Analysis of a Schizophrenic Psychosocial Network

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Abstract

The amorphous concept of social support systems merits construction of a conceptually coherent theoretical model linked to social theory and amenable to empirical investigation. The social network paradigm is presented as such a model. The model is further defined in terms of the intimate psychosocial network, which has been empirically studied with the Pattison Psychosocial Kinship Inventory. The characteristics of the normal network are shown to differ substantially in the schizophrenic network. The structure and functions of the schizophrenic network are illustrated in a case study analysis. The schizophrenic network is shown to exhibit dynamics that generate and perpetuate psychotic behavior. A strategy for network intervention is described, based on the model of structural change in the network social system.

Substantial interest has been shown in the dynamic function of the social relations of schizophrenics. There has been a great deal of research devoted to how social relations might influence the development of schizophrenic symptoms, the maintenance of symptoms, and the resolution of symptoms. Note that the emphasis here is not on fundamental etiology, but rather the more limited purview of the effect of social relations on symptom genesis, maintenance, and resolution.

The study of pathogenic or patholytic social systems of the schizophrenic has been limited by the lack of both a defined conceptual domain of the "social system" and an empirical methodology to assess the domain. Over the past decade the paradigm of the "social network" has been developed in social anthropology (Leinhardt 1977). The social network approach affords an operational construct that can be used in both empirical research and clinical intervention.

This article presents a clinical analysis of the social network of a schizophrenic girl. The case study illustrates the potential clinical utility of the social network paradigm, as well as some of the salient psychodynamics in the operation of the social network of a psychotic person. Elsewhere, we have discussed in greater detail the theoretical, empirical, and clinical aspects of our approach to social network analysis as a general theorem in mental health (Pattison 1973, 1976, 1977a, 1977b, 1980; Pattison, Llamas, and Hurd 1979).

The Social Network Paradigm

The concept of the social network is that people do not exist in amorphous relation to society. Rather, there are finite sets of links between ego and others, estimated to be 1,500–2,000 persons (Mitchell 1969; Boissevain and Mitchell 1973). These persons are arranged in a roughly geometric space of varying psychosocial distance from ego. These may be considered "zones" of relationships (Boissevain 1974). We may consider five zones:

1. The personal zone: persons with whom one lives and has high investment.

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2. The intimate zone: persons of high psychosocial importance with whom one interacts frequently.

3. The effective zone: people with whom one interacts but who are less important; or important people with less interaction.

4. The nominal zone: people known, but of lesser importance and interaction.

5. The extended zone: people known about or linked through significant others.

Some 10 years ago, we set out to determine empirically the actual structure of social networks. We developed the Pattison Psychosocial Kinship Inventory to determine the number of people, relationships, and interactions that might obtain in social networks of both normals and various states of psychopathology. We asked subjects to list those persons who were "important" to them at this time, whether they liked them or not. In brief, we found that normal persons consistently and reliably named about 25 persons who were "important" to them. These persons were roughly allocated into four subgroups: family, relatives, friends, and neighbor-coworkers. Further, the interactions in this normal social network were characterized by frequent interaction, positive affect, intense affect, a strong instrumental component of assistance, and balanced reciprocity of affective and instrumental exchange between ego and other.

The above "normal social network" encompasses zones 1 and 2 of the larger social network of a person's life. In addition to the highly consistent finding of a stable social configuration of relationships, we also found major changes in this social network structure in some 20 different states of psychopathology. We defined this specific subset of social relations (i.e., zones 1 and 2) as the "intimate psychosocial network," and we proposed that it represents a fundamental social unit of existence.

The term "psychosocial" network is used because the relationships are defined in terms of psychological meaning to ego (cathexis in Freudian terms, field charge in Lewinian terms), while at the same time there is an observable social interaction that can be measured between ego and important others. As we shall see, meaning and social interaction are not necessarily covariant. For example, a dead person may have high psychological meaning that influences behavior; another person with whom one interacts everyday may not have a significant influence.

Further, we must note that the social network is different from family, extended kin, or social group; not all members of the social network are acquainted or interact with each other. Rather, the social network is a "social construct" of the links between ego and salient significant others. The significance of the social network is clearly seen when an intimate psychosocial network is examined in its entirety. At that point we can observe how the social network influences the person—although such observation would be difficult, if not impossible, were we to observe any one network member individually.

The Intimate Psychosocial Network of the Schizophrenic

The general characteristics of the intimate psychosocial networks of schizophrenics (SNs) stand in marked contrast to normal networks. Among the most salient differences are the following:

- SNs are much smaller in size—between 8 and 12 persons.
- SNs often include persons with whom there is no long-term relationship—for example, a fellow patient, ward nurse, or new acquaintance.
- SNs often exclude socially salient persons, including long-term acquaintances or fellow siblings.
- SNs do not exhibit joint affective-instrumental exchange, but relations that are either instrumental or affective.
- SNs are characterized by emotional ambivalence.
- SNs have asymmetrical relations, with nonreciprocity of affective and instrumental exchanges between ego and others.
- SNs exhibit a collusive closed system of relations that sequesters the patient from external social influence and functionally captures the patient within the closed social system.

**Method of Case Study**

Jane, a 22-year-old Oriental single female who was living at home while attending college, was psychiatrically hospitalized with acute symptoms of a florid psychosis. Her symptoms included paranoid ideation, persecutory delusions and hallucinations, marked psychomotor agitation, flat affect, and cognitive and conative disorganization.

Jane was selected for social network intervention because the

\(^{1}\)Not her real name.
ward staff noted that whenever members of her family visited, her acute symptoms would dramatically diminish, only to reappear after the visits.

Jane completed the Pattison Psychosocial Inventory and named nine important people: Mother; Father; Sister #5, age 14; Sister #4, age 15; Sister #1, age 26; Brother-in-Law (husband of Sister #1); Favorite female cousin; Best girlfriend at college; Estranged boyfriend.

We then interviewed the parents to determine whether there were other persons with whom Jane had important relationships (keeping in mind the inclusion and exclusion phenomenon). They reported that the family had few social relations and few relatives in the United States. But they did add six more persons of potential significance: Sister #3, age 21 (a professional student living 300 miles away and omitted by Jane); Jane’s former longtime boyfriend, who is a frequent visitor; Mother’s older brother, Uncle #1; Mother’s younger sister, Aunt #1; Husband of Aunt #1, who is Uncle #2; Neighbor, an older woman who lives next door.

A review of the family history revealed important characteristics of Jane’s social network. Her family had immigrated to the United States from the Orient before the children were born. The father was a college graduate with a good civil service job. As an alien, he had remained socially aloof from his co-workers and had no neighborhood friends. The mother had not learned to speak English until the last 5 years. She therefore remained in the home almost exclusively. She had been taught English by the Woman Neighbor, who was the only neighborhood contact for the entire family.

In the past 5 years, the mother’s older brother (Uncle #1) and younger sister with husband (Aunt #1 and Uncle #2) had also immigrated to the same city. These relatives afforded some social contact for the family—but lived several hours distant, thus reducing contact.

The mother expressed great reluctance in involving her relatives, because of the family shame of having a psychotic daughter. She actively resisted the relatives’ involvement until the father asserted his willingness to comply. Significantly, Aunt #1 and Uncle #2 were the parents of Jane’s favorite cousin.

Both parents were reluctant to involve Sister #3, who had just entered graduate school and lived far away. Nevertheless they reluctantly agreed to fly Sister #3 to the city for a network collation. (We insisted on this because of the psychodynamic significance of absent family members, which is well described in the family therapy literature.) It is noteworthy that Jane, who is Sister #2, had omitted Sister #3 as an important person, which heightened our attention to this excluded member.

The former boyfriend was included because he was the only consistent “outsider” who visited the family home, and was in fact a good friend to all of the five sisters and the parents. He had stopped dating Jane over a year ago, but remained a friend of the family.

In summary, we were presented with a psychosocial network that the psychotic patient described as having nine members—note the psychotic network size ranges from 8 to 12. Further examination of spurious membership revealed the inclusion of an estranged recent boyfriend, and the exclusion of a sister. The relative resources are intrinsically small—with interaction limited by distance. The family as a whole, as well as the patient, has almost no contact with significant others, except for one cousin, one girlfriend, one neighbor, and one former boyfriend. Thus the linkages of the social network are overexclusive. There are almost no linkages to the external world, and the patient lives in a tight interlocked matrix of relationships.

### Organization of the Network Collation

The parents were charged with contacting and collating all of the network members for a 3-hour evening session. All the identified members arrived on time. The therapist (EMP) introduced all members to each other, since many had not met, and indeed did not even know who many of the members were. The purpose of the network collation was explained as an effort to assist the patient in her treatment.

Jane was then brought to the room. EMP repeated his previous explanation to Jane and to the network. Next EMP asked Jane to sit beside him in the center of the room. Jane was asked to place each network member in a specific space around her that seemed to best represent the relationship between Jane and that member. This is a direct application of the technique of “family sculpting” (see figure 1). This technique is useful because it symbolically represents each object relationship with ego,
it pictorially graphs out the network constellation to all, and it organizes the network so that the therapist can readily identify each sector of the network.

Several observations can be made of the organization:

- Jane places herself in alliance with Father.
- Mother and all the female sibs are placed in opposition to Jane.
- The excluded Sister #3 is placed in direct opposition to Jane.
- The female cousin and female best friend are placed in alliance, alongside Sisters #4 and #5.
- Estranged boyfriend and former boyfriend are placed in alliance.
- Mother is placed in alliance with woman neighbor.
- The three older relatives are placed at a distance from the rest of the network.

A final word must be said about therapeutic concept and method. Our approach is predicated on systems theory. We are operating on the assumption that major and significant dynamics are found in the operation of the system. The therapeutic strategy is aimed at changing the perceptions of roles and role behavior of the members of the system. This is akin to the "structural change" method of family therapy adapted to the larger social network (Pattison et al. 1975).

The role of the therapist in this large complex system may be likened to that of an orchestra conductor. The conductor arranges the players in sections (dynamic alliances revealed in the sculpting arrangement). Then the conductor asks the orchestra to play. When different sections play out of tune or different tunes, the conductor identifies the discrepancy, at-
tempts to resolve it, and attempts to achieve congruent playing of the same tune by all sections.

To continue the analogy, if an individual player (patient) tries to play (behave), while different sections play different tunes (different role definitions and expectations), the player (patient) will be placed in conflict about which tune (behavior) to follow. The result is player (patient) decompensation.

The therapeutic task of the conductor (therapist) is to listen to each section of the orchestra, instead of to individual players. Each section will play a specific tune (dynamic theme). The identification of section tunes (alliance themes) allows for identification of tune (theme) discrepancy. Resolution of discrepancy makes it possible for the entire orchestra (social network) to play the same tune (role behavior). Consequently, the individual player (patient) now hears one tune (role expectation), and may respond by playing the same tune (behavior) that the entire orchestra is playing.

The next technical problem for the conductor (therapist) is to direct the orchestra (social network) to play a healthy tune (healthy role definition) instead of playing an unhealthy tune (psychotic role definition).

In the following transcript, the reader may note both discrepant role definitions, and healthy or unhealthy role definitions. As the network intervention progresses, we can identify the efforts toward discrepancy reduction and healthy role definition.

**The Network Intervention**

**EMP:** Come in, Jane.

**Jane:** Oh no! What are you all doing here? (Cries) I love you all. This is too much. I love you. I love you. (Parents rise and run toward Jane.)

**EMP:** (Asks parents to return to seats. Approaches Jane, asks her to take his hand and come with him to sit down.)

**Jane:** I will if they stay where they are. (Jane sits down with EMP.)

**EMP:** (Asks Jane to place all persons in sculpted arrangements. She does so.)

**EMP:** (Restates purpose for meeting. Thanks everyone for interest and concern expressed for Jane by coming to meeting.)

**EMP:** Now, Jane, tell us what your problem is.

**Jane:** (Points to estranged boyfriend): He is the problem!

**EMP:** Why is he the problem?

**Jane:** He stopped going steady. He lied to me. He made a promise to be mine forever. Why, he is the problem!

**EMP:** (To estranged boyfriend): Is that so?

**Estranged Boyfriend:** Yes. She became too jealous. She became suspicious of me if I even talked to another girl in class.

**Jane:** That's not true! You lie. I was not jealous. You just deserted me.

**EMP:** Can anyone else help us here?

**Old Boyfriend:** Yes. That's the same reason I stopped dating Jane. She acted the same way with me. She was always jealous of other girls. I couldn't stand it.

**Jane:** You're both alike. I hate you both. You're bad. You both lie.

**EMP:** Can anyone else give us some information?

**Best Girlfriend:** I think it is terrible, the way both these boys treat her. Jane is sweet and wonderful. She isn't the jealous type. I've known her for 4 years now, and I can tell everybody what a wonderful person she is. She's not the bad one like these boys say.

**Favorite Cousin:** That's right. I've known Jane for 6 years. We are really close. She is certainly not the jealous type. Why, she is just the opposite. She always says how much she loves her sisters and cares for them.

**Brother-in-Law:** Well, I don't know about that. From what I see, the boys are right on target. I think Jane is really competitive with her sisters. She sure acts jealous with her sisters.

**Jane:** No! No! I love my sisters, they love me! I'm not jealous of the...

**Sisters #4 and #5** (Crying): That's right. We love you, Jane. (They reach out and embrace Jane).

**Sister #3:** Well, I don't! I hate Jane. I loathe her. I can't stand her. I hate you. Jane!

**Jane:** I hate you. You never were any good. I'm better than you. I'm prettier than you. I hate you.

**EMP:** (Asks parents to return to seats. Approaches Jane and Sister #3 from attempting to hit each other): Wait a minute here. Sisters #4 and #5 say they love Jane and are not competitive. But Sister #3 is just the opposite?

**Sister #1:** That's not quite right. Jane is jealous and competitive. She's been that way all the time. But it's been worse with Sister #3. In fact, they haven't talked to each other for 5 years.

**EMP:** Is that correct?

**Sister #3:** Yes. I hate her. I haven't said a word to her for 5 years.

**Jane:** Yes. I hate her. She's the cause of all my problems.

**EMP:** You mean your boyfriends are not the problem?

**Jane:** No! Sister #3 is my problem. I hate her. She hates me. I want to kill her. Then I'll be okay.

**EMP:** Well, now. Can anyone tell how this problem came about with Jane and Sister #3?

**Mother:** I don't know. But they were born 9 months apart. They were like twins. I dressed them the same and made them twins. They always fought. They always tried to outdo each other. Jane became the pretty one. She got all the boys. Sister #3 was the brainy one. She got the grades. I think Jane is jealous because Jane flunked college, and Sis-
Sister #1: Yes, that's true. They were always competitive. I think Jane tried to hold onto her boyfriends to prove that she was better than Sister #3.


Boyfriends: Us too! Boy oh boy, are we relieved—it's not us!

EMP: Well, let's review here: We all seem to agree that the boyfriends are not the source of the problem. Yes? (All nod.) But there does seem to be disagreement about Jane acting jealous and competitive.

Cousin, Best friend, and Sisters #4 and #5 all agree with Jane. Sisters #1 and #3 and Brother-in-Law, along with boyfriends, see Jane the opposite. How can we resolve this? Who can give us some more information?

Mother: Well, the girls sure fought a lot.

EMP: Explain.

Mother: Well, first it was just Jane and Sister #3. Then it got gradually worse. Jane started to fight with all of them.

EMP: Is this true?

Sisters #4 and #5: Yes. She fought with us. She hit us. We hate her! Jane: I hate you. You're all alike. I hate you all.

EMP: Jane, you hate all your sisters?

Jane: Yes.

EMP: Why?

Jane: They hate me first. They don't like me. They avoid me. They don't want to have anything to do with me.

EMP: Is this true?

Sister #1: Yes, it's true. I hate to admit it. It's true. Jane was always so nosy, so snobby. So competitive. We couldn't stand her. So the four of us sisters would always keep secrets from Jane. We would hide from her. We wouldn't let her play with us.

EMP: So the truth is that you four sisters did hate Jane, did keep secrets from her, did exclude her? (All four nod guiltily.) How come this kept going on in the family? Why didn't somebody go to the mother? Why didn't she do anything to change the bad pattern?

Mother: I tried. I tried. But I can't.

EMP: What did you try?

Mother: I saw Jane attack her sisters and they'd fight back. I tried to interfere. But Jane would attack me. She'd hit me, and bite me, and scratch me. I was afraid of Jane.

Jane: You better be. I hate you, Momma. You love them. You don't love me.

Mother (Cries): Jane, Jane, how can you hate me? I love you.

Jane: No you don't. And I don't love you. Daddy, Daddy, I love you, you're the only one who loves me. (Jane turns to her father and they mutually embrace in tears.)

Father: There, there. Of course, I love you. Don't cry.

EMP: Let's see what's happening here. Father, do you always comfort Jane?

Mother: Sure he does. He's the only one who can handle her. You see, this is what always happens. I just can't handle the girls. It gets so bad when the girls fight that I have to call him to come home from the office to straighten things out.

EMP: Father, do you do that?

Father: Yes. Reluctantly. I don't see why she can't handle the girls. I have to make up all sorts of excuses to leave the office in the middle of the day. I think a mother should be able to handle her own daughters.

EMP: Do you all agree that mother should be able to handle her daughters?

Uncle #1: Of course. But I think it is a shame that Mother is left alone.

Neighbor Woman: She is alone. She had no one to talk to. She couldn't even speak English. I taught her. I'm her only friend. I try to make her feel better. But she's treated so badly.

Uncle #1: Well, this is really bad news. I didn't know this was going on. My sister shouldn't be treated like this. Things have got to change. Father, you have to stop this!

Aunt #1: This is surely shameful. We should have known about this. We wouldn't have let this go on. (To Jane) You are indeed bad! You have no right to attack your mother. You should not hate your mother. You should love your sisters. You must change!

Uncle #2: That's right. Jane, you must respect your mother. You should not run to your father. I expect my daughter (Cousin) to respect her mother. You are my niece. You should act respectfully to your mother. Running to your father is no excuse.

Uncle #1: Right. Running to the father is not an excuse in a good Oriental family.

Cousin: I guess that's right. I never saw this side of Jane. I always saw the sweet, concerned Jane. But, Jane, you must learn to love your mother and sisters.

Jane: No, no. I hate them. They hate me. (Cries—turns to embrace Father again.)

EMP: Well. Father—can you help Jane here? She wants to love Mother, but can't bring her love and hate together.

Father: I don't know—what do I do?

EMP: You can't allow Jane to see you as all good and Mother as all bad.

Father: Well, that's true. I'm not all good and Mother's not all bad. Jane, that's true. You shouldn't hold onto me.

Jane: I hate you! You don't love me. You're just like Mother. I hate you both. I want to get out of here. (Jane jumps up to run.)

EMP: (Restraints Jane gently by the hand) Wait, Jane. You don't have to run. Everyone is here because they do love you, even if they get very angry with you at times. You, too, can love them and still be angry with them. Is that right? (All members of network nod approval.) (Enemies are statements by members that you can love someone and also be angry.) (Jane starts to cry in heaving sobs.)
Mother: I love you, Jane, and I want you to love me. (They cry and embrace.)
Sister #5: I love you, Jane, and I want you to love me. (They cry and embrace.)
Sister #4: I love you, Jane, and I want you to love me. (They cry and embrace.)
Sister #1: I love you, Jane, and I want you to love me. (They cry and embrace.)
Sister #3: It's been 5 years. I want it to stop. I want to start over. Forgive me. It's been half my fault. I do love you, even if we have fought all our lives. (Sister #3 approaches Jane with arms open.)
Jane: I love you. Forgive me. I love you. (Jane and Sister #3 stand locked in a crying embrace. Everyone in the room cries.) (Jane sits down. Everyone quiets down.)
Jane: I hate you. I hate you all. I don't trust any of you. (She tries to jump up to leave. EMP again gently restrains.)
EMP: It's all right. This is a new experience for you. Everyone is getting the story straight. Everyone has to learn to tell the truth now. You can feel love and hate together, just as they do.
Jane: No, I can't.
EMP: Yes, your family and friends here can help you now.
Jane: I hate them. They hate me.
EMP: Well, let's see if that's true. Is that true?
Father: Well, I love Jane. But she frightens me when she says that she hates me. I just want her to love me.
EMP: Hate and love go together. You have to learn not to be frightened by Jane's hate. Now don't act frightened. Respond to Jane—now.
Father: O.K. Jane you frighten me. But I can live with that, I guess.
Mother: Me, too. If you have to, feel hatred, but don't forget the love. (Ensuing members reiterate the theme of integrating love and hate.) (Jane listens and then proceeds to tell everyone how hard it is to both love and hate them at the same time.)
EMP: (Concludes session with negotiation with different members for specific tasks including: 1. Relatives to visit mother frequently and decrease her isolation. 2. Family members to take turns visiting Jane in hospital. 3. Sister #3 to write regularly to Jane. 4. Girlfriend and Cousin to remind Jane of lessons learned here. 5. Father to stop playing refuge for Jane. 6. Sisters to support mother in her role as maternal authority. 7. Mother to practice her new role of self-responsibility.)

Subsequent followup revealed that family members visited regularly with Jane, and adhered to the above negotiations to a substantial degree. The family reported great satisfaction with the network intervention. Some 4 months later, Jane was asymptomatic.

The apparently positive resolution of symptoms, however, is not the point of this report, since Jane also received medication and individual therapy. The network intervention may have contributed to the therapeutic process, but that can only be an inference. Rather, we wish to use this transcript to highlight the dynamics of the social network process, both in retrospect and in the process of change.

Analysis of the Network

The initial sculpting arrangement provides clues to the dynamic alliances that unfold in the network operation. However, it does not indicate what the content of the alliance themes will be.

The patient externalizes her network conflict onto a relatively neutral and external member (estranged boyfriend). The network accepts this externalization before the session.

The attempt to maintain the externalization and the image that Jane is good is attacked by the two-boyfriend alliance. They cannot initially overcome the network acceptance of externalization to protect the network status quo. Jane is reinforced in her externalization and good-bad object splitting by the Cousin-Girlfriend alliance in coalition with the Sister #4 and Sister #5 alliance.

The therapist identifies the discrepancy. A marginal network member (Brother-in-Law) serves as a catalyst to "re-frame" the issue, not in terms of boyfriend relationships, but in terms of sister relationships. This allows Sister #1 to clarify the conflict, which can then be consensually validated by the sisters and the mother. At the same time, the behavior of the sisters reveals the exclusionary behavior that serves as the reality core for the paranoid elaboration by Jane. Further, the more primitive level of competition for maternal love is revealed in mother's rearing of the two "twins." This fundamental competition is acted out ultimately in the mutual 5-year estrangement.

Thus, we see that the intimate family dynamics are quickly revealed and explicate the dynamic sources of the paranoid symptomatology. The inability of Jane to resolve good-bad object splitting is related to the network operations. The sisters deny their collusion and reinforce denial. Meanwhile, two different network alliances split in their perception and defini-
tion of Jane as either all good or all bad. To the boyfriends, Jane is an all bad object. To her cousin and girlfriend, Jane is an all good object. The network alliances perpetuate and reinforce the good-bad splitting within Jane. Jane cannot resolve her denial and splitting processes because in part the network is maintaining them.

There is a similar good-bad splitting between mother and father used by Jane. The parents are socially isolated with few relatives, and no friends or neighbors. Thus, there are no external reality inputs to influence parents' roles, and the parents reciprocally reinforce the good-bad splitting by Jane.

Mother is supported only by the neighbor woman, who does not have enough potency and reinforcement by others to strengthen mother's role function. Both mother and father protect the status quo—avoiding potential familial shame and guilt—by keeping the few relatives at a distance.

In sum, we have a small closed social network, relatively devoid of modifying external connections. The dynamics of network operation provide a pathogenic source of interpersonal relations, and further serve to reinforce pathological dynamics of operation.

The intervention with the network reveals the externalization defense. Clarification of the nidus of conflict makes it impossible for the network to maintain secrets, collusion, denial, or discrepancy. An alternative healthy resolution of basic object splitting and ambivalence is presented, and actually experienced and practiced in reality. Dysfunctional role behavior is identified, and alternative role definitions are offered. The members practice interaction in the new roles. Contracts are explicitly negotiated to reinforce the new role allocations and to "open" the network to broader member interaction. As a result, the patient is now confronted with not only a redefined role for herself, but a set of modified roles for other network members. Further, some steps have been taken to identify common new themes of network response to the patient, which are not only consistent throughout the network, but also consist of a set of more healthy and reparative social responses to the patient.

**Summary**

The concept of social support is operationally defined as the "intimate psychosocial network," which is a subset of the larger personal social network. In contrast to the normal network, the psychotic network varies in most parameters of structure and function. These differences are illustrated in the case study, which we consider a rather typical psychotic network. The dynamics of the network operate both to generate and perpetuate psychotic symptoms. A strategy for therapeutic network intervention is presented, based on the principles of structural change in the network social system.

**References**


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Special Report: Schizophrenia

Single copies of Special Report: Schizophrenia 1976 by Samuel J. Keith et al. are available free of charge from the Center of Studies of Schizophrenia. Multiple copies will also be supplied to requesters who wish to use the report for teaching purposes. The 58-page booklet summarizes recent research in schizophrenia, with special emphasis on work carried out by investigators who have received grant support from the National Institute of Mental Health. The major research areas covered in the report are Diagnosis, Genetics, Biology, Psychophysiology, Psychological Functioning, Family Studies, Studies of Populations at High Risk, Childhood Psychoses, Borderline Conditions, and Treatment. Requests for the report should be addressed to the Center for Studies of Schizophrenia, National Institute of Mental Health, 5600 Fishers Lane, Rm. 10–95, Rockville, MD 20857.