Chapter 22

SCHIZOPHRENIA: SOME QUESTIONS OF DEFINITION IN CULTURAL PERSPECTIVE

MURIEL HAMMER

INTRODUCTION

In the current professional literature about schizophrenia or about psychopathology in general, there are a number of issues on which one finds flatly contradictory assertions, as well as statements whose implications are contradictory. Some of this discordance of view is apt to be found in any field in which investigators in quite varied disciplines are actively engaged; but it is my impression that the amount of disagreement and the levels at which it occurs are unusual. Schizophrenia is a single disease, or several diseases, or a subcategory within a disease, or not a disease at all. It is primarily perceptual, or a cognitive, or an affective disorder. It is transmitted genetically or socially. It occurs about equally or quite disproportionately in different populations. It is or is not common in "primitive" societies. Patients never function well again, or some patients function better after a schizophrenic episode than they ever did before. It involves high arousal, or low arousal, high anxiety, or low anxiety; social insensitivity, maternal rejection, or maternal overprotection; isolation, overcrowding, nonconformity (or "deviance") and overconformity. Examination of the literature in the field would yield a virtually endless list of physiological, psychological, and social findings and counterfindings.

The reasons for this state of affairs seem to involve identification of cases (i.e. instances of the phenomenon), methods of study, and more fundamental problems of definition and perspective. To begin with, people are probably studying different things. We are driven by the impact of phenomena we do not quite understand to produce a category on whose criteria for membership we do not quite agree. We then try to study the characteristics of the members we have placed in that category. At best, we find some characteristics on which we agree and use those to refine our subsequent assignment of membership and definition of criteria. But, if the initial assignment of members to the category is too arbitrary or too varied, this progressive refinement of criteria may not occur, and may be replaced by constant alterations of criteria without increased agreement or conceptual clarity. Categories like "personality" or "race" are in some ways
similar. To take the latter as an example, if some of us were assigning membership to a particular racial category on the basis of blood type, some on the basis of social label, some on geography, some on genealogy, and some on skin color or hair type, our results would surely not be entirely consistent. The situation is even worse if we have each studied populations whose bases of selection are not clear and which therefore contain unknown proportions according to the various criteria. The populations studied are then both heterogeneous and incomplete, and characteristics found for one sample are not too likely to be true of others. This seems to approximate the situation found in assignment of members to samples of “schizophrenics.”

What Is Schizophrenia?

For any real phenomenon, there is no single or definitive answer possible to a question of this form. If I ask, “What is a circle?” I can give a definitive answer in terms appropriate to the abstract system in which it is involved. But, such questions as “What is man?” “What is life?” and even “What is an ocean?” yield fundamental aspects of an “answer” in many domains. For example, the history of man, life, or ocean is a fundamental part of knowing what it “is;” “circle” has a history, certainly, but its history does not enter into its fundamental definition.

To the extent, then, that schizophrenia is “real,” it can have no precise and ultimate definition. However, like other phenomena (e.g. man, life, ocean, cancer, or anemia), it should be capable of fairly precise definition within some domain of interest. If the phenomenon fits poorly into the domain, the definition will be difficult and imprecise. For example, although the acoustic domain is highly appropriate to the study of language, language fits poorly into the acoustic domain, and its definition within that domain would be most confusing. It may be that “schizophrenia,” or “insanity,” has a comparably poor fit in the domain “illness:” while a portion of it fits into part of that domain, the portion that does not may be crucial to the understanding of the entirety or any part of it.

The fundamental problem of definition in schizophrenia lies to an important degree within the more general problem of definition of psychopathology. A major part of this paper will consist of an attempt to utilize the cultural domain in seeking a framework for such definition. This is not to say that psychopathology as a whole fits into the cultural domain; it surely does not. However, it is within the cultural domain that psychopathology is in fact defined, differentially for different cultures; and at least in terms of present knowledge, it may be strategic to try to formulate the definition in cultural terms. Then, within the context of such a definition, it will be possible to suggest a perspective more specific to schizophrenia, involving considerations regarding group structure, modes of cultural acquisition, genetic transmission, and group survival.

The definition and perspective to be presented here are suggested tentatively, not in the expectation that they are adequate to solve the relevant problems, but rather in the belief that the concepts most widely employed require substantial reconsideration.

CULTURAL DEFINITION OF PSYCHOPATHOLOGY

There is nothing special or surprising about cultural variation in conceptions relevant to psychopathology, since such variations are likely to be found for any
other conception which one might be interested in exploring. One major distinction in the significance of these variations applies here: For some concepts, there are invariant criteria appropriate to certain purposes which permit the investigator to ignore cultural variation (except in the tactics of data-collecting); for others, there are not. Kinship, for example, is systematically different in different cultures, but for purposes of analyzing genetic connections, there is a criterion independent of our own and others' kin systems. For psychopathology or its subcategories, there is no presently available independent criterion. There have been some attempts to develop such a criterion, but it seems impossible as yet to say whether psychopathology will yield to such an approach. "Crime" and "property," for example, cannot be defined independently of cultural usage, which is inherent in the concepts. It may be that psychopathology includes both aspects in its wide range. General definition of any concept which essentially involves cultural usage requires some examination of cultural variants, and abstract formulation at a level that does not include specific cultural content and, therefore, does not include specific behavior.

In this section, some attention will be given to cultural usage regarding psychopathology in this society and some others, and to some of the attempts to develop independent criteria through symptom-seeking. A tentative definition of psychopathology in terms of noncongruence in social interaction will then be suggested and partially developed, before turning to consideration of its possible conceptual relevance to schizophrenia.

Criteria, Symptoms, and Incidence

It is, perhaps, of special interest, in considering the appropriateness of the medical framework for psychopathology, that some of this society's more fundamental axes of definition in mental illness are more like those used in defining phenomena like crime or social status, than those used in defining physical illnesses, such as tuberculosis or heart trouble. *De facto* definition of the mentally ill, particularly for schizophrenia, is based largely on an individual's behavioral modes, in interaction with others, in the light of the cultural norms. This is the kind of definition used for crime and for social roles more generally; it is not, except tangentially, the kind of definition used for most illnesses.

The more "ordinary" course of definition of an individual as ill is a process initiated by some kind of subjective discomfort to the patient (rather than to others) which he (or someone to whom he communicates information about the discomfort) interprets as possibly relevant to medical treatment, and on the basis of which he seeks confirmation and follow-up of this interpretation from a physician. This more "ordinary" process does, of course, occur for many psychiatric patients. However, it appears to be more affected than in the case of physical illnesses "by social and administrative pressures and by the attitudes and beliefs of contiguous figures in the immediate environment." For psychiatric illness in general, *de facto* social definition by nonphysicians in contact with the patient is a crucial part of the process (e.g. see Cumming?), in ways that are more comparable to definition in terms of "delinquency" or "community leadership" than "heart trouble" or "tuberculosis." In the case of the latter illnesses, the physician may say that the patient does or does not have heart trouble or tuberculosis; the degree of concern expressed by the patient or others is essentially irrelevant to diagnosis. In psychiatric illness, the doctor
must accept the social disturbance as given: It is a symptom; it is relevant to diagnosis, and in addition, it is both socially and psychiatrically important regardless of the diagnosis that may be given.

In our own culture, a number of different patterns are collectively called psychopathology and partially distinguished in practice from a number of overlapping patterns which are included in mental retardation, delinquency or criminality, sometimes sin, perhaps saintliness, ambition, genius, incompetence, and mediocrity. Some of the behavior patterns which we classify with psychopathology are not so classified by some other cultures or by our own in some of its historical traditions. Visions, for example, and calls to religious mission, independent of recognized religious institutions, are now apt to be treated medically in this society rather than sanctified. This is not a cultural universal.*

There are also several fairly well-documented culture-bound syndromes, in the sense that their incidence is essentially restricted to one or a few cultural groups. This is not to say that they have no aspects in common with more widely distributed psychiatric difficulties, but only that, as behavioral syndromes, they are specific to their particular cultures. As described, most of these syndromes are specific not merely in the content of the phobic response, for example, but also in the sharpness of definition of the episodes and apparent absence of pathology prior and subsequent to an episode, or between episodes if they are recurrent. Among these are the Malayan "latah," "Arctic hysteria," and northern American Indian "pibloktoq," generally considered forms of "hysteria," although Opler* judges them "schizophrenic," and Wallace* hypothesizes calcium deficiency as etiological to pibloktoq. Among them also are the South Chinese "koro," which involves a pattern of extreme concern over shrinkage and possible loss of the penis, and which may be a special episodic form of psychosis;" frenzied anxiety" in parts of Africa and "amok" in Indonesia, also considered "schizophrenic" by Opler;""kayakangst among some Eskimo groups, involving phobic, possibly delusional and/or hallucinatory responses to being alone in a kayak, particularly when the water is clear and smooth. All of these are characteristically episodic in form and commonly involve no chronic difficulty, although some occasionally result in death or homicide during an episode; and some, like koro and kayakangst seem to have certain chronic features, in the latter case sometimes requiring skilled hunters to give up hunting entirely. As reported in the literature, these culture-specific syndromes seem to have sharper behavioral definitions than most psychopathology; but this may only be a reflection of the likelihood that they would not otherwise be noticed by the cultural outsiders who do the reporting. Another pattern, although it has not been reported as a culture-specific syndrome, is a seemingly high incidence of nonphysiological muteness in certain kinds of psychiatric cases among some native Australian groups.* This differs from the previous cases in that it is chronic, and that the associated psychopathology is again not
clearly defined. Such individuals are considered “silly,” this category may encompass schizophrenia.

Not merely the symptoms, however, but the very bases of classification for psychopathology, as opposed to other social domains, are not in universal accord. There is unfortunately no comprehensive analysis available of the varying bases of classification in different societies. Most of the descriptions in the literature tend to emphasize the “supernatural” character of non-Western conceptions relevant to psychopathology. For the purpose of comparing the different systems of categorization, this is a completely irrelevant issue.* A few points, however, may be suggestive.

Apparently, the Mohave make no clear distinction among psychiatric, psychosomatic, and organic illness. Their major axis of distinction in this realm is whether the illness is simple or multiple in type. However, there are aberrant behavior patterns not included in this category, such as the hyperactivity, aggressiveness, etc., of those young people who will later become shamans. According to Devereux, among a large number of cases known to him, “all turbulent and sexually hyperactive children whose behavior fitted the ‘patterns of misconduct’ expected from future shamans,” either did become shamans or witches or later became psychotic. Thus, so long as the “pattern of misconduct” is adhered to, it is not handled as illness. Transvestites, also, while not admired, do have a particular pattern to follow, and something like a “rite of passage” to the new (and tolerated) role, which is not treated as illness. (In some ways comparable in our own culture is the ritual of divorce, which is not widely approved, but is generally accepted as normal.) On the other hand, theft having been virtually unheard of among the Mohave, the perpetrator of a case of sexual assault and robbery of a relative is assumed by the Mohave to have been intoxicated, in an attempt to explain not the assault, but the incomprehensible act of robbery.

Among the Navaho, incest, insanity, and witchcraft form a kind of complex. The expected consequence of incest is not socially imposed punishment, but insanity. Witches are “assumed to engage in incest and other forms of repulsive and forbidden behavior,” and a person suspected of being a witch is likely to be considered mentally ill. The inverse, however, does not hold: One need not be a witch in order to be mentally ill, since accidental contact with a witch or intended victimization by one can produce mental illness.

Information from various groups, American Indian, Eskimo, African, and Australian, suggests both the idea that there is substantial basic cross-cultural agreement on the existence of psychopathology and possibly on some of its symptoms, like marked apathy and withdrawal, and substantial variation in the significance and handling of other patterns and symptoms, like aggressiveness, hallucinations, trances, and seizures.

In addition to lack of agreement cross-culturally, it also appears, from the several discussions of non-Western categorizations that have been published, that psychopathology is not a clearly defined domain within any culture. In all systems, both well-defined cases and ambiguous ones seem to occur.

It is thus apparent that there is a serious problem in achieving a generally applicable definition of psychopathology and,
would fit in the overlap of X with Y (i.e., pathology accompanied by recognized symptoms), and conversely, most of the members of this overlap section would be patients. (In other words, most patients have both pathology and symptoms, and most people with both pathology and symptoms are patients.) There would then be people with pathology, but no recognized symptoms, and people with symptoms, but not pathology. (The latter is suggested by the finding that only a small minority of the "normal" population is symptom-free.) If this paradigm has any realistic base, then recent trends in expanding the scope of definition of psychopathology on the basis of such symptoms, for both the practitioner and the layman, are moving much more into the Y (symptom) domain than the X (pathology) domain. Our symptom-based searching may lead to some appropriate cases of pathology, but also to a large number of inappropriate "cases," while still failing to include "true" cases which lack those symptoms. The following question may be asked, by taking only one very limited example, even if our methods of measuring "anxiety" were more adequate than they now are: Would an equivalent degree of anxiety under different sociocultural conditions be a valid indication of an equivalent degree of pathological anxiety, or might a given degree of anxiety be more "appropriate" to one set of conditions than to the other? And, under such conditions, might the absence or relatively low degree of the "symptom," anxiety, sometimes be a reflection of pathology?

This speculation is not raised for pure love of logic. It arises out of recognition of the importance, theoretically and methodologically, of the culturally varied ways of behaving, and of classifying populations. Cross-cultural research suggests that there is universality to the category, psychopathology, but it also suggests that the criteria for classifying as noble or heroic, eccentric, pathological, simple-minded, criminal, etc., are differently ordered cross-culturally and that they therefore probably define somewhat different subpopulations. I am not aware of any good reason for supposing that any one system has greater validity than others. These classifications have developed in
each instance in relation to certain social pressures for codifying, and thereby to some extent coping with, a wide range of behaviors. The classificatory requirements for these social purposes are somewhat different from those imposed by the attempt to analyze the phenomenon systematically. Although all societies undoubtedly engage in analysis as well as coping, the latter may be expected to be the more potent influence on classification systems, including our own, and there is no a priori reason to expect the requirements of the two functions to coincide. This does not lead necessarily to conceptual chaos. In fact, it seems to me that it should lead to clearer research emphasis on how things work, rather than on how schizophrenics, for example, are better or worse than that extraordinary medicoscientific category, "normals."

On the basis of the information currently available, confusing as much of it is, it seems unlikely that psychopathology, or any major (ill-defined) diagnostic grouping, such as schizophrenia, will ever be understood in terms of a single type of factor, organic or social.\(^*\) Psychopathology is manifested in the way certain behavior patterns fit (or, rather, do not fit) with ongoing social patterns, and it must be possible to arrive at such nonfit by many different paths. Certain extreme conditions of metabolism or of lifelong isolation from other humans,\(^\dagger\) may be expected to pro-

\(^*\) Even where a clear etiological agent is identified, as in psychosis due to syphilis, the fundamental problem remains that of understanding the relationship between the organic effects and the associated behavior, as well as the nonorganic variables also affecting such behavior.

\(^\dagger\) It is interesting that for the chimpanzee, which is by many physiological criteria the primate species closest to humans and which is probably the only nonhuman species that regularly makes and uses tools, a young animal which loses its mother and produce behavioral unfitness under any circumstances; the combinations of organic-social conditions that can produce various kinds of fitness or unfitness must be endless. Further, even where it is clear that a particular organic or social condition leads to a given consequence, the process cannot be understood without analysis of the interaction of different types of factors. For example, the knowledge that faulty sugar metabolism or ingestion of certain drugs results in certain alterations of behavior patterns should simply be the beginning of ascertaining the social and physical variables that are relevant and, particularly, the way they interact to produce one or another of the particular aberrant behaviors that may be observed. Similarly, in the case of Harlow's monkeys,\(^*\) although it was clear that the absence of the monkey's mother was the initiating agent of the monkey's abnormalities, the physiological and social processes by which maternal deprivation is transformed into, for example, failure to reproduce in adulthood, would be most valuable information.

This complex phenomenon or set of phenomena, which we call psychopathology, has multiple sources and multiple expressions. It seems to be known to all human societies, but with no specific common definition across societies. To try to cope with this diversity of specific phenomena in the context of apparent partial agreement regarding the more general phenomenon, a highly abstract characterization of psychopathology seems to be required.

thereby its primary teacher grows up (if at all) lacking any skill at toolmaking. For many primate species, the most socially adept animals seem to be the ones that manage to remain longest in close relationship with their mothers and perhaps older siblings.\(^*\)
Abstract Characterization of Psychopathology: The Sources and Modes of Noncongruence

Mental disorder is visible initially through noncongruence in the realm of social transactions. "Congruence" refers to the capacity to fit together, to operate jointly in the same system; it does not logically imply similarity, although similarity may, in certain situations, increase congruence. Anything which adds uncertainty to these transactions will increase such noncongruence and, in turn, increase the amount of visible mental disorder. There are many possible sources of such increases in uncertainty and, thereby, potential noncongruence. If metabolic, neurological, or other organic differences alter the ability to encode or decode the culture's symbol systems (like language), they will probably increase uncertainty; if habitually used codes of the participants are less concordant than is typical, uncertainty will increase; if the participants' demands from an encounter are discordant, uncertainty will increase, and so on. (It is important, here, that discordance does not refer merely to difference, but to differences which are not compatible, or congruent, within the situation.) One major source of noncongruence is discordant cultural codification. "Codification" refers to underlying systems of rules for behavior and its interpretation; as an example language is perhaps the most comprehensive of such underlying systems, although body posture, children's games, facial gestures, role definition, etc., also involve cultural codifications.

Abstract psychopathology involves a structurally significant lack of congruence in social interaction, where incongruity is predominantly attributed as idiosyncracy to a specified individual in the interaction. The phrase "structurally significant" refers to those aspects of interaction upon which depend the larger systems of interaction and self-maintenance of the participants. "Congruence" refers to the capacity for operating jointly, and it does not imply agreement or similarity, although these may at times constitute, or be involved in, modes of achieving congruence. The third element, that of attribution of the source of the incongruity, is the respect in which this differs, for example, from cross-group discordance, as in some labor disputes, or from cross-cultural encounters involving lack of congruence attributable to disparities in linguistic or other cultural codifications not yet adequately translated. For example, if an English-speaking monolingual individual has difficulty communicating with a non-English-speaking Frenchman, he does not automatically attribute the difficulty to pathology. The difference in definition here is clear even though many actual situations may not be clearly identified by the participants or other observers. That is, the definition by its very nature cannot include criteria which have a simple relationship to behavior, since the interpretation of the behavior in situational and individual terms is involved in the definition.

The core set of psychiatric patients in a population should therefore be those individuals whose social behavior is structurally incongruent with others under conditions where rapid mutual adaptation is improbable, and where attribution to a source other than the individual's idiosyncracies is also improbable. The probability of adequate mutual adaptation is a function of the personal and code characteristics of the participants, the nature of their connection with each other, and the nature of the connection between their interaction and the interactions of each of them with
Genetic Factors in "Schizophrenia"

others. The probability of attribution of incongruity to a source other than the idiosyncratic character of one of the participants is a function of recognition of differential codification, and of an actual or hypothesized third party to "represent society." If two individuals find themselves engaged in an interaction in which their behavior is mutually incongruent, the simplest recourse is cessation of the interaction. If this is not readily available, which it is not for spouses, or co-workers, or old friends, or employer-employee pairs, each of them is likely to alter his own behavior; consciously or not, to elicit more congruent behavior from the other. While this is occurring, and particularly while it is unsuccessful, there is a search for a plausible model for the confusion. The discovery that one's cointeractant is deaf, or not a speaker of one's own language, or not the person one took him to be, or suffering from a high fever or intense grief, can provide such a model, and serve as a guide for the adaptation of one's own behavior. Such adaptation, whether arrived at by chance or based on a plausible model, must meet the constraints imposed by the specific interaction, by the general connection between the interactants, and by the place of that interaction in the participants' general systems of connections. Failing such adaptation, whether for chancé reasons, or because of a misleading model, or because of the situational or more general constraints, the source of the incongruence may be attributed to the other interactant rather than to the interaction. An actual or hypothetical third party is necessary, at this point, to corroborate the judgment that the source is in the interactant rather than the interaction, and that it is in this interactant rather than that interactant.

This has so far been stated as a reciprocal relation. However, noncongruence need not be reciprocal; it is possible for X's behavior to fit into Y's system at the same time that Y's behavior does not fit X's system. This imbalance would potentially produce X's identification of Y as the source of noncongruence, but not vice versa. By the third-party criterion, the attribution might be corroborated, shifted to X, or shifted to the interaction. Any increase in third-party usage of models locating the noncongruence in the characteristics of the interaction rather than in one of the interactants should produce a concomitant decrease in application of the psychopathology model. Thus, for example, orientations which are in other respects polar opposites, like racism and cultural value relativity, share the tendency to attribute to the characteristics of group membership any noncongruence between nonequivalent interactants, whereas the liberal-individualistic orientation, using group-referred models relatively less, is more apt to attribute the source of the noncongruence to an individual interactant.

In addition to different sources of noncongruence, there are obviously also a number of different modes of noncongruence, and our diagnostic categories to some extent reflect these differences. As a rough classification, one might differentiate three modes: noncongruence in "stylistics" (high-order rules or values, as in psychopath); noncongruence in "pragmatics," the productivity or intensity aspect of behavior; or, in a sense, the actualization of behavior (activity-level, as in depression and manic-depressive psychosis); noncongruence in the "semantics" and "syntactics" of behavior (cognitive distortion, confusion, bizarre behavior, as in schizophrenia).*
These modes affect each other, but not quite reciprocally. Distortions at the lower levels of organization (semantic-syntactic) must affect the way units at higher levels are produced; higher-level distortions may or may not affect the units at lower levels. A syntactic or semantic disorder is therefore manifest also at the pragmatic and stylistic levels, whereas pragmatic and stylistic disorders need not be manifest at semantic or syntactic levels. (That is, they need not be manifest through low-order analysis; stylistic differences must operate through semantic and/or syntactic differences, but these may only be apparent in complex and high-order distributional analyses.)

It should be noted here that, when the basis exists for more than one mode of noncongruence, stylistic noncongruence is likely to be the most erratically evident, depending upon whether the relationship or events at hand are such as to elicit the relevant value disparities; pragmatic noncongruence generally tends to be the most potent mode in a continuing long-term interaction; semantic and syntactic noncongruence tend to be the most potent modes in a short-term or casual interaction.

In addition, the identification of the mode of noncongruence is, to some extent, dependent on the cultural disparity between the interactants (including "third parties"). Unrecognized cultural differences will tend to be interpreted as idiosyncratic differences, regarding, for example, semantic or syntactic usage characteristic of a given group but non-

matics," "semantics," and "syntactics" are borrowed from philosophy and linguistics, not because they are necessarily adequate to the classification problems of "psychopathology," but because the implicit orientation to classification in terms of behavioral modes at different levels of organization, without regard to pathology, seems to me to be a proper framework. congruent with usage in another group. The incidence of diagnosed schizophrenia (which is here considered to approximate a "semantics-syntactics" disorder) does appear to increase with cultural distance from the diagnostican (e.g., see Hollingshead and Redlich48). I do not suggest that cultural distance from the psychiatrist accounts for such things as class differences in incidence of schizophrenia, but it may be a component and may also be partly responsible for unreliability of psychiatric diagnoses.

Cultural Acquisition and Behavioral Congruence in Relation to Group Structure

To provide some background for discussion of schizophrenia in relation to social noncongruence, it seems necessary at this point to spend some time developing the relationship between group structure and cultural acquisition, with particular emphasis on social sources of noncongruence, before returning to a more direct consideration of group structure and psychopathology.

Culture may be viewed as the mode of organization of human societies. A cultural recruit, whether an infant without prior enculturation, or an adult already enculturated to a different culture, must, within limited time ranges, acquire mastery of many levels of organization of the cultural routines, low level components and their proper sequences (roughly, the "semantics" and "syntactics" of culture) in a number of areas of behavior, such as speech, facial gesture, "proxemics."49 locomotion, manual performance; the appropriate conjunction of these behavioral areas; their integration into simple routines, such as "going to the grocer to buy a bread;" their bases of selection and,
therefore, the conditions in any situation that are relevant to the criteria of selection; and so on.

Social functioning is dependent upon a fairly high degree of congruence in the behavior of interacting individuals; non-congruence is one factor crucial to assignment of the label "psychopathology." Thus, the social sources of congruence and the alterations in them that may be expected to produce different kinds of noncongruence require some special discussion. Some of these sources will be briefly described below.

Somewhat deceptively, the model for congruence that seems simplest is that of identity of social behavior. Behavioral identity, however, is just as apt to produce noncongruence as congruence. Code or system identity is more relevant to congruence. For example, if A and B behave as though each was dominant to the other, the resultant is noncongruence; whereas, if A and B each behave in accord with a code holding A as dominant to B, the resultant is congruence, at least in that aspect of interaction. True code-identity, however, does not occur. A and B are of necessity operating in different parts of a system, and their views of the system are differentially biased and therefore to some extent differentially coded. Codes acquired, maintained, and revised in the same system are nevertheless likely to have an adequate degree of congruence so long as they continue to operate within that system. Congruence is probably simplest to achieve if continuity within the system includes continuity of connection with the same set of persons.

However, shift of position in a system, as well as shift of system, requires code-revision or sometimes even code-substitution. If the position-shift is one which is regular for the system, it is likely that the foundations for the relevant code-revisions will already have been acquired; in either case there will ensue a transition-period in which there is high pressure for rapid code-adaptation, through instances of some degree of noncongruence. In the case of system shift, code disparity may be even greater. However, in some systems where personnel shift is high, modes of code-adaptation ("second-order rules") are themselves acquired as part of the code itself. These are not infinitely flexible, but they do permit relatively easy transition between some systems and some others.

Concord between code and situation is another factor relevant to congruence: If situations arise that are not covered by the code or codes in use, initial congruence is improbable. It may subsequently evolve, and in turn affect the code, extending its coverage to such situations.

Simplicity of code, including clarity of definition of situations, is another factor interacting with similarity. If there is code similarity, then clarity and simplicity make for congruence. If there is code-disparity, clarity and simplicity in each will tend to mark the disparity, making for initial greater noncongruence, and for a higher probability of one or both of the interactants subsequently being able to acquire the relevant aspects of the other's code.

Thus, although this is not exhaustive, among the factors relevant to congruence are code-similarity; continuity of connections; second-order rules, i.e., rules for rule-adaptation; adequacy of coverage of the code(s); and simplicity of code.

In considering some of the sources of noncongruence, we may start with bases of departure from code-similarity. For individuals acquiring codes in similar positions in the same system, departures from similarity may be based on pronounced idiosyncracy of the individual
organically, or of those in key positions with respect to his enculturation, or on the idiosyncratic impact of a tangential system (for example, the erratic impact of one's alien father's system, if one is raised primarily by mother's kin; or the special conditions created by contact with a half-sibling raised in another system, etc.). In addition, the amount of code-similarity for different positions within a system is not the same for different systems, since cultures vary considerably in range of situations encountered, cross-system effects, etc. Even when continuity in a system is achievable, continuity of one's position in the system is not. Some degree of code-adaptation and transformation must therefore occur as a universal process, and there are bound to be critical periods in this process. Particularly (though not only) during such periods, a number of factors, both internal and external to a given individual, may alter the process in ways which produce noncongruence relevant to psychopathology. For example, one's essential codification of parent-child interaction may have continuity, while transition from appropriate performance of the child role to appropriate performance of the parent role may be aided or impeded by other transformations already made or not made, like establishment of a nuclear household, or by demands from other systems, as with parents who are still students. Here, the adequacy of the code in terms of coverage and in terms of second-order rules becomes relevant. If it fails to provide the basis for rapid adaptation to the altered conditions, some kind of noncongruence is likely to result in interactions directly or indirectly relevant to the "parent." Such incongruence is most likely to be pragmatic, involving such things as the degree of absorption in the role. Since numerous roles must be performed simultaneously in any social system, noncongruence in the parent-child interaction-pair or in interactions involved in one's other roles must result from time and energy apportionment that do not meet the system-requirements. One response to this situation is overall alteration of activity level, upwards, to meet all demands, or downwards to avoid all demands; or upwards changing to downwards upon the failure to meet all demands by this method. (Ultimately, of course, code semantics and syntactics can also be affected, since they undergo constant small revisions in the course of being used.)

In this last example, continuity within a single large system was assumed. Other structural situations may be worth considering for contrast. If one does not remain within the same social system, one may move as an individual across systems, or as a member of a subgroup that moves to a new system. Movement as an individual, particularly during the initial code-acquisition period, may be expected to produce a highly idiosyncratic codification, which, depending upon the particular sequence of conditions of acquisition, may be generally noncongruent with others, especially at the semantic-syntactic level, or highly adaptable because of unusual development of second-order rules. If the higher-order rules (or, approximately, "values") in the systems of early interaction were not consistent with each other, or were inconsistent with the process of adapting to new systems, they may not have been acquired. The more expectable kind of disorder would be high-order or "stylistic" noncongruence.

Movement as a member of a subgroup, even during one's initial acquisition period, permits the acquisition of the subgroup's code, but in a form affected by whatever modifications occur in the subgroup itself.
as a result of its interactions in the new system, as well as by the more direct impact of the new system on the individual. Like the individual moving alone, the subgroup-member cannot acquire a single preexisting code; however, there is for him potentially clear priority of one code over others. If the subgroup is adequate to making that priority strong, the resolution of semantic-syntactic noncongruence is in effect undertaken by the group as a unit, and individual noncongruence of this kind becomes less probable; if the subgroup itself is weak, and the code priority is therefore ambiguous, semantic-syntactic confusion and consequent unresolvable noncongruence are more likely.

The “best” conditions for producing semantic-syntactic noncongruence seem to involve early movement, as an individual, as a member of a weak subgroup, or as a weakly linked member of a strong subgroup, and with a background code relatively weak in development of second-order rules.

The large literature on migration, social mobility, and acculturation in relation to psychopathology should be expected to provide considerable evidence on these hypotheses. In general, it does not, since the crucial characteristics of group condition, age of transition, and code characteristics are not often specified. However, several conclusions from these studies are indicated: Known psychopathology is generally more frequent in populations that have migrated than in stable ones, and the offspring of migrant groups may be even more vulnerable than their parents, suggesting breakdown in the crucial initial enculturation period for the children’s generation. Not all migrant groups show increased pathology. It may be hypothesized here that migrants should show no special tendency to psychopathology if: (a) their groups of origin are stable but loosely connected, with personnel shift, and its demands for second-order rules are incorporated in the code; or if (b) they are, for various reasons, able to maintain group connection. There is presently available evidence on only one part of this hypothesis. According to Murphy, based on material from Israel, Singapore, North America, Australia, and Britain, rates for psychopathology are relatively low where the migrant groups are large and the migrants maintain their group dependence, as compared with rates for migrant groups where the numbers or attitudes of either the group or the host country make maintenance of a strong group improbable. Similarly, other evidence indicates that populations recently acculturated through individuals’ movement into urban industrial centers seem to suffer heavily in psychopathological incidence; local or in-city mobility, which would seem more likely to involve individual than group movement, is associated with greater rates of psychopathology than nonlocal mobility, which includes both individual movement and group movement. Unfortunately, without a finer breakdown of the relevant variables, most of the data can be interpreted in terms of a hypothesized tendency for pathological individuals to migrate alone, as well as in terms of the hypotheses proposed here. Although such self-selection may be a relevant factor in interpreting these data, it seems not to account for some of them, such as the high rates in the offspring of certain migrants, or in host countries where the “attitudes” are opposed to maintenance of group ties.

It is plausible to expect that different

* The structure of the group from which the migrants come may also be expected to affect the manner of self-selection.
Some Questions of Definition in Cultural Perspective

I would like, first, to present in skeletal form, without elaboration, a series of statements relevant to the perspective to be discussed here, which are based on the results of research on schizophrenia, and most of which seem to have been found with some consistency across studies; and, next, also in skeletal form, a set of propositions which I believe constitute a plausible biosocial statement about schizophrenia, whose main points are consonant with the evidence available, and are testable, although they are not now demonstrable. Following this, I would like to elaborate on its major components.

Summary of Some Relevant Data on Schizophrenia: Genetic, Social, and Behavioral

1. Family and twin studies are largely consistent in finding support for the hypothesis that there is a genetic component in the transmission of schizophrenia. The studies differ considerably in method, in rates of concordance found, and in the hypothesized genetic mechanisms.  

2. Longevity and fertility are both reduced for schizophrenics, in those societies for which such data are available.

3. Incidence rates for psychoses of early and middle adulthood, and presumably for schizophrenia, have probably remained fairly stable, at least for several generations. Without better criteria of identification, however, it is of course not possible to say with confidence whether the schizophrenics (or cases of dementia praecox) of a century ago are properly comparable with the schizophrenics of today.

4. Incidence rates for schizophrenia in this society are strongly associated with a number of conditions, some of which are clearly social, some probably social: social class, residence in large urban centers, ethnic background, migration, nativity and nativity of parents, population density, and possibly degree of "disorganization" of the community.

5. Schizophrenia apparently occurs in all types of societies for which we have any psychiatric data. However, its incidence is sometimes reported as low for certain groups, such as "tribal" Africans or the Hutterites, and one re-
searcher denies that it occurs among nonacculturated Mohave Indians.22 Diagnosed incidence (in hospitals) is also relatively low in England, for example, as compared with the United States.20

6. It is exceedingly difficult to make general statements about the behavior of schizophrenics. In this area, especially, differences in research formulation and method, heterogeneity of sample, and failure to control for even the most obvious cultural factors (like educational level, in the study of speech patterns), make experimental findings and behavioral descriptions both noncomparable and questionable. High variability and idiosyncratic productions are the most common findings, almost regardless of what specific tasks or characteristics are under study. Two seemingly opposed tendencies emerge from a wide range of studies: something like an internal "set" which seems relatively nonresponsive to experimental manipulation; and unusually high responsiveness to the most immediate, as compared with slightly more remote, cues or reinforcements.64,67 (See, e.g. review by Maher,66 pp. 359-388, and Salzinger et al.65) One might hypothesize, as a resolution of this apparent contradiction, that only the most unavoidable of external cues can affect behavior governed by a strong internal set. Studies of some aspects of speech usage, the most readily analyzed form of microcultural behavior, indicate similar apparent paradoxes. Lexical variation is relatively con-

stricted, at the same time that vocabulary use is relatively idiosyncratic,68 and predictability (comprehensibility) is relatively low.67 Viewing all of these in information-theory terms, speech shows relatively high internal or intraindividual redundancy, combined with relatively low social redundancy. However, it must be noted again that even the few assertions that can be made about the general results of quite a large amount of research in this area are about hospitalized patients, whose performance may well reflect the impact of the hospitalization to so great a degree as to be quite useless or misleading in describing schizophrenia as such.

7. Two studies are suggestive of possible unusual ability in the nonschizophrenic kin of schizophrenics. In one, the average childhood IQ of the siblings of a group of schizophrenics was higher than that of a group of their peers.69 In another, an exceptional degree of "creative" activity (particularly musically) was found in the nonschizophrenic members of a group of subjects whose mothers were schizophrenic but who were not reared by their mothers, as compared with a seemingly comparable group of subjects whose mothers were not schizophrenic, and who were also not reared by their mothers.70

A general methodological caution should perhaps be reiterated here, although it has been referred to elsewhere in this paper, and by many other writers. None of the results of studies in this field are
Some Questions of Definition in Cultural Perspective

strong enough to stand up to careful scrutiny; all of them, genetic, social, behavioral, physiological, suffer from major weaknesses involving definition of concepts, identification of cases, etc., since these problems affect all research in schizophrenia. Without reviewing these problems concretely here, since careful reviews are available elsewhere.\textsuperscript{11,59} I shall simply accept what appear to be the most convincing conclusions at the present time. Some of these findings will be elaborated below. First, however, I would like to present a summary of the position that will be developed in the rest of this paper. Although the evidence has some inconsistencies, it is highly likely that genetic transmission is involved in schizophrenia. Since fertility and longevity are adversely affected by schizophrenia in populations for which such information exists, and since the incidence of schizophrenia does not seem to have decreased over the generations for which such information exists, some compensatory mechanism must operate.\textsuperscript{51,71,72} Not enough is known to limit the possibilities to a small number of such mechanisms. However, because the major domain of impairment in schizophrenia is social, and because group survival is fundamental for social animals, possible advantages to the group seem worth exploring as a source of the compensatory characteristics of schizophrenia.

The social impairments associated with schizophrenia seem to arise from altered modes of use of cultural forms, including those at a low level of organization (although not limited to that level), e.g. facial gesture, body posture, and distances maintained from co-interacts, low-order speech sequences. We will consider here whether this may imply advantages to be found in the same domain. Parenthetically, if the "state" underlying schizophrenia has highly disparate possible manifestations, as suggested here, some doubt may arise as to the appropriateness of studying schizophrenia primarily within the "disease" category.

Differences in modes of use of cultural forms may be presumed to have, among their sources, both differences in modes of cultural acquisition and differences in the conditions under which these forms are used. Somewhat different modes of cultural acquisition and usage seem to be associated with differences in the structure of primary groups, e.g. the tight-knit, highly interconnected small social group, in contrast with a loose-knit, more open set of contacts. One way of looking at this difference is in terms of different feedback systems in a communication network.

What is known of the incidence and characteristics of schizophrenia, on the one hand, and of acquisition of cultural usage, on the other, suggests that the structure of small social groups may be critically involved in determining the functional, or phenotypic outcome of this genetic character. A crude diagram of the proposed relationships is indicated in Figure 22–2. The influences among these factors are of course not one-way; for example, modes of cultural acquisition not only are affected by group structure, but also affect it. The directions of the influences, as indicated in Figure 22–2, are simply those selected for emphasis here. What is being argued here, is that the structure of the group affects social interaction directly, and also affects cultural acquisition, which in turn affects social interaction; that, in addition, internal characteristics (including genetic factors) affect both social behavior and the individual's modes of cultural acquisition; and that certain conjunctions of these influences, in social interaction, produce noncongruence of the types and under the
conditions that make for apparent psychopathology. Within this scheme, one set of variants is more apt than others to produce psychopathology of a schizophrenic type. As a final point (not diagrammed) in this argument, a possible relationship will be suggested between the genetics of schizophrenia and the survival of the group.

Cultural Modes, Group Structure, and Schizophrenia

Both genetic and social factors enter into the development of modes of acquisition of cultural codes and behavior.

Although it cannot readily be specified what the modes are or what the genetic or social factors are, the general statement must nevertheless be true, and the possibility of specifying such modes and such factors is real.

From what we seem to know of schizophrenia, it seems most plausible that what is genetically transmitted is not schizophrenia as such, but some factor(s) which, among its effects, influences the individual's mode of cultural acquisition; and which, under certain social conditions, is strongly inclined to schizophrenic disorders. Under other social conditions, the mode of cultural acquisition may be just as much influenced, but may produce reordering rather than disorder.

From the epidemiological evidence on schizophrenia in varying social contexts, a number of different interpretations are possible, and a number of social factors have, in fact, been abstracted as relevant. The ones suggested here have much in
common with the others that have been suggested. The difference lies mainly in
the hypothesized dynamics of the pro-
cesses leading to schizophrenia. Most
analyses of social factors have assumed,
explicitly or implicitly, that social stresses
produce psychological stresses which yield
an increase in the rate of schizophrenia.
This may well be the case but, in addition,
social factors may create more or less dif-
cult conditions for individuals’ responses,
regardless of psychological stress. Social
conditions may themselves be more or less
adequate for training appropriate behavior
(i.e. behavior which will be congruent in
the situation encountered), more or less
confusing in eliciting appropriate behavior,
and more or less amenable to adaptation of
response when noncongruence does occur.
It is this set of social processes that is
being emphasized here. For this purpose,
the most relevant social characteristics
seem to be group stability and interconnectedness.

Although the data are faulty, for the
usual reasons of inadequate methods of
establishing incidence rates, and inade-
quate specification of the social conditions,
 schizophrenia seems not to be strongly
associated with stable social groups. Since
the same groups do seem to “produce”
 schizophrenia when they break up, it seems
likely that it is the social difference, rather
than gene-distribution, that makes for cer-
tain differences in incidence of the dis-
order. As indicated earlier, there is an
apparently disproportionate incidence of
psychopathology, and generally of schizo-
phrenia, in most groups that have recently
migrated or gone through certain accul-
turation processes. In general, in such
groups, group structure must alter sig-
nificantly during the transition. Rarely is
it possible for whole groups to move with-
out loss of key individuals or key connec-
tions with others, even if the groups do not
splitter more completely. Several other
kinds of information, though far too spotty
to be relied upon, suggest an association
between schizophrenia and formerly tight-
knit groups that have undergone social or
geographical dispersion. Schizophrenia is
reportedly unusually infrequent in the
stable, tight-knit Hutterite groups and
nonexistent among the nonaculturated
Mohave Indians and unusually frequent
among recent migrants to large cities like
New York or Oslo. The disproportionate
incidence in the lower class in many urban
studies in the United States and England
may also be relevant. The social group
to which these studies as “lower class”
includes a large number of “declased”
individuals, representing not merely pov-
erty and unsteady, unskilled employment,
but disruption of social connection with
some continuing group. That the relation-
ship between social class and the incidence
of schizophrenia is more likely a function
of group structure than of “status” is sug-
gested by the finding that the lowest-class
group is almost entirely responsible for the
differential. In the New Haven study, for
example, there is a sharp dis-
tinuity between the highest four class
groups and the bottom (fifth) class group,
with no marked difference in incidence
except for that discontinuity.

One of the difficulties in interpretation
of the data showing higher incidence for
migrant groups, for the lower class, for
social isolates, etc. is the problem of self-
selection or “drift” of pathological or vul-
nerable individuals into those social condi-
tions. Obviously, if the apparent difference
in incidence merely reflects a pattern which
is a consequence of illness, it cannot be in-
terpreted as causally relevant. Without at-
tempting to review here, the several
studies directed to this problem (see re-
view by Mishler and Scotch\textsuperscript{59}, which results are inconsistent with each other, it may be suggested that the “either-or” form of the question is an oversimplification. There is at least a third alternative. If some proportion of “vulnerable” individuals select or drift into conditions that increase the likelihood of becoming schizophrenic, those conditions are still relevant to the process, and those vulnerable individuals who have least access to those conditions thereby have reduced risk of schizophrenia. Such access would seem, in large measure, to depend on the structure of the group in which one is a member, and its connections with other groups. In addition, the impact of the changed conditions, if one does “drift,” depends upon the modes of cultural usage which one has already acquired.

Even without regard to psychopathology, the relationship between group structure and modes of cultural acquisition is as yet insufficiently explored. There are the beginnings of a body of work indirectly relating the structure of the intimate social group to aspects of speech acquisition and usage,\textsuperscript{14-18} and studies of task-performance in relation to the structure of experimental small groups seem potentially relevant. One study of feedback loops in a rumor chain is also of interest here. A number of laboratory studies of rumor transmission (as well as the party game “Telephone”) show marked distortion of the message as it moves through a human transmission line. The group structure is typically fully linear: A to B to C to \ldots to N; though the circle may be closed (\ldots to N to A). In a study of rumor transmission in a “real” (i.e. nonlaboratory) situation,\textsuperscript{70} it was found that the message was transmitted without distortion and, in fact, that accuracy (based on an external factual criterion) might even improve in the course of transmission. The group structure in this case differed from the laboratory situation in two ways; departure from simple linearity, and continuity of connections through time. The structure may be diagrammed, as indicated in Figure 22-3. Since the group as a whole had continuity over the course of time, individuals who were found to be poor transmitters were simply corrected for or excluded. Again, the evidence is certainly inadequate, but if the major modes of organization of social networks were viewed as dichotomous (clearly an oversimplification), the hypothesis would be as follows. In stable, highly interconnected groups, cultural modes are acquired with continuing sources of essentially consistent feedback; and minor departures can fairly readily be either excluded, corrected, or incorporated in the system. In loosely connected groups, with a pattern involving frequent change of contacts, the major prerequisite for adequate functioning is the acquisition of modes of altering one’s more specific modes of producing behavior. More variety of specific patterns is likely, but departures from patterns in use are not readily corrected or incorporated, and remain more or less idiosyncratic. The shift from one situation to another, for those enculturated in the second mode (associated with the less interconnected group), elicits learned patterns of making a transition. The shift for those enculturated in the first mode (that of the more interconnected group) elicits some degree of confusion, since relatively much less in the way of transition-making patterns has been acquired. Thus, it may be expected that such transition is not as critical for the loose-knit group members as for those from tight-knit groups; and that, for those who must make such difficult transitions, one of the things that will occur is an increased tendency to
schizophrenic breakdown, either for themselves or for the offspring they can no longer properly enculturate. (Obviously, schizophrenia will still be a rare outcome, though psychological stress may be quite common.) Presumably, both schizophrenia and its alternate outcomes will be elicited with greater frequency, under these social conditions, from those who are genetically more vulnerable.

While it is certainly not clear what genetic factors are associated with schizophrenia, nor what aspects of the organization of behavior these may effect, some of the descriptive data on the disorder suggest that, directly or (more probably) indirectly, one of these aspects may be some greater tendency to deal consciously with the levels of cultural organization that are ordinarily quite automatic past early childhood, such as one's own facial gestures, and, perhaps, more generally, to bring to a high level of awareness many of the characteristics of interaction and cultural codification which are for most people under ordinary conditions habitual and taken for granted. Conscious attention to one's own microbehavior tends to produce novel combinations which may or may not achieve integration with surrounding usage.

* Several analogies to this process seem suggestive, though none of them are quite comparable. The concept may suppose that such integration is more readily achieved in a social subsystem with high interconnectedness and consequent multiple sources of essentially concordant feedback. It may then be the case, where the social, and thus communicative, system is either too diverse (particularly if the diversity includes contradictory messages) or undergoing too rapid change, so that there is inconsistent or insufficient feedback, or so long a feedback loop that the feedback is no longer valid when it "arrives," that the process of reintegration of potential novel combination of microcultural behavior units may simply never achieve congruence with the surrounding system.

When such integration is achieved, the novel additions to the cultural repertoire may commonly be advantageous to the groups in which they occur, if only because of attention to detail of the educated but nonfluent speaker of a foreign language, or of the student of "diction" in his own language, tend to produce speech which is recognizably aberrant even when it is formally correct. At certain stages of language acquisition, the child's construction of complex forms produces neologisms which reveal awareness of structure of his language, as in the use of "brang," past tense of "bring," on the model of "sing/sang" and more remote forms like "drink/drank." The translation of foreign structures, and the extension of native structures to broader coverage, are both processes involved in linguistic change.
cause, within limits, a greater range of behavioral patterns is socially adaptive.

It was stated (above) that social functioning requires congruence of cultural behavior. This statement requires fundamental modification. Were complete congruence attainable by a social group, which for many reasons it is not, the group would have no means for responding to any radically altered conditions impinging upon it. It is the constant introduction of partially resolvable instances of noncongruence that provides both modes of handling changed conditions and a reservoir of potential cultural changes that may be integrated into the existing codes. It is not to be expected that schizophrenia, as such, provides this “cultural reservoir.” There are many quite nonpathological sources of possible change. However, among those individual variations that are relevant, the genotype(s) involved in schizophrenia may be an important source, particularly when they develop nonpathologically. As a final point in this paper, I would like to attempt to relate this idea to considerations concerning the survival of the social group.

Survival in Relation to the Social Group

For human beings, the relationship between biological and social survival is a little less dramatic than for ants and bees, but it is, nonetheless, clear that the first condition for the survival of a human infant is that it be born into a viable group.

In general, a genetically transmitted phenotype must approximately hold its own, possibly supplemented by mutation, if it is to persist in a population. Although it is fairly common to use a one-generation standard, this must be only a methodological shortcut, which certainly can fail in some cases. Thus, if type I has three times as many living offspring as type II, then type II should gradually diminish in relative frequency and perhaps disappear. But, what if the offspring of type II, in certain combinations, reproduce four or five or more times as many as the offspring of type I? To put it another way, the information we should have about fertility and schizophrenia is not how many children hospitalized schizophrenic patients have, compared with the general population, but something more, like how many great-grandchildren do the parents (or grandparents) of schizophrenics have, compared with the general population. To my knowledge, we do not now have such data, though it should be available.

Karlsson presents a five-generation family diagram which is of interest in this connection. Of thirteen nonschizophrenic siblings in his second generation, one had no children, six produced family lines in which there were no cases of schizophrenia, and six produced family lines in which there were cases of schizophrenia. The total number of individuals diagrammed (no spouses were included) was 955, of whom twenty-three were schizophrenic. Of the ten schizophrenics who had a chance to reproduce (that is, those in the generations before the last one reported),
five had no offspring, and the average for the ten was 1.2, or only about one-half the average for their nonschizophrenic kin. Nevertheless, the six lines with schizophrenics contained, in the fifth generation, 30 percent more individuals than the six lines without schizophrenics. That is, although the fertility of the schizophrenics is typically low, their closest kin within this larger group of kin do "better" than compensate for them.

In a recent study in New York State, Erlenmeyer-Kimling, Rainer, and Kallmann found that the fertility of nonschizophrenic siblings of schizophrenic patients is at least as high as the general population. In addition, mortality of the young offspring (particularly female) of schizophrenic parents may be somewhat lower than that of the general population. Additional materials of these kinds, including several-generation data comparable to Karlsson's, but on an adequately large population sample, might help to clarify our understanding of the survival of schizophrenia in the face of its apparent maladaptive characteristics. However, even such data would be far from adequate for a deeper understanding of survival for a highly social species. To return to the ants, entomologists seem able to speak without embarrassment of "altruism" in terms of genetic transmission.

Erlenmeyer-Kimling says, in this connection, "Even a slight differential in the probability of reaching childbearing age would be important in the balance of selection relating to schizophrenia, and convincing evidence... would constitute powerful support for the hypothesis that the genes associated with schizophrenia confer some compensatory advantage on their carriers. Moreover, the evidence would overwhelmingly support a physiological advantage hypothesis..." (emphasis mine). No explanation is given for the conclusion in this quote, and it is not obvious to me that physiological rather than social advantages, or a combination of the two, would be implied by such evidence.
of which schizophrenia is one manifestation, contributes to group survival, a basic pair of questions must be dealt with: (a) What is the relevant group? (b) How does this condition contribute to its survival?

Let us first consider what the groups of possible relevance are. A group is simply a set of individuals with more interaction (including reproductive) among themselves than with others, and with some discontinuity in the density of interactions. (If interactions were evenly distributed among the members of a population, there would be no groups within that population.) As an upper limit, the whole species might be considered to be a single group, since there is probably no absolute break, no two individuals who may not be connected through some chain of contacts, however long it might be in some cases. The lower limit is not as obvious. It is the smallest breeding group that could reasonably be an isolated breeding group. In considering the "theoretical and practical" questions of determining a minimum stable population size for human groups in relative isolation, Livn86 arrives at a suggested figure of five hundred, below which he considers that the population will be in disequilibrium, and will either disintegrate or move towards the necessary numbers.

On ethnological evidence, a more or less local group varying between several hundred and a few thousand individuals seems to be a very widespread unit. When daily routine groups are much smaller than this, as in some nomadic bands, for example, there seems commonly to be fairly frequent temporary joining together of a number of such units; mating seems to occur within the larger (composite) unit rather than the smaller (component) units. There is also some indication that units within this size range are significant in industrial society, as "marriage isolates." According to Dahlberg,84 the size of a "marriage isolate" has shifted from about four hundred in other kinds of societies, to about sixteen hundred in contemporary Europe (including urban areas like Paris, for which the estimate is under 1,000).

Groups of this size, as well as smaller groups presumably more intimately involved in enculturation, may be structured in quite different ways. Such a group, or subgroups within it, may be completely interconnected (i.e. any X has direct contact with any Y) and virtually all-encompassing (with few exceptions, all social contacts are within the group); or it may be a group only in the sense that there is a central tendency for contacts to occur among "group" members, who are loosely connected, with numerous external contacts, no boundary, and no consciousness that they constitute a group.

On both logical and, though to quite an inadequate degree, empirical grounds, it has been suggested here: (a) that modes of cultural acquisition are different in these differently structured groups; (b) that such differences affect the probability of developing idiosyncratic behavioral patterns, and the probability that such patterns will become integrated into the group, as one alternative, or will become patterns of noncongruence in social interactions as another alternative; and (c) that such patterns of noncongruence have different modes (e.g. "semantic-syntactic" versus "pragmatic"), partly produced by the group structure and differently diagnosed when they occur in ways that elicit identification in terms of psychopathology.

The question of how the posited condition, of which schizophrenia is one manifestation, may contribute to group survival has already been considered, though only sketchily. Assuming that individuals "vul-
nerable" to schizophrenia (including the "intelligent" and "creative" nonschizophrenic close kin of schizophrenics) tend to introduce cultural variations at all levels including that of microcultural behavior—variations which can, in certain group structures, be integrated into the group pattern—this enlarged "cultural pool" may be adaptive for the group as a whole.

SUMMARY

We are confronted with inconsistent and, in fact, contradictory assertions about schizophrenia at every level of study. The reason for this lies largely in the fact that, when we study schizophrenia, we are not dealing with a homogeneous population, nor with one whose relevant bases of heterogeneity are known. There is no simple way of correcting this state, since schizophrenia probably is not itself unitary, and whatever conditions it includes are probably each the resultant of numerous courses of development. Furthermore, identification as schizophrenic is a social process which itself incorporates variations in several components.

Quantitative evidence strongly suggests that there are genetic components which make some individuals more vulnerable than others to the development of schizophrenia. On present evidence, it is not possible to discover whether one or several different genotypes are relevant. However, some evidence does indicate that the same genotype(s) may predispose individuals to higher than average intelligence and creativity, as well as to pathology. If this is the case, the body of material that should be explored should not be limited to individuals who manifest schizophrenia, but should include the nonpathological alternatives.

The ordering of cultural forms in social interaction, most strikingly at the microcultural level, is strongly involved in known schizophrenic symptomatology, and has also been frequently referred to in discussions of "creativity." One of the sources of "choice" between pathology and creativity may then lie in the conditions of acquisition and utilization of such cultural forms. The group with which one has direct intimate contact, or contact only once-removed (e.g. friend of friend) is here suggested as both the background condition most responsible for modes of cultural acquisition, and therefore the nature of idiosyncracies in such acquisition, and the unit to which the genotype that yields schizophrenia contributes most directly, both positively and negatively, to biosocial survival.

Firm understanding of both the normal and abnormal outcomes of the processes relevant to producing human persons functioning culturally in societies is not likely to be achieved on the basis of currently available theory, fragmented as it is among differing orientations and disciplines. Firm understanding of schizophrenia seems, to me, to be contingent upon such broader understanding. If one were to discover a specific and readily identifiable social condition or a specific genetic or other constitutional factor as an unvarying component in the development of schizophrenia, the complex biosocial problems raised by schizophrenia could be more effectively studied, but would not have been solved. At the same time, any sound knowledge we may be able to acquire about schizophrenia must have its significance for the broader question.
Genetic Factors in "Schizophrenia"

REFERENCES


Some Questions of Definition in Cultural Perspective


56. Malzberg, B.: Mortality Among Patients with Mental Disease. Utica, State Hospital Press, 1934.


61. Leacock, E.: Three social variables and the occurrence of mental disorder. In Leigh-
Genetic Factors in "Schizophrenia"
