Psychometric Characteristics of Three Measures of SPD: Effects of Gender

(HONRS 499)

by

Lana L. Lennington

Thesis Advisor:
Dr. Deborah Ware Balogh

Ball State University
Muncie, Indiana

July 1992

July 18, 1992
Psychometric Characteristics of Three Measures SPD: Effects of Gender

Lana L. Lennington

Ball State University
Abstract

The aim of the present study was to assess possible gender differences between college females and males on three measures of schizotypal personality disorder (SPD); the Rust Inventory of Schizotypal Cognitions (RISC), the Psychosis Proness Scales and a relatively new scale developed by Venables, Wilkins, Mitchell, Raine and Bales. Separate analyses for males (n=364) and females (n=482) included item-total correlations and coefficient alpha estimates. Analysis of the psychometric properties of the measures suggests the measures are both reliable and internally consistent for both males and females. Gender effects were evaluated via t-test for each of the measures employed. Additionally, factor analysis procedures were applied to the RISC, and gender differences were evaluated for each factor of this measure. Finally, the Venables et al. scale was also evaluated in terms of gender differences on its two factors. Males tended to score significantly higher on subscales which taped more negative symptoms such as Physical Anhedonia while females scored significantly higher on some subscales which assessed more positive symptoms such as Schizophrenia, however, these results did not generalize to all the measures employed. No gender differences were found for the RISC as a whole and analysis of the factors also resulted in no gender differences. These findings converge with those obtained for negative symptoms among male schizophrenics but the present study found little support for the increased likelihood of positive symptoms among female subjects.
Gender Effects

Psychometric Characteristics of Three Measures of SPD: Effects of Gender

Researchers have consistently demonstrated gender differences among schizophrenics in premorbid history, expression of symptoms, physiological factors, age-of-onset, course, family history, and treatment response (Baron, Gruen, Asnis & Kane, 1983; Goldstein, 1988; Goldstein & Link, 1988; Lewine, 1981). The majority of findings suggest a more favorable course and outcome for females. A few studies, however, have demonstrated no differences between females and males (Dworkin, 1990; Leventhal, Schuck & Rothstein, 1984). Several arguments explaining the possible existence of gender differences found in schizophrenia have been purposed. Lewine (1981) has suggested the timing and subtype models. Misdiagnosis of schizophrenics and differences in the tolerance of schizophrenic symptoms for men and women are other arguments that are suggested to explain gender differences (Baron, et al., 1983; Burbach, Lewine & Meltzer, 1984; Lewine, 1981). The present paper addresses the generalizability of gender differences among schizophrenics to another classification within the schizophrenia spectrum -- namely schizotypal personality organization.
Research Supporting Gender Differences

Some studies of gender differences in schizophrenia support the hypothesis that men and women exhibit different patterns in many aspects of schizophrenia. In his review of the literature, Lewine (1981) concluded that male schizophrenics tend to exhibit poor premorbid competence, earlier onset, and negative symptoms while females tend to exhibit good premorbid competence, later onset, and positive symptom schizophrenia.

In a review of research conducted between 1980 and 1990, Seeman (1986) found several areas of gender differences: neuroleptic response, course, occupational functioning, housing status, social competence, and morbidity rate. Seeman suggests that female schizophrenics responded better to neuroleptics and required lower doses than male schizophrenics, although, after menopause female schizophrenics were more likely to suffer from tardive dyskinesia and require higher doses of neuroleptics than male schizophrenics in the same age category. Female schizophrenics were also more likely to have a more favorable outcome, better housing, better standard of living, and be less of a family burden. Finally, they were more likely to be
married, more likely to seek treatment, sustain outpatient treatment, and to be treated more positively by mental health staff and professionals (Seeman, 1986). Seeman (1986) also reports higher mortality rates for both male and female schizophrenics compared to controls, with male schizophrenics like males in other populations, being at greater risk for suicide than females.

Seeman (1986) suggests some explanations to clarify the discrepancies between male and female schizophrenics for variables such as standard of living, housing, and burden to the family. Because female schizophrenics tend to manifest symptoms later in life than males, they may have had the opportunity to develop social relationships such as getting married. A better standard of living and better housing among female schizophrenics are attributed to their male partners providing monetary support and housing. Alternatively, these factors may be related to the fact that female schizophrenics are more likely to be living with relatives who provide for them. Seeman (1986) also suggests that female schizophrenics tend to be less of a burden to their families because daughters are less vulnerable to high expressed emotion (EE), whereas males exposed to high EE are more likely
to develop psychotic symptoms. Thus those families that have higher EE feel a heavier burden from a schizophrenic son than high EE families with schizophrenic daughters.

Focusing on gender differences in the expression of symptomatology among hospitalized schizophrenics, Goldstein and Link (1988) found that men and women express schizophrenic symptoms differently. While women were found to express more impulsivity, aggressiveness, anger, and other affective symptomatology, male schizophrenics were found to express more withdrawal, isolation, and passivity.

Other investigations of gender differences among schizophrenics suggest differences in terms of course of illness. Lewine (1981) reported that men are at risk for first hospitalization during their twenties, whereas women are at greater risk for first hospitalization during their thirties. Similarly, Goldstein (1988) reported that schizophrenic women tend to experience a less severe course of illness than do schizophrenic men. In contrast to retrospective studies previously discussed, Goldstein (1988) conducted prospective research over a 10 year period and found that female schizophrenics experienced fewer rehospitalizations and shorter hospital stays than did males. These results also
indicated that women evidenced better social and work functioning, better response to neuroleptics, lower relapse rates, and less severe psychopathological outcomes.

Goldstein, Santangelo, Simpson and Tsuang (1990) also reported gender differences in schizophrenics using data collected in 1970. Probands were selected from a blind review of index admissions, follow up records, and interviews of patients admitted who had a chart diagnosis of schizophrenia. The probands were rediagnosed using DSM-III criteria for schizophrenia. The results of this study suggested that men were more likely to express a schizophrenic pattern characterized by poor premorbid history, winter births, and flat affect, whereas women were at a higher risk for schizophrenia characterized by dysphoria and persecutory delusions. Although these results support the contention that females and males differ in their expression of schizophrenia, the data are retrospective in nature and based upon preexisting hospital records (rather than interview data).

Angermeyer, Kuhn and Goldstein (1990) obtained similar results; data were gathered from subjects in psychiatric hospitals in Germany who were followed for 8 years after first hospitalization between 1978 and 1982. Subjects were later
Gender Effects

rediagnosed according to DSM-III criteria for schizophrenia and schizophreniform disorders. Women were found to have better course of hospital treatment, experience a shorter length of hospital stay, and survive longer in the community after their first hospital admission than schizophrenic men, who tended to spend significantly more time in the hospital.

Salokangas and Stengard (1990) also found evidence to support gender differences in schizophrenia. In a study of in premorbid functioning and functioning during the early stages of treatment, 227 patients diagnosed with schizophrenia according to DSM-III criteria were followed from their initial examination until two years after first assessment. No gender differences were found at time of admission in terms of expression of symptoms but the authors suggest this finding could be a result of the exclusion of all patients over 45 which eliminated well-functioning females from the study. At the two-year follow-up males showed more negative symptoms, expressed a more pessimistic view of their future functioning, had more relationship problems, and suffered from more depression than female schizophrenics. Females displayed better working capacity, overall functioning, and had more social contacts than male schizophrenics.
Also focusing on gender differences, Opjordsmoen (1991) studied the long-term outcome of schizophrenia. Subjects included 94 schizophrenics and 47 patients with schizophreniform disorder; all subjects were interviewed 10 and 31 years after their initial admission. No gender differences were found in level of functioning between male and female schizophrenics at the 10-year follow-up but gender differences were obtained at the 31-year follow-up. While males' level of functioning remained stable throughout the course of the illness, females' functioning deteriorated. An equal number of male and female schizophrenics were married, with marriage being associated with a negative impact on the illness for women but not for men. The finding that males have a better outcome than females is contradictory to most earlier research and possibly is a reflection of the previous lack of investigation into the long-term course of schizophrenia by other researchers.

Finally, Gureje (1991) found gender differences in age-of-onset of schizophrenia and for sociodemographic variables. Two-hundred fourteen schizophrenics (125 males, 89 females) were diagnosed according to Research Diagnostic Criteria (RDC) and family members of the subjects were interviewed to
confirm demographic information. Male schizophrenics were found to have an earlier age of onset, had better family socioeconomic status, and were less likely to be married than female schizophrenics.

Generally the investigations described above indicate that women experience later hospitalization and less severe course of schizophrenia; while men experience earlier hospitalization, more severe course, and poorer response to treatment. However, these data were not gathered for the purpose of research on gender differences, but rather were gathered for other purposes. Thus, these findings may not offer a complete picture of gender differences among schizophrenics. Additionally, these studies did not consider gender differences in other psychiatric groups; therefore the specificity of gender differences to schizophrenia remain unknown.

Research Supporting Absence of Gender Differences

In contrast to the research reviewed above, Leventhal, Schuck and Rothstein (1984) failed to obtain gender differences for age at first psychiatric hospitalization, age at first reported psychiatric symptoms, and premorbid competence, and further postulated that sex differences
obtained by other researchers were due to cultural artifacts. A possible explanation for these contradictory findings can be found in the criteria used to identify schizophrenic subjects. Leventhal et. al. (1984) used the World Health Organization Scale, New Haven Index, and criteria outlined by Feighner et. al. (1972), and subjects were not evaluated with regard to the DSM-III criteria for schizophrenia. A second possibility is their use of an outpatient, remitted sample; Goldstein and Link (1988) and Goldstein et al. (1990) both used an inpatient population while Opjordsmoen (1991) used an outpatient sample but still obtained gender differences. Dworkin (1990) found no sex differences between male and female schizophrenics in terms of negative or positive symptoms. Dworkin (1990) hypothesized that male and female differences in schizophrenia reflect different processes in the development and manifestation of schizophrenia and these independent processes should be researched separately. Although no differences were found for positive and negative symptoms, gender differences were found in that men tended to show greater asociality-withdrawal after the onset of their illness, poorer premorbid social competence and a younger ages of onset than women (Dworkin, 1990). Because Dworkin (1990)
diagnosed subjects according to European criteria thus, it is possible that gender differences were not found in this study because of the diagnostic criteria used. Other studies that demonstrated gender differences used DSM-III criteria to select schizophrenics (Angermeyer et al., 1990; Goldstein, 1988; Goldstein et al., 1990; Goldstein & Link, 1988; Lewine, 1981).

**Models of Sex Differences**

As stated above, existing research tends to support gender differences in schizophrenia and several theories have been proposed to explain these findings. Lewine (1981) proposed the timing and subtype models as two possible explanations for the observation of gender differences among schizophrenics. The *timing model* hypothesizes that schizophrenia among men and women is basically the same disorder, but has an early onset for men and a late onset for women. Because age of onset affects premorbid competence and type of clinical expression, men and women look clinically different. The *subtype model* proposes two types of schizophrenia. One is characterized by negative symptomatology, poor premorbid competence, and early onset, and the other is characterized by positive symptoms, good
premorbid competence, and late onset. The first subtype occurs primarily among men whereas the second subtype occurs most commonly among women. The subtype model includes sex as a defining feature of the subtype.

Variations of social role theory have also been offered to account for gender differences in schizophrenia. Lewine (1981) suggests that men face more psychosocial demands earlier than women that cause the onset of schizophrenia earlier in men. From this point of view, factors such as getting a job, leaving home, and establishing independent living situations contribute to the onset of schizophrenia for men, while family problems and childbirth contribute to the onset of schizophrenia for women. Thus, men and women face different social role demands that are associated with differences in onset, with males experiencing an earlier onset. Further research would be needed to evaluate this theory, but it appears that, as the role of women changes over time to resemble that of men, the age of onset for female schizophrenics should decrease.

Another explanation presented by Lewine (1981) and Goldstein and Link (1988) is that the schizophrenic symptoms expressed by women are tolerated more by their family
Gender Effects

members and so schizophrenia is detected, and reported, later in women than in men. Hence, men are hospitalized earlier than women, although the actual age of onset may be the same for both men and women. This explanation is used to account for age of onset differences between men and women. The theory that schizophrenic symptoms are tolerated longer in women than in men, resulting in what appears to be later onset for women, appears to suggest a general deficit in women's personalities. This theory tends to assume or suggest that women in general express traits, or are expected to express negative character traits, and therefore, when a woman develops a bonafide schizotypal personality disorder, it is tolerated or not detected for a longer period of time.

Misdiagnosis of women with affective disorder has also been hypothesized to account for the observation of relatively more positive symptoms among female schizophrenics (Burbach et al., 1984; Lewine, 1981; Lewine et al., 1984). This model, explaining sex differences as a function of misdiagnosis among women with affective disorders, is refuted by Goldstein and Tsuang (1990) who suggest that those studies that use diagnostic criteria other than DSM-III result in invalid classifications of schizophrenia and thus, the theory
The existing explanations of gender differences in schizophrenia appear to share a flaw in reasoning. All of the theories fail to identify and present an actual factor responsible for the observed differences. Instead, the existing phenomena are labeled or renamed. This type of faulty reasoning is known as the nominal fallacy, which occurs when consistent patterns are noticed, classified and then the classification is used to infer causation. An example of the nominal fallacy is the label of the subtype model proposed by Lewine (1981). The label is given through the acknowledgement of an emergence of two types of schizophrenia, one that is manifested primarily in men and the other, in women. The question of causation of the two types of schizophrenia is answered with the label of the subtype model. So, according to Lewine (1981) the two types of schizophrenia exist by definition of the subtype model. Lewine (1981) offers a classification that is insufficient in explaining causation. Similar reasoning can be applied to all of the explanations of gender differences.

Sex Differences in Schizotypy

The focus on gender differences between male and
female schizophrenics and the hypotheses presented for these gender differences has not been a focus of attention in research concerning schizotypics. Schizotypal personality disorder (SPD) has received increased attention in the last decade and although many researchers have investigated SPD, little research has been conducted to evaluate possible gender differences. Because schizotypal personality disorder often precedes schizophrenia, it would appear fruitful to evaluate schizotypal individuals because investigations of gender differences within SPD may provide useful information concerning gender differences among schizophrenics.

Development of the "Schizotypic" Construct

The diagnosis of schizotypal personality disorder is discussed in the work of Emil Kraepelin. Kraepelin was the first to describe a syndrome similar to what is classified today as schizophrenia, called dementia praecox, in 1904. In his extensive work with schizophrenics, Krapelin also observed abnormal personalities in the relatives of patients with dementia praecox. According to Kraepelin these individuals were, "probably for the most part regarded as 'latent schizophrenics' and therefore essentially the same as the principle malady" (c.f. Kendler, 1985). In a similar vein,
Deutsch (1942) reported "psychoanalytic observations" of a series of cases who were characterized by a marked impoverishment in the emotional relationship to the outside world. Deutsch noted a similarity between these personalities and the premorbid characteristics of schizophrenics (c.f. Kendler, 1985). Hoch and Polatin (1949) described a "pseudoneurotic form of schizophrenia" characterized by individuals who were seen for neurotic-like symptoms but who were fundamentally different from patients with true neurosis (c.f. Kendler, 1985). Pseudoneurotic schizophrenics were characterized by the symptoms that were primarily the same as those of schizophrenia, such as abnormal thought processes and distortions in self-concept and body image. Hoch et al. did not find any evidence of family relatedness in their study of schizophrenics (c.f. Kendler, 1985).

Rado first proposed the term schizotypal in 1953 when he used it to abbreviate the term schizophrenic phenotype. Rado explained that schizotypy evolved from the conceptual scheme of schizophrenia, proposing that schizophrenia was a inherited predisposition, passed to an offspring by both parents "by a Mendelian mechanism." Rado further proposed that individuals with schizotypy could be diagnosed before that
individual developed an "open psychosis"; thus the individual could be defined as a schizotypic by his / her "schizotypal organization." Rado's characterization of schizotypal symptoms focused on the schizotypic's "integrative pleasure deficiency" which causes an emotional disbalance and an extraordinary amount of fear, oversensitivity, and "profound insecurity in relation to self, to one's bodily parts, and to the environment." Because of schizotypics' extreme fear, they cannot function in human relationships and have a reduced capacity for affection and human sympathy. Rado also explains that schizotypal disintegration leads to a stage called open schizophrenic psychosis (Rado, 1953).

In keeping with Rado's conceptualization, Meehl (1962) used the term schizotypic to identify a neural integrative deficit. Meehl identified individuals whom he said were born with a genetic predisposition, called schizotaxia, a necessary component of schizotypy. If schizotaxic individuals were raised in stable environments they would not deteriorate, and would remain "well-compensated" schizotypics. If an individual with schizotaxia had experiences that aggravated the dormant predisposition, the schizotypic could decompensate into schizophrenia. Meehl suggests four
schizotypal source traits: cognitive slippage, anhedonia, ambivalence, and interpersonal aversiveness. Meehl's anhedonia is akin to Rado's integrative pleasure deficiency.

**Symptoms of Schizotypal Personality Disorder**

Recently, descriptions of schizotypy have become more encompassing. Schizotypal personality disorder has been conceptualized in two ways, familial and clinical (Jacobsberg, Hymowitz, Barasch & Frances, 1986). The familial approach emphasizes characteristic traits found in the deviant but non-psychotic relatives of schizophrenics and is primarily concerned with negative symptoms. Negative symptoms involve the aspects of social isolation and impaired functioning (Jacobsberg et al., 1986). The clinical approach focuses on patients who appear to demonstrate the fundamental symptoms of schizophrenia without psychotic symptoms or severe personality deterioration and is associated with a combination of positive and negative symptoms (Kendler, 1985). Positive symptoms involve magical thinking, odd communication, and ideas of reference (Jacobsberg et al., 1986).

The DSM-III-R classification includes nine criteria for schizotypal personality disorder that criteria includes both
negative and positive symptoms. DSM-III-R characterizes SPD by, "a pervasive pattern of deficits in interpersonal relatedness and peculiarities of ideation, appearance, and behavior, beginning by early adulthood and present in a variety of contexts, as indicated by at least five of the following: 1 ideas of reference (excluding delusions of reference). 2 excessive social anxiety, e.g. extreme discomfort in social situations involving unfamiliar people. 3 odd beliefs or magical thinking, influencing behavior and inconsistent with subculture norms, e.g. superstitiousness, belief in clairvoyance, telepathy, or 'sixth sense,' 'others can feel my feelings' (in children and adolescents, bizarre fantasies or preoccupations). 4 unusual perceptual experiences, e.g. illusions, sensing the presence of a force or person not actually present (e.g. 'I felt as if my dead mother were in the room with me'). 5 odd or eccentric behavior or appearance, e.g. unkempt, unusual mannerisms, talks to self. 6 no close friends or confidants (or only one) other than first-degree relatives. 7 odd speech (without loosening of associations or incoherence), e.g., speech that is impoverished, digressive, vague, or inappropriately abstract. 8 inappropriate or constricted affect, e.g., silly, aloof, rarely reciprocates gestures or facial
expressions, such as smiles or nods. Suspiciousness or paranoid ideation" (American Psychiatric Association, 1980).

The Relationship of Schizophrenia to Schizotypy

There is some empirical support for a genetic link between schizophrenia and schizotypal personality disorder. Kendler, Gruenberg, and Strauss (1981) interviewed relatives from the Danish Adoption Study of Schizophrenia and found a significantly higher prevalence of SPD in biological relatives of schizophrenic adoptees than in biological relatives of matched controls. Baron et al. (1983) reported that siblings who had two schizotypal parents were at greater risk for schizophrenia, for definite and probable schizotypal personality disorder, and for schizophrenia and schizotypal personality disorder combined than were control siblings. Further, siblings who had one parent without SPD and one parent with schizotypal personality disorder had a greater risk for schizophrenia, schizotypal personality disorder, and the two illnesses combined than siblings with two unaffected parents. When investigating age-of-onset differences Baron et al. (1983) also found support for a genetic link between schizophrenia and SPD, demonstrating that relatives of schizophrenics who were themselves schizophrenics and or
schizotypal had an age-of-onset of around 20 years. Furthermore none of the subjects had an onset after age 40. Baron et al. concluded that, "the lack of significant schizophrenic-schizotypal differences in average age of onset provides further support for the postulated genetic link between the two disorders, "and suggested that schizophrenia and schizotypal personality disorders may represent different phenotypic manifestations of the same underlying genetic dispositions.

Kety (1988) using the adoption samples from the Copenhagen and Denmark studies, found that chronic schizophrenia and schizotypal personality disorder were concentrated in the biological relatives of schizophrenic adoptees as compared to those of the controls, but not in the adoptive relatives. Relatedly, Torgersen (1980) hypothesized that schizotypals with more negative symptomatology are in the same diagnostic spectrum as schizophrenia. He found that, among the biological relatives of schizophrenic probands, both schizotypics and schizophrenics are found, but among schizotypic probands, only schizotypic biological relatives were found. This finding also suggests that the transmission of schizotypal personality disorder is genetically based.
The adoption studies provide support for a genetic link between schizotypal personality disorder and schizophrenia. However, the application of the findings from genetic studies is limited by the fact that only about ten percent of schizophrenics have relatives with the disorder. There is also a large body of research available on the gender differences in schizophrenia. However, research on gender differences in schizotypal personality disorder is very scarce. Because schizotypy usually precedes schizophrenia, it appears that there is a need to evaluate possible gender differences in schizotypy. Although interviews with biological relatives are commonly used to select schizotypics, a more economical and generalizable psychometric approach is available.

**Psychometric Detection of Schizotypy**

The use of psychometric scales appears to be a more economical way to select schizotypics than interviews with biological relatives. Psychometric scales can be administered in large groups, thus screening many people at once for the presence of specific attributes. Psychometric scales also have the advantage of being systematically scored which aids in the elimination of some of the error variance in interview-based
diagnosis. Several measures have been developed specifically for the detection of schizotypy including the Physical and Social Anhedonia, Perceptual Aberration, Magical Ideation, and Impulsivity-Nonconformity Scales developed by Chapman and associates (1976, 1978, 1982, 1983). Further examples of scales developed to detect schizotypy include the STQ developed by Claridge and Broks (1984), the Rust Inventory of Schizotypal Cognitions (RISC; Rust, 1988), and a new scale developed by Venables, Wilkins, Mitchell, Raine and Bailes (1990).

Chapman, Chapman and Raunin (1976, 1978) developed the Physical and Social Anhedonia scales for the measurement of anhedonia, or the impaired ability to experience pleasure. The scales were designed to avoid items with a gender, age, and social class bias. The Physical Anhedonia Scale consists of 61 items, the coefficient-alpha reliability of the scale is .80 with test-retest reliability of .79. The scales have been administered to college students, a control standardization sample, and a schizophrenic sample. The results were broken down by gender for the college sample and for the control standardization sample but for the schizophrenic sample only males were used in further analysis. The female control
subjects tended to score more hedonically than male control subjects (Chapman et. al., 1976). However, Balogh et. al. (1991) found that males tended to score higher on this measure.

Another scale developed by Chapman, Chapman, and Raulin (1978) is a scale designed to measure body-image aberration called the Perceptual Aberration Scale. Body-image aberration is defined as deviant perceptions, feelings, and beliefs about one's own body, such as perceptions of changed size or shape of the body and delusions involving the decay of internal organs. Although the 35 items on the Perceptual Aberration Scale were constructed to avoid bias toward gender, females tend to score higher than males. The scale has also been given to an all male schizophrenic population and an all male non-college control group. However, female schizophrenics were not considered in the development of the scale. The Perceptual Aberration Scale has a coefficient-alpha reliability of .90 and a six-week test-retest reliability of .79. The Perceptual Aberration Scale correlates negatively with the Physical Anhedonia Scale, suggesting that perceptual aberration and physical anhedonia measure separate characteristics of vulnerability to schizophrenia.

The Magical Ideation Scale was also developed as an
indicator of schizotypy (Eckblad & Chapman, 1983) and evaluates beliefs in forms of causation that, by conventional standards, are invalid. The scale is a 30-item true-false scale based on the Meehl's description of magical ideation as a core symptom of schizotypy. The scale has been given to male and female college students who were interviewed for for evidence of psychotic symptoms. Beyond the initial analysis of mean scores and coefficient alpha, no gender differences were considered. Research that has considered gender differences on the Magical Ideation Scale has generated mixed results with males sometimes showing higher scores, females sometimes showing higher scores, and sometimes no gender differences being found (Balogh et. al., 1991). A high positive correlation (r = .70) between the Magical Ideation Scale and the Perceptual Aberration Scale suggests these two measures tap the same domain. Thus, the two scales are often combined into the Perceptual Aberration-Magical Ideation Scale (Per-Mag Scale) (Chapman, Chapman & Miller, 1982).

A final scale developed by Chapman and associates is the Implusivity-Nonconformity Scale (Chapman, Chapman, Numbers & Edell, 1984). This 51-item scale measures a disregard or lack of concern for ethical and social standards, a lack of self-
control, and a tendency to act impulsively. Chapman, et al. (1982) report coefficient alpha values of .84 for male college students and .83 for female college students on this measure, but report no further analysis of gender differences. Gender differences for scores on the Impulsivity-Nonconformity Scale have been found with males scoring higher than females (Balogh et. al., 1991). Characteristics of individuals who score high on the scale include: antisocial behavior, heavy alcohol use, drug experience, and emotionally distant relationships with parents, friends, and siblings (Chapman et al., 1982). More importantly, high-scoring Impulsivity-Nonconformity subjects exceed control subjects on schizotypal symptoms, affective symptoms, and psychotic-like symptoms (Chapman et al., 1982). The Impulsivity-Nonconformity scale correlates approximately .67 with the Psychoticism Scale from the Eysenck Personality Questionnaire (Chapman et al., 1982). It has been suggested that the Impulsivity-Nonconformity Scale measures a tendency toward antisocial personality, supported by the finding that impulsive, nonconforming, and antisocial behavior is reported in the premorbid adjustment of some schizophrenics (Chapman, Chapman, Numbers, Edell, Carpenter & Beckfield, 1984).

Another scale used to measure schizotypy and borderline
personality in a nonclinical population was developed by Claridge and Broks (1984). This scale originated from a larger scale used in a pilot study by Reichenstein and yielded 97 items that covered different aspects of the cognitive, perceptual, and attentional disturbances discovered in the reports of schizophrenic individuals. The STQ assesses both schizotypal personality disorder and borderline personality disorder and is broken down into two scales -- the STA and the STB. The STA measures schizotypy and consists of 37 items, and the STB assesses borderline personality disorder, and consists of 18 items. Items on both scales correspond to the criteria set forth in the DSM-III for schizotypal and borderline personality disorders (Claridge & Broks, 1984). The STA and STB are substantially correlated, ($r = .71$) but only the STB scale correlates with the Eysenck Personality Questionnaire Psychoticism scale ($r = .38$, Claridge & Broks, 1984). The STA scale had virtually zero correlation with the EPQ Psychoticism scale, but both scales correlate with Eysenck's Neuroticism scale. Gender differences in responses were not considered in the development of this scale or in the validation procedure.

The Rust Inventory of Schizotypal Cognitions (RISC) was also developed to evaluate schizotypal personality disorder.
The RISC is a 26-item questionnaire used for assessing schizotypal cognitions associated with the positive symptoms of acute schizophrenia (Rust, 1988). The RISC was developed with special attention paid to the normal distribution in the general population, and emphasizing “cognitive content rather than cognitive deficit” (Rust, 1988). In validation studies the RISC has been shown to discriminate between acute schizophrenics and controls. The scale also has good face validity in that it has no obvious odd items and it is not readily apparent that the scale is measuring psychotic behavior. In the validation of the RISC analysis of gender differences in responses resulted in no significant sex differences (Rust, 1988). Balogh, Merritt, and Steuerwald (1991), in evaluating the concurrent validity of the RISC using the Chapman scales and the MMPI, found that the Magical Ideation scale accounted for most of the variability in scores on the RISC for males and females. Additionally, Steuerwald and Balogh (1991) found a relationship between interview derived ratings of DSM-III-R personality disorders and scores on the RISC with a non-clinical population. The relationship between RISC scores and schizotypy existed for symptoms that involved a cognitive component but not for those symptoms related to
social adaptation or interpersonal functioning. These suggest that the RISC is best utilized as a screening device for schizotypy rather than a diagnostic tool with non-clinical populations.

A final scale developed to measure schizotypy was constructed by Venables, Wilkins, Mitchell, Raine and Bailes (1990). It is a short scale with items borrowed from several of the scales discussed previously. The scale was designed to measure the negative and positive symptoms of schizotypy while maintaining face validity, i.e. not appearing to subjects to be measuring abnormal behavior. Gender differences for responding were not considered in validation or in the development of the scale. The scale was found to have three factors; schizophrenia, social anhedonia and physical anhedonia. The schizophrenia factor was associated with the positive aspects of schizotypy. The scale has never been used with a schizophrenic population, but the scale has been validated with Launay and Slade's scale of "hallucinatory predisposition", the Perceptual Aberration and Physical Anhedonia Scales, Golden and Meehl's Schizoidia Scale and Eysenck's and Eysenck's Psychoticism scale. These findings suggest that the scale measures both positive and negative
Symptoms of schizophrenia (Venables et al., 1990).

Scope of the Present Study

In an effort to address measurement of gender differences in characteristics associated with schizotypy, the present study utilized the positive / negative symptom framework to make predictions about males and females pattern of endorsement on psychometric scales of schizotypal attributes. Females were expected to obtain higher scores than males on measures that represent positive symptoms, while males were expected to score higher on scales that tap more negative symptomatology. Additionally, psychometric analyses of the measures involved were performed separately for males and females.

Given this positive / negative symptom framework, females were expected to score higher than males on the Perceptual Aberration Scale, Magical Ideation Scale and the Impulsivity-Nonconformity Scale. The Perceptual Aberration Scale and Magical Ideation Scale tap perceptions and cognitions associated with schizophrenia such as illusions and unconventional beliefs of causality. The Impulsivity-Nonconformity scale has generally been associated with higher scores for males but other evidence suggests that the scale
may produce higher scores among females. The Impulsivity-Nonconformity scale has been shown to be related to antisocial behavior, drug and alcohol use, and more angry and distant relationships (Chapman et al., 1984). It has also been suggested that female schizophrenics express more impulsivity, aggressiveness, and anger than male schizophrenics (Goldstein & Link, 1988). The evidence for female expressing more symptoms associated with the Impulsivity-Nonconformity scale leads to the prediction that females will score higher than males on this scale. Conversely, males were expected to score higher on the negative symptom measures such as the Social Anhedonia and Physical Anhedonia scales. The Social and Physical Anhedonia scales assess deficits in the ability to experience pleasure.

Gender differences in responding have not occurred on the RISC (Rust, 1988), which is further supported by other research (Balogh et al., 1991). Although the RISC was designed to assess positive symptoms, factor analysis of this measure suggests the presence of a social withdrawal, negative symptom factor. If RISC items are factor-scored based upon its components, gender differences may occur. The cognitive factor of the RISC was predicted to yield higher scores for
females while the social isolation factor was predicted to result in higher scores for males.

The final measure of schizotypy, designed by Venables et al. (1991), was predicted to result in higher scores for females on one factor and higher scores for male on the two remaining factors. The schizophrenism factor of the Venables scale is associated with positive symptoms of schizotypy and therefore was predicted to yield higher scores for females. The social anhedonia and physical anhedonia factors of the Venables measure tap negative symptoms and so males were predicted to score higher than females on those two factors.

Method

Subjects

Subjects were selected from a subject pool comprised of students enrolled in an introductory psychology class at a large Midwestern university. Subjects were required to participate in psychological research to receive credit for the introductory psychology class. Originally, 998 students participated in the study. Subjects were eliminated from the subject pool if their scores on the Personal Reaction Inventory exceeded two standard deviations above the mean reported by Marlowe and Crowne (1990). Subjects who failed to complete
90% of the items on any scale were also eliminated from further analysis. One-hundred-fifty-two subjects were eliminated, the final number of subjects consisted of 364 males and 482 females between the ages of seventeen and twenty-five.

Measures and Procedure

In this study four scales were employed: the Rust Inventory of Schizotypal Cognitions (Rust, 1988), a measure of social desirability developed by Marlowe and Crown (1982), the scale developed by Venables et al. (1991), and a composite of the various measures developed by Chapman and associates (1976, 1978, 1983, 1982) called "Survey of Attitudes and Experiences II" (see Appendix C).

These four measures where given to subjects in two-hour group sessions by at least one female experimenter and, occasionally, two female experimenters. The subjects were first given a copy of the statement of informed consent which was read outloud by the experimenter. The statement of conformed consent indicated that subjects would be completing scales that measured attitudes and experiences among college students. The statement of informed consent (see Appendix A) was the only testing material on which
subjects' names appeared; code numbers were used on all other materials to identify subjects.

The subjects also completed a demographic questionnaire (see Appendix B) that asked for information pertaining to age, sex, marital status, parental employment, year in school, college major and information about psychological history of the subject and his / her family. Subjects completed all scales on computerized scoring sheets and were allowed to complete the scales in any order. The Chapman scales were presented as one large scale titled "Survey of Attitudes and Experiences I", the RISC was presented as the "Survey of Cognitions", the Venables scale was titled "Survey of Attitudes and Experiences II", and the social desirability scale was presented as the "Personal Reaction Inventory". All instructions to the measures were given to the subjects according to the administration procedures outlined by the authors of the scales.

Upon completion of the scales subjects returned the testing materials to the experimenter and were given a debriefing sheet that outlined the major purpose of the study along with some information about the scales that the participants completed. Subjects who did not complete all the
scales or where suspected of randomly answering the questions on the scales were not included in the analysis of scores. Subjects data were not included in the analysis of scores if they were observed by the experimenter randomly answering questions on the scales, or if subjects did not follow the instructions for answering questions on the computerized score sheets. Subjects were suspected of randomly answering questions if they answered every question in one direction (all true or all false) or if they answered both true and false for each question.

Results

Preliminary Analysis

The mean age for subjects was 19.18 for males (SD = 1.49) and 18.55 for females (SD = 1.09). Summary statistics and frequency distributions were obtained for all scales and subscales along with the skewness and kurtosis of the distributions. These results are summarized in Table 1.

Estimates of coefficient alpha and item-total correlations were obtained for males and females for each scale and subscale. Alpha
values and both the highest and lowest item-total correlations obtained for each scale are summarized in Table 2. Cronbach’s alpha was used for the Rust Inventory of Schizotypal Cognitions because the data were continuous, while Kuder-Richardson-20 was used with all other dichotomous data.

Coefficient alpha and item-total correlations for each scale were examined separately for males and females. Item-total correlation values ranged from .59 (females; Perceptual Aberration) to -.12 (males; Physical Anhedonia). The overall item-total correlations were moderate to low. Coefficient alpha values ranged from .71 to .86 for males and from .89 to .73 for females.

Analysis of Gender Effects

Gender differences were evaluated via a t-test for each measure. The Venables scale was evaluated in two ways: first in terms of total score and second, in terms of factor scores. The schizophrenism factor consists of items 1, 4, 5, 7, 10, 13, 14, 15, 16, 17, 19, 24, 25, 27 and 29 while the combined social and physical anhedonia scales are comprised of items 2, 3, 6, 9, 11, 18, 20, 21, 22, 23, 28 and 30. Items 8 and 12 of the
Venables scale were excluded from the factor score analysis because item 8 did not load on either of the two anhedonia factors or the schizophrenism factor, and item 12 loaded on all three factors. The t-test results are reported in Table 3.

As predicted, males scored significantly higher than females on the Physical Anhedonia Scale, t=9.36, df=880, p<.0001, the Social Anhedonia Scale, t=8.81, df=881, p<.0001, and on the Anhedonia factors of the Venables Scale, t =12.43, df=875, p<.0001. Females scored significantly higher than males on the Schizophrenism factor of the Venables Scale, t= -3.55, df=876, p<.0001. No gender differences were obtained for the RISC. Contrary to predictions females did not score significantly higher than males on Magical Ideation, Perceptual Aberration, and Impulsivity-Nonconformity.

Secondary Analysis

In an effort to evaluate the lack of differences among females and males in the RISC, this scale was factor analyzed using a principle components analysis. A varimax rotation resulted in seven factors that accounted for 46 percent of the variance in subjects' scores. The seven factors were labeled
as: Illusions-Derealization (items; 5, 6, 14, 17, 18, 21, 23, 25, 26), Paranoid Self-Consciousness (1, 4, 17, 22), Superstitions (15, 21), Idealized Cognitions (3, 7, 11, 13), Illusions/Interactions (2, 5, 9, 10, 24), Distorted Interactions (2, 8, 16), and External Power Ideation (19, 20). In determining upon which factor an item loaded two criteria were used: first no loadings less than .3 were considered, and secondly an item was included within the factor upon which it loaded the highest. The item loadings are presented in Table 4.

Insert Table 4 about here

Mean scores for males and female on each of the RISC factors were calculated and subjected to t-tests. Males scored significantly higher on the Idealized Cognitions factor, \( t=5.17, \text{ df}=873, p<.0001 \). Females scores approached significance for the External Power Ideation factor, \( t=-1.69, \text{ df}=881, p<.092 \). The remaining factors did not yield significant gender differences. Because this analysis yielded few male-female differences, RISC total scores were factor analyzed again and forced into a three-factor solution corresponding to the three factors outlined by Rust: schizoid, paranoid, and self-actualization. This analysis resulted in the same factor
structure outlined by Rust with 28 percent of the variance accounted for in subjects' scores. However, no female-male differences were obtained for mean scores on these three factors.

Discussion

The present study was concerned with possible gender differences in attributes associated with schizotypal functioning. Research with schizophrenics has suggested gender differences in manifestation of symptoms. Females tend to express more positive symptoms while males tend to express more negative symptoms. Research addressing gender differences in schizotypy is scarce and the present study sought to investigate the possibility of gender differences in characteristics associated with schizotypy.

Gender specific analyses of the psychometric properties of the measures employed suggested that the measures appear equally reliable and internally consistent for females and males in a non-clinical college student sample. Estimates of coefficient alpha were moderate to high for both females and males. Item-total correlations were low to moderate for both males and females. The low item-total correlations were considered unsatisfactory for scales which are designed to tap
one dimension of schizotypy such as the RISC which taps schizotypal cognitions. In the case of the RISC, Rust reports a range of .11 to .36 for item-total correlations that is similar to the correlations obtained in the present study (1988).

Analysis of raw scores on the schizotypy measures employed here provide some support for the presence of gender differences between males and females. As predicted males scored significantly higher on the Physical and Social Anhedonia Scales and on the Ahnedonia factor of the Venables scale. These findings are comparable to those reported among schizophrenics. Specifically, male schizophrenics show more anhedonia than do female schizophrenics. The present findings are also similar to those of Raine (1992), who found that male college students scored higher on No Close Friends and Constricted Affect, both subscales of the Schizotypal Personality Questionnaire (SPQ) that tap negative symptoms. Also, as predicted females scored significantly higher on the Schizophrenism factor of the Venables scale, a finding that supports the greater tendency of female schizophrenics to evidence positive symptoms. Venables et al. (1990) suggest that the Schizophrenism factor taps positive symptoms because it appears to correlate with perceptual aberration and
hallucinatory predisposition which are both positive symptoms of schizotypy. This finding suggests that females manifest more positive symptoms.

Females were also hypothesized to score higher on the Magical Ideation, Perceptual Aberration, and Impulsivity-Nonconformity Scales because they tap the positive symptoms of schizotypy. However, the present study failed to obtain gender differences for these three scales. Raine (1992) also predicted that females would score higher than males on more positive symptoms scales. Indeed, Raine obtained higher overall scores for females than males on the Unusual Perceptual Experiences, Odd Speech, and Eccentric/Odd Behavior and Appearance subscales of the SPQ. However, the findings were nonsignificant and were not replicated in two individual samples. The Unusual Perceptual Experiences subscale is reported to be conceptually similar to the Perceptual Aberration Scale. The similarity between the scale employed by Raine and the Perceptual Aberration Scale suggests that females may not score higher on this particular facet of schizotypal symptoms.

Research concerning the RISC suggests that no gender differences exist for males and females for this measure when
a total score is considered. However, factor analyses of the 
RISC suggest that two factors exist that would be expected to 
produce gender differences given the data concerning female-
male differences among schizophrenics. The two possible 
factors of the RISC expected to produce gender differences are 
a cognitive component and a social withdrawal factor. The 
schizophrenia literature suggests that females would score 
higher on the cognitive or positive factor and males would 
score higher on the social withdrawal or negative factor. 
Because of the possibility of gender differences for the RISC a 
more detailed analysis of the factor structure of the RISC was 
performed. The seven factors extracted from the factor 
analysis of the RISC did not conform to the factor structure 
reported by Rust (1987) who obtained a three factor-solution 
for the RISC that included a schizoid factor, a cognitive / 
paranoid factor, and a self-actualization factor. For the factor 
solution obtained here males were expected to score 
significantly higher than females on the Paranoid Self-
Consciousness, Idealized Cognitions, and Illusions/Interaction 
factors with females scoring higher than males on the 
remaining factors. Although males did score significantly 
higher on the Idealized Cognitions factor and females scored
somewhat higher on the External Power Ideation factor, the results were nonsignificant for the other factors. The results suggest that the factor structure of the RISC does not interact with gender and thus several explanations may account for the lack of a consistent pattern of gender differences in the present study. First, the female-male differences in symptom expression among schizophrenics may not generalize to schizotypics. The results of the present study, coupled with those of Raine (1992), suggest that although an increased likelihood of negative symptoms occurs among males females are no more likely to evidence positive symptoms. Thus, the gender differences among schizophrenics concerning negative symptoms may generalize to schizotypics, whereas the gender differences concerning positive symptoms does not. However, this interpretation is constrained by the fact that the specificity of gender differences in the expression of positive and negative symptoms has not been established. Thus, previous results among schizophrenics and the findings of the present study may merely be the result of gender. Further research with various clinical samples is needed to confirm that the gender effect is unique to schizophrenia.

A second explanation for the present finding concerns the
psychometric soundness of the measures employed here. For example, the measures used here may not be as reliable and valid for one gender as they are for the other. This does not appear to be a likely explanation based upon the internal consistency estimates obtained here and the results of previous investigations of the reliability and validity of these schizotypy measures.

Finally, several features of the data set may have resulted in the failure to obtain a more consistent pattern of differences in the expected direction for both males and females. First, the Infrequency Scale was not used to eliminate subjects from the data before analyses. Typically, a score of greater than two is used to screen out subjects thought to be characterized by a fake-bad response set. Because males had a higher mean value on the Infrequency Scale than females, they could have had artificially inflated values on all measures due to a greater inclusion of subjects with a "fake bad" deviant response set. Additionally, even though subjects with high scores on the Marlowe-Crown Social Desirability Scale were eliminated prior to gender analyses, the remaining females still produced higher scores than males. Thus, it is possible that the female sample included more subjects with a
"fake good" response set, thereby artificially reducing their scores. These two features of the data may have resulted in bonafide gender differences. A follow up study might adopt the strategy of matching subjects on Infrequency, and Marlowe-Crown scores to minimize the impact of these variables upon measurement of specific traits associated with schizotypy.

The finding that males had higher mean score than females on virtually all the scales except for the Marlowe-Crown might also be explained by the difference in age between females and males. Research on schizophrenia suggests that males have an earlier onset (around twenty years), while females have a later age of onset. In this sample, males were somewhat older than females. It is possible that the males in this sample were at the age in which decompensation into more severe pathology had already begun thus causing higher scores than females on most measures. Although not part of this study, it is of interest to mention that in past research with college students using the MMPI, males consistently obtained more elevated scores while females had consistently normal profiles. Thus, it is possible that college males as a group, for whatever reason, appear more deviant on measures of psychopathology.
The present study found support for males expressing more negative symptoms, as assessed by several measures of schizotypy, while little support was found for females subjects expressing more positive symptoms than males. Research in the area of gender differences among schizotypics is limited and further research with varying clinical populations is needed.
References


Table 1
Summary Statistics for Males and Females on Measures of Schizotypy

<table>
<thead>
<tr>
<th>Measures</th>
<th>RISC</th>
<th>M-C</th>
<th>INF</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>F</td>
<td>M</td>
</tr>
<tr>
<td>M</td>
<td>35.70</td>
<td>35.59</td>
<td>12.52</td>
</tr>
<tr>
<td>S.D.</td>
<td>8.30</td>
<td>8.72</td>
<td>4.85</td>
</tr>
<tr>
<td>skewness</td>
<td>-0.29</td>
<td>-0.07</td>
<td>0.03</td>
</tr>
<tr>
<td>kurtosis</td>
<td>0.75</td>
<td>0.51</td>
<td>-0.49</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>MAG</th>
<th>N-C</th>
<th>PER</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>F</td>
<td>M</td>
</tr>
<tr>
<td>M</td>
<td>9.84</td>
<td>9.54</td>
<td>20.16</td>
</tr>
<tr>
<td>S.D.</td>
<td>5.05</td>
<td>5.61</td>
<td>7.23</td>
</tr>
<tr>
<td>skewness</td>
<td>0.36</td>
<td>0.66</td>
<td>-0.06</td>
</tr>
<tr>
<td>kurtosis</td>
<td>-0.39</td>
<td>0.05</td>
<td>-0.58</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>PHY</th>
<th>SOC</th>
<th>Venables</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>F</td>
<td>M</td>
</tr>
<tr>
<td>M</td>
<td>15.88</td>
<td>11.33</td>
<td>10.38</td>
</tr>
<tr>
<td>S.D.</td>
<td>7.98</td>
<td>5.85</td>
<td>5.41</td>
</tr>
<tr>
<td>skewness</td>
<td>0.65</td>
<td>0.88</td>
<td>1.04</td>
</tr>
<tr>
<td>kurtosis</td>
<td>-0.04</td>
<td>0.77</td>
<td>1.69</td>
</tr>
</tbody>
</table>

Note: RISC-Rust Inventory of Schizotypal Cognitions, M-C-Marlowe-Crown Personal Reaction Inventory, Inf-Infrequency, Mag-Magical Ideation, N-C-Impulsivity-Nonconformity, Per-Perceptual Aberration, Phy-Physical Anhedonia, Soc-Social Anhedonia, Venables-scale developed by Venables et al.
<table>
<thead>
<tr>
<th></th>
<th>Alpha</th>
<th>Highest Item-Total</th>
<th>Lowest Item-Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Males</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RISC</td>
<td>0.86</td>
<td>0.52</td>
<td>-0.12</td>
</tr>
<tr>
<td>M-C</td>
<td>0.74</td>
<td>0.37</td>
<td>0.04</td>
</tr>
<tr>
<td>Inf</td>
<td>0.79</td>
<td>0.56</td>
<td>0.21</td>
</tr>
<tr>
<td>Mag</td>
<td>0.79</td>
<td>0.47</td>
<td>0.16</td>
</tr>
<tr>
<td>N-C</td>
<td>0.81</td>
<td>0.51</td>
<td>0.03</td>
</tr>
<tr>
<td>Per</td>
<td>0.85</td>
<td>0.48</td>
<td>0.20</td>
</tr>
<tr>
<td>Phy</td>
<td>0.86</td>
<td>0.52</td>
<td>-0.12</td>
</tr>
<tr>
<td>Soc</td>
<td>0.79</td>
<td>0.44</td>
<td>0.12</td>
</tr>
<tr>
<td>Venables</td>
<td>0.71</td>
<td>0.43</td>
<td>-0.04</td>
</tr>
<tr>
<td><strong>Females</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RISC</td>
<td>0.76</td>
<td>0.48</td>
<td>0.10</td>
</tr>
<tr>
<td>M-C</td>
<td>0.76</td>
<td>0.41</td>
<td>-0.01</td>
</tr>
<tr>
<td>Inf</td>
<td>0.73</td>
<td>0.58</td>
<td>-0.01</td>
</tr>
<tr>
<td>Mag</td>
<td>0.84</td>
<td>0.49</td>
<td>0.14</td>
</tr>
<tr>
<td>N-C</td>
<td>0.84</td>
<td>0.46</td>
<td>0.08</td>
</tr>
<tr>
<td>Per</td>
<td>0.89</td>
<td>0.59</td>
<td>0.27</td>
</tr>
<tr>
<td>Phy</td>
<td>0.78</td>
<td>0.39</td>
<td>-0.06</td>
</tr>
<tr>
<td>Soc</td>
<td>0.76</td>
<td>0.42</td>
<td>0.02</td>
</tr>
<tr>
<td>Venables</td>
<td>0.76</td>
<td>0.48</td>
<td>0.10</td>
</tr>
</tbody>
</table>

Note: RISC-Rust Inventory of Schizotypal Cognitions, M-C-Marlowe-Crown Personal Reaction Inventory, Inf-Infrequency, Mag-Magical Ideation, N-C-Impulsivity-Nonconformity, Per-Perceptual Aberration, Phy-Physical Anhedonia, Soc-Social Anhedonia, Venables-scale developed by Venables et al.
Table 3. T-Tests Between Males and Females on Measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>T Value</th>
<th>Degrees of Freedom</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical</td>
<td>9.36</td>
<td>664.16</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Social</td>
<td>8.91</td>
<td>721.00</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Magical</td>
<td>-0.16</td>
<td>841.21</td>
<td>&lt;.875</td>
</tr>
<tr>
<td>Perceptual</td>
<td>1.69</td>
<td>832.32</td>
<td>&lt;.091</td>
</tr>
<tr>
<td>Impulsivity</td>
<td>9.76</td>
<td>804.16</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Infrequency</td>
<td>5.32</td>
<td>535.10</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>RISC</td>
<td>0.18</td>
<td>831.13</td>
<td>&lt;.854</td>
</tr>
<tr>
<td>Venables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anhedonia</td>
<td>12.43</td>
<td>617.35</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Schizophrenism</td>
<td>-3.55</td>
<td>849.72</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>

Note: Positive t values indicate males scoring higher than females, and negative t values indicate female scoring higher than males.
Table 4. Factor Analysis of the Rust Inventory of Schizotypal Cognitions

<table>
<thead>
<tr>
<th>Items</th>
<th>Factor Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Factor 1: Illusions-Derealization</strong></td>
<td></td>
</tr>
<tr>
<td>Sometimes people or objects seem to glow with an inner light. (25)</td>
<td>.67</td>
</tr>
<tr>
<td>I have, on occasion, tried to reach the very essence of an object with my mind. (12)</td>
<td>.59</td>
</tr>
<tr>
<td>Sometimes I get a weird feeling that I am not really here. (23)</td>
<td>.58</td>
</tr>
<tr>
<td>Things sometimes go so well for me that I suspect I may be receiving help from an outside agency. (26)</td>
<td>.55</td>
</tr>
<tr>
<td>Sometimes my thoughts seem so loud I can almost hear them. (6)</td>
<td>.53</td>
</tr>
<tr>
<td>Sometimes I suspect that the real world is nothing like what it seems. (18)</td>
<td>.51</td>
</tr>
<tr>
<td>I have occasionally had to explain sudden sniffing of a smell as my imagination. (14)</td>
<td>.44</td>
</tr>
<tr>
<td>I am sometimes unsure whether I have said something aloud or not. (17)</td>
<td>.41</td>
</tr>
<tr>
<td>I have never seen anything that looked like a ghost. (5)</td>
<td>.38</td>
</tr>
<tr>
<td><strong>Factor 2: Paranoid Self-Consciousness</strong></td>
<td></td>
</tr>
<tr>
<td>I really don't understand why I say some of the things I do. (22)</td>
<td>.63</td>
</tr>
<tr>
<td>I sometimes tell people too much about myself and almost immediately regret it. (4)</td>
<td>.62</td>
</tr>
<tr>
<td>Sometimes I feel I am ugly, and at other times that I am attractive. (1)</td>
<td>.57</td>
</tr>
<tr>
<td>I am sometimes unsure whether I have said something aloud or not. (17)</td>
<td>.40</td>
</tr>
<tr>
<td><strong>Factor 3: Superstitions</strong></td>
<td></td>
</tr>
<tr>
<td>I am not a superstitious person. (21)</td>
<td>.82</td>
</tr>
<tr>
<td>I never use a lucky charm. (15)</td>
<td>.82</td>
</tr>
<tr>
<td><strong>Factor 4: Idealized Cognitions</strong></td>
<td></td>
</tr>
<tr>
<td>I am almost always consistent in what I say</td>
<td></td>
</tr>
</tbody>
</table>
and believe.  

There are some people whom I trust completely.  

When I try to help people they often misunderstand my motives.  

I consider no person or country to be my enemy.  

Factor 5: Illusions/Interaction  

In the pitch dark I never see any visual images.  

I have never “broken out in a cold sweat” upon realizing what I have told someone about myself.  

I have never suspected that people I am fond of may be secretly working against me.  

I have never seen anything that looked like a ghost.  

I have never embarrassed myself by expressing unreasonable jealousy.  

Factor 6: Distorted Interactions  

Most people are too stupid to realize which things in life are important.  

Secret organizations have no real power or influence over our lives.  

I have never embarrassed myself by expressing unreasonable jealousy.  

Factor 7: External Power Ideation  

It has never occurred to me that the world may be a figment of my imagination.  

I would not be the least bit concerned if a person who believed in magic tried to put a spell on me.
### Table 5: T-Tests for the RISC Factors

<table>
<thead>
<tr>
<th>Factors</th>
<th>T Values</th>
<th>Degrees of Freedom</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illusions-Derealization</td>
<td>.87</td>
<td>859</td>
<td>&lt;.385</td>
</tr>
<tr>
<td>Paranoid Self-Consciousness</td>
<td>-5.28</td>
<td>876</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Superstitions</td>
<td>-.01</td>
<td>881</td>
<td>&lt;.994</td>
</tr>
<tr>
<td>Idealized Cognitions</td>
<td>5.17</td>
<td>873</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Illusion/Interaction</td>
<td>-.75</td>
<td>869</td>
<td>&lt;.431</td>
</tr>
<tr>
<td>Distorted Interactions</td>
<td>.26</td>
<td>873</td>
<td>&lt;.792</td>
</tr>
<tr>
<td>External Power Ideation</td>
<td>-1.69</td>
<td>881</td>
<td>&lt;.089</td>
</tr>
</tbody>
</table>

Note: Positive t values indicate males scoring higher than females, and negative t values indicate females scoring higher than males.
Appendix A

Statement of Informed Consent

1. In this research study you will be asked to take some standard psychological tests which involve questions about attitudes and experiences that college students often have. It will take about 2 hours of your time to complete the tests. The tests you will be taking will be used to study the properties of reliability and validity of the scales being used.

2. The tests you will be taking will be used in research to look at the relationship and distribution of scores of the entire group of test takers. Because individual performance will not be evaluated you cannot obtain feedback on your performance. Your responses on these tests will be held in strict confidence at all times by the experimenter.

3. There are no known physical risks involved in participating in this study. There is not a significant psychological risk involved in participating in this study. Some people may feel uncomfortable answering some of the test questions. If you are uncomfortable answering some of the test questions you may omit some of the questions or choose to withdraw participation from this study.

4. There are no known psychological benefits associated with this experiment. However, this experiment gives you the opportunity to learn about the kinds of tests psychologists sometimes use. The data you provide could contribute to the science of Psychology. Any possible psychological discomfort associated with taking this test is far outweighed by the benefits.

5. There are no appropriate alternative procedures that would be more advantageous to you at this time.

6. You have the right as a research subject to question the testing procedure at any time or to withdraw your participation without facing any form of penalty. If you have any questions you may contact Dr. Deborah Balogh (285-1690) of the Department of Psychological Science, Ball State University.

I have read the statement of informed consent.

DATE ____________________ PARTICIPANT'S SIGNATURE ____________________
Appendix B

FACE SHEET

Age: __________ Sex: __________ Marital Status: _____________________

Dominant Hand: _______Right _______Left _______Both

_________Freshman _______Sophomore _______Junior _______Senior

College Major: ________________________________

Parent's Occupations:  
Mother ________________________________
Father ________________________________

If you are currently taking prescribed medications, please list them:

________________________________________________________________________

Have you ever been treated for alcohol / drug abuse? _______Yes _______No

If you were ever enrolled in Special Education Classes please describe:

________________________________________________________________________

Have you, your parents, or your brothers / sisters, for a psychological problem, ever been hospitalized ( _______Yes _______No) or treated with medication ( _______Yes _______No)?

Please list the diagnosis and / or medication given if you know it:

________________________________________________________________________

Have you ever participated in psychological counseling? _______Yes _______No

If Yes, please describe: ____________________________________________________________________________

Have you ever had a serious head injury? _______Yes _______No

If Yes, please describe: ____________________________________________________________________________
Appendix C

Survey of Attitudes and Experiences II

Below, and on the following page, is a list of statements about attitudes and experiences that some people would consider personally descriptive. Please indicate which of these statements are descriptive of you by reading each one carefully and marking either TRUE or FALSE in the appropriate circle on the computerized score sheet. There are no right answers to give and no trick statements. If you feel unsure about how to respond to a statement, you should choose the answer that is most nearly true of you. Please try to record an answer for every statement, work quickly and do not spend too long considering the meaning of each one. Do not start until you are sure you know what to do.

1. I am not easily confused if a number of things happen at the same time.
2. When I pass flowers I often stop to smell them.
3. I attach little importance to having close friends.
4. I often change between positive and negative feelings toward the same person.
5. I am not much worried by humiliating experiences.
6. Writing letters to friends is more trouble than it's worth.
7. I often get a restless feeling that I want something but do not know what.
8. It is not possible to harm people merely by thinking bad thoughts about them.
9. When I have been extremely happy I have sometimes felt like hugging someone.
10. I suddenly feel shy when I want to talk to a stranger.
11. Beautiful scenery has been a great delight to me.
12. Getting together with old friends has been one of my greatest pleasures.
13. I am not usually self conscious.
14. I find it difficult to concentrate, irrelevant things seem to distract me.
15. When introduced to strangers I often wonder whether I have known them before.
16. Now and then when I look in the mirror, my face seems quite different from usual.
17. People can easily influence me even though my mind was made up on a subject.
18. A brisk walk has sometimes made me feel good all over.
19. I often have grave difficulties in controlling my thoughts when I am thinking.
20. When anticipating a visit from a friend I have often felt happy and excited.
21. I would like other people to be afraid of me.
22. I have been fascinated with the dancing of flames in a fireplace.
23. The idea of going out and mixing with people at parties has always pleased me.
24. I prefer others to make decisions for me.
25. Sometimes people I know well begin to look like strangers.
26. I have thoroughly enjoyed laughing at jokes with other people.
27. Good luck charms do not work.
28. I get a lot of pleasure from listening to music.
29. I have sometimes felt that strangers were reading my mind.
30. I do not understand why people enjoy looking at the stars at night.
Survey of Cognitions

INSTRUCTIONS: Each of the 26 statements which follows has four possible responses: A = strongly disagree
B = disagree
C = agree
D = strongly agree

Read each statement carefully and decide which response is most accurate for you. Pay particular attention to making sure that your response describes what you actually think, rather than how you feel you ought to think. When you are satisfied you have the answer which best describes what you think, mark the letter that corresponds to the answer on the computerized score sheet. Please try to respond to all the statements. If you are not completely sure which response is the most accurate, mark the one which you think is most likely. Do not spend too long on each statement.

1. Sometimes I feel I am ugly, and at other times that I am attractive.
2. I have never embarrassed myself by expressing unreasonable jealousy.
3. I consider no person or country to be my enemy.
4. I sometimes tell people too much about myself and almost immediately regret it.
5. I have never seen anything that looked like a ghost.
6. Sometimes my thoughts seem so loud I can almost hear them.
7. I am almost always consistent in what I say and believe.
8. Most people are too stupid to realize which things in life are important.
9. In the pitch dark I never see any visual images.
10. I have never "broken out in a cold sweat" upon realizing what I have told someone about myself.
A = strongly disagree  B = disagree  C = agree  D = strongly agree

11. There are some people whom I trust completely.
12. I have, on occasion, tried to reach the very essence of an object with my mind.
13. When I try to help people they often misunderstand my motives.
14. I have occasionally had to explain sudden sniffing of a smell as my imagination.
15. I never use a lucky charm.
16. Secret organizations have no real power or influence over our lives.
17. I am sometimes unsure whether I have said something aloud or not.
18. Sometimes I suspect that the real world is nothing like what it seems.
19. I would not be the least bit concerned if a person who believed in magic tried to put a spell on me.
20. It has never occurred to me that the world may be a figment of my imagination.
21. I am not a superstitious person.
22. I really don't understand why I say some of the things I do.
23. Sometimes I get a weird feeling that I am not really here.
24. I have never suspected that people I am fond of may be secretly working against me.
25. Sometimes people or objects seem to me to glow with an inner light.
26. Things sometimes go so well for me that I suspect I may be receiving help from an outside agency.
Personal Reaction Inventory

Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide whether the statement is true or false as it pertains to you personally. Mark the letter that corresponds to your answer on the computerized score sheet. Please try to respond to all the statements.

1. Before voting I thoroughly investigate the qualifications of all the candidates.
2. I never hesitate to go out of my way to help someone in trouble.
3. It is sometimes hard for me to go on with my work if I am not encouraged.
4. I have never intensely disliked anyone.
5. On occasion I have had doubts about my ability to succeed in life.
6. I sometimes feel resentful when I don't get my way.
7. I am always careful about my manner of dress.
8. My table manners at home are as good as when I eat out in a restaurant.
9. If I could get into a movie without paying and be sure I was not seen I would probably do it.
10. On a few occasions, I have given up doing something because I thought too little of my ability.
11. I like to gossip at times.
12. There have been times when I felt like rebelling against people in authority even I knew they were right.
13. No matter who I'm talking to, I'm always a good listener.
14. I can remember "playing sick" to get out of something.
15. There have been occasions when I took advantage of someone.
16. I'm always willing to admit it when I make a mistake.
17. I always try to practice what I preach.
18. I don't find it particularly difficult to get along with loud mouthed, obnoxious people.
19. I sometimes try to get even rather than forgive and forget.
20. When I don't know something I don't at all mind admitting it.
21. I am always courteous, even when people are disagreeable.
22. At times I have really insisted on having things my own way.
23. There have been occasions when I felt like smashing things.
24. I would never think of letting someone else be punished for my wrong-doings.
25. I never resent being asked to return a favor.
26. I have never been irked when people expressed ideas very different from my own.
27. I never make a long trip without checking the safety of my car.
28. There have been times when I was quite jealous of the good fortune of others.
29. I have almost never felt the urge to tell someone off.
30. I am sometimes irritated by people who ask favors of me.
31. I have never felt that I was punished without cause.
32. I sometimes think when people have a misfortune they only got what they deserved.
33. I have never deliberately said something that hurt someone's feelings.
Survey of Attitudes and Experiences

Here are some statements about attitudes and experiences. Please answer each statement TRUE or FALSE to describe your attitudes and experiences. If your answer is "TRUE" fill in the space under "A" on your answer sheet. If your answer is "FALSE", fill in the space under "B" on your answer sheet. We want you to describe yourself as you have been during most of your adult life. Please mark every statement, even if you are not quite sure about the answer.

1. I wouldn't worry much if my bills were overdue.

2. Sometimes I have had the feeling that a part of my body is larger than it usually is.

3. I think that flying a kite is silly.

4. Having close friends is not as important as many people say.

5. Long-term goals are not as important for me as living for today.

6. I usually quit before finishing one activity in order to start something else.

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

8. I attach very little importance to having close friends.

9. Sex is the most intensely enjoyable thing in my life.

10. The color that things are painted has seldom mattered to me.

11. I never get so angry I can't speak coherently.

12. Being in debt would worry me.

13. I break rules just for the hell of it.

15. I prefer watching television to going out with other people.

16. I have never watched television.

17. I sometimes have had the feeling that some parts of my body are not attached to the same person.

18. A car ride is much more enjoyable if someone is with me.

19. Sometimes I have had feelings that I am united with an object near me.

20. I often do unusual things just to be different from other people.

21. I have felt that something outside my body was a part of my body.

22. I have had a cold at least once in my life.

23. I have sometimes felt that strangers were reading my mind.

24. I have felt that my body and another person's body were one and the same.

25. Poets always exaggerate the beauty and joys of nature.

26. I like to make long distance phone calls to friends and relatives.

27. Playing with children is areal chore.

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

29. I have noticed sounds on my records that are not there at other times.

30. I have always enjoyed looking at photographs of friends.

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

32. Beautiful scenery has been a great delight to me.
33. I have never had a cut or scratch of any kind.

34. I usually consider different viewpoints before making a decision.

35. I have often enjoyed receiving a strong, warm handshake.

36. When I'm feeling a little sad, singing has often made me feel happier.

37. The beauty of a sunset is greatly overrated.

38. I don't know why some people are so interested in music.

39. If reincarnation were true, it would explain some unusual experiences I have had.

40. Although there are things that I enjoy doing by myself, I usually seem to have more fun when I do things with other people.

41. Flowers aren't as beautiful as many people claim.

42. I sometimes become deeply attached to people I spend a lot of time with.

43. People sometimes think that I am shy when I really just want to be left alone.

44. I prefer being spontaneous rather than planning ahead.

45. It has always made me feel good when someone I care about reaches out to touch me.

46. When I have walked by a bakery, the smell of fresh bread has often made me hungry.

47. When things are going really good for my close friends, it makes me feel good too.
48. I find it difficult to remain composed when I get into an argument.

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

50. I can speak eight foreign languages fluently.

51. When someone close to be is depressed, it brings me down also.

52. My emotional responses seem very different from those of other people.

53. At times I have wondered if my body was really my own.

54. When I am alone, I often resent people telephoning me or knocking on my door.

55. Parts of my body occasionally seem dead or unreal.

56. Just being with friends can make me feel really good.

57. When things are bothering me, I like to talk to other people about it.

58. I almost never dream about things before they happen.

59. I prefer hobbies and leisure activities that do not involve other people.

60. I liked to annoy my high school teachers.

61. It's fun to sing along with other people.

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

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

64. The taste of food has always been important to me.
65. Knowing that I have friends who care about me gives me a sense of security.

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

67. I have had very little fun from physical activities like walking, swimming, or sports.

68. I have never felt that my arms or legs have momentarily grown in size.

69. The boundaries of my body always seem clear.

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

71. When I move to a new city, I feel a strong need to make new friends.

72. Things sometimes seem to be in different places when I get home, even though no one has been there.

73. One food tastes as good as another to me.

74. Standing on a high place and looking out over the view is very exciting.

75. I usually control my feelings well.

76. My hearing is sometimes so sensitive that ordinary sounds become uncomfortable.

77. I avoid trouble whenever I can.

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

79. I have always hated the feeling of exhaustion that comes from vigorous activity.

80. I could easily tell you the first three letters of the alphabet.
81. I have had very little desire to try new kinds of foods.

82. For several days at a time I have had such heightened awareness of sights and sounds that I cannot shut them out.

83. I have sometimes danced by myself just to feel my body move with the music.

84. I have seldom cared to sing in the shower.

85. I have studied opera singing in Italy.

86. I have never seen a live animal.

87. I have seldom enjoyed any kind of sexual experience.

88. I have sometimes seen children playing.

89. I don’t enjoy why people enjoy looking at the stars at night.

90. People are usually better off if they stay aloof from emotional involvements with most others.

91. The sound of a parade have never excited me.

92. Sometimes part of my body had seemed smaller than it usually is.

93. Although I know I should have affection for certain people, I don’t really feel it.

94. Sometimes I have felt that I could not distinguish my body from other objects around me.

95. I often get so mad that I lose track of some of the things I say.

96. People often expect me to spend more time talking with them than I would like.
97. I have never found a thunderstorm exhilarating.

98. I feel pleased and gratified as I learn more and more about the emotional life of my friends.

99. Occasionally, it has seemed as if my body had taken on the appearance of another person's body.

100. I have never gone into a store.

101. When I start out in the evening I seldom know what I'll end up doing.

102. A brisk walk has sometimes made me feel good all over.

103. Numbers like 13 and 7 have no special powers.

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

105. When I want something, delays are unbearable.

106. Now and then when I look in the mirror, my face seems quite different than usual.

107. Sex is okay, but not as much fun as people claim it is.

108. I have sometimes eaten candy.

109. After a busy day, a slow walk has often felt relaxing.

110. There are not many things that I have ever really enjoyed doing.

111. The hand motions that strangers make seem to influence me at times.

112. Most people think of me as reckless.

113. I have usually found lovemaking to be intensely pleasurable.
114. Good luck charms don't work.

115. When others try to tell me about their problems and hangups, I usually listen with interest and attention.

116. On hearing a good song I have seldom wanted to sing along with it.

117. I like to use obscene language to shock people.

118. People often behave so strangely that one wonders if they are part of an experiment.

119. I have never doubted that my dreams are the products of my own mind.

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

121. I have never been in trouble with the law.

122. Sometimes when I look at things like tables and chairs, they seem strange.

123. No one seems to understand me.

124. I sometimes do dangerous things just for the thrill of it.

125. I have always had a number of favorite foods.

126. At times I have felt that a professor's lecture was meant especially for me.

127. I never had really close friends in high school.

128. I have sometimes been fearful of stepping on sidewalk cracks.

129. Sometimes I feel like everything around me is tilting.
130. I am usually content just to set alone, thinking and daydreaming.

131. I have often found walks to be relaxing and enjoyable.

132. I have walked on a sidewalk.

133. I have been fascinated with the dancing flames in a fireplace.

134. When eating a favorite food, I have often tried to eat slowly to make it last longer.

135. On seeing a soft, thick carpet, I have sometimes had the impulse to take off my shoes and walk barefoot on it.

136. I'm much too independent to really get involved with other people.

137. There are few things more tiring than to have a long, personal discussion with someone.

138. I usually act first and ask questions later.

139. I have sometimes felt confused as to whether my body was really my own.

140. I frequently overeat and wonder why later.

141. It made me sad to see all my high school friends go their separate ways when high school was over.

142. I have often found it hard to resist talking to a good friend, even when I have other things to do.

143. I do many things that seem strange to others but don't seem strange to me.

144. I never wanted to go on any of the rides at an amusement park.
145. I have had the momentary feeling that someone’s place has been taken by a look-alike.

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

147. It has seemed at times as if my body was melting into my surroundings.

148. I have occasionally had the silly feeling that a TV or radio broadcaster knew I was listening to him.

149. I visited Easter Island last year.

150. Thinking things over too carefully can destroy half the fun of doing them.

151. I let go and yell a lot when I’m mad.

152. When I have seen a statue I have had the urge to feel it.

153. It’s important to save money.

154. I have often enjoyed the feel of silk, velvet, or fur.

155. Horoscopes are right too often for it to be a coincidence.

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

157. I have never had the passing feeling that my arms or legs had become longer than usual.

158. I never care to sunbathe; it just makes me hot.

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

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

161. The smell of dinner cooking has hardly ever aroused my appetite.

162. It would embarrass me a lot to have to spend the night in jail.

163. Making new friends isn’t worth the energy it takes.

164. I have sometimes sensed an evil presence around me, although I could not see it.

165. I’ve never cared much about the texture of food.

166. I can remember when it seemed as though one of my limbs took and unusual shape.

167. Occasionally I have felt as though my body did not exist.

168. Sometimes people whom I know well begin to look like strangers.

169. I have felt as though my head or limbs were somehow not my own.

170. I have usually found soft music boring rather than relaxing.

171. It has often felt good to massage muscles when they are tired or sore.

172. I have sometimes had the feeling that one of my arms or legs is disconnected from the rest of my body.

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

174. I have never felt tired.

175. There are things that are more important to me than privacy.

176. I sometimes have to touch myself to make sure I’m still there.
177. I would probably purchase stolen merchandise if I knew it was safe.

178. I have never combed my hair.

179. People who try to get to know me better usually give up after a while.

180. The first winter snowfall has often looked pretty to me.

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

182. I would be happy living all alone in a cabin in the woods or mountains.

183. If given the choice, I would much rather be with others than be alone.

184. I find that people too often assume that their daily activities and opinions will be interesting to me.

185. At times I perform certain little rituals to ward off negative influences.

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

187. I really don't feel very close to my friends.

188. People who drive carefully annoy me.

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

190. I grow all the food I eat.

191. I have sometimes enjoyed feeling the strength in my muscles.

192. I sometimes have had the feeling that my body is abnormal.
193. The government refuses to tell us the truth about flying saucers.
194. During one period when I was younger I engaged in petty thievery.
195. Some people can make me aware of them just by thinking about me.
196. The warmth of an open fireplace hasn’t especially soothed and calmed me.
197. I have always found organ music dull and unexciting.
198. I never have the desire to take off my shoes and walk through a puddle barefoot.
199. I think I could learn to read other’s minds if I wanted to.
200. I usually find myself doing things “on impulse.”
201. I have sometimes had the feeling that my body is decaying inside.
202. I almost always do what make me happy now, even at the expense of some distant goal.
203. It worries me if I know there are certain mistakes in my work.
204. I always stop at red lights.
205. In school I sometimes got in trouble for cutting up.
206. Sometimes I have had a passing thought that some part of my body was rotting away.
207. I have sometimes felt that some part of my body no longer belonged to me.
208. My relationships with other people never get very intense.
209. The bright lights of a city are exciting to look at.
210. I have had the momentary feeling that I might not be human.

211. In many ways, I prefer the company of pets to the company of people.

212. A good soap lather when I'm bathing has sometimes soothed and refreshed me.

213. I rarely act on impulse.

214. My hands or feet have never seemed far away.

215. Ordinary colors sometimes seem much too bright to me (without taking drugs).

216. It is very unusual for me to feel lonely for someone.

217. I have wondered whether the spirits of the dead can influence the living.

218. The sound of rustling leaves has never much pleased me.

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

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

221. I have never had the feeling that certain thoughts of mine really belong to someone else.

222. I try to remember to send people birthday cards.

223. It has always made me uncomfortable to have someone confide in me about something personal.

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

225. My parents often objected to the kind of people I went around with.
226. I have worried that people on other planets may be influencing what happens on earth.

227. It has often made me feel good to have people seek me out because they like being with me.

228. On a long drive, it makes no difference to me whether I'm alone or with someone else.

229. I have usually finished my bath or shower as quickly as possible just to get it over with.

230. I've gone out of my way to watch children play even when I don't know them.

231. Sometimes I feel sleepy or tired.

232. I have always loved having my back massaged.

233. I have felt that I might cause something to happen just by thinking too much about it.

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

235. I would just as soon play solitaire as play cards with other people.

236. When I'm extremely happy, I sometimes feel like hugging someone.

237. When I really want something, I don't care how much it costs.

238. I sometimes have a feeling of gaining or losing energy when certain people look at me or touch me.

239. I have sometimes had the passing thought that strangers are in love with me.

240. I have never ridden in a bus or taxicab.