The Israeli High-Risk Study: Some Critical Remarks

by Mordecai Kaffman

Abstract

This article addresses a number of methodological weaknesses in the group comparison design of the Israeli High-Risk Study. It would seem that 25 years ago constraints of experimental design may have led the investigators to select as schizophrenic probands patients who today would no longer qualify for schizophrenic diagnosis according to DSM-III. In addition, a series of relevant dimensions (e.g., the course of the assumed schizophrenic process, family variables, life circumstances, and psychosocial factors) were not taken into account. For these reasons, many of the study's hypotheses and conclusions can be considered basically speculative, and it is suggested that many of the findings may be artifacts of the research design. Nor are there any evident grounds for the supposition that the differences between kibbutz and town children, in terms of the nature and severity of particular psychopathological problems, should be decisively ascribed to the differences in social framework and child-rearing practices in the kibbutz and in town. The weight of many other variables, in particular intrafamily influences, is no less marked in the kibbutz setting than in town.

A 1985 issue of Schizophrenia Bulletin (Vol. 11, No. 1) reports at length on the findings and conclusions of an investigation known as the Israeli High-Risk Study, which was conducted for more than 20 years by a large number of researchers. As Nagler and Mirsky (1985) put it, "The project is an attempt to add some knowledge to the nature-nurture dilemma in the etiology of schizophrenia" (p. 25). In an effort to examine the respective influences of genetic and environmental factors in the development of schizophrenia, the investigators studied a group of 50 Israeli preadolescent, high-risk children who were born and grew up in two different environments: 25 children born in a kibbutz to a schizophrenic parent and 25 children born to a schizophrenic parent in town and raised in the customary family setting. Each index subject was matched with a control kibbutz or town child. The children, 100 in all, were interviewed and thoroughly examined (by psychological, neurological, and electrophysiological examinations) when the mean age of the study population was 11 and then again at age 16. The index group was uniformly rated as more impaired than the control group, with statistically significant differences in severity of psychopathology, quality of social and school adjustment, and presence of neurological "soft" signs.

In the first two stages of the followup, which covered a 15-year span, the investigators failed to find any consistent differences between the kibbutz and nonkibbutz rearing environments, in either the subjective or objective measures that were used on the index and control children. On the basis of these findings, the investigators concluded that the higher rate of neuropsychological disturbance in the index children was mainly related to the schizophrenic diathesis and not to environmental influences.

Some years later, however, when the index subjects reached an average age of 25, the investigators—using a test battery that included the Schedule for Affective Disorders and Schizophrenia, Lifetime Version...
(SADS-L) (Spitzer and Endicott 1977)—discovered to their surprise an increased incidence of major psychiatric pathology in the kibbutz index subjects, particularly schizophrenic spectrum cases and affective disorders. In light of this later finding, they hypothesized that "the interaction of the kibbutz environment with a schizophrenic diathesis may have a psychopathogenic effect" (Mirsky et al. 1985, p. 152).

Although the preceding brief summary of some of the findings of this extensive research project—with its great mass of data and information—does not do it justice, for present purposes, I believe the summary gives an adequate picture of the main points of this multidisciplinary study.

Evaluating "Nature": Were the "Schizophrenic Parents" Really Schizophrenic?

For the past 25 years I have served as medical director and chief psychiatrist of the Kibbutz Child and Family Clinic, which provides psychological and psychiatric services for the majority of kibbutzim in Israel. During this time I have had occasion, together with the staff of the clinic, to examine, treat, and follow up a large number of schizophrenic parents and their children in the kibbutz setting. The experience has left me perplexed in the face of the obvious differences between our clinical experience and the findings of the Israeli High-Risk Study. I have read carefully and reread the various papers that make up the study to try to identify and understand properly the source of these differences. The present article summarizes my queries and critical comments on the material that has been published so far on this most impressive study.

The study's authors deserve praise for their outspokenness in describing in detail the methodological difficulties, pitfalls, and limitations they faced more than once during their investigation. Silberman and Mirsky (1985) themselves point out the serious problems in their research design—among others, the geographic separation between the team members, lack of mutual agreement about statistical methodology, small size of the study sample due to the objective difficulties to find schizophrenic subjects, extended age range of the index kibbutz children (over 7 years), etc. In addition to these obstacles, however, the study contains a considerable number of methodological flaws that might place the reliability of the conclusions in question.

One of the study's main limitations lies in the regrettable fact that the psychiatric diagnosis of schizophrenia among the index parents was not made by the researchers themselves, thus leaving some doubt as to its reliability. The investigators depended on the diagnostic labels put on the parents during the 1950's and 1960's by a heterogeneous group of Israeli psychiatrists who volunteered to cooperate with the researchers (after the hospitals and various government bodies, on the grounds of confidentiality, refused to release the registered information). Thus, the index subjects were selected through extramural individual or group meetings with the therapists (doctors, psychologists, social workers and nurses). The researchers could console themselves with the fact that the registered information was faulty and incomplete, anyway, so that "Often memory proved more reliable than stacks of illegible reports in files, written in various languages, according to the psychiatrists' origins" (Nagler 1985, p. 33).

The psychiatrists who made the diagnosis of schizophrenia were working in various hospitals all over Israel. They had no unified diagnostic criteria, and sometimes their ideas on the definition and nature of schizophrenia were divergent. Having worked at that time in several Israeli psychiatric hospitals and having experienced the problem of the lack of a common language for diagnostic assessment, I can only verify the picturesque description of Nagler (1985): "Diagnostic labels such as process schizophrenia, schizophrenic reaction, pseudoneurotic schizophrenia, and borderline schizophrenia reflected the psychiatrist's 'Weltanschauung' rather than the psychic condition of the patients" (p. 33). Along with the psychiatrists working with me in the Kibbutz Clinic, I can testify that in at least one-third of the patients who were labeled schizophrenics by the psychiatric hospitals, and were turned over to us for ambulatory treatment and followup, we found no signs of schizophrenia according to the diagnostic criteria established in the DSM-III (American Psychiatric Association 1980) for Schizophrenic Disorders. The researchers of the Israeli High-Risk Study apparently had a good many reservations about the validity and reliability of the past psychiatric diagnoses as well. Therefore, they added two more criteria to strengthen the validity of the original findings: (1) there had to be a record of several rehospitalizations in the anamnesis of the patient; and (2) the patient's medical file had to contain at least 3 symptoms from a checklist of 22 that "by consensus of the research team, were felt to be closely related to the diagnosis of schizophrenia" (p. 33).

Even the addition of these two parameters does not seem sufficient
to establish the validity of the schizophrenia diagnosis. First, 25 years ago, the phenomenon of the "revolving door," with a high rate of rehospitalization, was very common not only in schizophrenia but also in a wide range of other diagnostic categories. It was also accepted practice, when a patient was readmitted for the psychiatrist in charge to stick to the original diagnosis in almost every case. This was especially true if the label of schizophrenia had been attached to the patient, because of the prevailing fatalistic premise "Once a schizophrenic—always a schizophrenic."

The additional criterion of finding at least three symptoms common to the patient's medical file and the checklist the researchers devised seems of doubtful value because of the objective difficulties already mentioned in getting at the medical records, and also because of the difficulty in deciphering the multilingual records when they were available. Our chief reservation involves the questionable reliability of the suggested symptom checklist. A careful study of the list shows that at least half the items are not specifically symptomatic of schizophrenic disorders. They may indicate other psychiatric conditions, such as affective, paranoid, and nonschizophrenic psychotic disorders. To exemplify the checklist's lack of specificity, 10 of the 22 symptoms that are said to be indicative of schizophrenia are listed here: marked apathy, marked negativism, marked hypobulia, lack of interest in own appearance, lack of interest in other patients, overaggressiveness, concretization, continuous ideas of persecution, megalomania, and no participation in occupational therapy. If the researchers believe that three of the preceding symptoms are sufficient to verify schizophrenia, the validity of the assertion that the group of index parents consists solely of schizophrenics seems open to serious doubt.

Indeed, in so ambitious a research project, one aiming to examine the relative weight of hereditary and environmental factors in the children of schizophrenic parents, the researchers should present more convincing evidence of the validity of the diagnosis of schizophrenia in the index parents' group. Of course, criticism of this nature seems reasonable and self-evident in view of the diagnostic tools at our disposal today. When the study was initiated 25 years ago, however, it was no simple matter to locate a group of pure schizophrenics whose psychiatric diagnosis would be acceptable according to present-day criteria. In addition to the absence of standardized diagnostic criteria for schizophrenia, there was an exaggerated tendency in Israel at that time to arrive at a diagnosis of schizophrenia. Indeed, many different types of paranoid disorders, major affective disorders with delusional features, and cases of organic and atypical psychoses were included under that label. If such was the state of psychiatric diagnosis 25 years ago, all the more reason today for reservations and caution in drawing conclusions from such research.

Fifteen years after the initial examination, Mirsky et al. (1985) found that 10 of 46 index cases showed evidence of affective disorders; this seems to be a red light on the validity of the original diagnosis of schizophrenia, at least for some index parents.

**Evaluating "Nurture": Kibbutz vs. Nonkibbutz Children**

It is difficult to understand why authors of various articles in the study hypothesize that significant differences between kibbutz and nonkibbutz index children in the nature and severity of their psychopathology should be ascribed to the differences in childrearing practices in the two settings. The researchers frequently use the somewhat misleading phrase, "the differential effects of town and kibbutz rearing." There is, of course, a conceptual error at work here; many other factors may affect the development of psychological problems and cause differences in outcome. Kibbutz children, to no lesser a degree than town children, respond to various traumatic events, particularly to stressful family situations (Kaffman 1972; Elizur and Kaffman 1983). It is regrettable that the researchers failed to identify and estimate the specific weight of the multiple variables (other than differences between kibbutz and nonkibbutz methods of upbringing) that may have played a decisive role as pathogenic or corrective influences on children at risk. Before hypothesizing about the particular role of differential childrearing practices, the researchers should have examined with great care whether the index groups (of both parents and children) were well matched in all relevant dimensions and, thus, whether they could really be compared fairly on the presence or absence of major stressful occurrences. While reporting on the deep grief that befell members of the research team at the unexpected death of three of their teammates during the years of research, they should also have been aware of the possibility that the high-risk families under study—both adults and children—may have found themselves in no less stressful situations. Since small groups are involved (25 children each), it is clear that variables relating to different life
circumstances and particular traumatic stressors may have played a decisive role in the study’s outcome—with a weight much greater than that attached to being brought up in a kibbutz or in town.

Following is a partial list of factors on which the researchers did not report but that may have had a considerable influence on the differences in type and severity of the index children’s psychopathology, without regard to their respective social setting:

1. Factors Related to the Index-Parent Pathology. There are no details on the severity of the pathology of the index parent, no appraisal of the premorbid personality or the degree of subsequent deterioration in important areas of psychosocial functioning. Especially obvious is the lack of consideration and assessment of the quality of impairment in the parent-child relationship. There are no details on the course of the mental illness—chronic, subchronic, or in remission—or on the number or length of psychiatric hospitalizations.

2. Factors Related to the Family. There are no comparative data between the index groups with regard to the integrity of the family unit and the respective rates of divorce and marital separation. The researchers do state that, at the beginning of the study, the parents were separated or divorced in 20 percent of the index families, but there is no information on the differences between the kibbutz families and the town families on this important variable or on the changes that took place over time. Consequently, we know nothing about the proportions of one-parent families, remarriages, and blended families. Nor was any attempt made to determine the possible presence of other sources of family stress or dysfunction.

Furthermore, there is no information whatever on the presence or absence of family and social support systems and networks.

3. Factors Relating to the Index Children. There is no information on the stressful situations and traumatic events that may have occurred in the lives of individuals or families. Nor are we told which children received psychological or psychiatric treatment, what the nature of the treatment was, or what its effect, if any, was on their psychopathology.

If the overall design and methodology of this study are to be judged by the material presented, doubt remains about whether the two groups of index children were indeed comparable in the nature and severity of their illness and their parents’ pathology, and also about family integrity, family functioning, and other environmental influences that may have played a role during the long period of the research.

The selection criteria for the control children also leave room for doubt about whether the differences in extent of psychological disturbance may properly be ascribed solely to the presence or absence of “schizophrenic diathesis.” The researchers who set up the group comparison design seem not to have reckoned sufficiently with the basic tenet that the selection of control cases should minimize all biases and differences that may favor one side or another. Against the control children, almost all of whom came from intact families, there was placed a group of index children, a high proportion of whom came from broken families and had been through repeated traumatic experiences because of the recurrent hospitalization of one of their parents. Nagler (1985) notes that in 36 percent of the index cases, one of the parents was away from home, because of hospitalization or for some other reason, at the time of initial testing, and that at that time, 20 percent of the index group parents were separated or divorced. It is reasonable to suppose that in the 15-year followup period, the differences in the frequency of family breakups in the two groups of parents grew.

Wallerstein and Kelly (1980) found serious psychological difficulties in more than a third of the cases in a sample of children and adolescents of ordinary divorced families they studied over a 5-year period. An important result of that study, which the researchers of the Israeli High-Risk Study might well have taken into account before reaching their conclusions, was that 37 percent of the children and adolescents of divorced couples exhibited moderate to severe symptoms of depression (Wallerstein and Kelly, p. 211).

The bias in favor of the control group becomes even more obvious as it is learned that the researchers found it necessary—for reasons not stated—to replace almost a quarter (12 children) of the original sample of control subjects after they discovered some type of psychopathology in the control parents (Nagler 1985; Shotten 1985). Under these circumstances, the comparison between the experimental and control groups seems almost devoid of any meaning or significance.

Characteristics of the Psychopathology of the High-Risk Children

One of the study’s most interesting findings relates to the essence of the neuropsychological symptoms displayed by the index children in the
first two phases of the investigation. These children showed an overall pattern of impaired psychosocial functioning, poor school adjustment, attention difficulties, deficits in perceptual-motor skills, learning disabilities with a lower proficiency level in arithmetic, and "a basic distortion in cognitive integration" (Sohlberg and Yaniv 1985, p. 48).

Forty-four percent of the children of index parents showed signs of a neurointegrative defect in at least one of the testing periods, compared with only 6 percent of the control group. The most common neurological signs were "soft" perceptual-sensory signs, poor motor coordination, poor right-left orientation, poor balance, and motor overflow (Marcus et al. 1985). These very special findings point clearly to the presence among the index children of a typical clinical syndrome of attention deficit disorder (or minimal brain dysfunction [MBD], as some clinicians persist in calling it). If that syndrome was present, then it is reasonable to hypothesize that there was a group among the index parents in whom the presumed schizophrenic disorder would appear related to MBD on a family basis. In the Kibbutz Clinic we found that of 200 children diagnosed as MBD, 16 percent of them appeared to have a genetically determined syndrome (Kaffman, Sivan-Sher, and Carel 1981). Those with genetically determined MBD are a high-risk group for psychiatric disease, and several authors have suggested a link between particular cases of familial MBD and schizophrenia (Bellak and Charles 1979).

It would seem that the researchers did not take this hypothesis into account, since in their third and final followup examination, they did not test for possible remnants of neuropsychological dysfunction. Further neurological assessment of the sample seems required, mainly to determine the role of MBD-linked, familial-genetic influences in the development of pathology in some of the index children.

Comparison of Outcomes: Kibbutz and Town Children 15 Years Later

At the end of the two main stages of the investigation (1967 and 1973), Silberman and Tassone (1985) concluded that: "This study failed to find any consistent differences between rearing environments on the subjective or objective measures that were used either for the whole group or in the index children. It is reasonable to hypothesize, therefore, that the deficits found in our index children reflect the schizophrenic diathesis and are not highly subject to modification by the environment" (p. 144). Eight years later (1981), however, the research teams decided on a third examination, this time restricted to a single interview by a clinical psychologist (Arje Latz) brought in especially from the United States. A test battery consisting of the Schedule of Affective Disorders and Schizophrenia—Lifetime Version, the Social Adjustment Scale, and six subtests of the Wechsler Adult Intelligence Scale was administered to 23 kibbutz index subjects and 23 town index subjects whose average age by this time was 25. On the basis of the data from the SADS-L interviews, Mirsky et al. (1985) reported a higher incidence of psychiatric disorders among the kibbutz index cases: ". . . nine schizophrenia spectrum disorder cases occurred in the index group, and six of these were in the kibbutz-index cell. Even more surprising is the finding of 11 instances of affective disorder (five major), all but two of whom were in the kibbutz index cell" (p. 151).

Hence our followup data clearly suggest adolescence as the period in which the differential effects of environment began to appear, even though such effects were not apparent in the measures previously gathered; [and] our results indicate an increased incidence of psychiatric disorder in the kibbutz index-subjects, suggesting that the interaction of the kibbutz environment with a schizophrenic diathesis may have a psychopathogenic effect. (Mirsky et al. 1985, p. 152)

In view of the numerous methodological weaknesses in this work, it would seem that the researchers' hypothesis—that the particular quality of kibbutz life may interact negatively with a schizophrenic diathesis and may potentiate psychopathology in early adulthood—is too far-fetched and lacks a sufficiently strong base. Even if we accept the validity of the DSM-III psychiatric diagnoses determined by a single clinical psychologist after only one interview; even if we disregard the fact that the examination was not blind, since "the environment from which they [the subjects] came (kibbutz or town) was too easily recognizable to be kept a secret" (Nagler 1985, p. 37); even then it seems that hypothesizing a causal connection between the mode of life in the kibbutz and the psychopathology observed in the 25 kibbutz children of presumed schizophrenic parents is quite speculative. As already noted, before automatically relating the differences in psychopathology between kibbutz children and nonkibbutz children to the differences in way of life or childrearing practices, the researchers ought first to note and evaluate other important
factors (e.g., severity of parental pathology, degree of recurrence of mental illness, level of deterioration, family functioning, marital breakdowns, other stressful events). Our 25 years of clinical experience in the Kibbutz Clinic, involving more than 100 families having children with a schizophrenic parent diagnosed according to DSM-III criteria, points to the decisive importance of the influences just mentioned—and not necessarily of specific kibbutz factors—on the development of psychological problems among the children. In addition, our experience with families in town does not support the study’s findings. On the whole, in our everyday practice with offspring of schizophrenics, we have found a lower incidence of psychopathology in the kibbutz than in town. This may be due to the planned use of the support of social networks in the kibbutz and the active implementation of deinstitutionalization policies (Kaffman 1981).

To those who are not familiar with daily kibbutz life, it should be pointed out that every year the kibbutzim absorb from town hundreds of boys and girls in early adolescence, children who for one reason or another are sent to the kibbutz to continue their education during the formative high school years. Among these are city children born to schizophrenic parents, youngsters who were separated from their parents (except for an occasional visit) and sent to the kibbutz to remove them from a stifling, pathogenic home environment. We have had occasion to follow the development of more than 40 such boys and girls, each of whom lived in a kibbutz for between 10 and 20 years. The vast majority showed no signs of any significant illness; on the average, they exhibited good psychosocial functioning. The history of these children offers no support for the researchers’ contention that the interaction of the kibbutz environment with a schizophrenic diathesis may have pathogenic consequences. Were this hypothesis true, we would be hard put to explain why this allegedly harmful environment was not operative before adolescence. According to the researchers, the kibbutz-reared index children exhibited, up to age 16, similar and sometimes less psychopathological symptoms than their counterparts in town. Neither we, nor the researchers themselves, possess the information on many relevant dimensions to form sufficiently well grounded hypotheses about the differences between the two index groups at the end of adolescence.

One possible explanation may be that the two index groups were ab initio quite different in their parents’ psychopathologies. The fact that there were nine subjects (39 percent) in the kibbutz index group with depressive spectrum disturbances when they reached the average age of 25 indicates (with a high degree of probability) that the kibbutz index parent group included a number of individuals with affective disorders accompanied by psychotic features. Of the nine, five had major affective disorders, compared with only one case of major affective disorder in the corresponding town index group. As is well known, major affective disorders are more common among family members than in the population at large, particularly if the first major depressive episode occurs at about age 20 (Weissman et al. 1984).

Under the conditions of this study it would be difficult to negate the possibility that in some cases of psychiatric disorder in the index group in late adolescence, the pathology was related to endogenous factors. It seems almost certain that in other cases, a complex of stressors related to intrafamily conflict and/or other unknown environmental pressures played some role in creating the psychopathology.

With all that, if the researchers still maintain that, in adolescence, the combination of schizophrenic diathesis and the conditions of kibbutz life is liable to increase the risk of serious psychopathology, they should provide more substantial proof of how the supposed pathogenic factors operated in the cases they studied. Being well versed in the details of life in the kibbutz for both children and adults, I do not deny that this form of life—not unlike any other social setup—contains sources of tension, conflict, frustration, and stress. Based on my experience and that of the staff of the Kibbutz Clinic, however, it must be emphasized that no verification has been found for any of the following contentions:

1. That kibbutz children of schizophrenic parents display a higher incidence of psychiatric disorders on reaching maturity than do their counterparts in the city.

2. That within the wide variety of nosological categories that may show up among children of schizophrenics, the diagnosis of major affective disorder occupies a central place. On the contrary, the incidence of major endogenous depression or bipolar disorder in the offspring of confirmed schizophrenics is minimal and highly exceptional.

3. That it is possible to identify specific factors in kibbutz life that for some reason begin to have a detrimental effect on the young when they have reached the age of 20.
References


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