Family characteristics as perceived by hypothetically psychosis-prone college students

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University of Montana
FAMILY CHARACTERISTICS AS PERCEIVED BY HYPOTHETICALLY
PSYCHOSIS-PRONE COLLEGE STUDENTS

by
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B.A., Gustavus Adolphus College, 1985
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ABSTRACT

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The present investigation studied 159 college students classified by the Wisconsin Scale of Physical Anhedonia, Perceptual Aberration, and Magical Ideation. These scales assess low level schizotypal symptoms and hypothesized risk for psychotic disorders. Males and females scoring high on either the Perceptual Aberration and/or Magical Ideation Scales, or on the Physical Anhedonia Scale were compared to control subjects in their responses to a number of family assessment instruments. This study investigates family functioning and family satisfaction in the hypothetically psychosis-prone by use of the Family Environment Scale (FES), the McMaster Family Assessment Device (FAD), the Family Satisfaction Scale (FES), and the Adjective Checklist (ACL).

Multivariate ANOVAs, univariate analyses of variance (one-way ANOVAs), and the Student-Newman-Keuls Multiple Comparison Range procedure were applied to the data. Both Per-Mags and Anhedonic subjects reported significantly greater family dysfunction over a wide array of different dimensions. Both groups also expressed significantly more general dissatisfaction with their families, and greater dissatisfaction with the levels of cohesion and adaptability in their families than did control subjects. Results from the ACL indicated that Per-Mag males described their mothers with significantly more favorable adjectives and as higher in Nurturance than they described their fathers. These results add support to the belief in the importance of the family environment and family functioning in the etiology of schizophrenia and schizophrenia spectrum disorders. Continued research with this population in this area is encouraged.
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Introduction

The purpose of the present study is to examine whether there are differences in the perceptions that hypothetically psychosis-prone individuals have of their families, compared to the perceptions of control subjects.

This study uses several instruments which have been developed for assessing both normal and pathological families. The McMaster Family Assessment Device, Version III (FAD; Epstein, Baldwin, & Bishop, 1983) was devised for measuring various attributes of healthy compared to unhealthy families. The FAD distinguishes between healthy and unhealthy families along several dimensions, including a scale for overall family health or pathology.

The Family Environment Scale (FES; Moos & Moos, 1981) is composed of ten subscales that measure the social-environmental qualities of various types of families. There are three forms that constitute the FES: The Ideal Form, which assesses people's conceptions of ideal family environments, the Expectations Form, which measures the various expectations individuals have about family settings,
and the Real Form, which assesses perceptions individuals have of their conjugal or nuclear environment. Since the present study is concerned with the perceptions that individuals have of their family, only the Real Form will be used in this investigation.

The Family Satisfaction Scale (FSS; Olson & Wilson, 1982) evaluates the satisfaction of individual family members on the dimensions of Family Cohesion and Family Adaptability. The FSS also provides a total score representing overall family satisfaction. Family cohesion has to do with the extent to which family members are connected to or separated from each other, and the healthiest levels of family functioning lie near the middle of this scale. Family Adaptability refers to the degree to which the family system is flexible and able to change when there are stressors, with healthiest levels of family functioning also lying near the middle.

The Adjective Checklist (ACL; Gough & Heilbrun, 1980) is used to elicit descriptions of self or others and requires no technical knowledge of any kind to fill out. When the subject reports a description, he/she merely checks those items that seem to describe the
target. The present study focuses on the following scales from the ACL filled out to describe both the mother and the father of the subject: Number of favorable adjectives checked, Number of unfavorable adjectives checked, and Nurturance. In addition, an overall analysis of ACL descriptions will be reported.

The subjects are college students who scored high on either the Physical Anhedonia Scale (Chapman, Chapman, & Raulin, 1976, 1978) or the Perceptual Aberration and/or Magical Ideation Scales (Chapman & Chapman, 1985; Eckblad & Chapman, 1983), as well as a group of controls who receive low scores on all three scales, and on the Impulsive Nonconformity Scale. These first two groups are hypothesized as being at high risk for the later development of psychosis. Individuals who score high on these scales have been identified as particularly likely to have psychotic-like experiences (Chapman, Chapman, & Raulin, 1976; Eckblad & Chapman, 1983; Chapman & Chapman, 1985). This paper begins with a review of the literature on this population and an examination of the relationship of hypothetically psychosis-proneness to schizophrenia.
Evolution of the Concept of the Schizotypal Personality

This study examines a population possessing symptoms of schizotypal personality disorder (American Psychiatric Association, 1987). These individuals commonly appear odd and eccentric, as do individuals suffering from schizoid and paranoid personality disorders. Thus, schizotypal individuals are grouped with the schizoid and paranoid personality disorders in the DSM-III-R. Schizotypal personality disorder is defined by DSM III-R as "a pervasive pattern of peculiarities of ideation, appearance, and behavior and deficits in interpersonal relatedness, ...that are not severe enough to meet the criteria for Schizophrenia (DSM III-R, 1987)." The abnormalities of behavior commonly include difficulty in expressing affect and social isolation, both of which are likely to make interpersonal interactions problematic.

Schizotypal personality disorder is a relatively recent term, and there are few references historically to the disorder in the research literature. It is conceptualized as being related to schizophrenia in a number of ways, with symptoms that are similar to those in schizophrenia, but present to a less pervasive and
severe degree. The term "schizotypal" has been surrounded in controversy since its inception. Schizotypal's relationship to schizophrenia, as well as its separation from both borderline personality disorder (Gunderson & Singer, 1975), and schizoid personality disorder (Millon, 1981) have been controversial. Although it is difficult to find the beginnings of the term "schizotypal" in the literature, there are numerous allusions to a less intense form of schizophrenia. This less severe form has had a myriad of labels.

Kraeplin (1896) was the first to discuss what is now classified as schizophrenia. Kraeplin called the disorder "dementia praecox," and believed that deterioration was inevitable. Many investigators since Kraeplin, however, have believed that the deterioration that accompanies the disease is not always inevitable or irreversible. Not long after Kraeplin's initial classification, Bleuler (1911) found examples of so-called dementia praecox that didn't deteriorate. Recent investigations (Harding, Zubin, & Strauss, 1987; Harding, Strauss, Hafez, & Lieberman, 1987; Schuldberg et al., 1990; Quinlan & Schuldberg, manuscript
submitted for publication) have supported Bleuler's notion of a non-deteriorating course and found cases that not only did not deteriorate, but actually improved over the course of a number of years. Bleuler felt there were many disorders of schizophrenia, and spoke of "the group of schizophrenias." He believed that the main symptoms of schizophrenia were ambivalence, autism, a schism between intellect and affect, and disruption in thought association, and he believed that the disorder resulted from some type of neurological disorder. A contemporary of Bleuler, Meyer (1906), also believed that schizophrenia could exist in less severe forms.

The term "ambulatory schizophrenias" was used by Zilboorg (1941) for individuals that could lead relatively normal lives, but who still had some symptoms similar to schizophrenia, such as autistic thinking or social isolation. This furthered the concept of a less severe form of schizophrenia, but the term "schizotypal" had still not appeared at this point in time.

Within this classification of less serious forms of schizophrenia-like disorders, two subtypes were
discussed by Schafer (1948) and Rapaport et al. (1945, 1946, 1968). The entire group was referred to by Rapaport as "preschizophrenics." He referred to one subtype as "coarctated;" these individuals were typically characterized by constriction of affect, withdrawal, and anxiety. This group, which has been virtually unresearched, is quite similar in types of symptoms to the Physical Anhedonic group in this study.

Rapaport referred to the second group as "overideational," and it consisted of individuals who had a preoccupation with ideas, bodies, and fantasy life. This group resembles the other hypothetically psychosis-prone group examined in the present study, the "Per-Mags." Schafer referred to the "overideational" group as "schizoid," and believed that members of this group were on the verge of a psychotic break. He called the "coarcted" group "schizophrenic character," and believed that, although there were primary symptoms, individuals in this category were integrated with a fairly balanced personality. Schafer's idea of "schizophrenic character" is very similar to today's concept of schizotypal personality.

Rado was the first to use the term "schizotypal"
in a paper presented to the New York Academy of Medicine in 1950. He obtained this term from the term "schizophrenic phenotype," which reflected his belief that the disorder consisted of an observable manifestation of some genotype or hereditary proclivity. It was Rado's belief that the genotype resulted in two defects. He referred to the first one as "integrative pleasure deficiency," and the second as "proprioceptive diathesis" (Rado, 1956). Rado believed that the hypothesized deficiency in pleasure resulted in the development of an impaired self because the psychodynamic integration of the individual was curtailed. This impaired process of integration is then compensated for by the individual by what Rado referred to as "schizoadaption." Rado basically viewed the schizotypal personality as a stable form of schizophrenia which could eventually lead to instability and breakdown. The "integrative pleasure deficiency" Rado spoke of is very similar to symptoms characteristic of the Physical Anhedonic group examined in this study.

Meehl (1962, 1990) furthered Rado's concept. He wrote about a neural integrative deficit, for which he
coined the term "schizotaxia." Meehl believed that although schizotaxia was necessary for the development of schizophrenia, it alone was not sufficient for this development. An individual with schizotaxia may or may not develop schizophrenia, depending on his/her social learning history. The most important causal influence pushing the schizotype toward schizophrenic decompensation is, for Meehl, the "schizophrenogenic mother," although the significance of this concept has since been pretty well discredited. The term "schizoid" initially referred to the whole group of preschizophrenics before distinctions were made within that group.

The borderline personality has also been included in this group. In DSM-II (American Psychiatric Association, 1968), the term "schizoid" included both people with peculiarities in thought and behavior and people with a diminished ability to interact with others socially. It was found that the former group had a higher family occurrence of schizophrenia. The term "schizoid" currently in DSM-III-R and in present-day thinking refers primarily to the inability to form social relationships, whereas "schizotypal" refers to
those individuals who are impaired interpersonally and have odd thoughts and behaviors. In addition, the borderline personality is currently distinguished more specifically by its tendencies towards highly charged interpersonal relationships and its intense difficulties with affect (Gunderson & Singer, 1975; American Psychiatric Association, 1987), and is now separate from schizotypal personality disorder, which is characterized mainly by cognitive difficulties, and schizoid personality, characterized by interpersonal disengagement.

**Measurement of Hypothetical Psychosis-Proneness**

The University of Wisconsin group of Loren Chapman and his collaborators (e.g. Chapman, Chapman, Raulin, & Edell, 1978; Chapman & Chapman, 1985, 1987) have examined a group of individuals resembling the schizotypal individuals defined in the past, and refer to these individuals as being hypothetically "psychosis-prone." Although these subjects typically have some schizotypal symptoms, they generally are not severe enough to warrant a diagnosis of schizotypal personality disorder. Chapman et al. (1980) also
believe that schizophrenia is more than merely one disorder, and hence have attempted to measure possible proneness to different kinds of psychoses, including both schizophrenia and the affective disorders. It is their belief that the discovery of different psychoses in a clinical population is made difficult by the effects of being in the hospital and other treatment variables (including medication effects) and the disturbing quality of the psychosis itself. Therefore, identifying different types of psychoses is more easily accomplished with a group that is considered to be at risk for the future development of psychosis, before the confounding factors of the full-blown disorder and its treatment become effectual.

This study examines two subtypes of hypothetically psychosis-prone subjects. One group is characterized by interpersonal difficulties and affective disturbance and reports receiving an abnormally small amount of pleasure from physical sensations. The other group is characterized by the presence of odd thoughts and behavior. The former group is referred to as the Physical Anhedonic group, while the latter group is referred to as the "Per-Mag" group, consisting of high
scorers on either or both the Perceptual Aberration or the Magical Ideation Scale.

The traits measured by the Physical Anhedonia Scale are similar to those discussed in Meehl's (1962, 1990) theory of a biological deficit. It is hypothesized by Meehl that this deficit causes a loss of pleasure, which then has a negative effect on interpersonal relationships. There is a strong association between Physical Anhedonia and poor premorbid adjustment in schizophrenics (Chapman, Edell, & Chapman, 1980; Katsanis, Iacono, Beiser, & Lacey, 1992). Thus, this scale appears appropriate as a measure of a general pleasure deficit which includes both social interactions and physical sensations. Individuals identified by the Physical Anhedonia Scale are more likely to have fewer heterosexual interests and activities, and are more likely to be socially withdrawn than controls (Chapman, Edell, Chapman, 1980; Katsanis, Iacono, & Beiser, 1990; Katsanis, Iacono, Beiser, & Lacey, 1992). The Chapman group also developed a scale of Social Anhedonia, which is less used (Chapman et al. 1976).

The Perceptual Aberration and Magical Ideation
Scales measure the other schizotypal-like traits examined in this study. Perceptual Aberration refers to distortions in body image and experiences of the body. This is similar to what Rapaport (1968) described as typical of the "overideational" preschizophrenic patient, one who was preoccupied with ideas, bodies, and fantasies. Subjects who score high (at least 2.0 standard deviations above the mean) on this scale exceed controls on a number of characteristics, most notably problems of concentration, abnormalities in communication and speech, psychotic-like experiences, and depression (Chapman, Chapman, & Raulin, 1978; Chapman & Chapman, 1985).

The other scale used in this study (Eckblad and Chapman, 1983) attempts to distinguish subjects reporting Magical Ideation. Magical Ideation is also related to the concept of the "overideational" preschizophrenic discussed earlier. Meehl theorized that the characteristic of Magical Ideation was an important precursor to schizophrenia. It has been reported (Chapman and Chapman, 1985) that subjects who scored high (at least 2.0 standard deviations above the
mean) on this scale exhibited similar symptoms to those who scored high on the Perceptual Aberration Scale. The two scales are also highly correlated. Thus, these two scales are used together in most research as well as in this study.

**Familial Traits of Relatives of Schizophrenics**

Over the past several decades, numerous investigators have been concerned with whether specific characteristics of family life are associated with the etiology and development of schizophrenia (Bateson, Haley, Jackson, Weakland, 1956; Lidz, Fleck, Alanen & Cornelison, 1957; Searles, 1959; Sanua, 1961; Laing, 1961; Bowen, Dysinger, & Basamania, 1959; Wynne, Ryckoff, Day, & Hirsch, 1958; Singer & Wynne, 1963; Yi-chuang Lu, 1961; Farina, 1960; Caputo, 1963; Cheek, 1964; Mishler & Waxler, 1964; Hirsch & Leff, 1971; Doane, 1978; Liem, 1980; Leff & Vaughn, 1981).

Personality characteristics and the social attributes of parents have been the focus of a considerable number of investigations since the early part of the present century. One of the products of this time period was the well-known notion of a "schizophrenogenic mother"
(Fromm-Riechmann, 1948). This concept has received little empirical support, however, and although some investigators (i.e. Lidz, 1973), have found that there is considerably more parental conflict in schizophrenic families than there is in normal ones, during the past several decades there has been a shift in the focus of attention among researchers in this area. The whole family has become the main focus of interest, and particularly the patterns the family members manifest when interacting and communicating with each other. For example, several groups of investigators (Ferreira & Winter, 1968; Mishler & Waxler, 1968, 1975; Murrell, 1971; Solvberg & Blakar, 1975; Herman & Jones, 1976) have found that normal families tend to be more flexible in their interactions with one another than schizophrenic families.

In one model of the normal family, the spouses form a coalition, as members of the parental generation, in which they maintain their respective gender-linked roles and are capable of transmitting useful ways of adaption to the society that they live in (Lidz, 1963; Minuchin, Rosman, & Baker, 1978). This may not occur in families with a schizophrenic or at-
risk member, where some theorists believe there is an overall blurring of sex and generation roles in the family and an obsession with and apprehension about incestuous feelings. These types of relationships are perceived as producing "abnormal" family environments in which it becomes very hard for children to learn ways of behaving that are appropriate for their age and sex during the course of their development. In addition, it is believed that these relationships predispose the individual towards irrationality and distortions in thinking (Lidz, 1963). These families also have a tendency to be isolated from their surrounding social and cultural environments.

Wynne and his team, formerly at the National Institute of Mental Health, focused originally on the quality and structure of role relationships within the family of schizophrenics (Wynne, Ryckoff, Day, & Hirsch, 1958). Wynne then began collaborating with Singer, concentrating instead on disordered communication in the families of schizophrenics. These two investigators believe that there are central features differentiating the families of young adult schizophrenics from normal families. First of all,
communications are typically blurred and poorly integrated. These dysfunctional styles of communicating meaning are considered to be characteristic of the entire family, not merely of the thought patterns of one parent or the disturbed child. Somewhat similar phenomenon are assessed in the present study by The McMaster Family Assessment Device (FAD; Epstein, Baldwin, & Bishop, 1983).

Secondly, Wynne believed that schizophrenic families typically relate to each other with inconsistent and inappropriate types of distance and closeness. Lastly, the structure of the schizophrenic family is noteworthy for the tactics that the family shares in denying or reinterpreting feelings that stir up anxiety.

Wynne uses the notions of "pseudohostility" and "pseudomutuality" in describing these structural patterns. He defines pseudomutuality by contrasting it with a relationship of true mutuality, and with a situation without reciprocal obligations, or nonmutuality. Wynne (1958) states:

.....in describing pseudo-mutuality we are emphasizing a predominant absorption in fitting together, at the expense of the differentiation of the identities of the persons in the
relation...In pseudo-mutuality emotional investment is directed more toward maintaining the sense of reciprocal fulfillment of expectations than toward accurately perceiving changing expectations.

Wynne describes pseudohostility as a state of chronic conflict and alienation among family members. The difference between pseudomutuality and pseudohostility, however, is essentially unimportant here; what is important is that both states are rigid and "pseudo." Both states are defenses that allow family members to maintain some semblance of life together without needing to confront the pervasive "meaninglessness" of their lives.

Role structures in these families are typically either very loosely structured or very rigid and stereotyped. Either structure creates difficulties for the development of appropriate role relationships. There is a "blurring" of boundaries between the individual and the role, which results in the child experiencing the family as all-encompassing of him/herself. The child is thus unable to find an identity separate from his/her role within the family. The child's perception of this enmeshment of the individual will be assessed by the "Cohesion Scale" of the FSS.
In order to preserve the illusion of harmony, deviations from the rigid role structure of the family are either not recognized or are reinterpreted. There are various family legends that place importance on the negative consequences that will occur if these rigidly defined roles are not adhered to. Each member's actions are approved of haphazardly and blandly in order to preserve a facade of peace and harmony. Family members generally try to act as if the family could be completely self-sufficient. There is a continuous, elastic encircling boundary around the family that has been called "a rubber fence" (Wynne et al., 1958). This "rubber fence" is related to the "Independence" subscale of The Family Environment Scale (FES; Moos & Moos, 1981) used in the present study. Individuals who score high on this scale are not likely to belong to a family which considers itself "completely self-sufficient." In addition, the "Favorable" and "Unfavorable" Adjectives Checked Scales, based on the subjects' ACL descriptions of their mothers and fathers will provide a measure of perceived or asserted harmoniousness or idealization.

Wynne's theory (1958) was developed largely from
clinical data derived from family therapy. More recently, Wynne and Singer (1963) have used a predictive method using psychological test data in an attempt to predict what type of schizophrenia, in terms of style of thinking, is present in an offspring based on the analysis of data of the schizophrenic's family. The data used are typically projective test material, though segments of parental interaction have also been utilized. Wynne and Singer (1963) believe that through the use of this method, they have been moved toward "greater precision in differentiating and defining concepts and greater attention to the process and methods by which data are assessed" (p.3). Since beginning to use the predictive method, Wynne and Singer have focused an increased amount of attention on psychosocial processes in the development of schizophrenia, and moved from an emphasis on family role structure to family communication.

Singer, Wynne, and their co-workers see schizophrenia as reflecting a faulty family environment that prevents the individual from attaining a stable ego identity; he/she is unable to develop the necessary strengths and capacities for normal personality
development. Their investigations have specifically focused on the thought disorder characteristic of schizophrenia. They believe that structural features of communication, and, in particular, communication that may result from and produce formal thinking disorders, is a more appropriate place to focus research than on the content of the disturbance.

Singer and her collaborators contrast the process of schizophrenic development explicitly with a model of normal personality development. They assume that a basic prerequisite for normal personality development in the child is the establishment of an adequate ego identity, and this is dependent upon a family environment that has an organized and clear role structure with a consistent and unambiguous focus of attention in interaction. Thus, to Singer and Wynne, for normal development to result, the family system must be the type of learning environment that allows both appropriate identification with parental figures and appropriate reality testing.

They suggest that in the interaction processes of the families of schizophrenic patients, neither adequate reality testing nor the opportunity for the
healthy integration of roles into the developing personality is allowed (Singer & Wynne, 1963). Wynne et al. (1958) believe that the rigid role structure combined with the norm of pseudo mutuality forces the child to act out the form of a role without understanding its substance. Because the required actions do not correspond to inner feelings and needs, the role cannot be properly integrated as a part of his/her self. Wynne and his associates believe that in intense pseudomutual relations role behavior eventually comes to be dissociated from individual experience. These roles are never really integrated into the functioning of an actively perceiving psyche, but rather govern the individual's behavior automatically, as if he/she is just "going through the motions."

Although these patterns of role behavior are not under the domain of an actively discriminating ego, they are internalized into the personality (Wynne et al., 1958).

Since the patterns of interaction are disjointed, a stable focus of attention that would allow the development of rational, ordered thought and permit reality testing is absent. A prominent position is given to the notion of "focal attention" by Singer and
Wynne in constructing a link between type of thought disorder present in the schizophrenic and the patterns of family interaction. Wynne and Singer (1964) see the family patterns of handling attention and meaning as "directly related to the development of capacities for focal attention in offspring (p.7)."

Though inadequate and inappropriate, these distorted modes of thinking and perceiving allow the child to function adequately within his/her family until adolescence. At this time however, to fully participate socially, the individual needs an independent and secure ego identity. A crisis arises from society's demand that the individual leave the rigid family role system and act as an independent person. For the adolescent this is a dilemma: he/she can neither adequately meet the new demands, nor remain completely within the family any longer; thus, he/she may develop a schizophrenic response. It seems likely that the hypothetically psychosis-prone individual perceives him/herself as dependent upon the family, with little chance to experience the sense of independence of his/her healthier cohorts. The level of independence perceived by the young adult is
assessed by the Independence subscale of the FES in the present study.

Thought disorder is also of crucial importance in the view of schizophrenia held by Lidz and his collaborators. Lidz (1963), like Singer and Wynne, believes that schizophrenia is primarily a disorder developing during adolescence, with the emphasis placed on the lack of an adequate identity and on the learning of distorted and irrational ways of thinking as part of the schizophrenic developmental process. However, these authors differ in the manner in which they view identity formation in adolescence and the consequences it has for the child.

Lidz views the lack of adequate identity models within the family as being the major problem in schizophrenic families. He sees the essential difficulty as the same for both boys and girls in this type of environment, that is, difficulty in forming a gender-appropriate identity in the presence of the faulty model that is provided by the same-sex parent. Lidz believes that in a pathogenic family, for the girl, the mother is hostile, cold, and aloof. The father is seen as being passive and inadequate in the
family of boys. With both the boy and the girl, the opposite sex parent attempts to undercut his/her spouse and make seductive advances to the child. Thus, there is a blurring of generational boundaries and a lack of proper adult models, resulting in a deficient, weak ego identity:

...These parents fail to provide a satisfactory family milieu because they cannot form a coalition as members of the parental generation transmitting their appropriate sex-linked roles, or transmit instrumentally valid ways of thinking, feeling, and communicating suited to the society into which the child must emerge....(Lidz, 1963).

Lidz believes that a child growing up in a family which lacks these fundamentals has confusing models for identification, which results in difficulty in achieving an identity linked to his/her sex, in surmounting incestuous attachments, and in finding meaningful guides to help them dependably relate to others.

Rather than an acute identity crisis centering on independence such as the one described by Wynne however, Lidz believes that the acute onset of a schizophrenic psychosis is precipitated by the child's fear of loss of control of either hostile or incestuous impulses. The child is so overwhelmed by these drives,
and by being unable to control them, that he/she adopts a schizophrenic response where either the perceptions of his/her own needs is dramatically changed, or rational ways of behaving are abandoned. As Lidz states:

The progression of the erotically toned child-parent attraction to an incestuous bond threatens the existence of the nuclear family, prevents the child from investing energy into extra-familial socializing channels, and blocks his emergence as an adult....His conscious avoidance of incest becomes necessary because of defective family structure and role confusion, the personalities of family members become further distorted because spontaneous interaction becomes impossible, role conflict inevitable, and crippling defenses necessary...Confronted by an untenable conflict and unable to find a path into the future, the schizophrenic patient withdraws from the demands of society and reality by breaking the confines imposed by the meanings and logic of his culture which, in turn further isolates the patient.....(Lidz, 1964).

This is basically a description of a psychosis which develops when a weak ego is no longer capable of controlling the person's inner drives. Since the child never learned rational problem-solving, he/she has insufficient resources to rely upon at the time of the crisis. Lidz associates the difficulties just discussed to general inadequacies in parental nurturance patterns and the family environment's failure to provide a healthy socialization context for
normal development.

More recently, investigators have found that the affective climate of the family can have an important influence on the course of the illness for the schizophrenic family member (Brown, et al., 1972; Vaughn & Leff, 1976; Leff & Vaughn, 1981; Vaughn et al., 1982). It has been observed that expressed emotion (EE) by the relatives to the schizophrenic member of the family can have an important impact upon the likelihood of subsequent relapse, with the highly critical or emotionally over-involved expressions measured by the EE construct increasing that likelihood (Vaughn & Leff, 1976; Leff & Vaughn, 1985). More recently, Doane and her colleagues have shown that the affective style (AS) of the family can be an important factor in the course of schizophrenia (Doane, Falloon, Goldstein, & Mintz, 1985; Doane, Goldstein, Miklowitz, & Falloon, 1986). The AS of the family essentially measures the emotional climate of the family, or how family members relate to one another. The present study attempts to examine the family environment as perceived by the hypothetically psychosis-prone individual and determine what effects this has on
individuals who have been hypothesized to contain young people who are early in the course of an schizophrenia. Phenomena related to EE will be attempted to be assessed by the "Conflict" subscale of the FES, while phenomena similar to those tapped by the AS measure will be assessed by the "Affective Responsiveness" and "Affective Involvement" subscales of the FAD.

Bateson (1961) turns the whole question of schizophrenic illness around by suggesting that the symptoms of schizophrenia are merely adaptive responses of an individual to an underlying family problem, analogous to the situation in which fevers are recognized in medicine as the body's response to disease. Similarly to the theorists described above, Bateson views the pathology to which the psychosis is a response as the garbled patterns of family relationships. He believes that the schizophrenic psychosis may have a curative function and runs a normal course that may end with the remission of symptoms. In regard to this, he states:

...this is one of the most interesting characteristics of the strange condition known as schizophrenia: that the disease, if it be one, seems sometimes to have curative properties...The dynamics of the curative nightmare are, however, quite obscure....Once precipitated into psychosis
the patient has a course to run....Once begun, a schizophrenic episode would appear to have as definite a course as an initiation ceremony - a death and rebirth - into which the novice may have been precipitated by his family or by adventitious circumstances, but which in its course is largely steered by endogenous process (Bateson, 1961).

Bateson's group is well known for its use of the expression, the "double bind," although this concept is not as well understood or operationalized as its popular usage would suggest. In his first comprehensive statement of a "communicational theory of the origin and nature of schizophrenia," Bateson said the following needed to be present in order for a double bind situation to exist:

1) Two or more persons ... 2) Repeated experience ... 3) A primary negative injunction ... 4) A secondary injunction conflicting with the first at a more abstract level, and like the first enforced by punishments or signals which threaten survival ... 5) A tertiary negative injunction prohibiting the victim from escaping from the field.

These five elements concretely demonstrate the manner in which the double bind becomes manifest as a system of interaction; by measuring the clarity and directness of family communication and the overall contentment of family members with the way that information is given and received, conceptually related variables will be assessed by the "Communication" subscale of the FAD in
the current study. Besides this general communication pattern consisting of conflicting injunctions, three other features of the double bind are considered necessary conditions for the development of schizophrenia. First of all, the notion of conflicting injunctions needs to be denied; secondly, the child can't escape from the situation; and thirdly, he/she is not allowed to "metacommunicate", or, in other words, cannot comment on or point to the conflicting nature of the communication. Neither the patient nor the parents are able to act as if they were aware of the disparities, and the parents insist that he/she respond.

This leaves the child in a "damned if you do and damned if you don't" situation (Bateson, 1960). He/she is trapped by the incompatible demands, and yet is not allowed to call attention to his/her predicament. There is generally a lack of consistency between different aspects of a message. For example, the literal meaning of the words may be quite different from the emotion conveyed by the tone of voice; or, the verbal content may contradict the hand gestures. Bateson explains this lack of consistency as involving
different "logical types" rather than simply different channels of communication.

In these types of incongruities involving different message levels or double binds, the child is threatened with punishment for whichever part of the incongruous message he/she chooses to respond to. Bateson and his collaborators suggest that the analogue to resolving logical paradoxes by the recognition of the use of two different levels of abstraction is the act of metacommunicating or commenting on the incongruity between the parts of a message. When this is not allowed, the person receiving the messages remains trapped because the incongruity cannot be resolved.

Within the frame of family interaction, the double-bind hypothesis as originally stated focused attention primarily on the interaction between mother and child in the development of schizophrenia, placing the emphasis on the problems faced by the child caught in the double bind. More recently, however, there has been more emphasis placed on the role the child plays in maintaining this system.

Haley (1963) looks at the entire family as an
interacting system. By doing this, he suggests some of the conditions that might exist in a society where double binds may be adaptive responses. By pointing to the importance of the struggle for power and control, Haley indicates that a major issue in all human relationships has to do with who is going to set the rules for the relationship. Haley views the family as a self-corrective social system which governs and regulates behavior and sees family members as being responsible for setting limits for each other's behavior.

Haley states that members of schizophrenic families, like all families, govern each other's behavior by imposing sanctions when their rules are violated. He believes, however, that the main difference is that in schizophrenic families, there is complete denial that anyone is making the rules, in other words, that anyone is acting as the "meta-governor." In regards to this, Haley notes:

Typically in these families the mother tends to initiate what happens, while indicating either that she isn't, or that someone else should. The father will invite her to initiate what happens while condemning her when she does. Often they suggest that the child take the lead, and then disqualify his attempts ... The family "just happens" to take actions in particular directions with no
individual accepting the label as the one responsible for any action ... The family of the schizophrenic would seem to be not only establishing and following a system of rules, as other families do, but also following a prohibition on any acknowledgement that a family member is setting rules. Each refuses to concede that he is circumscribing the behavior of others, and each refuses to concede that any other family member is governing him (Haley, 1963).

Haley states that the act of communicating itself involves defining one's relationship with the other individual. Any communication sets rules at some level in regard to the nature of the behavior that takes place in the relationship. The members of schizophrenic families however, attempt to avoid defining their relationships by disqualifying any or all of their messages. Haley suggests that the double bind is an adaptive response in a family where the members refuse to acknowledge that they are setting rules for each other's behavior, and thus, interaction focuses on denying any responsibility for the nature of their relationships.

Subsequent research (Doane et al., 1981) has focused on disqualification in communication by schizophrenic families. The present study uses the "Expressiveness" subscale in the FES and the "Communication" subscale of the FAD in an attempt to
assess this phenomenon similar to the "double bind." As described earlier in this paper, the double bind is essentially communication by the parent which includes conflicting sets of messages, placing the son/daughter in an impossible situation. The child is placed in a "damned if you do and damned if you don't" predicament. The "Expressiveness" subscale of the FES purports to measure "the extent to which family members are encouraged to act openly and to express their feelings directly" (Moos, 1981). The "Expressiveness" subscale thus seems to be inversely related to Bateson's "double bind." The "Communication" subscale of the FAD assesses the amount of clearness and content with the way that information is given and received in families. This is in direct contrast to the double bind and its set of incongruent demands.

All the theories mentioned up to this point state that schizophrenic families are in a state of chronic distress. This does not mean, however, that they are in a continual state of unhappiness and dissatisfaction. A family may hide under a facade of harmony to avoid expressing underlying and pervasive tension (Wynne et al., 1958). This would be
inherently unstable and unsatisfying in the same sense that neurotic defenses are considered unsatisfying in the context of personality dynamics. Wynne believes that although the defenses may be necessary to avoid overwhelming anxiety, they are not used without serious costs. Thus, the family that hides under a harmonious facade pays the price by the denial of reality and the loss of personal identities for the various family members (Wynne et al., 1958).

Despite the likely distress and lack of satisfaction in pathogenic families, variables that are assessed in this investigation by The Family Satisfaction Scale (FSS; Olson & Wilson, 1982), the pathological system is quite stable. These families persist and find ways of dealing with each other repeatedly. Although the members may be quite unhappy, this is still considered to be a closely intercommunicating system (Bateson, 1961).

Searles (1958) believes there are positive feelings between a schizophrenic and his/her parents. He states that the child stays in the relationship out of love for his/her mother, and out of the belief that if he/she left the relationship the mother would "go
crazy." This is quite different from the notion of Bateson that the child stays in the relationship because of the painful and inescapable double bind.

According to Lidz (1964), the child is brought into and becomes increasingly enmeshed in the family system in order to help stabilize it. But he/she is not allowed to work out a role for herself/himself that would threaten the existing parental role pattern, since that would threaten the emotional equilibrium of the parent(s). Though he/she is permitted to take a number of different positions within the structure, any position taken must be in line with the on-going parental relationship, and in this manner, the actions he/she takes preserve the system.

As mentioned earlier, there is hypothesized to be a general atmosphere of irrationality within the schizophrenic family. Along with this, there is commonly much isolation between the schizophrenic family and the rest of society (Lidz & Fleck, 1964; Leff & Vaughn, 1985; Karwacki, Schulberg, & Burns, unpublished manuscript, 1992). This atmosphere dramatically diminishes the child's ability to perceive and to communicate with the world outside of the
family. In order to maintain his/her position within the family, the child is forced to accept the distortions of communication and perception put out by the parents. He/she is thus forced into complete dependence on the family (Lidz, 1963).

Wynne and his team argue that normal families maintain themselves through complementary role expectations. If behavior is not consistent with the definitions of the family, sanctions are imposed. By imposing sanctions, accepted behaviors are perpetuated. The pseudo-relationships of a schizophrenic family are like this also, but are even more unquestionably accepted. Any deviations in role performance are either reinterpreted or denied.

Wynne et al. (1958) believe that one consequence of the rigid role structure in the schizophrenic family is that each member of the family develops a strong interest in maintaining things as they are. This is a direct result of the system not permitting a separation of family members' personal identities from their family roles. The development of an adequate ego identity requires the type of socializing environment where the individual is free to step back and try out
different ways of carrying out the expectations of his/her role. When the emphasis is placed on the rigid maintainance of a facade of relationship, and there is little tolerance for not fitting completely into a role, there is not a conducive atmosphere nor suitable opportunities to engage in the type of role-playing learning experience which enables the identity to be separated from the family role system.

In studying the families that schizophrenic patients grew up in, it is notable that the family milieu is nearly always described by researchers as seriously disturbed or distorted. Indeed, Lidz has stated that the disturbed family environment is found more consistently in schizophrenic research than any biochemical or genetic finding (Lidz, 1984). Although some investigators have sought to demonstrate a strong genetic component in the study of adopted-away offspring of schizophrenic parents (e.g. Lowing et al., 1983), more recent work recognizes the importance of intrafamilial environmental influences (Mirsky, 1984) as well.

Various theories have been examined in the present paper that hypothesize how the schizophrenic family
exerts its detrimental influence. In the search for dimensions along which disturbed and normal families differ, several areas of consistency exist in the research literature. Disturbed families have been found to change topics more frequently than normal families (Riskin & Faunce, 1970), as well as report less clear communication with one another than normal families (Solvberg & Blakar, 1975).

There have been a number of family studies that provide evidence suggesting that parent-child coalitions are characteristic of disturbed families (Cheek, 1964; Schuham, 1970; Mishler & Waxler, 1975). Mishler and Waxler (1975) found that parent-parent coalitions were more common in normal families. As noted earlier, Lidz (1973) found that there is considerably more parental conflict in schizophrenic families than there is in normal ones. In addition, normal families have been found to be more flexible in their interactions with one another (Ferreira & Winter, 1968; Mishler & Waxler, 1968, 1975; Murrell, 1971; Solvberg & Blakar, 1975; Herman & Jones, 1976). There is a trend for disturbed families to be less harmonious in their functioning than normals (Ferreira & Winter,
1965, 1968; Murrell, 1971), and for families with disturbed offspring to be less effective than normal families in dealing with tasks (Friedman & Friedman, 1970; O'Connor & Stachiowak, 1971; Mishler & Waxler, 1975; Glaser, 1976).

As noted earlier in this paper, Singer and Wynne (1963) believe that Communication Deviance is related to thought disorder in the offspring. Wynne, Singer, Bartko, & Toohey (1984) compared Communication Deviance in parental pairs with offspring ranging from normal to severely schizophrenic, and found that both severity of psychopathology in the parents and parental communication deviance were each related to severity of offspring disturbance.

Riskin & Faunce (1970) found that in a family discussion task disturbed families changed topics more frequently, cut each other off, and shifted themes more frequently than normal families. Disturbed families are also more likely than normals to lack clarity in their communications with one another (Friedman & Friedman, 1970; Riskin & Faunce, 1970; Solvberg & Blakar, 1975).

Thus, as this brief review indicates, families of
schizophrenics emerge in empirical research as being less flexible, less harmonious, less effective, having a greater amount of parent-child coalitions, and with more communication deviance than normal families.

The Present Study

The purpose of the present study is to investigate the manner in which hypothetically psychosis-prone subjects with low-level schizotypal traits perceive their families, and to assess how satisfied they are with them. An advantage of doing research with this population of subjects is that they can be studied without the confounding effects of hospitalization and medication.

As reviewed above, there is more pathology and dysfunction in the families of schizophrenics than in those of normal families. Thus, in relation to hypothetically psychosis-prone subjects:

1) It is hypothesized that there will be greater evidence of family pathology and dysfunction as perceived by the young adult in the families of hypothetically psychosis-prone subjects than by controls in all of the seven areas to be assessed by
the McMaster Family Assessment Device (FAD).

2) Since Physical Anhedonic subjects are believed to experience less pleasure from their environment and to be less affectively involved with others than Per-Mags or controls, the second hypothesis is that Per-Mags and controls will perceive their families as having a greater amount of "Affective Responsiveness" and "Affective Involvement" than Anhedonics. Furthermore, it is also hypothesized that the controls will perceive their families as having more "Affective Involvement" and "Affective Responsiveness" than members of the Per-Mag group as well.

3) Since there is empirically a greater amount of psychopathology and dysfunction in families of schizophrenics, it is hypothesized that both Anhedonics and Per-Mags will express less satisfaction with their families than controls on the Family Satisfaction Scale (FSS).

4) It is hypothesized that hypothetically psychosis-prone individuals will view their families as deficient in the "positive" attributes (to be assessed by the FES subscales Cohesion, Expressiveness, Independence, Intellectual-cultural orientation,
Active-recreational orientation, and Moral-religious emphasis, but excessive in the more "negative" attributes, assessed by the FES subscales Conflict and Control, in comparison to the control group.

5) Finally, since it has been suggested by Lidz's work that there is more conflict between the schizophrenic offspring and his/her same sex parent, it is hypothesized that the hypothetically psychosis-prone subjects will use more Negative adjectives in their descriptions of the same-sex parent than they will for the opposite-sex parent, more Positive adjectives for the opposite-sex parent than they will for the same-sex parent, and that they will describe the opposite-sex parent as being more Nurturant in comparison to the same-sex parent on the Adjective Check List (ACL) descriptions of the parents.

Methods

Subjects

Subjects are male and female college students who completed the Wisconsin Scales of hypothetical psychosis-proneness (Perceptual Aberration, Magical Ideation, Physical Anhedonia, and Impulsive
Nonconformity) as part of a general testing in the Introduction to Psychology course taught at the University of Montana. The study includes a total of 21 male and 31 female subjects identified by the Perceptual Aberration-Magical Ideation Scales, 4 male and 36 female subjects identified by the Physical Anhedonia Scale, and 31 male and 36 female control subjects, a total of 159. Subjects who qualified for the study were contacted by phone. They were run in groups of approximately 5-10 (the smallest size group consisted of one subject, the largest of 12) in order to facilitate the answering of questions by the experimenter. Subjects were either paid a token sum of three dollars or received some class credit for participating in the experiment.

Experimental subjects met the following criteria: Per-Mags scored either at least two standard deviations above the mean on either the Perceptual Aberration or the Magical Ideation Scales (or both), or achieved a score of at least three or above on the sum of the standardized Perceptual Aberration and Magical Ideation Scales. Physical Anhedonic subjects were at least two standard deviations above the mean on the Physical
Anhedonia Scale, and did not qualify for the Per-Mag group; control subjects were no more than .5 standard deviations above the mean on all three scales, as well as on the Impulsive Nonconformity Scale, an additional measure of hypothetical psychosis-proneness not investigated here. All subjects received scores of 2 or less on an Infrequency Scale (Chapman, Chapman, & Raulin, 1978) designed to detect spurious responding. Subjects are all 35 years old or younger, and are all English speaking and Caucasian. Montana norms were used throughout this study; these norms tend to be slightly higher than the Chapman's Wisconsin norms.

For female subjects, the mean age was 48.43, 48.58, and 48.43 for the control group, the Anhedonics, and the Per-Mags respectively. For male subjects, the mean age of the mother was 44.87, 46.45, and 46.25 respectively for the controls, the Per-Mags, and the Anhedonics. With regard to the subjects' parents, analysis of variance revealed a significant main effect for sex between the age of the father and the sex of the subject ($F[2,156]=2.701, p<.05$). For the male subjects, the mean age of the father for the Anhedonics, Per-Mags, and controls was 48.75, 46.89,
and 46.67 respectively. For the female subjects, the mean age was 48.58 for the Anhedonics, 51.68 for the Per-Mags, and 50.68 for the controls. Similarly, a significant main effect for sex was found between the age of the mother and the sex of the subject $\left( F[2,156]=4.724, p<.05 \right)$.

It is difficult to explain these unexpected findings. Although it is unclear why, it is possible that the male subjects were more likely to go to college immediately after high school (thus having younger parents), while the female subjects may have waited before attending college, when her parents are more advanced in age.

None of the other ANOVA’S for the demographic variables of age, income, or educational level of the parents produced any significant differences. The mean education level for the father's of the controls, the Per-Mags, and the Anhedonics was 14.77, 15.08, and 13.77 respectively. For the mother's of the controls, the Per-Mags, and the Anhedonics, the mean level of education was 13.94, 14.68, and 13.66 respectively. Mean annual income for the control, Per-Mag, and Anhedonic males was $28,262, $28,048, and $30,010.
respectively. For the control, Per-Mag, and Anhedonic females, the mean annual income was $26,973, $27,504, and $24,873 respectively.

Measures

The Wisconsin Scales of hypothetical psychosis-proneness (Chapman, Chapman, Raulin, & Edell, 1978; Chapman & Chapman, 1985, 1987) are psychological tests specifically designed to screen large groups of young adults in order to identify and to study several groups of persons hypothesized to be at high risk for psychosis.

The coefficient alpha reliabilities of the scales are .80 for the Physical Anhedonia Scale, .90 for the Perceptual Aberration Scale, (Chapman, Edell, & Chapman, 1980), and .82 to .85 for the Magical Ideation Scale (Eckblad & Chapman, 1983).

The Perceptual Aberration Scale includes items such as "Sometimes I have the feeling that I am united with an object near me" (keyed true). Most of the items are similar to this in the sense that they refer to distortions in perception, often of one's own body (Chapman & Chapman, 1985). The Physical Anhedonia
Scale contains items such as "I have always loved having my back massaged" (keyed false). This scale measures a deficit in the capacity to experience physical pleasure (Chapman, Edell, & Chapman, 1980).

The Magical Ideation Scale (Eckblad & Chapman, 1983) was developed to measure cognitive characteristics strongly emphasized by Meehl (1962) as precursors to schizophrenia. Chapman & Chapman (1985) reported that high scorers on this scale displayed similar symptoms to those scoring high on the Perceptual Aberration Scale, and these scales are correlated ($r = .70$). Thus, the two scales are frequently combined into a single scale (Per-Mag Scale), as is done in the present study.

The Impulsive Nonconformity Scale (Chapman et al., 1985) was developed with the idea that only a subset of Per-Mag subjects are at actual risk for psychosis, and that this subgroup might be identified with the help of a paper and pencil measure of impulsivity. The traits that were emphasized in the development of this scale include a lack of concern for other people's rights or feelings, and a lack of respect for prevailing ethical and social standards of society. An illustrative
example of one of the items on this scale is "When I start out in the evening I seldom know what I'll end up doing" (keyed true). In the present study, the Impulsive Nonconformity Scale is used only to exclude subjects from the Anhedonic or the control groups.

Each subject received a packet containing the following materials: a consent form, a demographic questionnaire containing questions about age, family income, and education of parents, three family measurement instruments, and an ACL for the subject to describe his or her mother and one to describe his or her father. These materials are described below in the order in which they appeared in the subjects' booklets.

1) Consent form (Appendix A)

2) Demographic data sheet (Appendix B)

3) The McMaster Family Assessment Device, Version III (FAD; Epstein, Baldwin, & Bishop, 1983)

(Appendix C)

This 60 item survey was devised for measuring various attributes of healthy compared to unhealthy families. It is based on the McMaster Model of Family Functioning (Epstein, Sigal, & Rakoff, 1962; Westley &
Epstein, 1969), and identifies six salient dimensions of family functioning. The FAD distinguishes between healthy and unhealthy families through the use of the following dimensions: 1) Problem-solving; 2) Communication; 3) Roles; 4) Affective Responsiveness; 5) Affective Involvement, and, 6) Behavior Control. In addition, the FAD contains a seventh scale which the authors refer to as "General Functioning," which gives an overall score of family health or pathology. Internal consistency figures from a sample of 503 subjects who belong to both clinical and nonclinical family groups ranged from .72 to .92 (Chronbach's alpha) for the six scales. This assessment device also significantly predicted ($p<.001$) whether families came from the clinical or nonclinical group (Epstein, Baldwin, & Bishop, 1983).

4) The Family Satisfaction Scale (FSS; Olson & Wilson, 1982) (Appendix D)

The FSS is a 14 item inventory designed to evaluate the satisfaction of individual family members on the dimensions of Family Cohesion and Family Adaptability. A circumplex model of family systems
(Olson, Russell, & Sprenkle, 1979) was used to develop these two systemic aspects of family functioning. Through the use of factor analytic techniques, these authors isolated the two dimensions. Family Cohesion has to do with the extent to which families members are connected to or separated from their families. The model has four levels of cohesion which vary from extreme low cohesion (disengaged) to extreme high cohesion (enmeshed), with the healthiest levels of family functioning represented by the middle of the range. Family Adaptability (change) refers to the degree to which the family system is flexible and able to change when there are stressors. In addition, the FSS yields a total score representing overall family satisfaction. With the sample used in test development (N=433), the entire scale for family satisfaction yielded a Chronbach's alpha of .92. The Cohesion and Adaptability subscales had Chronbach's alpha coefficients of .82 and .86, respectively. The two dimensions of family behavior, "Cohesion" and "Adaptability," may be placed into a circumplex model used to identify different types of marital and family systems (Olson, Sprenkle, & Russell, 1979).
5) The Family Environment Scale (FES; Moos & Moos, 1981) (Appendix E) The FES is one of ten Social Climate Scales developed by Moos and associates. It is composed of ten subscales that measure the social-environmental qualities of various types of families. A distinct advantage of the FES is that its items can be easily understood by the respondents. There are three forms of the FES: the Real Form, which measures people's perceptions of their nuclear family environments; the Ideal Form, which measures how people would conceive of the ideal family environment; and the Expectations Form, which measures people's expectations of what a family will be like. Since perceptions are what this study is concerned with, only the Real Form was used in the present investigation. Three underlying sets of dimensions, the Relationship dimensions, the System Maintenance dimensions, and the Personal Growth dimensions are assessed by the ten subscales of the FES.

The Expressiveness, Conflict, and Cohesion subscales assess the Relationship dimensions; the extent of help, support, and commitment family members
have for each other are assessed. In addition, these scales also assess the degree that family members are able to express their feelings directly, to act openly, and to openly express aggression, conflict, and anger.

Achievement orientation, Active-recreational orientation, Moral-religious emphasis, Intellectual-cultural orientation, and the Independence subscales all assess the Personal Growth dimensions. The degree that members of the family are self-sufficient, assertive, and make their own decisions is assessed by these subscales, as is the extent that activities are placed into a competitive or achievement-oriented framework, the amount of family interest in social, political, cultural, and intellectual activities, the amount of importance placed on religious and ethical issues, and the degree of involvement in recreational and social activities.

The Control and Organization subscales assess the System Maintenance dimensions. The extent of clear organization and structure in planning family activities and responsibilities and the degree to which set rules and procedures are used to run family life are measured by these subscales.
Normative data on the Form R (the Real Form) subscales were collected for 1,125 normal and 500 distressed families. As anticipated, when compared to normal families, distressed families are lower on Cohesion, Expressiveness, Independence, and Intellectual and Recreational orientation, and higher on Conflict and Control.

For each of the ten FES subscales, Chronbach's alpha is in an acceptable range (varying from a high of .78 for Cohesion, Intellectual-cultural orientation, and Moral-religious emphasis, to a low of .61 for Independence), indicating a fair amount of internal consistency for the subscales. Test-retest reliabilities of individuals' scores for the ten subscales were calculated for 47 individuals who took Form R twice with an eight-week interval between testings. Test-retest reliabilities were all found to be in an acceptable range, varying from a low of .68 for Independence to a high of .86 for Cohesion.

6.) The Adjective Checklist (ACL; Gough & Heilbrun, 1980; Appendix F) was initially proposed in 1949 at the Institute of Personality Assessment and
Research (IPAR) at the University of California, Berkeley. The ACL was first used to record the reactions of staff members to individuals studied intensively in assessment programs. Although normative trait ratings were the standard technique for recording observations when the ACL was first developed, these ratings have been replaced by some researchers by idiographic methods of description, descriptions of an individual reflecting the relative levels of within-person characteristics rather than comparative rank in relation to others. When the subject provides an ACL description, he/she merely checks those items that seem necessary to give a comprehensive and differentiated description, producing an ipsative or ideographic description. In addition, a number of normative scales have been developed for the ACL. The checklist is especially useful since it can elicit words and ideas commonly used for description in everyday life in a standardized and systematic manner. The ACL requires no technical knowledge and no special competence of any kind to fill out. It has gone through a number of changes since it was first introduced, and is presently published in a 300-item form. There are a total of 37
scales that are currently recommended for scoring ACL protocols. The following scales will be focused on in the present study: "Number of Favorable Adjectives Checked," "Number of Unfavorable Adjectives Checked," and "Nurturance." Two ACL's were given to each subject: one to describe the subject's mother, and one for his/her father. Subjects were given a booklet containing an assortment of 300 adjectives, and were asked to read them quickly and put an "x" in the box beside each one they would consider descriptive of his or her mother. Subsequently, they were asked to do the same thing for their father.

**Procedure**

Subjects were identified based on their scores on the Wisconsin scales. They were then contacted by phone and asked if they would participate in the study in exchange for class credit or a small honorarium. The experimenter was blind to the groups to which the subjects belong. After subjects arrived at the place of testing, they were escorted to a classroom, and told to take a seat and await further instructions. Approximately five to ten subjects were run at any one
session, with one as the minimum and 12 as the maximum number run at any one time. After checking that everyone had a pencil, the following instructions were given:

Hi, I'm Tom Hamburgen, a graduate student in the Clinical Psychology Department here at the university. I'm currently working on a project that is concerned with the perceptions different individuals have of their families. I would like you to fill out four questionnaires, which are enclosed in the packets that you will be receiving shortly. Please read and follow the instructions carefully, and try to answer all the questions as honestly as you can. Your participation in this study will be confidential. I do not want to know who you are, just how you feel about the questions you are being asked. I will also pass out a sheet which asks for some demographic information, and a consent form for you to sign if you agree to participate. This form will not be attached to your questionnaires. Please do not put your name anywhere on the booklet itself. You should be able to complete this during this time, and can leave it with me on the way out. Please return all the booklets to me on the way out. Raise your hand if you have any questions while completing the questionnaires and I will come to help you.

Questionnaires and consent forms were then distributed to all subjects and collected near the door as they left.

Results

The Shipley Institute for Living Scale

No significant main effect for sex
or interaction effects ($F[2,150]=1.032, p=.36$) were found on the Shipley Vocabulary or Logical Reasoning subscales.

A 3X2 multivariate analysis of variance (MANOVA) was employed to analyze the responses on the subscales of each assessment instrument with group (Per-Mag, Anhedonic, and controls), and sex of subject as between-subject factors. Results of the MANOVA's revealed no significant effects due to sex on any of the instruments used in this study. Furthermore, univariate $F$-tests revealed that the main effects for sex across subscales of all instruments were always nonsignificant, with the exception of one subscale, "Affective Responsiveness," on the FAD. Thus, sex differences will not be discussed further. Group by sex interactions will be discussed where they occur.

The Family Environment Scale (FES)

On the Family Environment Scale (FES), multivariate analysis of variance (MANOVA) conducted over the ten scales was not significant for the
interaction of group by sex ($F[20, 288] = 1.114, p = .333$) or
the main effect for sex ($F[10, 144] = 1.091, p = .373$).
However, there was a strong significant main effect for
group ($F[20, 288] = 2.600, p = .0005$). Subsequent one-way
analyses of variance (ANOVA) revealed significant
differences between the control group and the
hypothetically psychosis-prone groups on the FES
subscales of Cohesion, Expressiveness, Moral-religious
emphasis, Intellectual-cultural orientation, Active-
recreational orientation, and strong trends on the
subscales Organization and Achievement Orientation.
Student-Newman-Keuls multiple range comparison
procedure revealed that Per-Mags and Anhedonics both
reported significantly less Cohesion ($F[2, 156] = 4.0805,
p < .02, M = 6.43, 5.35, and 5.55$ for controls, Per-Mags,
and Anhedonics, respectively), Expressiveness
($F[2, 156] = 5.188, p < .01, M = 6.07, 4.81$, and 5.10), and
Moral-religious emphasis ($F[2, 156] = 5.1691, p < .01,
$ $M = 5.42, 4.36$, and 4.10, for controls, Per-Mags, and
Anhedonics respectively) relative to controls. There
was a strong trend for Per-Mags to view their families
as significantly lower on the Organization subscale
($F[2, 156] = 3.033, p < .051, M = 5.58, 4.67$, and 5.15, and the
Achievement Orientation subscale (F(2, 156) = 2.855, p < .061, M = 5.94, 5.19, and 5.68), relative to the controls. On the Intellectual-cultural orientation subscale, both Per-Mags and controls viewed their families as significantly higher than the Anhedonics did (F(2, 156) = 9.87, p < .0001, M = 6.42, 5.77, and 4.40). These data are summarized in Tables 1 and 2 and Figure 1.

The Family Satisfaction Scale (FSS)

On the Family Satisfaction Scale (FSS), a MANOVA was conducted over the three scales. Although the group by sex interaction did not achieve significance (F(4, 304) = 1.112, p = .347), a significant main effect was found both on sex (F(2, 152) = 7.837, p < .001) and group
ANOVAs revealed significant differences between the hypothetically psychosis-prone subjects and the controls on all of the FSS subscales. The Student-Newman-Keuls multiple range procedure revealed that Per-Mags and Anhedonics both reported significantly less Cohesion ($F[2,156]=3.84, p<.025$, $M=29.01, 26.54, \text{ and } 26.02$, for the controls, Per-Mags, and Physical Anhedonics respectively), Adaptability ($F[2,156]=4.3545, p<.015$, $M=21.18, 18.56, \text{ and } 19.05$) as well as less overall Family Satisfaction ($F[2,156]=4.3469, p<.015$, $M=51.89, 45.61, \text{ and } 45.03$).

No significant differences between the Per-Mags and the Anhedonics were found.

A circumplex transformation was performed on these two scales to reduce them to a single "health" measure. Three was subtracted from the raw score of each test item in both subscales (Cohesion and Adaptability), this difference was squared, then the squares of these differences were summed, and finally, the square root of the combined summed squares was taken (Olson, Sprenkle, & Russell, 1979). Results of an analysis of this transformed score were significant for group ($F[2,153]=3.27, p=.041$), providing further support for
the significant results of the ANOVA's. These data are summarized in Tables 3 and 4 and Figure 2.

The McMaster Family Assessment Device (FAD)

On this measure of family functioning, scores for each statement range from "1-4," with "1" representing the healthiest level of functioning, and "4" the unhealthiest. On the FAD, the MANOVA conducted over the seven scales was nonsignificant for the interaction of group by sex ($F(14,294)=.777, p=.694$), and sex ($F(7,147)=1.573, p=.148$), although a strong trend was observed for the main effect of group ($F[14,294]=1.664, p=.062$). Subsequent one-way analyses of variance (ANOVAs) revealed significant differences between the controls and the hypothetically psychosis-prone groups.
on nearly all the FAD subscales. Student-Newman-Keuls multiple range comparison tests revealed that Per-Mags report their families as significantly higher (indicative of lower functioning) than controls on all of the subscales except Affective Responsiveness and Problem Solving. Per-Mags viewed their families as significantly lower, relative to controls on the subscales General Functioning, ($F[2,156]=4.0664, p<.02$), $M=21.33, 24.79, \text{ and } 24.28$), Communication ($F[2,156]=3.8876, p<.03$), $M=12.07, 13.79, \text{ and } 12.80$), Affective Involvement ($F[2,156]=3.2037, p<.05$), $M=13.27, 15.31, \text{ and } 14.68$), and Behavior Control ($F[2,156]=3.0890, p<.05$), $M=17.81, 19.56, \text{ and } 19.00$). Per-Mags and Anhedonics both perceived their families as significantly lower in functioning than controls on the subscale Roles ($F[2,156]=6.6847, p<.002$, $M=16.25, 18.58, \text{ and } 17.93$ for controls, Per-Mags, and Anhedonics, respectively). These data are summarized in Tables 5 and 6 and Figure 3.

Insert Tables 5 and 6 about here
The Adjective Checklist (ACL)

Initially, 13 subjects were dropped from the analyses using the ACL due to incomplete data. A MANOVA conducted over all 37 scales was nonsignificant for the interaction group by sex ($F[148, 134] = 1.231, p = .110$), as well as for the main effect for sex ($F[74, 67] = .892, p = .685$, and group ($F[148, 134] = 1.78, p = .167$).

It was hypothesized that the hypothetically psychosis-prone subjects would use more negative (unfavorable) adjectives in their descriptions of the same-sex parent than they would for the opposite-sex parent, more positive adjectives for the opposite-sex parent than they would for the same-sex parent, and that they would describe the opposite-sex parent as more nurturant in comparison to the same-sex parent. These hypotheses were tested using paired sample $t$-tests. Results showed that Per-Mag males described
their mothers as significantly higher than their fathers on the Favorable adjectives ($t_{19}=2.80$, $p<.015$), with means of 48.95 and 37.75 for their mothers and fathers respectively. They also reported their mothers as significantly higher than their fathers on the adjectives on the "Nurturance" scale ($t_{19}=2.14$, $p<.05$), with means of 49.35 and 40.90 for their mothers and fathers respectively.

Although there were no significant results for the females, the Anhedonic females exhibited a strong trend to view their mothers as more "Nurturant" than their fathers ($t_{32}=1.98$, $p<.06$, $M=49.38$ and $M=44.09$), contrary to the hypothesis. These data are summarized in Tables 7, 8, and 9.

Discussion

As stated earlier in this thesis, numerous investigators over the past several decades have been
concerned with whether specific characteristics of the family environment are associated with the etiology and development of the psychoses and schizophrenia in particular. In studies of the role played by familial factors in the development and course of psychosis, empirical data have been somewhat conflicting. The results of the present study provide preliminary support for the notion that hypothetically psychosis-prone college students express less satisfaction with and view their families as being more dysfunctional than the families of control subjects. Although in studies of schizophrenia it is unclear whether these family characteristics existed prior to the development of the disorder, the present investigation examines family factors before the confounding effects of hospitalization and medication have taken place, in a group hypothesized to be at risk for future breakdown. The data obtained in the present study contribute information to this scantly researched area of familial precursors of mental disorder assessed before the onset of the disorder.
Comparison of Hypothetically Psychosis-Prone and Control Groups on Family Variables

The Family Environment Scale (FES)

The purpose of the FES is to assess systematically the interpersonal climate of families so that clinically useful typologies of family environments can be constructed. Hypothetically psychosis-prone subjects (Per-Mags and Anhedonics) reported significantly more perceived family dysfunction on seven of the ten subscales of The Family Environment Scale (FES). These findings support the hypothesized difference between these two groups. On two of the seven scales in which findings were significant, however, Achievement Orientation and Organization, only the Per-Mags received significantly lower scores than the controls. It is unclear why the Anhedonics did not also score lower on these two dimensions. Since the Achievement Orientation subscale measures "the extent to which activities (such as school and work) are cast into an achievement-oriented or competitive framework" (Moos, 1981), this finding seems to imply that the
Anhedonics viewed their families as more competitive than did the Per-Mags (although this difference did not reach significance). It is possible that the Per-Mags are also focused inward on unusual experiences that are taking place in their mind and body and are less able to view their families as goal-directed than the Anhedonics, in spite of the Anhedonics' significant social withdrawal.

The same logic can be applied to the findings for Organization, the other subscale. It is quite conceivable that the Per-Mag may be so confused from the unusual and bizarre experiences that he/she is going through that it is exceedingly difficult for him/her to rate his/her family on "organization," because their own life feels so disorganized. Wynne et al. (1958) spoke of the lack of clearly defined roles in the families of schizophrenics, and how this may possibly be a precursor to the disease. Per-Mags may be one group of hypothetically psychosis-prone subjects that come from families that place minimal importance on clear organization and structure in planning family activities and responsibilities, and may thus be viewed that way by the subject.
Doane (1978) found a variety of dimensions among which disturbed and normal families differ: patterns of conflict, flexibility versus rigidity, family effectiveness and efficiency, and deviant styles of communication. It has been hypothesized that since there are a variety of measures that discriminate disturbed families from normal ones (Doane, 1978), hypothetically psychosis-prone individuals would view their families as deficient in the "positive" attributes, as measured by the subscales Cohesion, Expressiveness, Independence, Intellectual-cultural orientation, and Active-recreational orientation, but excessive in the "negative" attributes, assessed by the subscales Conflict and Control. These hypotheses were largely supported: controls were found to view their families as having significantly more Cohesion, Expressiveness, Achievement-orientation, Moral-religious emphasis, and Organization than the Per-Mags, and significantly more Cohesion, Expressiveness, Intellectual-cultural Orientation, Active-recreational Orientation, and Moral-religious Emphasis than the Anhedonics did in describing their families. In addition, the Anhedonic group scored significantly
lower than both the Per-Mags and controls on the Intellectual-cultural Orientation and the Active-recreational Orientation subscales. Apparently, the family of the isolated and withdrawn Anhedonic is also not involved in intellectual and recreational activities to the extent of the Per-Mags' families.

It is noteworthy that no significant differences were found for the subscales Conflict and Control, although it was hypothesized that the Per-Mags and Anhedonics would both have significantly higher scores than the control group on both of these dimensions. In considering the family dimension of "Control," it is possible that the responses to the "Control" scale are curvilinear in nature, with the most desireable response lying somewhere near the middle (similar to the FSS scales). It is thus conceivable that the families of those who are likely to be most dysfunctional (the two hypothetically psychosis-prone groups) would therefore be rated as very high or very low on this dimension, averaging into a less dysfunctional score near the middle. Upon examination of the means of the three groups, this seems to be one possibility that could have occurred. Anhedonics in
particular appear to vary more greatly in regard to their scores for the dimension of "control."

It is widely believed (e.g. Lidz, 1973; Leff & Vaughn, 1982, 1985) that there is more conflict in families of schizophrenics than in those of nondisturbed families. Why there was not more conflict reported for the hypothetically psychosis-prone groups relative to the controls in the present study is unclear. It seems plausible that the conflict which has been found in studies of schizophrenia could be a reaction to the schizophrenic proband later in the course of the illness, rather than a family environmental precursor of the disease. Leff & Vaughn (1985) found that a large proportion of schizophrenics and other patients who were discharged into environments in which there was a high degree of expressed emotion (EE) relapsed much sooner than their low EE counterparts. Conflict within the family was a very common feature for these probands. It is possible that although there is a strong association between conflict and relapse for schizophrenia, this is not necessarily germane to the relationship between conflict and hypothetically psychosis-prone
individuals, who have not yet experienced or may never experience a full-blown schizophrenic breakdown.

On the other hand, it has also been stated (Brown, 1972) that there is an "overlap" between the quality of the parental marriage, referred to as "emotional divorce," and the measure of parental conflict that was used in the expressed emotion (EE) studies. In other words, emotionally divorced parents are not completely withdrawn, but engage in high EE behaviors. Parental conflict in families where both parents were still living together has proven to be as powerful of a predictor of schizophrenic relapse as critical attitudes towards the patient (Vaughn & Leff, 1976). Therefore, the characteristics of a generally less favorable attitude towards the family and the perception of less satisfaction with the family that have been found with the hypothetically psychosis-prone subjects in this study have their counterparts among the factors that have been identified in the EE research literature as determining relapse of the illness. This possible continuity over time suggests that conflictual emotional attitudes may not be a direct response to the development of schizophrenia in
a family member, but could precede its appearance by as much as a number of years (Brown & Harris, 1978).
Thus, it seems surprising that, contrary to this author's prediction, the hypothetically psychosis-prone groups of the present study did not report more conflict in their families than the control group.

One possible explanation could be that the vast majority of subjects who participated in this study were college freshmen, 18 or 19 years of age, and away from their families for the first time. They may have had more of their energies focused on their new life at the university and have forgotten about some of the conflict that may have existed at home. They may also idealize their parents now that they are separated from them. Due to their greater amount of social withdrawal, however (Chapman, Edell, & Chapman, 1980; Chapman & Chapman, 1985; Haberman, Chapman, Numbers, & McFall, 1979; Beckfield, 1985), the Anhedonics seem less likely to fit this possible explanation than the Per-Mags.

The McMaster Family Assessment Device (FAD)

The results from the FAD in the present investigation provide additional evidence regarding
reported family pathology when hypothetically psychosis-prone subjects are compared to controls. Significant differences were found in the present study on five of the seven scales. The Student-Newman-Keuls multiple range comparison procedure revealed that the Per-Mags scored significantly higher (viewed their families as having more psychopathology) than the controls on the Communication, Affective Involvement, General Functioning, and Behavior Control subscales. The Per-Mags and the Anhedonics both viewed their families as significantly more dysfunctional on the subscale, Roles. These results are summarized in Table 2.

Hypothetically psychosis-prone subjects, as hypothesized, view their families as differing from controls on a number of different family dimensions. On the subscale Roles, which measures role allocation and acceptance of one's role within the family (Epstein, et al., 1983), both the Per-Mags and the Anhedonics viewed their acceptance of their role within the family as chaotic and maladaptive. Controls were much more likely to accept their roles and feel comfortable with them.
In the present investigation, the Affective Involvement subscale of the FAD measures the degree to which subjects experience their families as intrusive. This is similar to what is measured by the FSS subscale Cohesion used in this study, although the latter is more concerned with intrusiveness of time and space. The Per-Mags' expression of greater family pathology than controls on these two measures provides partial support for the second hypothesis of this study.

Although there was a significant effect for sex on the Affective Responsiveness subscale (the only sex difference in this study), this does not seem that remarkable. Considering that a total of twenty-six scales were examined, with the probability of a Type I error set at the .05 level, the odds are in favor of finding more than one significant difference merely by chance, given the number of univariate contrasts made.

It was hypothesized that since Physical Anhedonics are believed to experience less pleasure from their environment and to be less affectively involved than Per-Mags, Per-Mags would perceive their families as having a greater amount of Affective responsiveness and Affective involvement than Anhedonics. However, this
hypothesis was not supported. The effect for Affective responsiveness did not achieve statistical significance: the control group did, however, have a significantly lower (healthier) mean score on the Affective Involvement subscale than the Per-Mag group, although there was no significant difference involving the Anhedonics. The only other subscale that did not achieve significance in the predicted direction is the Problem-solving subscale. The reason for this is not entirely clear. Problem solving refers to "the family's ability to resolve issues which threaten the functional capacity and integrity of the family at a level that maintains effective family functioning (McMaster, 1983)." The Problem-solving subscale has the fewest number of items of the scales on the FAD, with only five statements which pertain to it. It seems as though it would be difficult to discriminate different perceptions across this dimension with such a small number of items, which make this scale less reliable. On the whole, it appears that item content on the FAD reflects the functioning of the whole family, whereas the accuracy of a statement could easily vary across persons or subsystems within the
family. This seems especially likely to occur with the subscale Problem-solving as a result of the fewer statements relating to it. However, the reliability figure for the scale for a sample of individuals who were members of both clinical and nonclinical family groups achieved a Chronbach's alpha of .72, which is fairly reliable (Epstein, Baldwin, & Bishop, 1983). Thus, the reason for the failure of the Problem-solving subscale to reach significance remains unclear. Further work is needed with this population before any conclusive statements can be made.

The Family Satisfaction Scale (FSS)

It was hypothesized that since there is a greater amount of observed dysfunction and psychopathology in the families of schizophrenics, hypothetically psychosis-prone individuals would express less satisfaction with their families than would controls. The results of the present investigation supported this prediction. The control group was found to score significantly higher than the two psychosis-prone groups on both the Family Adaptability and the Family Cohesion subscales of the FSS. "Adaptability" has to
do with a family's ability to shift its role structure in response to change or stress. "Cohesion" essentially measures the families' degree of closeness. In addition to the differences found on the Family Adaptability and the Family Cohesion subscales, the total amount of satisfaction the subjects reported with their families (the sum of the score on the Family Cohesion and Family Adaptability subscales) was significantly higher for the control group than for the Anhedonics or the Per-Mags. It should be noted that the authors of the FSS suggest that the total score is preferable because it is most valid and reliable (Olson & Wilson, 1982). As noted earlier, the score created using a Circumplex Transformation (which only examines the total score) revealed that both the Per-Mags and the Anhedonics viewed their families as significantly less satisfying than the control group.

Minuchin et al. (1978) have discussed rigidity as a common component of dysfunctional family functioning. They describe it as "a family's lack of ability to adapt to change and growth." Although neither the FES nor the FAD have a subscale for "rigidity," the Family Adaptability subscale of the FSS used in the present
study is closely related to that dimension. There were significant findings found on this subscale, with the control group, as hypothesized, expressing a greater amount of satisfaction with this aspect of their family functioning than either the Per-Mags or the Anhedonics.

The Adjective Checklist (ACL)

Since it has been shown in Lidz's work (1963) that there is more conflict between the schizophrenic offspring and his/her same-sex parent, it was hypothesized that the hypothetically psychosis-prone subjects would use more "negative" (Unfavorable) adjectives in their descriptions of the same-sex parent than they would for the opposite-sex parent, more "positive" (Favorable) adjectives for the opposite-sex parent than they would for the same-sex parent, and that they would describe the opposite-sex parent as more Nurturant in comparison to the same-sex parent.

These hypotheses were examined directly using a paired sample t-test to test for differences within each group. No significant differences were found for the control group males or females. As hypothesized, the Per-Mag males viewed their mothers in significantly
more Favorable terms and as more Nurturant than their fathers, but Per-Mag females perceived differences that were not significant. This may be due in part to the greater emphasis on nurturing our culture places on the role of mothers in general, although this appears to be changing. The hypotheses that female Anhedonics would view the opposite-sex parent as more Nurturant and in more Favorable terms than the same-sex parent, and the same-sex parent in more Unfavorable terms than the opposite-sex parent were not supported. This difference was not tested for the Anhedonic males due to the small number of subjects in this group.

The reasons for the lack of support for these hypotheses regarding the Anhedonics are unclear. It is conceivable that the subjects have such blunted affect that they have difficulty endorsing any of the adjectives, positive or negative. Indeed, the total number of adjectives endorsed in describing both mothers and fathers was considerably and significantly lower for the Anhedonics than it was for both the controls and the Per-Mags (see Tables 8 and 9). It is also possible that these unexpected results could be due to an "ordering," "fatigue," or "lack of
motivation" effect, since this instrument was the last one the subjects completed. In addition, no differences were found among groups in the number of profiles flagged as "invalid" by the Berkeley computer program.

There are a total of 600 adjectives that subjects needed to look through for the ACL mother and ACL father combined. This can be fairly tedious and tiring, probably even more so for the Anhedonics, given their lack of energy and interest. They may have had little incentive or motivation to do a thorough and careful job. In addition, as stated earlier, there might well have been an ordering effect, since the ACL was the last instrument that they completed. It is possible that the subjects, particularly the Anhedonics, could have been fatigued or apathetic by this point.

Strengths and Weaknesses of the Present Study and Directions for Future Research

This is the only family study to this author's knowledge that has used a nonclinical population of hypothetically psychosis-prone college students.
Assuming at least a partial relationship between the subjects' reports and the reality of the family environments, the fact that significant results in the hypothesized direction were obtained on all four dependent measures (FES, FAD, FSS, ACL) with such a small sample size, amplifies the substantial real-life significance of these findings, which is that the type of family environment a hypothetically psychosis-prone individual grows up in could possibly have an effect on whether or not he/she subsequently develops psychosis.

One weakness of this study has already been mentioned. By having young college students fill out self-report instruments regarding their families while they are out of the home and living at school has the potential for confounding factors. It is difficult to ascertain how reliable their memories are, for in reality the vast majority of the students are supplying information based on how they view their home life as it was and not on how they viewed it when they actually lived at home. This allows for distortions to occur, and raises the question of just what is it that is really being assessed.

Another factor that weakens the present study is
the small size of the cell containing the Anhedonic males (3). Future work with this population should attempt to have more equal numbers in the various cells. There are other methodological weaknesses of the present study that need to be mentioned. First is the fact that one group of students received money for participation, while other students received class credit. This obviously has potential confounding effects. Furthermore, the time of year that the subjects were run is another additional factor that needs to be taken into account. The first group was run during the holiday season, while the assessment of the second group took place during springtime, near the end of the school year. Not only do the different seasons effect people's moods, but the time just prior to final examinations is known to be a considerably more stressful time for many students, which could easily have had an effect on the results of this investigation. In addition, students may have had more recent experiences with their families in one group versus another. This is suggested by the differences in the ages of the parents of members of the groups.
Conclusions

The present study examines whether there are differences in the perceptions that hypothetically psychosis-prone college students have of their families, compared to the perceptions of control subjects. Two groups of hypothetically psychosis-prone college students were identified by either the Wisconsin Per-Mag or Physical Anhedonia scale. The groups that are hypothetically psychosis-prone typically display sub-clinical schizotypal symptoms and are likely to show difficulties in interpersonal situations. The present investigation focused on the manner in which these subjects with schizotypal traits perceive their families and assessed how satisfied they are with them.

Although it is accepted that dysfunctional families are common in a schizophrenic population, this phenomenon, to the best of the author's knowledge, has not been examined in a hypothetically psychosis-prone population. The control group was found to differ from the two hypothetically psychosis-prone groups on a number of family dimensions. In particular, the Per-Mags and Anhedonics perceived more overall pathology
and dysfunction in their families than did the controls. The Per-Mags and Anhedonics also expressed less overall satisfaction with their families, as well as finding them less Cohesive and with a lesser amount of Adaptability (scores in the middle on these two scales are considered ideal, and both of these groups scored considerably below the middle). In addition, groups differed when these scales were transformed into a "Health" measure where middle range scores were transformed to high healthy scores.

Finally, the hypotheses that hypothetically psychosis-prone subjects would use more positive adjectives to describe the opposite-sex parent and more negative adjectives to describe the same-sex parent was supported for the Per-Mag males, but not for the Anhedonics or the Per-Mag females. Per-Mags, but not Anhedonics or controls, found the opposite-sex parent more Nurturant. Searching for the reason for this disparity would make an interesting investigation, and open up new areas for future research.

It has been shown that hypothetically psychosis-prone individuals (both Anhedonics and Per-Mags) report a great deal more psychopathology and a great deal less
satisfaction with their families than controls. Although it must be kept in mind that this study focuses on perceptions, which may or may not be the same as reality, the manner in which the individual views his/her family environment may indeed be more important than reality itself. These results add support to the belief in the importance of the family environment and family functioning in the etiology of schizophrenia and schizophrenia spectrum disorders. Although many questions remain unanswered, the present study supports the continuation of this type of research on this population.
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APPENDIX A

The purpose of this study has been explained to me, and I agree to participate. I have been told that I will be completing three questionnaires about my family and how I view them.

I understand that my participation is voluntary, and I am free to withdraw from the study any time I like. I further understand that my responses are anonymous.

It has been explained to me that this survey is for scientific research only, and that none of the participants will be identified. The experimenter's name and phone number have been given to me in the event that I have any questions regarding the investigation or questionnaires I filled out.

Student Signature_____________________________________

Date____________________________________
APPENDIX B

Information Sheet

ID#:____  Age:____  Sex: Male____  Female____

Racial-Ethnic Background: (Check all that apply)
White____  Native American____  Black____
Asian____  Hispanic____  Other (please specify)____

Year in school: (Check one)
Freshman____  Sophomore____
Junior____  Senior____
Age of Father:____  Age of Mother:____

Parent's present marital status: (Check all that apply)
Married only once____  Divorced____
Separated____  Single parent____
Remarried (mother)____  (father)____

Father's occupation: ________________
Mother's occupation: ________________

Father's education: (highest grade completed) ____
Mother's education: (highest grade completed) ____

Annual Family Income: (Check one)
Less than $10,000____  $10,000-20,000____
$20,000-30,000____  $30,000-50,000____
Over $50,000____
APPENDIX C

McMaster Family Assessment Device, Version III

Instructions: The following are a number of statements about families. Read each statement carefully and decide how well it describes your own family. You should answer according to how you see your family.

For each statement there are four (4) possible responses:

Strongly Agree (SA) Circle SA if you feel that the statement describes your family very accurately.

Agree (A) Circle A if you feel that the statement describes your family for the most part.

Disagree (D) Circle D if you feel that the statement does not describe your family for the most part.

Strongly Disagree (SA) Circle SD if you feel that the statement does not describe your family at all.

Try not to spend too much time thinking about each item, but respond as quickly and as honestly as you can. If you have trouble with one, answer with your first reaction. Be sure to answer every statement in the space below each one.

*Note: The following items comprise the scale. The response line for each item has been deleted in the interest of space and efficiency. It appeared in the study as follows:

<table>
<thead>
<tr>
<th></th>
<th>SA</th>
<th>A</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
</table>

1. Planning family activities is difficult because we misunderstand each other.

2. We resolve most everyday problems around the house.

3. When someone is upset the others know why.

4. When you ask someone to do something, you have to check that they did it.
5. If someone is in trouble, the others become too involved.
6. In times of crisis we can turn to each other for support.
7. We don't know what to do when an emergency comes up.
8. We sometimes run out of things that we need.
9. We are reluctant to show our feelings for each other.
10. We make sure members meet their family responsibilities.
11. We cannot talk to each other about the sadness we feel.
12. We usually act on our decisions regarding problems.
13. You only act the interest of others when something is important to them.
14. You can't tell how a person is feeling from what they are saying.
15. Family tasks don't get spread around enough.
16. Individuals in the family are accepted for what they are.
17. You can easily get away with breaking the rules.
18. People come right out and say things instead of hinting at them.
19. Some of us just don't respond emotionally.
20. We know what to do in an emergency.
21. We avoid discussing our fears and concerns.
22. It is difficult to talk to each other about tender feelings.
23. We have trouble meeting our bills.
24. After our family tries to solve a problem, we usually discuss whether it worked or not.
25. We are too self-centered.
26. We can express feelings to each other.
27. We have no clear expectations about toilet habits.
28. We do not show our love for each other.
29. We talk to people directly rather than through go-betweens.
30. Each of us has particular duties and responsibilities.
31. There are lots of bad feelings in the family.
32. We have rules about hitting people.
33. We get involved with each other only when something interests us.
34. There's little time to explore personal interests.
35. We often don't say what we mean.
36. We feel accepted for what we are.
37. We show interest in each other when we can get something out of it personally.
38. We resolve most emotional upsets that come up.
39. Tenderness takes second place to other things in our family.
40. We discuss who is to do household jobs.
41. Making decisions is a problem for our family.
42. Our family is interested in each other only when they can get something out of it.
43. We are frank with each other.
44. We don't hold to any rules or standards.
45. If people are asked to do something, they need reminding.
46. We are able to make decisions about how to solve problems.
47. If the rules are broken, we don't know what to expect.
48. Anything goes in our family.
49. We express tenderness.
50. We confront problems involving feelings.
51. We don't get along well with each other.
52. We don't talk to each other when we are angry.
53. We are generally dissatisfied with the family duties assigned to us.
54. Even though we mean well, we intrude too much into each others' lives.
55. There are rules about dangerous situations.
56. We confide in each other.
57. We cry openly.
58. We don't have reasonable transport.
59. When we don't like what someone has done, we tell them.
60. We try to think of different ways to solve problems.
APPENDIX D

Family Satisfaction Scale

INSTRUCTIONS: The following questions are about how satisfied you are with different aspects of your family. Think carefully about these items and circle your answer below each question using one of the following responses:

   (D)         (SD)         (GS)         (VS)         (ES)

HOW SATISFIED ARE YOU WITH:

1. how close you feel to the rest of your family?
2. your ability to say what you want in your family?
3. your family’s ability to try new things?
4. how often parents make decisions in your family?
5. how much mother and father argue with each other?
6. how fair the criticism is in your family?
7. the amount of time you spend with your family?
8. the way you talk together to solve family problems?
9. your freedom to be alone when you want to?
10. how strictly your family sticks to the assigned chores?
11. your family’s acceptance of your friends?
12. how clear it is what your family expects of you?
13. how often you make decisions as a family rather than individually?
14. the number of fun things your family does together?
APPENDIX E

THE FAMILY ENVIRONMENT SCALE (FES)

There are 90 statements in this booklet. They are statements about families. You are to decide which of these statements are true of your family and which are false. If you think the statement is "true" or mostly "true" of your family, make a "T" next to the statement. If you think the statement is "false" or mostly "false" of your family, make an "F" next to the statement.

You may feel that some of the statements are true for some family members and false for others. Mark "T" if the statement is true for most members. Mark "F" if the statement is false for most members. If the members are evenly divided, decide which is the overall stronger impression and answer accordingly.

Remember, we would like to know what your family seems like to you. So do not try to figure out how other members see your family, but do give us your general impression of your family for each statement.
1) Family members really help and support one another.

2) Family members often keep their feelings to themselves.

3) We fight a lot in our family.

4) We don't do things on our own very often in our family.

5) We feel it is important to be the best at whatever you do.

6) We often talk about political and social problems.

7) We spend most weekends and evenings at home.

8) Family members attend church, synagogue, or Sunday School fairly often.

9) Activities in our family are pretty carefully planned.

10) Family members are rarely ordered around.

11) We often seem to be killing time at home.

12) We say anything we want to around home.

13) Family members rarely become openly angry.

14) In our family, we are strongly encouraged to be independent.

15) Getting ahead in life is very important in our family.

16) We rarely go to lectures, plays or concerts.

17) Friends often come over for dinner or to visit.

18) We don't say prayers in our family.

19) We are generally very neat and orderly.

20) There are very few rules to follow in our family.

21) We put a lot of energy into what we do at home.

22) It's hard to "blow off steam" at home without upsetting somebody.

23) Family members sometimes get so angry they throw things.

24) We think things out for ourselves in our family.

25) How much money a person makes is not very important to us.

26) Learning about new and different things is very important in our family.
27) Nobody in our family is active in sports, Little League, bowling, etc.

28) We often talk about the religious meaning of Christmas, Passover, or other holidays.

29) It's often hard to find things when you need them in our household.

30) There is one family member who makes most of the decisions.

31) There is a feeling of togetherness in our family.

32) We tell each other about our personal problems.

33) Family members hardly ever lose their tempers.

34) We come and go as we want to in our family.

35) We believe in competition and "may the best man win."

36) We are not that interested in cultural activities.

37) We often go to movies, sports events, camping, etc.

38) We don't believe in heaven or hell.

39) Being on time is very important in our family.

40) There are set ways of doing things at home.

41) We rarely volunteer when something has to be done at home.

42) If we feel like doing something on the spur of the moment, we often just pick up and go.

43) Family members often criticize each other.

44) There is very little privacy in our family.

45) We always strive to do things just a little better the next time.

46) We rarely have intellectual discussions.

47) Everyone in our family has a hobby or two.

48) Family members have strict ideas about what is right and wrong.

49) People change their minds often in our family.

50) There is a strong emphasis on following rules in our family.

51) Family members rarely back each other up.
52) Someone usually gets upset if you complain in our family.

53) Family members sometimes hit each other.

54) Family members almost always rely on themselves when a problem comes up.

55) Family members rarely worry about job promotions, school grades, etc.

56) Someone in our family plays a musical instrument.

57) Family members are not very involved in recreational activities outside work or school.

58) We believe there are some things you just have to take on faith.

59) Family members make sure their rooms are neat.

60) Everyone has an equal say in family decisions.

61) There is very little group spirit in our family.

62) Money and paying bills is openly talked about in our family.

63) If there's a disagreement in our family, we try hard to smooth things over and keep the peace.

64) Family members strongly encourage each other to stand up for their rights.

65) In our family, we don't try that hard to succeed.

66) Family members often go to the library.

67) Family members sometimes attend courses or take lessons for some hobby or interest (outside of school).

68) In our family each person has different ideas about what is right and wrong.

69) Each person's duties are clearly defined in our family.

70) We can do whatever we want to in our family.

71) We really get along well with each other.

72) We are usually careful about what we say to each other.

73) Family members often try to one-up or out-do each other.

74) It's hard to be by yourself without hurting someone's feelings in our household.
75) "Work before play" is the rule in our family.
76) Watching T.V. is more important than reading in our family.
77) Family members go out a lot.
78) The Bible is a very important book in our home.
79) Money is not handled very carefully in our family.
80) Rules are pretty inflexible in our household.
81) There is plenty of time and attention for everyone in our family.
82) There are a lot of spontaneous discussions in our family.
83) In our family, we believe you don't ever get anywhere by raising your voice.
84) We are not really encouraged to speak up for ourselves in our family.
85) Family members are often compared with others as to how well they are doing at work or school.
86) Family members read, listen to music, art, and literature.
87) Our main form of entertainment is watching T.V. or listening to the radio.
88) Family members believe that if you sin you will be punished.
89) Dishes are usually done immediately after eating.
90) You can't get away with much in our family.
**APPENDIX F**

**THE ADJECTIVE CHECK LIST**

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**University of California, Berkeley**

**DIRECTIONS**

The answer sheet contains a list of 300 adjectives. Please read each adjective and decide if it describes you. Do not worry about oppositions, contradictions, and so forth. Mark your answer on the sheet. Try to be frank and fill in the spaces for the adjectives which describe you as you really are, not as you would like to be.

Use a No. 2 Pencil. Do not make stray marks. Place the spaces completely.

**ADJECTIVE SELF-DESCRIPTION**

| Adjective | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
|-----------|---|---|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 001       | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 002       | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 003       | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 004       | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 005       | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |

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**PARKER ANSWER SHEET**

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**UNIVERSITY OF CALIFORNIA, BERKELEY**

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**ADJECTIVE CHECK LIST**

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**DIRECTIONS**

The answer sheet contains a list of 300 adjectives. Please read each adjective and decide if it describes you. Do not worry about oppositions, contradictions, and so forth. Mark your answer on the sheet. Try to be frank and fill in the spaces for the adjectives which describe you as you really are, not as you would like to be.

Use a No. 2 Pencil. Do not make stray marks. Place the spaces completely.

**ADJECTIVE SELF-DESCRIPTION**

| Adjective | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
|-----------|---|---|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 001       | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 002       | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 003       | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 004       | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 005       | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
APPENDIX G

Shipley Institute of Living Scale

Part I

Instructions: In the test below, the first word in each line is printed in capital letters. Opposite it are four words. Circle the one word which means the same thing, or most nearly the same thing, as the first word. If you don’t know, guess. Be sure to circle the one word in each line that means the same thing as the first word.

EXAMPLE:

<table>
<thead>
<tr>
<th>LARGE</th>
<th>red</th>
<th>big</th>
<th>silent</th>
<th>wet</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)TALK</td>
<td>draw</td>
<td>eat</td>
<td>speak</td>
<td>sleep</td>
</tr>
<tr>
<td>(2)PERMIT</td>
<td>allow</td>
<td>sew</td>
<td>cut</td>
<td>drive</td>
</tr>
<tr>
<td>(3)PARDON</td>
<td>forgive</td>
<td>pound</td>
<td>divide</td>
<td>tell</td>
</tr>
<tr>
<td>(4)COUCH</td>
<td>pin</td>
<td>eraser</td>
<td>sofa</td>
<td>glass</td>
</tr>
<tr>
<td>(5)REMEMBER</td>
<td>swim</td>
<td>recall</td>
<td>number</td>
<td>defy</td>
</tr>
<tr>
<td>(6)TUMBLE</td>
<td>drink</td>
<td>dress</td>
<td>fall</td>
<td>think</td>
</tr>
<tr>
<td>(7)HIDEOUS</td>
<td>silvery</td>
<td>tilted</td>
<td>young</td>
<td>dreadful</td>
</tr>
<tr>
<td>(8)CORDIAL</td>
<td>swift</td>
<td>muddy</td>
<td>leafy</td>
<td>hearty</td>
</tr>
<tr>
<td>(9)EVIDENT</td>
<td>green</td>
<td>obvious</td>
<td>skeptical</td>
<td>afraid</td>
</tr>
<tr>
<td>(10)IMPOSTER</td>
<td>conductor</td>
<td>officer</td>
<td>book</td>
<td>pretender</td>
</tr>
<tr>
<td>(11)MERIT</td>
<td>deserve</td>
<td>distrust</td>
<td>fight</td>
<td>separate</td>
</tr>
<tr>
<td>(12)FASCINATE</td>
<td>welcome</td>
<td>fix</td>
<td>stir</td>
<td>enchant</td>
</tr>
<tr>
<td>(13)INDICATE</td>
<td>defy</td>
<td>excite</td>
<td>signify</td>
<td>bicker</td>
</tr>
</tbody>
</table>
(14) IGNORANT red sharp uninformed precise
(15) FORTIFY submerge strengthen vent deaden
(16) RENOWN length head fame loyalty
(17) NARRATE yield buy associate tell
(18) MASSIVE bright large speedy low
(19) HILARITY laughter speed grace malice
(20) SMIRCHED stolen pointed remade soiled
(21) SQUANDER tease belittle cut waste
(22) CAPTION drum ballast heading ape
(23) FACILITATE help turn strip bewilder
(24) JOCOSE humorous paltry fervid plain
(25) APPRISE reduce strew inform delight
(26) RUE eat lament dominate cure
(27) DENIZEN senator inhabitant fish atom
(28) DIVEST dispossess intrude rally pledge
(29) AMULET charm orphan dingo pond
(30) INEXORABLE untidy involatile rigid sparse
(31) SERRATED dried notched armed blunt
(32) LISSOM moldy loose supple convex
(33) MOLLIFY mitigate direct certain abuse
(34) PLAGIARIZE appropriate intend revoke maintain
(35) ORIFICE brush hole building lute
(36) QUERULOUS maniacal curious devout complaining
(37) PARIAH outcast priest lentil locker
(38) ABET waken ensue incite placate
(39) TEMERITY rashness timidity desire kindness
(40) PRISTINE vain sound first level
Part II

Instructions: Complete the following by filling in either a number or letter for each dash (____). Do the items in order, but don’t spend too much time on any one item.

EXAMPLE: A B C D E

(1) 1 2 3 4 5 __

(2) white black short long down __

(3) AB BC CD D__

(4) Z Y X W V U __

(5) 1 2 3 2 1 2 3 4 3 2 3 4 5 4 3 4 5 6 ___

(6) NE/SW SE/NW E/W N/__

(7) escape scape cape __

(8) oh ho rat tar mood ___

(9) A Z B Y C X D __

(10) tot bard drab 537 ___

(11) mist is wasp as pint in tone ___

(12) 57326 73265 32657 26573 ___

(13) knit in spud up both to stay ___

(14) Scotland landscape scapegoat ___ ee

(15) surgeon 1234567 snore 17635 rogue ___

(16) tam tan rib rid rat raw hip ___

(17) tar pitch throw saloon bar rod fee tip end plank ___

___ meals

(18) 3124 82 73 154 46 13___

(19) lag leg pen pin big bog rob ___
(20) two w four r one o three —
Chapman Psychosis-Proneness Scales

Instructions

This booklet contains a questionnaire consisting of approximately 200 questions. Answer each question True (1) or False (2) as best applies for you, using the answer sheet provided.

The questionnaire asks about a number of different attitudes and experiences people might describe themselves as having. Please blacken choice "1" on your scantron if the statement is true as best applies for you, and blacken choice "2" if the statement is false as best applies for you. You may leave an item blank, if you wish, but try to answer even if you are not sure the statement really applies to you.

It is best to work as quickly as possible.

After we begin, please keep your answer to yourself and do not discuss them with your neighbors. Again, please no talking while you are filling out the questionnaire.

Answer the questionnaire only for times you were not using drugs.

This will take you about 50 minutes to fill out.

1. PLEASE ENTER YOUR SEX IN ITEM 1. Male = 1. Female =
2. I have sometimes enjoyed feeling the strength in my
3. Sometimes I have had feelings that I am united with an object near me.
4. On seeing a soft, thick carpet, I have sometimes had the impulse to take off my shoes and walk barefoot on it.
5. I sometimes have a feeling of gaining or losing energy when certain people look at me or touch me.
6. There just are not many things that I have ever really enjoyed doing.
7. Sometimes when I look at things like tables and chairs, they seem strange.
8. The sound of rustling leaves has never much pleased me.
9. Sometimes I feel like everything around me is tilting.
10. I have always hated the feeling of exhaustion that comes from vigorous activity.
11. At times when I was ill or tired, I have felt like going to bed early.
12. I don't understand why people enjoy looking at the stars at night.
13. I have been fascinated with the dancing of flames in a fireplace.
14. I have sometimes been fearful of stepping on sidewalk cracks.
15. I have often enjoyed receiving a strong, warm handshake.
16. The color that things are painted has seldom mattered to me.
17. I can remember when it seemed as though one of my limbs took on an unusual shape.
18. The taste of food has always been important to me.
19. I have always loved having my back massaged.
20. I have wondered whether the spirits of the dead can influence the living.
21. The bright lights of a city are exciting to look at.
22. The sounds of a parade have never excited me.
23. Things sometimes seem to be in different places when I get home, even though no one has been there.
24. I think I could learn to read others' minds if I wanted to.
25. The beauty of sunsets is greatly overrated.
26. I have felt that my body and another person's body were one and the same.
27. When I have seen a statue I have had the urge to feel it.
28. At times I perform certain little rituals to ward off negative influences.
29. I have felt that I might cause something to happen just by thinking too much about it.
30. I have been disappointed in love.
31. After a busy day, a slow walk has often felt relaxing.
32. Parts of my body occasionally seem dead or unreal.
33. I have always had a number of favorite foods.
34. I have occasionally had the silly feeling that a TV or radio broadcaster knew I was listening to him.
35. Sometimes people whom I know well begin to look like strangers.
36. There have been times when I have dialed a telephone number only to find that the line was busy.
37. It has always made me feel good when someone I care about reaches out to touch me.
38. I usually work things out for myself rather than get someone to show me how.
39. I have sometimes felt that strangers were reading my mind.
40. I have sometimes had the feeling that one of my arms or legs is disconnected from the rest of my body.
41. Sex is okay, but not as much fun as most people claim it is.
42. My hands or feet have never seemed far away.
43. When I have walked by a bakery, the smell of fresh bread has often made me hungry.
44. Flowers aren't as beautiful as many people claim.
45. It has often felt good to massage my muscles when they are tired or sore.
46. It has seemed at times as if my body was melting into
my surroundings.
47. Poets always exaggerate the beauty and joys of nature.
48. There have been a number of occasions when people I know have said hello to me.
49. Some people can make me aware of them just by thinking about me.
50. I have worried that people on other planets may be influencing what happens on earth.
51. I have never had the passing feeling that my arms or legs had become longer than usual.
52. I have usually finished my bath or shower as quickly as possible just to get it over with.
53. The hand motions that strangers make seem to influence me at times.
54. I have felt as though my head or limbs were somehow not my own.
55. Numbers like 13 and 7 have no special powers.
56. I have seldom cared to sing in the shower.
57. People often behave so strangely that one wonders if they are part of an experiment.
58. Now and then when I look in the mirror, my face seems quite different than usual.
59. I cannot remember a time when I talked with someone who wore glasses.
60. I have never had the feeling that certain thoughts of
mine really belonged to someone else.

61. Often I have a day when indoor lights seem so bright that they bother my eyes.

62. I've never cared much about the texture of food.

63. When I pass by flowers, I have often stopped to smell them.

64. I have sometimes had the feeling that my body is decaying inside.

65. It is not possible to harm others merely by thinking bad thoughts about them.

66. I have had the momentary feeling that someone's place has been taken by a look-alike.

67. I have sometimes felt that some part of my body no longer belonged to me.

68. I like playing with and petting soft little kittens or puppies.

69. I have felt that there were messages for me in the way things were arranged, like a store window.

70. Beautiful scenery has been a great delight to me.

71. When introduced to strangers, I rarely wonder whether I have known them before.

72. I never wanted to go on any of the rides at an amusement park.

73. I have sometimes danced by myself just to feel my body move with the music.
74. I have often found walks to be relaxing and enjoyable.
75. I have never found thunderstorms exhilarating.
76. I cannot remember a single occasion when I have ridden on a bus.
77. I have noticed sounds on my records that are not there at other times.
78. When I start out in the evening I seldom know what I’ll end up doing.
79. I never have the desire to take off my shoes and walk through a puddle barefoot.
80. I sometimes have to touch myself to make sure I'm still there.
81. My sex life is satisfactory.
82. When eating a favorite food, I have often tried to eat slowly to make it last longer.
83. I have sometimes felt confused as to whether my body was really my own.
84. At times I have felt that a professor’s lecture was meant especially for me.
85. The boundaries of my body always seem clear.
86. I enjoy many different kinds of play and recreation.
87. It worries me if I know there are mistakes in my work.
88. I have felt that something outside my body is a part of my body.
89. I think flying a kite is silly.
90. I have usually found lovemaking to be intensely pleasurable.
91. I almost never dream about things before they happen.
92. Sometimes I have had the feeling that a part of my body is larger than it usually is.
93. I have had very little fun from physical activities like walking, swimming, or sports.
94. A good soap lather when I'm bathing has sometimes soothed and refreshed me.
95. For several days at a time I have had such a heightened awareness of sights and sounds that I cannot shut them out.
96. At times I have wondered if my body was really my own.
97. I am more sensitive than most other people.
98. The first winter snowfall has often looked pretty to me.
99. I sometimes have had the feeling that some parts of my body are not attached to the same person.
100. When I'm feeling a little sad, singing has often made me feel happier.
101. One food tastes as good as another to me.
102. My hearing is sometimes so sensitive that ordinary sounds become uncomfortable.
103. I have had very little desire to try new kinds of foods.
104. I have never felt that my arms or legs have momentarily grown in size.
105. I have always found organ music dull and unexciting.
106. I have sometimes had the passing thought that strangers are in love with me.
107. Occasionally I have felt as though my body did not exist.
108. I have seldom enjoyed any kind of sexual experience.
109. I have had the momentary feeling that I might not be human.
110. Sex is the most intensely enjoyable thing in life.
111. Occasionally it has seemed as if my body had taken on the appearance of another person's body.
112. I don't know why some people are so interested in music.
113. Horoscopes are right too often for it to be a coincidence.
114. I go at least once every two years to visit either northern Scotland or some part of Scandinavia.
115. I have usually found soft music boring rather than relaxing.
116. Good luck charms don't work.
117. Standing on a high place and looking out over the view is very exciting.
118. I am sure I am being talked about.
119. The smell of dinner cooking has hardly ever aroused my appetite.

120. I have had the momentary feeling that my body has become misshapen.

121. I have often felt uncomfortable when my friends touch me.

122. Dancing, or the idea of it, has always seemed dull to me.

123. Sunbathing isn't really more fun than lying down indoors.

124. Sometimes I have had a passing thought that some part of my body was rotting away.

125. Trying new foods is something I have always enjoyed.

126. On some mornings, I didn't get out of bed immediately when I first woke up.

127. The sound of organ music has often thrilled me.

128. I sometimes have had the feeling that my body is abnormal.

129. The sound of the rain falling on the roof has made me feel snug and secure.

130. I have had the momentary feeling that the things I touch remain attached to my body.

131. I have not lived the right kind of life.

132. Ordinary colors sometimes seem much too bright to me (without taking drugs).
133. Sometimes part of my body has seemed smaller than it usually is.
134. The warmth of an open fireplace hasn't especially soothed and calmed me.
135. On hearing a good song I have seldom wanted to sing along with it.
136. Sometimes I have felt that I could not distinguish my body from other objects around me.
137. I have often enjoyed the feel of silk, velvet, or fur.
138. I have sometimes sensed an evil presence around me, although I could not see it.
139. If reincarnation were true, it would explain some unusual experiences I have had.
140. I have never doubted that my dreams are the product of my own mind.
141. The government refuses to tell us the truth about flying saucers.
142. I've never cared to sunbathe; it just makes me hot.
143. A brisk walk has sometimes made me feel good all over.
144. I often get so mad that I lose track of some of the things I say.
145. I never get so angry I can't speak coherently.
146. Thinking things over too carefully can destroy half the fun of doing them.
147. It's important to save money.
148. I usually quit before finishing one activity in order to start something else.

149. As often as once a month I have become so angry that I have had to hit something or someone to relieve my anger.

150. I frequently overeat and wonder why later.

151. Most people say "please" and "thank-you" more often than is necessary.

152. My friends consider me to be a cool, controlled person.

153. When I want something, delays are unbearable.

154. I don't have much sympathy for people whom I can push around and manipulate easily.

155. Most of the mourners at funerals are just pretending to be sad.

156. My way of doing things is apt to be misunderstood by others.

157. Most people think of me as restless.

158. I always let people know how I feel about them, even if it hurts them a little.

159. I almost always do what makes me happy now, even at the expense of some distant goal.

160. I have had to invent some good excuses to get out of work or taking exams.

161. I think people spend too much time safeguarding their future with savings and insurance.

162. I break rules just for the hell of it.
163. I usually find myself doing things on "impulse".
164. I usually act first and ask questions later.
165. I rarely act on impulse.
166. I prefer being spontaneous rather than planning ahead.
167. I always stop at red lights.
168. I sometimes do dangerous things just for the thrill of it.
169. No one seems to understand me.
170. I let go and yell a lot when I'm mad.
171. I find it difficult to remain composed when I get into an argument.
172. Long-term goals are not as important for me as living for today.
173. During one period when I was a youngster I engaged in petty thievery.
174. Driving from New York to San Francisco is generally faster than flying between these cities.
175. I often do unusual things just to be different from other people.
176. I usually consider different viewpoints before making a decision.
177. Sometimes when walking down the sidewalk, I have seen children playing.
178. In school, I sometimes got in trouble for cutting up.
179. Being in debt would worry me.
180. I like to use obscene language to shock people.
181. People who drive carefully annoy me.
182. If I burped loudly while having dinner at the house of someone I knew, I would be embarrassed.
183. I liked to annoy my high school teachers.
184. When I really want something, I don't care how much it costs.
185. I believe that most light bulbs are powered by electricity.
186. My parents often objected to the kind of people I went around with.
187. I would probably purchase stolen merchandise if I knew it was safe.
188. I have never been in trouble with the law.
189. I do many things that seem strange to others but don't seem strange to me.
190. I wouldn't worry too much if my bills were overdue.
191. I try to remember to send people birthday cards.
192. I usually laugh out loud at clumsy people.
193. On some occasions I have noticed that some people are better dressed than myself.
194. I avoid trouble whenever I can.
195. It would embarrass me a lot to have to spend a night in jail.
196. I find that I often walk with a limp, which is the
result of a skydiving accident.

197. I have never combed my hair before going out in the morning.

198. I usually control my feelings well.
APPENDIX I

Items within each subscale of
McMaster Family Assessment Device
and
Olson's Family Satisfaction Scale

Family Assessment Device:

Problem-Solving:
We usually act on our decisions regarding problems.
After our family tries to solve a problem, we usually discuss whether it worked or not.
We resolve most emotional upsets that come up.
We confront problems involving feelings.
We try to think of different ways to solve problems.

Communication:
When someone is upset the others know why.
You can't tell how a person is feeling from what they are saying.
People come right out and say things instead of hinting at them.
We are frank with each other.
We don't talk to each other when we are angry.
When we don't like what someone has done, we tell them.

Roles:
When you ask someone to do something, you have to check that they did it.
We make sure members meet their family responsibilities.
Family tasks don't get spread around enough.
We have trouble meeting our bills.
There's little time to explore personal interests.
We discuss who is to do household jobs.
If people are asked to do something, they need reminding.
We are generally dissatisfied with the family duties assigned to us.

Affective Responsiveness:
We are reluctant to show our affection for each other.
Some of us just don't respond emotionally.
We do not show our love for each other.
Tenderness takes second place to other things in our family.
We express tenderness.
We cry openly.

Affective Involvement:

If someone is in trouble, the others become too involved.
You only get the interest of others when something is important to them.
We are too self-centered.
We get involved with each other only when something interests us.
We show interest in each other when we can get something out of it personally.
Even when we mean well, we intrude too much in each other's lives.

Behavior Control:

We don't know what to do when an emergency comes up.
We can easily get away with breaking the rules.
We know what to do in an emergency
We have no clear expectations about toilet habits.
We have rules about hitting people.
We don't hold to any rules or standards.
If the rules are broken, we don't know what to expect.
Anything goes in our family.
There are rules about dangerous situations.

General Functioning:

Planning family activities is difficult because we misunderstand each other.
In times of crisis we can turn to each other for support.
We cannot talk to each other about the sadness we feel.
Individuals are accepted for what they are.
We avoid discussing our fears and concerns.
We can express feelings to each other.
There are lots of bad feelings in the family.
We feel accepted for what we are.
Making decisions is a problem for our family.
We are able to make decisions about how to solve problems.
We don't get along well with each other.
We confide in each other.
**Family Satisfaction Scale:**

Family Cohesion:

*How satisfied are you with-*

- how close you feel to the rest of your family? (emotional bonding)
- your family's willingness to try new things? (family boundaries)
- how much mother and father argue with each other? (coalitions)
- the amount of time you spend with your family? (time)
- your freedom to be alone when you want to? (space)
- your family's acceptance of your friends? (friends)
- how often you make decisions as a family? (decision making)
- the number of fun things the family does together? (interests and recreation)

Family Adaptability:

*How satisfied are you with-*

- your ability to say what you want in your family? (assertive)
- how often parents make decisions in your family? (control)
- how fair the criticism is in your family? (discipline)
- the way you talk together to solve family problems? (negotiation)
- how strictly you stay with who does what chores in your family? (roles)
- how clear it is what your family expects of you? (rules)

Family Satisfaction = total of all of the above items
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<th>Anhedonic</th>
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Table 2

One-way Analysis of Variance (Group by Family Environment Subscale)
Significance at p < .01, .05, and .10 (trend)

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Figure 1
Mean Scores on Family Environment Scale by Control, Per-Mag & Anhedonic Subjects
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Figure 2
Mean Scores on Family Satisfaction Scale by Controls, Per-Mags, and Anhedonics
Table 5
Means and Standard Deviations on McMaster FAD*
As Reported by Anhedonic, Per-Mag, and Control Subjects

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*On FAD, lower scores reflect healthier functioning.
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Figure 3
Mean Scores on McMaster FAD by Controls, Per-Mags, and Anhedonics

Note: On FAD, lower scores reflect healthier functioning
Table 7
Means and Standard Deviations of Hypothesized Differences on Adjective Check List
as Reported by Anhedonic, Per-Mag, and Control Subjects

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Means and Standard Deviations on Adjective Check List, Mother Variables

As Reported by Anhedonic, Per-Mag, and Control Subjects

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Table 9

Significant differences on ACL, Mother Variables

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<th>Test x Scale</th>
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**KEY**

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<td>MAS Masculine</td>
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<td>Favorable</td>
<td>AGG Aggression</td>
<td>NP Nurturing parent</td>
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<td>CRS Counseling RE</td>
<td>A2 High oricence, high intelligence</td>
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<td>SCN Self-confidence</td>
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<td>Intracception</td>
<td>PAJ Personal adjustment</td>
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<td>ISS Ideal self</td>
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<td>CPS Creative personality</td>
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Table 9, continued

Significant Differences on ACL, Father Variables

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