfully, their anxiety rises further; their tele perception is often not sensitive to differentiate clearly the individuals who choose them from those who do not.

39. A criterion which is significant in one culture may be relatively insignificant in another or entirely non-existent.

40. The outstanding single factor determining success or failure in group psychotherapy is the spontaneous choice of members or the spontaneous affinity between them. They must hang together by spontaneous affinities in order that one becomes a therapeutic agent of the other. It does not make any difference

whether these choices are mature decisions, the adequate result of sociometric procedure, or unconsciously acquired by an experiment of nature. But would these affinities have existed automatically as a matter of course, like we imagine that ants are chained together in an anthill, a sociometry would not have been needed and come into existence.

41. The choice of the therapist is frequently emphasized by psychoanalysts. *The choice of therapist in individual psychology has its counterpart in the choice of the participant members in group psychotherapy.* It is here, however, of far greater importance than in individual psychotherapy.

42. Not only the quality, but the "quantity" of emotional expansiveness is established in the formative age of an individual. His thirst to expand is early channeled by the social institutions surrounding him. In our culture it is the family which freezes his outgoing social spontaneity at a certain point. The greater the cleavage between the acquired and in adulthood expected range of expansiveness, the greater becomes the need for special, intermediary institutions to train his social spontaneity.

43. Injury proneness decreases with increase of social cohesion. Army platoons and crews of workmen should be organized along sociometric lines, so as to decrease the injury proneness of soldiers and workers.

44. The integration of a social class depends upon the degree of balance attained between its official structure and the sociometric matrix.

45. The maximum and final effectiveness of sociometric methods cannot be estimated adequately by experimental designs of any type. It requires total application to an entire culture and its practice within it for long stretches of time.

46. A "measure" of withdrawal from reality is the larger the number of *incorrect* "guesses" an individual makes of the relation which the individuals who form his social atom have towards each other, of the individuals who choose or reject him or whom he chooses or rejects or who choose or reject each other. This is a measure of what is often called a "withdrawal from reality."

47. Our social atoms and the changes which are registered in them are continuously interiorated as well as exteriorated. In the course of sociometric interiorization the individual has all the

individuals of his social atom and the relations between them interiorated. He can "send" messages (choice and rejections) out to them and can receive them without any external exchange taking place. The more such an interioralized process operates as an independent system the more the normal "sociometric paranoia" becomes a real one.

48. Sociometric paranoia is a "normal" condition of the socius. The more attention an individual arouses the more involuntarily or voluntarily he draws the normal paranoid trends, positive and negative, towards him (crucifixion).

49. It is a fallacy to talk glibly about "group decision." What is it, sociometrically? In order to determine change one has to determine the sociogram of the group in reference to the "change" criterion before (I), during (II) and after (III) the decision is made. The second phase involves the "warm up" of the members of the group. Just as there is no group acceptance there is no group decision. Behind these words the actual process is hidden. It is only through the exploration of the interindividual process that insight into the actual process can be attained.

50. The actual behavior of a subject is not identical with his symbolic behavior as expressed through words, drawings, pictures and other projection materials. Psychoanalysis and projection tests rely upon the symbolic behavior of the subject and must interpret its significance by means of an analytic code. It requires to be submitted to two types of analysis, besides the apperception of the immediate events an interpretation of its symbolism. In contrast with them psychodrama, role playing, sociodrama, sociometric tests and other group and action methods enter into direct contact with the actual behavior of subjects. Speech, movements, etc., are not seen as fragments but in their actional and interactional contexts. Changes are visible in the behavior and actions of the subjects which can be used for diagnostic as well as therapeutic assessments. The distinction between "analytic" and "operational" psychotherapies is founded upon the conditions described here.

51. All tests, diagnostic and therapeutic methods used at present in clinical psychology and psychiatry can be arranged in the form of a scale, using the degree of involvement of the protagonist and investigator and the degree of structuring of the material to which

they are exposed as points of reference. (Moreno scale of involvement.) *On one extreme end of the scale can be placed the inkblots of the Rorschach Test and Rorschach analyst—minimum structuring of the material and minimum involvement of the investigator—on the other extreme end of the scale can be placed psycho- and sociodrama with a maximum structuring of material and maximum involvement of the protagonist and investigators.* Nearest to the Rorschach end of the scale will come picture tests like TAT, Rosenzweig, etc., around the middle of the scale the psychoanalyzant and the psychoanalyst, nearest to the psychodrama end of the scale will come roleplaying and behavior in life itself. Such a scale may help the student to construct new techniques and discover their precise place in the scale.

HYPOTHESES, BOOK IV

1. The greater the original affinity between the newcomer and the parental figure of the group, the better will the newcomer be accepted by the whole group. The best chance for a central and rapid integration into the new environment is a "*mutual*" *first choice* between the parental figure and the newcomer.

2. The greater the original affinity between the newcomer and the key individual (outstanding star) of the group, the better will the newcomer be accepted by the whole group. Here a mutual first choice is the most desirable condition.

3. The affinity of the newcomer for the prominent members of the group to which he is assigned is more significant than *their* affinity towards him; centrifugal spontaneity is more essential to adjustment than centripetal spontaneity.

The question has been raised why 1) *first choice*, 2) *mutuality of choice* and 3) *centrifugal spontaneity* should be important for adequate group inclusion. The answer is that, just like in every "love", mutual love from the start of acquaintance on is an excellent beginning for continuous partnership; having chosen each other first creates a form of "axionormative" obligation to make good, trying hard to make their own decision stick. A person who loves although unreciprocated is still better off than a person whom everyone loves but who is not able to reciprocate. We have seen

from empathy tests that "Einfuehlung" and choice coming from one side only may increase the understanding and the love of the one for the other but it does not necessarily lead to therapeutic results; but if empathy runs both ways, from A to B as well as from B to A, then a condition emerges which is superior to and inclusive of transference as well as to empathy, it is the "tele" phenomenon.

The three hypotheses have been submitted to preliminary studies. Sociometrized groups have been compared with non-sociometrized groups. Sociometrically tested and assigned individuals make a better adjustment than non-tested individuals who are assigned hit or miss.

4. The structure of groups formed by total strangers in *statu nascendi* deviate from chance and show a fair degree of organization and cohesion from the start.

5. The effect of sheer physical propinquity upon interaction is often due to an "amor fati loci". We have heard subjects declare: "Here I am now (sitting, standing, walking, sleeping, etc.), I have to put up with it." Locus as destiny.

6. The effect of physical propinquity upon interaction is at times due to the principle of least effort; inertia, apathy and low spontaneity is then stronger than the tele; we have seen individuals who prefer to make as little effort as possible, to stay put wherever they are instead of moving nearer the one they like.

7. The effect of physical propinquity upon interaction is due to attraction to a *locus*, sitting at the table in the corner, near a window (light and sun), sleeping at a distance, as near the wall as possible—the choice of physical isolation.

8. The effect of physical propinquity upon interaction is due to attraction to an object, f.i., a special desk, a special room, etc.

9. The effect of physical propinquity upon interaction is rarely entirely physical and mechanical; there is an axionormative order operating: "Accept everyone whom you find in your proximity and try to get along with everyone."

10. Neutrality towards individuals is often due to a cultural imperative, an acquired response of ascetic unselfishness, an air of objectivity, an attitude of self reliance and independence.

11. In the semantic development of the infant there are three crucial moments: the first cry, the first sound and the first word. The sound matrix is prior to the language matrix. Taking the "sound" of the other precedes taking the role of the other. The infant is dependent, in the acquisition of language and social roles, upon the other, but he is not quite so dependent in the acquisition of his psychosomatic roles as, for instance, the role of the eater and the sleeper. There he is autonomous, he takes his *own* role. In the role of the soundmaker he is on both sides of the fence, he takes some of the sounds from the voice configurations around him, from the voices of other humans, from birds and animals, tinkling objects and the elementary sounds of nature, but he adds something to them from his own, spontaneous autonomy. *The body of the infant is a soundproducing instrument*; like from a musical instrument, a player can evoke sounds from it. As time goes on the infant may learn to play on it different and more sophisticated tunes; but he has something to start with, the physical spontaneity of soundmaking is an inherent skill of his body.

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The materials and illustrations in the book are drawn from institutions and schools. These institutions and schools are not responsible for the interpretations of the findings.

SELECTED GLOSSARY OF SOCIOMETRIC TERMS

This glossary is an essential part of the sociometric system. No concept has a meaning by itself. Terms and concepts are interdependent within the entire system. No one factor is an independent variable. The more significant the factor the more dependent it is upon others. Creativity for instance, has been found conditioned by cultural, interpersonal, sexual, economic and physical factors.

Clear definition of terms is always indispensable. A scrutiny of our definitions is particularly important at this time as the latest theoretical trends in sociometry (Northway, Jennings, Borgatta) return to the position taken in this book: primacy of material inquiry against excess of mathematical treatment; that analysis is not more "rigorous" just because it is mathematical; that mathematical rigor is worthless if the material upon which it is founded is flabby and if it encourages compromises in experimental design to suit statistical objectives.

Sociometric test (of a group) measures the *conflict* between the actual structure of a group which the members maintain at the time when the test is given against the structure of the group as revealed by their choices.

Sociometric test (of an individual) measures the *conflict* between the actual position an individual maintains within a group against the position revealed by his choices.

Sociometric questionnaire requires an individual to choose his associates for any group of which he is or might become a member.

Sociogram depicts by means of a set of symbols the two-way or interpersonal relations which exist between members of a group. If A chooses B this is only one half of a two-way relation. In order that the relationship should become sociometrically meaningful the other half must be added. It may be that B chooses A or that he rejects A or that he is indifferent towards A.

As the sociogram can be read by everyone who knows the symbols it can be considered as a *sociological alphabet*.

Isolate: not choosing and being unchosen on any criterion. He does not send out or receive any negative choices. His sociometric score is zero.

Reciprocated choice: choosing and being chosen on the same criterion, a pair.

Pair: choosing and being chosen on the same criterion, a reciprocated choice.

Triangle: three individuals choosing each other on the same criterion.

Chain: an open series of mutual choices on any criterion—A chooses B, B chooses A, B chooses C, C chooses B, C chooses D, D chooses C, etc.

Star: an individual who receives the expected number or more than the expected number of choices on the same criterion. [Note the difference between star and popular leader.]

Sociometric status, operational definition: the number of times an individual has been chosen by other individuals as a preferred associate for all activities in which they are engaged at the time of the test. It is obtained by adding the number of choices each individual receives on each criterion.

Sociometric score: the number of different persons who have chosen an individual on all criteria used.

Score of emotional expansiveness: the number of different persons whom an individual chooses or to whom he is attracted on any criterion.

Choices: choices are fundamental facts in all ongoing human relations, choices of people and choices of things. It is immaterial whether the motivations are known to the chooser or not; they are significant only as clues to his cultural and ethical index. It is immaterial whether they are inarticulate or highly expressive, whether irrational or rational. They do not require any special justification as long as they are spontaneous and true to the self of the chooser. They are facts of the first existential order.

Intensity of choice: this is measured by the amount of time actually spent with the individuals chosen against the amount of time one wants to spend with them. (See "Time as a Quantitative Index of Interpersonal Relations," Bibliography)

Social atom, operational definition: plot all the individuals a person chooses and those who choose him, all the individuals a person rejects and those who reject him; all the individuals who do not reciprocate either choices or rejections. This is the "raw" material of a person's social atom.

Conceptual definition: the smallest unit of the sociometric matrix.

Sociometric leader: 1) popular leader, 2) powerful leader and 3) isolated leader. *The popular leader* receives more than the number of expected choices on *all* criteria in which he and the choosers are mutually involved; the choosers have themselves a *low* sociometric status. *The powerful leader* receives more than the number of expected choices on all criteria in which he and the choosers are mutually involved; the choosers have themselves a *high* sociometric status. Through the chain relations which they provide he can exercise a far-reaching influence. *The isolated leader* receives less than the number of expected choices or, in an extreme case, not more than a single mutual first choice. This choice comes from a powerful leader who is himself the recipient of a large number of choices coming from a number of individuals who enjoy high sociometric status. The isolated leader individual may operate like an invisible ruler, the power behind the throne, exercising indirectly a wide influence throughout sociometric networks.

These are by definition sociometric leader types and should not be confused with what is called "a leader" in folk usage, magic or charismatic. Many other factors enter into their development, especially the phenomenon of the role, but however complex a leadership process may appear *in situ* its sociometric base is an indispensable clue for its deeper understanding; it should not be bypassed.

Sociometric cleavage: two groups of individuals in which self preference—that is preference for members of own group—rules out other-preference, that is, preference for members of out-groups. It is the dynamic reason for the tendency of a group to break up into subgroups.

The saturation point: is the point of maximum absorption of a population in power for a minority group, the point which a

population cannot exceed if it is to prevent a break-out of frictions and various disturbances. A given population may be saturated with a certain minority group at a given time. If an excess of members of the minority group move into the community from the outside in numbers exceeding this point, the delicate balance begins to break. In the case of a chemical solution its point of saturation for a certain substance may change, for instance, with the rise or fall of temperature. In the case of social groups, the point of saturation may change with the organization of the inter-related groups.

Sociodynamic law holds that the distribution of sociometric scores is positively skewed. The tendency in any particular group for more choices to go to few members is the sociodynamic effect. "This tendency is related to the development of the value system of the group. Values develop by becoming more precisely embodied in the persons of fewer members of the group." (See H. J. Hallworth, Bibliography)

Spontaneity is the variable degree of adequate response to a situation of a variable degree of novelty. Novelty of behavior by itself is not the measure of spontaneity. Novelty has to be qualified against its adequacy *in situ*. Adequacy of behavior by itself is also not the measure of spontaneity. Adequacy has to be qualified against its novelty. The novelty, for instance, of extreme psychotic behavior may be to such a degree incoherent that the actor is unable to solve any concrete problem, to plan an act of suicide, to cut a piece of bread or to solve a thought problem. (We speak here of pathological spontaneity.) The adequacy of behavior may be unnovel to a degree which results in strict rigid or automatic conformity to a cultural conserve. Such adherence may gradually obliterate the ability of the organism and the talent of the actor to change.

Spontaneity can be conceived as the *arch catalyser*, metaphorically speaking it has a procreative function. Creativity can be conceived as the *archsubstance*, metaphorically speaking it has a maternal function.

Role taking is "being" in a role in life itself, within its relatively coercive and imperative contexts, for instance, being a

mother, a father, a policeman, etc. The roles are social conserves, they have, or at least pretend to have, a finished form.

Role playing is "playing" a role, by choice, in a chosen setting, for the purpose of exploring, experimenting, developing, training or changing a role. Playing a role can take the form of a test or is an episode in the course of a psychodrama or sociodrama.

Technique of self presentation. The subject acts in his own roles and portrays the figures which fill his own private world. Psychodrama is here a form of individual psychotherapy. He is his own auxiliary ego, the physician may be the other. One of the first uses of the psychodramatic technique was in this individual form. It was and is an improvement upon psychoanalysis as a patient-physician relationship. Erroneously, psychodrama is thought of only in its group form.

Technique of role reversal. Its shortest definition is that the person A becomes the person B and that the person B becomes the person A. On the psychodramatic stage this reversal is meant as an actuality because for certain mental patients it is an actuality. It is not fiction or "as if." It illustrates the revolutionary aspect of psychodramatic logic. An abbreviated form of this technique is if A takes one of the "roles" of B and B takes one of the "roles" of A.

The mirror technique. The subject or patient is represented by an auxiliary ego who portrays him how he acts in the various situations of his life, how he really is as others see him. The spectators in the audience react towards him and discuss him as if he would be the real person. The real person sits in the audience and is often taken unawares. "He is physically present but not psychologically" (Ray Corsini), at least that is what is pretended. The real purpose of the technique is to let the patient see himself "as in a mirror," provoke him and shock him into action.

The technique of the double. The shortest definition is that two persons, A and B are one and the same person. This is another illustration of the psychodramatic logic. B acts as the double of A and is accepted by A as such. The degree of nonacceptance and the conflict derived from it between the individual and his double is an important phase in double catharsis.

CURRENT SOCIOMETRIC TERMS COINED BY AUTHOR

Sociometry, psychodrama, sociodrama, group therapy, group psychotherapy, warm up or warming up, roleplayer, roleplaying, audience participation and catharsis, situation test, group catharsis, action techniques, acting out techniques, action research, action methods, actor in situ, sociometric test, spontaneity test, isolate, star, racial cleavage, racial saturation point, emotional expansiveness, social expansiveness, sociostasis, surplus reality, sociatrist, sociotic, socios, bioatry, tele, social atom, cultural conserve, cultural atom, role test, axiodrama, physiodrama, hypnodrama, spontaneity quotient, social quotient, interpersonal therapy, interpersonal situation, interpersonal catharsis, interpersonal dynamics, psychological geography, sociometric networks, psychological home, auxiliary ego, role reversal, mirror technique, double technique, social microscopy.

CURRENT SOCIOMETRIC TERMS INTRODUCED BY OTHER AUTHORS

Interpersonal relations (W. C. Perry, 1927); participant observer (E. C. Lindeman, 1925); sociatry (Alfred McClung Lee, 1941); roletaking (George H. Mead, 1934); microsociology (Georges Gurvitch, 1936).

VEHICLES AND GRAPHIC INVENTIONS INTRODUCED BY AUTHOR

Spontaneous interaction diagram (1923); sociogram (1932); psychodrama stage (1923); space and movement diagram (1923); sociomatrix (*Sociometry*, Vol. I, 1937, p. 108), further developed by Stuart C. Dodd (*Sociometry*, Vol. III, 1940).

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