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AN INVESTIGATION OF BORDERLINE PSYCHOPATHOLOGY  
IN AN ADOLESCENT POPULATION

by

Daniel James Bruining

A Dissertation Submitted to the Faculty of the Graduate  
School of Loyola University of Chicago in Partial  
Fulfillment of the Requirements for the Degree of  
Doctor of Philosophy

March

1990

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## VITA

The author, Daniel James Bruining, is the son of Gerald Carl Bruining and Shirley Ann (Ferm) Bruining. He was born on September 16, 1957, in Muskegon, Michigan.

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## CHAPTER I

### INTRODUCTION

Adolescence has frequently been described as a period of turmoil when an individual might experience uncertainty regarding issues such as long-term goals, career decisions, and sexual orientation. In addition, adolescents have been seen as irritable, moody, unpredictable, and impulsive. As they struggle to establish a sense of independence and adapt to the changes of this period, they might engage in a variety of maladaptive behaviors such as drug use, sexual experimentation, and delinquent behaviors. They might struggle with experiences of boredom, emptiness, loneliness, and conflicts regarding independence. Finally, while most likely not chronic or intense, many adolescents may have entertained the thought of suicide at one time or another.

Turmoil and instability, which are often described as a natural part of adolescent development, are central features of the criteria for borderline personality disorder as outlined in the Diagnostic and Statistical Manual of Mental Disorders-Revised (DSM-III-R) published by the American Psychiatric Association (1987). In order to warrant a diagnosis of borderline personality disorder, an individual must manifest five of the following criteria for a period of

at least one year:

1. a pattern of unstable and intense interpersonal relationships characterized by alternating between extremes of overidealization and devaluation
2. impulsiveness in at least two areas that are potentially self-damaging, e.g., spending, sex, substance use, shoplifting, reckless driving, binge eating (Do not include suicidal or self-mutilating behavior covered in [5].)
3. affective instability: marked by shifts from baseline mood to depression, irritability, or anxiety, usually lasting a few hours and only rarely more than a few days
4. inappropriate, intense anger or lack of control of anger, e.g. frequent displays of temper, constant anger, recurrent physical fights
5. recurrent suicidal threats, gestures, or behavior, or self-mutilating behavior
6. marked or persistent identity disturbance manifested by uncertainty about at least two of the following: self-image, sexual orientation, long-term goals or career choice, type of friends desired, preferred values
7. chronic feelings of emptiness or boredom
8. frantic efforts to avoid real or imagined abandonment (Do not include suicidal or self-mutilating behavior covered in [5].) (pp. 194-195)

The controversy regarding personality disorder in adolescence and the broader debate about the validity of borderline personality disorder are critical issues within clinical psychology and psychiatry. Considerable uncertainty exists with respect to the existence, etiology, treatment, and prognosis of this disorder. It has been viewed as a type of personality organization (Kernberg, 1967); as a

synonym for severe personality disorder (Fyer, Frances, Sullivan, Hurt, & Clarkin, 1988); and as a descriptive syndrome of behaviors (Gunderson & Kolb, 1978; Spitzer, Endicott, & Gibbon, 1979). Individuals called borderline have alternatively been referred to as pseudoneurotic schizophrenics, hysteroid dysphorics, and coercted preschizophrenics (Gunderson & Singer, 1975). They have been placed on the continuum with affective disorders (Davis & Akiskal, 1986; Friedman, Clarkin, Corn, Arnoff, Hurt, & Murphy, 1982; Klein, 1975), schizophrenic disorders (Rapaport, Gill, & Schafer, 1945-1946; Weiner, 1966), and personality disorders (Gunderson & Singer, 1975). In addition, while there may be historical equivalents to some of the current definitions of borderline personality disorder, it has only been included in the official diagnostic nomenclature since the advent of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III, 1980). These issues are further confounded in adolescence where fluctuations in behavior, affect, cognition, and other aspects of development are often presumed to be natural. It may be that features of borderline personality disorder occur with regularity among many adolescents.

Efforts have been made to operationalize and clarify the multiple issues inherent in the diagnosis of borderline personality disorder. Several investigators have developed diagnostic interviews and checklists aimed at identifying

individuals with borderline personality disorder (Baron & Gruen, 1980; Conte, Plutchik, Karasu, & Jerrett, 1980; Gunderson, Kolb, & Austin, 1981; Nurnberg, Hurt, Feldman, & Suh, 1987; Perry & Cooper, 1985). While this has been helpful, these methods typically reflect the theoretical biases of the investigators and no single widely accepted definition has emerged from this morass. The question is still asked, "Borderline by whose definition?"

When any new discovery or conceptualization is made in psychology, the scientific method requires that other investigators duplicate the findings (reliability) and determine how they are similar and different to other already established phenomena (validity). While progress has been made in establishing the reliability of borderline personality disorder as a diagnosis in adults and to a lesser extent in adolescents, considerable disagreement remains regarding its validity.

The present study was conducted in an effort to examine the diagnosis of borderline personality disorder in adolescence. The Diagnostic Interview for Borderlines (DIB, Kolb & Gunderson, 1980) was administered to a group of adolescents to measure the presence and extent of borderline psychopathology. The interview provides a cut-off score which in adult populations has been shown to maximize sensitivity and specificity in comparison to DSM-III criteria (Barrash, Kroll, Carey, & Sines, 1983; Gunderson et

al., 1981). A group of nonhospitalized adolescents, none of whom achieved scores on the DIB within the borderline range, was compared to a hospitalized group of DIB-identified, nonborderline and DIB-identified, borderline adolescents. Their performances were compared on three other psychological tests (independent variables): the Comprehensive System for the Rorschach (Exner, 1974); the Millon Adolescent Personality Inventory (MAPI) (Millon, Green, & Meagher, 1982), and the Separation-Individuation Test of Adolescence (SITA) (Levine, Green, & Millon, 1986). Given the instability and broad range of psychopathology inherent in the diagnosis of borderline personality disorder, it was predicted that the hospitalized, borderline adolescents would exhibit signs of psychopathology on these instruments relative to the hospitalized, nonborderline adolescents. The nonhospitalized comparison adolescents were expected to show the least amount of pathology on these tests.

## CHAPTER II

### REVIEW OF LITERATURE

#### Adolescent Turmoil and Its Relationship to Psychopathology

One of the products of the post-industrial age has been the emergence and definition of the developmental period known as adolescence. This label has generally come to represent individuals who are somewhere between the early teen years and late teens to early twenties. The definition is considered to be a function of age as well as occupational or school status. Adolescence roughly corresponds to the period when an individual develops secondary sexual characteristics until that person assumes the roles and responsibilities which are generally synonymous with adulthood. For example, it seems reasonable to consider a 21-year old, married, full-time worker an adult whereas many people might consider a 21-year old, part-time student who lives with his or her parents to be an adolescent. In addition to external criteria, adolescence is popularly defined as an internal or psychological state characterized by confusion and instability regarding issues such as career choice, sexual identity, and peer and family allegiances.

Accounts of adolescent turmoil abound in the literature, particularly in the psychoanalytic literature where

untroubled adolescents are described as atypical. Anna Freud (1958) stated "...the upholding of a steady equilibrium during the adolescent process is itself abnormal" (p.275). Eissler (1958) described typical problems in adolescent development as "...The symptoms manifested by such patients may be neurotic at one time and almost psychotic at another. Then sudden acts of delinquency may occur, only to be followed by a phase of perverted sexual activity" (p.226). While such descriptions may describe a subset of adolescents, they are highly suspect when applied to the normal course of adolescent development.

Erikson (1955) described identity formation as the major developmental task of adolescence. While this may be true, it does not necessarily follow that this requires a period of great inner turmoil nor does development stop after an individual enters adulthood. It may be true that some adolescents experience a period of relative crisis which, using Erikson's term, might be described as an "identity crisis;" however, in the majority of adolescents, this so-called crisis is probably short-lived and not extreme.

The relationship between the internal and external manifestations of adolescent turmoil and enduring psychopathology is unclear. Given the potentially rapid changes in behavior, cognition, and physical attributes characteristic of many adolescents, it is unclear if observed personal-

ity traits are sufficiently established to warrant a diagnosis that implies enduring, pervasive, and inflexible patterns of dealing with experience. This is extremely important with regard to personality disorders and borderline personality disorder in particular given the potentially normative nature of many of the behaviors described as symptoms of this disorder.

One of the defining features of borderline personality disorder is the presence of marked instability. This characteristic is an integral part of most of the DSM-III-R diagnostic criteria including: interpersonal relationships, affect, anger, identity, and impulse control. Adolescence is also described as a period of instability. If instability and turmoil are natural features of adolescent development, it would seem that they might exist along a continuum of severity. While a limited degree of fluctuation might be normal and potentially a sign of growth, as the instability becomes more intense, pervasive, and chronic, it would seem to transcend the bounds of adaptive behavior and might be seen as pathological. Because of the uncertainty regarding normal adolescent development, studies of adolescent psychopathology should be conducted with an understanding of normative behavior. In the present work, a general discussion of adolescence and adolescent psychopathology will be undertaken to help clarify these issues, followed by a discussion of borderline personality disorder and its



manifestations in adults and adolescents.

Several studies have sought to clarify the nature of adolescence and to quantify what has been described in a romantic way as a time of inner turbulence and upheaval. While inner turmoil and crisis may indeed be the case for some adolescents, recent research has suggested that this is not the case for the majority of adolescents. In a longitudinal study of Canadian youth who were followed from ages ten to nineteen, Golombek, Marton, Stein, and Korenblum (1989) described three major phases of adolescence: early, middle, and late. Early adolescence is considered to be the most difficult for almost all individuals. This phase is characterized by relative negativity, introversion, feelings of little internal control, pessimism, and difficulty expressing and accepting affection. This is followed by middle adolescence which is characterized as the most stable, least affectively disturbed, most optimistic, affectionate, and introspective period of adolescence. The final stage of adolescence is notable for a return to relative instability. The authors suggested that middle adolescence is typically a time when few radical external changes or decisions are required whereas late adolescence marks a return to greater uncertainty about the future concerning sexuality, career choice, and relationships with friends and family.

These investigators isolated three general pathways of

adolescent development which accounted for almost all developmental paths taken by their subjects. The first pathway was characterized by relative harmony and a lack of turmoil throughout all three phases of adolescence. These individuals rarely expressed inner disturbance and did not exhibit behavior problems. They determined that slightly more than one-third (35%) of their adolescents negotiated all three phases with little internal or external distress. The second and largest group of adolescents (40%) were described as fluctuating between periods of stability and relative distress. These individuals had significant identity conflicts and manifested transient behavior problems; however, when viewed over time they appeared to be negotiating the tasks of adolescence without risk of developing serious behavior or emotional problems. This group appears to parallel the "modal adolescent" described by Offer (1969). The third group (25%) were described as nearly always distressed, unhappy, pessimistic, impulsive, and uncooperative. They appeared to have trouble establishing significant affectionate relationships and manifested considerable difficulty with identity crystallization. A subset of this group (approximately 20 percent of their sample) showed stable patterns of instability and warranted a psychiatric diagnosis. The authors classified 5% of their total sample as severely disturbed and stated that their prognoses were poor. They concluded that while nearly 50% of their sub-

jects experienced periods of relative turmoil and presented with feelings of distress or maladaptive behavior during any given phase of adolescence, the majority successfully negotiated this developmental period and did not develop stable psychiatric disorders.

In another report, Korenblum, Marton, Golombek, and Stein (1987) discussed the types and course of their subjects who presented with significant personality disorder. Diagnostic decisions were based on the subject's responses to a clinical interview which primarily focused on interpersonal relationships. Although a structured, DSM-III-oriented diagnostic interview was not conducted, the authors reported reasonable confidence in their diagnostic impressions. Adolescents manifesting disorders were grouped into one of five clusters which reflect the general categories of personality disorder in DSM-III. All subjects were interviewed at the ages of 13 and again at 16, thus allowing for longitudinal comparisons. After the first interviews, 27 out of 63 subjects were found to manifest some variant of personality disorder. Almost all of these subjects exhibited either characteristics of antisocial personality disorder or a disorder considered to be primarily related to anxiety (avoidant, dependent, compulsive, and passive-aggressive personality disorders). Two additional smaller groups of subjects showed either odd or eccentric behavior (schizoid, schizotypal, and paranoid personality disorders) or mixed

personality disorders. None of the subjects warranted diagnoses within the erratic or unstable domain (histrionic, narcissistic, or borderline personality disorders). At age 16 there was an overall decrease in the number of subjects who warranted a personality disorder diagnosis. There was a marked decrease in the number of individuals who presented with anxiety-related personality disorders; a notable increase in the number who presented within the mixed or atypical realm; and lesser increases in the groups presenting unstable behavior and antisocial behavior; and stability in the number who presented with odd or eccentric behavior. Fifteen of the subjects were given a diagnosis at both ages. Of these individuals, the two who received a diagnosis within the odd or eccentric realm received the same diagnosis, and five of the eight subjects who received a diagnosis of antisocial personality disorder at age 13 retained their diagnosis at age 16. The authors suggested that individuals who are diagnosed within the antisocial or schizotypal realm appear to be the most stable with respect to their psychopathology and also manifest the poorest prognoses. Subjects diagnosed within the anxiety-related group often fail to meet criteria at a later age. A third group, comprised of mixed and erratic personality disorders, exhibited the least diagnostic stability in the adolescent years. While this study provides useful data, it is deficient in its failure to utilize more structured, repli-

cable diagnostic procedures, its small sample size, and its apparent neglect of possible Axis I disorders.

Thomas and Chess (1984) conducted an extensive longitudinal study of 133 individuals who were followed from infancy to young adulthood. Although they were primarily interested in temperament, their data also provided information on the incidence and outcome of individuals identified as having behavior disorders. With regard to temperament, their results paralleled those of Golombok et al.'s (1989) who identified three primary paths through adolescence. Approximately 40% of their subjects were characterized as "easy children" and manifested few behavior or emotional problems. The second group consisted of children who were described as "slow to warm up" and were between the first group of easy children and the third group of difficult children. The individuals in this third group (10%) showed little ability to adapt to their environments, were irritable, and manifested distress when exposed to new stimuli. These children were more likely to develop behavior problems in early and middle childhood which tended to persist into adolescence. They also found that with the onset of adolescence there was an increase in the number of newly diagnosed cases and that these cases tended to be more severe than those which emerged at younger ages. There were significant correlations between childhood clinical case status and lower ratings of adult adjustment as well as

between easy childhood temperament and higher levels of adult adjustment.

Offer and Sabshin (1984) and Offer (1980), using a self-descriptive personality test as well as other data in a population of nonclinical youth, also identified three paths through adolescence: continuous growth (23%), surgent growth (35%), and tumultuous growth (21%). The adolescents in the tumultuous group exhibited higher rates of psychopathology characterized by affective lability, unpredictable behavior, rebellion, and generalized confusion. Although specific data were not provided, the authors stated that even with treatment many adolescents in the tumultuous group went on to develop more chronically unstable patterns of functioning.

Kashani, Beck, Hoeper, Fallahi, Corcoran, McAllister, Rosenberg, and Reid (1987a & 1987b) attempted to determine the prevalence of psychiatric disturbance in a typical middle-class community population of high school students. They conducted DSM-III-based structured interviews with 150 randomly selected 14, 15, and 16-year olds; administered several paper and pencil questionnaires; and conducted parental interviews in an attempt to assign DSM-III diagnoses where appropriate and to make a judgement about the individual's need for psychological treatment. They determined that over the course of their study, 62 (41.3%) of the adolescents could be diagnosed with at least one disorder

using DSM-III. Twenty-eight (19%) of these subjects were considered to be in need of treatment. Of these 28 subjects, seven met criteria for one disorder, ten for two, four for three, and seven for four. The three most frequently given diagnoses were anxiety disorder, conduct disorder, and dysthymic disorder.

In a second study (Kashani et al., 1987b), the authors provided data related to personality in the same population of subjects. They examined the relationships between personality profiles, psychiatric disorders, and parental attitudes. Using the Millon Adolescent Personality Inventory (Millon et al., 1982) as their measure of personality functioning, they compared adolescents who had been given Axis I DSM-III diagnoses to those who did not receive a diagnosis. They found significant differences using the MAPI on 14 of the 20 scales. The troubled adolescents showed the greatest elevations on the scales of Forceful (a measure of dominance, aggression and impatience) and Sensitive (a measure of pessimism, moodiness, and unpredictability).

The Isle of Wight study (Graham & Rutter, 1973; Rutter, Graham, Chadwick, & Yule, 1976; Rutter, Tizard, & Whitmore, 1970) is one of the most extensive and comprehensive studies of normal adolescent development. This study examined 2303 14 and 15 year olds whose parents and teachers completed a questionnaire addressing their general behavior.

one aspect of this large scale study which addressed the epidemiology of adolescent psychopathology is described by Rutter et al. (1976). A random sample of 200 nontroubled subjects was compared to 304 subjects who attained scores on the questionnaire indicative of potential psychological difficulty. These adolescents and their parents and teachers were then interviewed by a psychiatrist who was blind to group membership and a diagnosis was given where appropriate. From an examination of the responses of the nontroubled youths and their parents and teachers, the authors determined that symptoms of alienation were not common among adolescents. While slightly less than half of the group reported minor difficulties regarding issues such as curfew and dress, very few identified more serious concerns or difficulties with family life. In the group identified as potentially troubled, symptoms of alienation were much more common but still occurred in less than half of the group. Their interview also addressed questions related to inner turmoil. In the random sample from the nontroubled population, nearly half of the subjects reported some inner turmoil most frequently characterized as mild anxiety or depression. This percentage corresponds to the data presented by Golombek et al. (1989) which suggested that nearly 50% of all adolescents report some feeling of turmoil during at least one phase of adolescence.

Using a random cohort of 14 and 15 year olds, Rutter



et al. (1976) calculated a prevalence rate for any psychiatric diagnosis of 7.7%. Again, this corresponds to the prevalence rate for severe disturbance of 5% determined by Golombek et al. (1989). Although specific diagnostic distinctions were not provided for the troubled 14 and 15 year olds, only one individual was thought to manifest a schizophreniform disorder; nine presented with adult-like depressive disorders, and 15 were identified as oppositional.

Utilizing their data from a previous study (Rutter et al. 1970), the authors (Rutter et al., 1986) compared all individuals identified as disturbed at the age of 10 with those identified as disturbed at the ages of 14 and 15. Roughly half of the subjects who presented with a disorder at the age of age 14 or 15 had been given a previous diagnosis. They determined that the disorders which arose in adolescence were markedly different from those which were manifest at the age of ten. Disorders which developed in adolescence appeared more similar to adult disorders than to those that developed in childhood and did not appear to constitute exclusive adolescent syndromes. This finding is consonant with Korenblum et al. (1987) who suggested that certain disorders (schizotypal, schizoid, antisocial) have more stability and typically present at a younger age than those that present in adolescence. Similarly, Rutter (1985) reported continuities in behavior and diagnoses in children diagnosed within the schizophrenic spectrum; unclear links

between childhood affective disorder and adult affective disorder; a tendency for neurotic-level emotional disturbances present in childhood to remit in adolescence (with the exception of obsessive symptomatology); and clear links between childhood conduct disorder and adult antisocial personality disorder. While not all conduct-disordered children present as antisocial in adulthood, almost without exception, adult cases of antisocial personality disorder manifested equivalent behaviors as children and adolescents. They determined that enduring disorders arising in childhood were strongly associated with academic difficulties, particularly in reading and to a lesser extent in arithmetic.

After reviewing their data within the context of a number of studies which have examined the potentially transient nature of adolescent psychological difficulties Rutter et al. (1976) concluded that there are little data to support the notion that major symptoms of psychopathology fluctuate significantly within adolescence or between adolescence and adulthood. While approximately 50% of adolescents reported symptoms of depression or anxiety, this infrequently reached the level of severity and stability necessary to warrant a diagnosis. Furthermore, there does not appear to be a subset of serious disorders which develop and remit within the adolescent period. With the exception of childhood presentations of schizophrenic, obsessive, and antisocial disorders, most disorders, particularly anx-

xiety-related disorders, tend to remit spontaneously.

In summary, the data support the idea that inner turmoil is common in nearly half of the normal adolescent population at some point during their adolescent years; however, for the vast majority of adolescents this turmoil is brief and not extreme. Less than 10% of all adolescents appear to exhibit clear psychiatric disorders and many of these disorders were present in childhood. While some of these childhood disorders appear to remit spontaneously or are at least partially attenuated with treatment, others persist into adulthood. There exist little data to suggest that a significant number of adolescents develop severe transient disorders which remit spontaneously. In addition, disorders which develop during adolescence tend to merge with adult disorders. These disorders are represented in the current nosological scheme of DSM-III and DSM-III-R.

Significant controversy exists regarding the use of personality disorder diagnoses in individuals under the age of 18. DSM-III provides childhood and adolescent equivalents of several of the adult personality disorder diagnoses. For example, antisocial personality disorder is referred to as conduct disorder when the diagnostic criteria are met in individuals under the age of 18 and borderline personality disorder is thought to be on the continuum with identity disorder. Although DSM-III allows for personality disorder diagnoses in individuals under the age of 18, it

states:

The other Personality Disorder categories may be applied to children or adolescents in those unusual instances in which the particular maladaptive personality traits appear to be stable. When this is done, there is obviously less certainty that the Personality Disorder will persist unchanged over time. (p. 306)

DSM-III appears to be based on the premise that significant personality fluctuation occurs in adolescence and that the emergence of enduring maladaptive behavior patterns warranting a diagnosis occurs infrequently.

There is a relative paucity of data regarding the presentation and course of adolescent personality disorder. In part, this may reflect the reluctance of clinicians to assign Axis II diagnoses to adolescents given the implied chronicity of the diagnosis. In addition, the extensive theoretical literature which regards normal adolescent development as a period of turmoil provides a different set of expectations for the interpretation of maladaptive behavior. While many adolescents may experiment with a variety of behaviors such as substance and alcohol use, sexual activities, and minor acts of delinquency, these behaviors are considered to be pathological only when they reach a certain frequency, intensity, and duration. It may be that many clinicians hope that their adolescent patients will "outgrow" these behaviors or believe that they only represent a phase of development. In addition, Stone (1981) and Kernberg (1978) have cautioned against the use of Axis II

diagnoses in adolescence given the possibility that prodromal bipolar disorder and disorders within the schizophrenic spectrum may initially manifest themselves in an atypical fashion more characteristic of a personality disorder.

The distinction between pathological and normal behavior in adolescence is probably most uncertain with regard to borderline personality disorder. As outlined previously, in order to warrant this diagnosis an individual must manifest at least five of the following behaviors: unstable and intense interpersonal relationships; potentially self-damaging impulsive acts; affective instability; inappropriate or intense anger; suicidal threats, gestures or behavior including self-mutilating acts; identity disturbance; chronic feelings of emptiness or boredom; and frantic efforts to avoid abandonment. Personality disorder diagnoses are only given when an individual manifests these behaviors for at least one year. While several of these criteria can be more easily quantified such as suicidal gestures or attempts and the frequency and type of substance use, the majority of the symptoms exist along a continuum and may be less stable and less easily measured. DSM-III and DSM-III-R do not provide specific definitions for what constitutes intense or extreme manifestations of their diagnostic criteria. Consequently, more readily standardized and replicable assessment instruments are needed.

Psychoanalytic literature has provided a substantial theoretical foundation regarding the etiology of borderline personality disorder. The following section contains a brief overview of this work. This will be followed by a discussion of the definition and measurement of the disorder and a review of validity data.

### Etiology of Borderline Personality Disorder

While theories regarding the etiology of borderline personality disorder abound in the literature, they are almost all psychodynamically oriented. Developmental psychoanalytic literature appears to have produced the most consistent and large body of writings; however, the vast majority of these discussions are based on speculation, case studies of reconstructed childhood experiences from analytic work, or limited empirical evidence based on naturalistic observations. In addition, most of this work relies on loosely defined concepts of character disorder which are not necessarily consistent with DSM-III descriptive criteria.

Margaret Mahler and her associates (Mahler, 1968; Mahler, Pine, & Bergman, 1975; Mahler & Kaplan, 1977) have been some of the more influential authors regarding the etiology of borderline personality disorder as well as of human development in general. In a series of studies from quasi-experimental, naturalistic observations of mother-child interactions, she and her coworkers outlined six primary phases of normal development during the first three

to four years of life: autism, symbiosis, differentiation, practicing, rapprochement, and consolidation. This entire process is broadly referred to as separation-individuation and seeks to describe the process whereby infants begin to recognize themselves as distinct psychological entities separate from their primary attachment which is generally considered to be the mother. These observations allowed Mahler and her associates to identify normal as well as potentially pathological interactions between the child and the mother, and to hypothesize about the role of these experiences in the etiology of subsequent psychopathology. Mahler and others (Blos, 1967; Esman, 1980; Mahler, 1972; Masterson & Rinsley, 1975) have speculated that phase-specific pathological developments might have considerable implications for the manifestation of pathology in later years, particularly adolescence. The rapprochement subphase is typically considered to be the most significant with regard to borderline phenomenon in adolescence. Mahler (1972) characterized the rapprochement subphase (ages 15 to 22 months) as a struggle between a developing sense of psychological and physical independence and the subsequent awareness of vulnerability. This is in contrast to the previous practicing subphase when a sense of omnipotence and bodily narcissism prevailed. During rapprochement the developing child is thought to experience considerable conflict regarding his or her wish to establish full

independence and the wish to reattach him or herself to the omnipotent other. McDevitt and Mahler (1980) described manifestations of an inadequately or pathologically negotiated rapprochement subphase as:

...excessive separation anxiety, depressive mood, passivity, and inhibitions on the one hand and demandingness, coerciveness, possessiveness, envy, and temper outbursts on the other. (p. 413)

Healthy negotiation of this phase results in a realistic assessment of the child's abilities, improved reality testing, the emergence of identifications with others, and a developing sense of object constancy.

Although it would be tempting to assume that the pathological derivatives of the rapprochement subphase could serve as a template for future pathology, particularly of the borderline and narcissistic kind, Kaplan (1980) cautioned against the reductionistic belief that difficulties during the rapprochement subphase necessitate the emergence of character pathology in adolescence and adulthood. She suggested that relative success encountered while negotiating previous as well as subsequent phases can have a profound impact on the manifestations of future character pathology. Nevertheless, many authors have noted the parallels between the pathological developments in the rapprochement subphase described by Mahler and the manifestations of borderline phenomena.

Blos (1967) referred to adolescence as a second



individuation process. He noted several similarities between the initial process of separation-individuation from the mother and the process whereby the developing adolescent seeks to establish independence from his or her family and to form a separate identity as an autonomous adult. Behavioral parallels can be drawn between the practicing subphase of the separation-individuation subphase where the now upright toddler experiences exhilaration with each new discovery and delights in his or her expanding repertoire of independent behaviors, and the adolescent who is similarly impressed with his or her new adult abilities ranging from physical maturation to formal thought processes. Blos' theory is consistent with the hypothesis that adolescence might be a time of increased risk for the emergence of problems that could be traced to difficulties during the initial separation-individuation process.

Data from Mahler's (1972) observations of human development have not supported the hypotheses that there is a direct relationship between borderline phenomena and specific failures during the separation-individuation process; however, she emphasized the importance of understanding the deficiencies of integration and internalization during this period as indications that the synthetic functions of the ego are impaired. These deficits are thought to have a profound impact on subsequent development and character structure. She highlighted the development of object con-

stancy, the quality and quantity of later trauma and failures, the degree of castration anxiety, the outcome of the oedipal period, and the relative success of the adolescent identity crisis as formative in the emergence of lasting character pathology. Given the telescopic nature of psychoanalytic developmental theory, a process whereby subsequent maturation and experiences can essentially reorganize and reconstruct character structure, it is now generally recognized that the rapprochement period cannot be examined in isolation as the sole formative experience which might account for the etiology of borderline phenomena. Despite this caveat, the rapprochement subphase continues to be viewed as the most formative with regard to borderline personality disorder. The often extreme difficulties seen in individuals who warrant a diagnosis of borderline personality disorder may be seen as a result of early difficulties negotiating the process of establishing oneself as separate from others. While this may be true, little research has been conducted to support this hypothesis. If a common etiology for the disorder could be established, this would support the idea that borderline personality disorder is a distinct diagnostic entity.

#### Diagnosis and Measurement of Borderline Personality Disorder

The Diagnostic Interview for Borderlines (DIB) was developed as a research tool by Gunderson et al. (1981) to help identify individuals who exhibited a sufficient number

and intensity of behaviors to meet research criteria for borderline personality disorder. The interview was developed using criteria selected from extensive theoretical and empirical data generated by a variety of individuals who have studied the borderline concept (Gunderson and Kolb, 1978). The interview consists of questions which allow a trained clinician to score 29 statements considered to reflect some aspect of borderline personality disorder (i.e., "The patient has slashed his/her wrist or otherwise self-mutilated himself/herself.") The statements are scored according to the presence and intensity of a given behavior or symptom. A score of zero is given when the behavior is not present; one is scored when the behavior is present but not extreme or intense; and two is given when the behavior is intense or extreme. While the majority of the statements are scored in this manner, four of them, which are thought to be incompatible with a primary diagnosis of borderline personality disorder, are negatively scored. These include chronic hallucinations and delusions, social isolation, and persistent symptoms of mania. For these items, a score of zero is given when the behavior is absent; negative one when it is present but not intense; and negative two when the behavior is severe and enduring.

Reflecting the assumption that borderline personality disorder is a chronic, relatively stable condition of instability, most of these statements are historical in nature

rather than current. The statements assess behaviors ranging from five years before the interview to the present. Twenty-nine statements are grouped into five content areas which comprise the major components of borderline personality disorder as defined by the interview: social adaptation, impulse-action patterns, affects, psychosis, and interpersonal relations. Section total scores are attained by adding the scores from the statements which comprise a given section. The 29 statements are not distributed equally among the five sections and range from the Social Adaptation section which has four of the 29 statements to the Psychosis section which has eight. It is therefore possible to receive a total section score ranging from zero to eight on the Social Adaptation section to zero to twelve on the Psychosis section (two of the eight statements in this section are scored from zero to negative two). In an effort to equalize the contribution made by each of the five sections, a scaled score is assigned to each section based on the summed score of the statements. A scaled section score of zero is attained when the behaviors in the section are either not present or of insufficient intensity to warrant diagnostic concern; one is given when the individual manifests a pathological but relatively mild degree of the behaviors assessed within the section; and a score of two is given when the behaviors are extreme and intense. For example, an individual would receive a score of zero on the

Impulse-Action Patterns section if he or she showed only one of the following behaviors: self-mutilation, manipulative suicide attempts or threats, substance abuse, sexual acting out, or impulsiveness in an area other than those mentioned above. A section score of one would be given if the individual manifested two or more of these behaviors, and a score of two would be given when at least three of these difficulties were present. The scaled section scores for the five content areas are then added to produce a total interview score. It is possible to receive a total score ranging from zero to ten.

While the DIB and DSM-III are more alike than different, they vary in several key areas. The most notable and controversial differences concern the specific symptoms included in the DIB under brief psychotic-like experiences such as depersonalization, and the inclusion of substance abuse-related psychotic episodes. DSM-III contains the criterion of identity disturbance which is only implied in the DIB. In addition, the organization of the two systems differs. For example, the DIB's impulse/action patterns section contains several criteria which are listed separately in DSM-III. Probably the most important difference can be found in the specificity of the individual criteria. While the DIB incorporates some flexibility and requires clinical judgments, the majority of the statements have guidelines for determining the pathological level of a given

behavior. These judgments are much less structured in DSM-III. Consequently, for research purposes, the DIB has the potential to be a more reliable system.

In the initial study using the DIB, Kolb and Gunderson (1980) examined a group of 70 hospitalized adults who were diagnosed using DSM-III at discharge as either schizophrenic, depressed, borderline, or other. Their performances on the DIB were compared and significant differences emerged regarding the total interview score between the patients diagnosed as borderline and those diagnosed as depressed or schizophrenic. While it distinguished borderlines from the heterogeneous other category, it did so less dramatically. They determined that a score of seven or more on the DIB maximized the sensitivity and specificity of the instrument in discriminating DSM-III borderlines from all other patients in the study. At a cut-off score of seven or higher, the DIB correctly identified 73% of the DSM-III borderlines. This level of sensitivity is generally considered to be adequate; however this is not surprising given the considerable overlap between the two diagnostic systems. While this study provided important data regarding the DIB and its potential as a research tool, a standardized method for assigning DSM-III diagnoses was not used. In addition, the authors did not claim that the diagnoses were made independently. It appears that the two investigators who administered the DIBs were often aware of the differential

diagnosis made after a patient's intake interview. These methodological issues may have served to inflate the level of agreement between the DIB and the discharge diagnoses rendering the conclusions tentative.

The DIB has exhibited good interrater reliability with relatively few practice interviews. Gunderson et al. (1981) demonstrated good interrater reliability among experienced clinicians after only four interviews ( $R=.75$  for the 29 statements and  $R=.80$  for the overall diagnosis). Although there was a trend for reliability to improve over time, no statistically significant improvement occurred over subsequent interviews. Kroll, Pyle, Zander, Martin, Lari, and Sines (1981) found good interrater reliability for the DIB (90% agreement) across three combinations of interviewers who differed by gender, age, profession, and experience (chance-corrected  $k$  coefficients of .62, .74, and .78). These interviewers had no previous experience with the DIB and received no direct instruction other than that provided in the DIB procedure manual. These results suggest that the DIB can be reliably administered after a relatively short period of time without intensive training.

In addition to interrater reliability, the establishment of test-retest reliability is essential in demonstrating the stability of the diagnosis as well as the ability of the interview to elicit similar data despite examiner differences. Cornell, Silk, Ludolph, and Lohr (1983) demon-

strated adequate interrater reliability (92% diagnostic agreement,  $k=.80$ ) and test-retest reliability for two independent administrations of the interview given at least one week apart (87.5% diagnostic agreement,  $k=.71$ ). Twenty-four recently admitted adult inpatients comprised the study population and met at least one of the DSM-III criteria for borderline personality disorder. Four interviewers: an attending psychiatrist, an attending psychologist, and two postdoctoral psychologists, were utilized in the study and each of them administered six first and six second interviews. The interviews were counterbalanced with regard to gender and experience, so that each interviewer served equally with every other interviewer as either the administrator or the observer who independently scored the interview. While the reported interrater reliability is acceptable, the effect of experience appeared to be important, with more experienced clinicians tending to score behaviors as less intense than the postdoctoral fellows.

Loranger, Oldham, Russakoff, and Susman (1984), in a study of 30 diagnostically heterogeneous adult inpatients admitted to an acute care ward, achieved interrater reliability of 83% with an interclass correlation of .77 for the DIB. In addition, they addressed the validity of the DIB. The DIB was administered to all subjects. A modified version of the Schedule for Affective Disorders and Schizophrenia (Spitzer & Endicott, 1977) was also administered to



the subjects to determine the feasibility of diagnosing borderline personality disorder from this more inclusive and structured interview. They found that the two interviews diagnosed most of the same patients as borderline using the criteria established by Gunderson and Singer (93%, inter-class correlation = .91) but that only 70% of the patients who received a DSM-III diagnosis of borderline personality disorder received a positive DIB diagnosis. Although there is substantial overlap between the two diagnostic systems, they cautioned that studies using different diagnostic systems to determine the presence of borderline psychopathology cannot be directly compared.

An additional step toward establishing the validity of the diagnosis requires demonstration that individuals identified as borderline by the interview differ in predictable and reliable ways from individuals identified as having other psychiatric disorders. Soloff and Ulrich (1981) compared Research Diagnostic Criteria-defined schizophrenics and unipolar depressed patients to a group of DSM-III borderline patients. They demonstrated significant reliability for the total interview and the individual diagnostic criteria using discriminant function analyses comparing the three groups. They found that the interpersonal relations and impulse-action patterns section more powerfully predicted group membership than did the other sections. They concluded that the DIB has good discriminative power in adult

psychiatric populations; however, they recommended that more stringent investigations be conducted to determine if it adequately classified borderlines among individuals diagnosed as having other personality disorders.

Barrash et al. (1983), using the technique of cluster analysis on the 29 statements of the DIB, demonstrated that inpatient DIB-identified borderlines could be discriminated from inpatients with other personality disorders. They found that scores on 15 of the 29 statements did not significantly differ among the groups and that 13 of the statements indicated that the borderlines were more disturbed than the other personality-disordered patients. In particular, self-mutilation and manipulative suicide attempts distinguished the total sample of borderlines from individuals who had other Axis II disturbances. They found that two basic types of borderlines emerged, one which shared some features of schizotypal personality disorder and the other which appeared to be more classically borderline and showed significantly greater difficulty with impulse control and affect regulation. In addition, the second group had more intense and chaotic interpersonal relationships.

If borderline personality disorder represents a stable constellation of maladaptive behaviors, one would expect that it could be discriminated from other disorders in a less acutely disturbed outpatient setting. Frances, Clarkin, Gilmore, Hurt, and Brown (1984) addressed this issue

using the DIB to study the diagnosis of borderline personality disorder in an outpatient population ( $N = 76$ ). The patients were referred to the study after it was determined that they did not manifest significant Axis I psychopathology. They received a systematic DSM-III interview and were assigned an Axis II diagnosis as well as an independent rating from the DIB. Comparing DIB borderlines to DSM-III borderlines, they replicated Kolb and Gunderson's (1980) findings that a cutoff score of seven optimized sensitivity and specificity for the diagnosis. In comparing the DSM-III borderlines to the other personality disordered individuals, they found that the borderline group showed significantly more impairment in overall functioning than did the nonborderline group; however, a considerable proportion (22%) of the nonborderline group manifested extreme pathology. In addition, nearly two-thirds of the patients received more than one Axis II diagnosis with schizotypal and dependent personality disorders being most prevalent in individuals whose primary diagnosis was DSM-III borderline personality disorder. This suggests that the personality disorder diagnoses are not mutually exclusive and might exist along dimensions of severity rather than as discreet entities.

In another study of the DIB and the borderline construct, Hurt, Clarkin, Koenigsberg, Frances, and Nurnberg (1986) examined DSM-III-diagnosed inpatients and outpatients who met criteria for either Axis I or Axis II disorders.

They investigated the psychometric properties of the DIB as well as the instrument's diagnostic utility using DSM-III diagnoses as the external criteria. They determined that a cutoff score of seven maximized specificity and sensitivity when using the total score for diagnostic purposes. In addition, nearly three-fourths of the statements significantly distinguished DSM-III borderlines from nonborderlines and only four statements differentiated outpatient from inpatient borderlines. This latter finding again suggests that the borderline construct can be applied to both inpatients and outpatients and does not simply reflect acute, severe psychopathology. In examining the distribution of the total DIB scores, they found that the instrument is most predictive of DSM-III diagnoses at the ends of the continuum but that at the midrange of six to seven, it discriminated relatively poorly. This suggests that features of borderline personality disorder exist along a continuum rather than constituting an exclusive diagnosis.

In a study comparing inpatients and outpatients diagnosed as borderline using DSM-III criteria, Koenigsberg (1982) found that their responses on the DIB were nearly identical. He found that while the inpatients manifested regression in psychotherapy, self-mutilation, and drug abuse to a greater extent than did outpatients, none of the other 26 areas assessed by the DIB significantly differed between the two groups. Given that self-mutilation and to a lesser

extent substance abuse are often primary reasons for acute hospitalization, it is not surprising that the hospitalized group exhibited more of these behaviors than did the outpatient sample. The author found no significant differences between inpatients and outpatients in the social adaptation, affects, or psychosis sections of the interview. He determined that the average DIB score for the inpatient sample was 8.29, whereas it was significantly lower for outpatients (6.75). To a great extent this reflects the more intense difficulties in drug abuse, self-mutilation, and treatment regression found in the inpatient sample. It also suggests that at the time of hospitalization, borderline patients may present with somewhat greater difficulties in all areas of functioning. The author concluded that a diagnosis of borderline personality disorder can be made in inpatient and outpatient settings using the DIB and that the individuals so diagnosed do not significantly differ with the exception of showing more difficulties in the behaviors which resulted in hospitalization.

Although considerable effort has gone into establishing the validity of the DIB in measuring borderline personality disorder, the majority of these early studies did not consider issues of diagnostic comorbidity or the impact of secondary diagnoses. For example, a patient warranting a primary diagnosis of borderline personality disorder who also manifests symptoms of depression may differ in sig-

nificant ways from a borderline patient without prominent depressive symptomatology. Although not the focus of the present study, issues regarding comorbidity of psychiatric disorders in borderline personality disorder have been the subject of recent research and will be highlighted in the following discussion. This will include an overview of the research examining the relationship between borderline personality disorder and affective disorders. While still exploratory, there appears to be an important relationship between depression and borderline personality disorder with regard to etiology, treatment, and prognosis. In contrast, there does not appear to be a significant relationship between schizophrenia and borderline personality disorder. The relationship between borderline personality disorder and the other personality disorders is much less clear and is confounded by major disagreements regarding diagnostic validity and reliability.

Pope, Jonas, Hundson, Cohen, and Gunderson (1983) studied the phenomenology, family psychiatric history, biological treatment response, and follow-up of 33 inpatient adults diagnosed as borderline using the DIB. They included all patients who had attained a score of six or more on the DIB. They found that nearly half of the patients presented with a concomitant major affective disorder and that this group appeared to differ in significant ways from individuals diagnosed as borderline without a major affective

disorder. In general, patients who had a comorbid affective disorder appeared to have a better long-term prognosis, responded better to medication, showed a higher incidence of affective disorder in first degree relatives, and had a higher incidence of affective disorder on follow-up. In addition, several of the patients with affective disorders failed to exhibit borderline symptoms at follow-up whereas none of the pure borderline patients manifested a remission of borderline personality disorder at follow-up. This suggests that there may be fundamental etiological differences between these two types of borderlines.

In a critical review regarding the issue of diagnostic comorbidity in borderline personality disorder, Fyer et al. (1988) discussed the lack of clarity of the diagnosis and, contrary to the studies discussed above, argued that while individuals diagnosed as borderline seem to share common descriptive symptoms, little support has been generated to establish the diagnosis as a distinct entity with a common etiology, course, genetic history, or treatment response. They found that nearly all of the patients in their study who carried a diagnosis of borderline personality disorder warranted at least one other Axis I or II disorder (91%). They found that although borderline personality disorder frequently occurred with affective disorder, when base rates for these disorders were taken into account, it did not occur more frequently than would be expected. This high-

lights the need to consider base rates as well as sensitivity and specificity of diagnostic criteria in any study of psychopathology.

Given the speculation that borderline personality might represent a mild form or variation of a disorder within the schizophrenic spectrum, it is interesting to note that only one patient from the Pope et al. study (1983) received a diagnosis of schizotypal personality disorder and that no other patients manifested schizophrenic disorders. In addition, family history did not reveal a greater incidence of first degree relatives with these disorders. Nearly all (85%) of the patients in this study met criteria for more than one personality disorder. Histrionic personality disorder was diagnosed in 73%, narcissistic personality disorder in 3%, and antisocial personality disorder in 9% of the subjects. The authors suggested that these disorders may be linked with regard to phenomenology as well as etiology. Alternatively, they may represent variations of the same basic disorder. This distinction will require additional study using larger patient groups and more structured, reliable methods for diagnosing personality disorder.

Kroll, Carey, Sines, and Roth (1982) compared a group of inpatient adolescents and adults in Britain using the DIB, DSM-III, Minnesota Multiphasic Personality Inventory (MMPI) (Hathaway & McKinley, 1943) and ICD-9 diagnostic criteria. Similar to Pope et al. (1983), they identified



seven DIB borderlines, six of whom presented with significant symptoms of a major affective disorder. Seven DIB-identified patients received personality disorder diagnoses using ICD-9 criteria, four received a DSM-III diagnosis of borderline personality disorder, and two additional patients warranted a diagnosis of DSM-III mixed personality disorder. While the authors determined that the interview could reliably discriminate among Axis I and II disorders, they indicated that it did not adequately differentiate among the personality disorders. Their findings corroborated those of Pope et al. (1983) in suggesting that the DIB may be assessing heterogeneous personality disorder rather than a specific, mutually exclusive syndrome. They pointed out that the personality disorders section of DSM-III is primarily based on clinical experience and theory rather than tested hypotheses and suggested that more refined studies aimed at establishing the validity of the borderline construct need to be completed.

In a previous study, the authors (Kroll et al., 1981) determined that while there is some overlap between the diagnostic criteria for borderline personality disorder as described in DSM-III; Spitzer, Endicott, and Gibbon's checklist for unstable personality disorder; and the DIB, there remains a large group of patients who are diagnosed as borderline by only one method. In comparing DIB borderlines to DSM-III borderlines, the authors determined that there

was more diagnostic disagreement than agreement. They suggested that while all of their patients met criteria for personality disorder, it may be premature to claim construct validity for borderline personality disorder as distinguishable from other personality disorders. Of note, the DIB-identified borderlines manifested a significantly different MMPI profile (8-4-2) from the non-DIB-identified patients. While the borderlines exhibited a similar profile compared to the other group, their elevations were much greater. This finding offers some support for the DIB construct of borderline personality disorder. The non-DIB group consisted of all other patients in the study. A more stringent test of the MMPI's diagnostic utility might have been demonstrated if the DIB borderlines showed a different profile from the non-DIB-identified personality disordered patients.

Brief psychotic episodes are included in the DIB as criteria for a diagnosis of borderline personality disorder while they are excluded from the DSM-III criteria. These experiences range from periods of depersonalization and derealization to episodes of paranoia and somatic delusions. While prolonged episodes of these symptoms receive negative weight when determining a final DIB diagnosis, transient episodes which appear to be related to stress are scored positively. Silk, Lohr, Westen, and Goodrich (1989) studied inpatients who received a DIB diagnosis of borderline per-

sonality disorder concurrently with a diagnosis of major depressive disorder. Given the confound that a positive score on the DIB may be attained only when psychotic symptoms are included, they subtracted the psychosis section score from the total DIB score but retained a cutoff score of seven. This eliminated six of thirty subjects who only met DIB criteria when their psychosis scores were included. They determined that their remaining borderlines were significantly more likely to report symptoms of dissociation with depersonalization occurring more frequently than de-realization. Fifteen out of 24 borderlines reported definite experiences of dissociation as opposed to only two from the comparison group of 30 depressed patients. These findings parallel those of Soloff (1981b) who found significantly more experiences of depersonalization among hospitalized borderlines than those with major depression. The authors did not find a significant increase in actual psychotic experiences (hallucinations, delusions, sustained paranoia) in the borderline sample compared to the depressed comparison group. They suggested that borderlines experience few true psychotic episodes but are highly vulnerable to transient psychotic-like phenomena. Although DSM-III and DSM-III-R do not include experiences of transient psychotic-like experiences in their diagnostic criteria, this study suggests that this feature might be included in future diagnostic systems.

McManus, Lerner, Robbins, and Barbour (1984) attempted to replicate many of the findings concerning the DIB in a population of adolescent inpatients. Using three pairs of interviewers, they achieved high levels of interrater reliability for the diagnosis (k coefficients of .85, .72, & .72) and determined that the DIB could be administered reliably to inpatient adolescents. In addition to a DIB determination of borderline personality disorder, all subjects were given a traditional DSM-III diagnosis. Individuals who received either a primary or secondary diagnosis of borderline personality disorder using DSM-III were compared for diagnostic agreement with DIB-identified borderlines. Twelve (25%) of their sample received a primary DSM-III diagnosis of borderline personality disorder and an additional four (8%) warranted a secondary diagnosis of borderline. Using a cut-off score of seven on the DIB, they calculated sensitivity and specificity to be .75. They determined that the subsections of impulse-action patterns, affects, and interpersonal relations adequately discriminated the DSM-III borderlines from the other diagnostic groups; however, scores on the social adaptation and psychosis sections failed to differ between the groups. In concordance with Pope et al. (1983), they discovered a substantial degree of overlap between borderline personality disorder and major affective disorder. Four of the DSM-III-identified borderlines (primary or secondary) received a major

affective disorder diagnosis. This supports the idea that there may be an important relationship between affective and borderline disorders in adolescents. They found a striking degree of overlap between the symptoms most discriminative of adult and adolescent DIB-identified borderlines. Self-mutilation, manipulative suicide gestures, substance abuse, highly conflictual relationships with caregivers, intense unstable relationships, and devaluation showed high discriminating power in all individuals identified as borderline. They suggested that there is considerable continuity between borderline personality disorder in adolescents and adults.

Friedman et al. (1982) reviewed the inpatient charts of 76 discharged adolescents and assigned DSM-III diagnoses to each one based on explicit symptom documentation. They assigned affective disorder diagnoses to 45 of these patients. Twelve patients warranted a diagnosis of borderline personality disorder and all of these individuals received a diagnosis of affective disorder as well. They determined that the subset of adolescents who present with both diagnoses had a higher incidence of suicide attempts and that their methods were potentially more lethal than those who had a single diagnosis of an affective disorder. While this is an interesting finding, the conclusion is hardly unexpected given that a history of suicide attempts is one of the major diagnostic criteria for borderline personality

disorder. They suggested that borderline personality represents a disorder of affect processing and gave little attention to the other behaviors which are considered essential for the diagnosis in DSM-III. While many borderline patients most likely present with some depressive symptomatology, the claim that borderline personality disorder is exclusively a variant of affective disorder cannot be supported by the majority of other studies. Perhaps the most serious deficiency of this study is the sole reliance on chart information to generate diagnostic conclusions. Without a more thorough, reliable, and replicable assessment tool such as a comprehensive diagnostic interview, the conclusions of this study should be considered exploratory.

In summary, the DIB has demonstrated adequate inter-rater and test-retest reliability; shows moderate overlap with other approaches to the diagnosis of borderline personality disorder; and has good discriminative power in comparisons with Axis I disorders and to some extent with Axis II disorders. The DIB has been less consistently successful in differentiating DIB-identified borderlines from individuals who receive other DSM-III personality disorder diagnoses. This is confounded by the failure of almost all studies to report a structured methodology by which the external criterion personality disorder diagnoses were made. To some extent this is a reflection of the more intuitive process by which the personality disorders section

of DSM-III and DSM-III-R were organized. More importantly, it highlights the lack of knowledge regarding the diagnostic reliability and validity of the personality disorders. studies of this nature are further complicated by the comorbidity of borderline personality disorder with other Axis I and II disorders. With the exception of the retrospective study by Fyer et al. (1988), most studies indicate that there is an important relationship between borderline personality disorder and affective disorders as well as other personality disorders. While it does not appear to be directly related to the schizophrenic spectrum of disorders, the inclusion of psychotic-like symptoms such as depersonalization may be warranted. All of these issues will require considerable research in an effort to clarify them.

The DIB has not been extensively used with adolescent populations; however, it has produced levels of reliability comparable to the adult studies. In addition, it has manifested a similar ability to correctly classify independently diagnosed DSM-III borderlines, and has established a core of symptoms which are common to both adolescent and adult DIB-identified borderlines.

#### Validity Studies of Borderline Personality Disorder

The early studies using the DIB focused on issues of reliability and validity using a DSM-III diagnosis as the external criteria. In the following section, issues related more directly to the construct of borderline personality

disorder will be addressed. Several investigators have attempted to demonstrate concurrent validity for the diagnosis. This can be accomplished by examining the relationship between diagnosis and performance on independent indices thought to measure aspects of the disorder. Soloff (1981a & 1981c) compared adult borderline inpatients to Research Diagnostic Criteria-defined depressed and schizophrenic adult inpatients using several psychological tests thought to reflect core symptoms of borderline personality disorder. He demonstrated significant correlations between the impulse-action pattern section of the DIB and two self-report measures of impulsivity; between the psychosis section and a measure of psychotic and psychotic-like symptoms; and between the affects section and a measure of depression and hostility.

Construct validity of the borderline diagnosis can be demonstrated if individuals who meet the criteria reliably differ in their responses on psychological tests from individuals not given the diagnosis. The Rorschach has frequently been utilized as a measure of psychological functioning and is often used in psychodiagnostic and research assessments of borderline personality disorder. In addition, other tests such as the MMPI and Wechsler Adult Intelligence Scale - Revised (WAIS-R) (Wechsler, 1981) are often used in these studies. Many early reports, (Gruenewald, 1970; Singer, 1977; Weiner, 1966; Zucker, 1952) made sweep-



ing claims about the utility of psychological testing in the diagnosis of borderline patients. The most consistently reported finding involved variations on the theme that borderlines typically produce non-thought-disordered responses on structured tests but manifest considerable thought disorder on nonstructured tests such as the Rorschach. In a provocative review of the psychological test literature on borderlines, Widiger (1982) found little support for the claim that borderlines typically do better on structured tests while manifesting thought disorder on unstructured tests. He cited numerous methodological problems in virtually every early study including unsubstantiated diagnoses, broad claims based on speculation or single case reports, and no reference to base rate data which is crucial in evaluating the specificity and sensitivity of diagnostic claims. Since Widiger's review, several studies have been published which have addressed and corrected many of these methodological problems. There is an emerging body of literature to suggest that borderlines show predictable and moderately distinctive patterns of responses on psychological tests. Several of these studies will be reviewed below.

Exner (1986a) compared Rorschach data from three DSM-III diagnosed groups of adult patients: borderline personality disorder, schizotypal personality disorder, and first admission schizophrenics. Several important findings

emerged from this study which offered considerable support for the idea that borderline and schizotypal personality disorders represent distinct clinical entities and that there is a significant relationship between schizophrenia and schizotypal personality disorder but not between borderline personality and either of the other two diagnoses. Borderlines were found to produce more responses indicative of unmodulated affect (elevated CF + C responses, elevated affective ratios, lower lambdas, & higher Depression Index scores); showed less ability to deal constructively with acute stress (adjusted D scores less than 0); exhibited higher egocentricity ratios; and exhibited disturbed reality testing relative to normals. Although Exner questioned the appropriateness of the labels applied to these disorders, his data clearly offer support for three distinct disorders. His test data on borderline subjects are consistent with much of the theoretical and descriptive literature which describes borderlines as affectively unstable, impulsive, immature, and prone to relative difficulties with reality testing when under stress.

Armstrong, Silberg, and Parente (1986) examined the Rorschach and Wechsler Intelligence Scale data of 138 hospitalized adolescents who received a variety of DSM-III Axis I and II diagnoses. They formed four groups based on the presence or absence of thought disorder on the Rorschach and Wechsler Intelligence Scale data. They determined that

individuals who presented with little or no thought disorder on either instrument tended to manifest significant depressive symptomatology; individuals with high disordered Rorschachs and low disordered Wechslers typically presented as borderline; subjects manifesting high thought disorder on both tests presented with schizophrenic-like conditions; and individuals with disordered Wechsler data and low disordered Rorschachs presented with a variety of interpersonal deficits. This represents the only substantial support for the frequently cited but poorly substantiated claim that individuals who manifest borderline psychopathology often produce non-thought-disordered Wechslers while showing significant evidence of thought disorder on the Rorschach.

Archer and Gordon (1988) examined 138 inpatient adolescents diagnosed with DSM-III criteria. Using Exner's Comprehensive System (1986) for scoring Rorschach data, they determined that the composite Depression Index (DEPI) did a poor job of differentiating patients among the various Axis I and II diagnoses. While the Schizophrenia Index (SCZI, a measure of thought disorder) did a reasonably good job of discriminating adolescent schizophrenic patients from the other diagnostic groups, this measure was less sensitive and specific than the MMPI Sc scale (Schizophrenia). Of note, the 18 patients diagnosed with primary personality disorder (five of whom were borderline) did not significantly differ from the schizophrenics with regard to their reality testing

indices ( $X-\%$  and  $X+\%$ ) or their SCZI values. This suggests that as a group, adolescents with a primary Axis II disorder manifest reality testing and thought disorder indices on projective testing equivalent to that of adolescents whose diagnoses are within the schizophrenic spectrum.

In a study of the MMPI profiles of inpatient adolescents, Archer, Ball, and Hunter (1985) successfully classified 82.1% of 28 adolescents diagnosed as borderline using DSM-III criteria. The borderline adolescents were compared to adolescents with the following diagnoses: conduct disorder, dysthymic disorder, other personality disorders, and other diagnoses. The borderlines significantly differed from all of the comparison groups by manifesting elevations on four of the thirteen commonly used MMPI scales (F, HS, D, and SC). This indicates that adolescents diagnosed as borderline differ in their responses on a structured psychological test in comparison to other disturbed adolescents.

Lipovsky, Finch, and Belter (1989) compared a group of DSM-III diagnosed depressed adolescent inpatients with a group of nondepressed adolescent inpatients using Rorschach data (Exner's Comprehensive System, 1986b), the MMPI D scale, and a self-report measure of depression (Children's Depression Inventory, Kovacs & Beck, 1977). They determined that while several Rorschach variables were related to self-report measures of depression (morbid & shading responses), most Rorschach data were not correlated with

depression. Comparisons across diagnostic categories revealed no significant differences between depressed and nondepressed adolescents. The authors commented that their data differed in many ways from that reported in the normative tables provided by Exner (1985). In particular, the mean X+% value (an indicator of reality testing ability) was more than two standard deviations below Exner's mean. The lambda value (a measure of constriction) was more than two times higher than that considered normal by Exner. This suggests that either this group represents a highly atypical sample of constricted adolescents or that Exner's adolescent norms do not accurately reflect the types of responses produced by adolescent inpatients. Although the authors did not report comparisons between their data and that provided by Exner, it appears that the Rorschach may offer an indication of general distress in adolescence rather than information which might be helpful in differential diagnostic decisions.

Weiner and Exner (1978) compared groups of normal, outpatient, and schizophrenic adults with normal and outpatient adolescents using indices of disordered thinking (i.e., DV, ALOG, INCOM, etc.). They determined that nonpatient adolescents produced a significantly greater number of responses thought to reflect idiosyncratic or illogical thinking as well as potential reality testing difficulties than did nonpatient adults. Furthermore, outpatient ado-

lescents produced significantly more of these responses than did the normal group of adolescents. This pattern was mirrored in the adult groups where the normals displayed fewer signs of disordered thinking than did the outpatients, who showed moderate severity relative to the schizophrenics. The authors suggested that indices of disordered thinking occur with significant regularity in nonpatient samples as well as outpatient and inpatient groups. In addition to the presence of these factors, one should examine the amount and severity of the distortions prior to making judgments about the type and degree of pathology in a given individual. This is particularly important in adolescent samples, where indices of disorder apparently occur with considerable frequency in normal samples.

In a comprehensive review of recent studies examining psychological test data in the diagnosis of borderline personality disorder, Gartner, Hurt, and Gartner (1989) discussed the limited but emerging body of data which supports the validity of psychological testing in differential diagnosis. The authors reviewed many of the methodological difficulties inherent in these studies such as problems with diagnostic reliability, diagnostic heterogeneity, comorbid or concurrent diagnoses, sample size, and sensitivity and specificity of significant findings.

One of the difficulties encountered when attempting to identify patterns on psychological tests which might be

predictable and unique in patients warranting a diagnosis of borderline personality disorder involves the wide range and degree of pathology inherent in the diagnostic criteria. For example, while depression is one of the criterion for borderline personality disorder, it is unclear if psychological testing data measuring depression might differ in an individual who is primarily depressed compared to an individual with a diagnosis of borderline personality disorder with depressive features. Similarly, affective lability, anger, impulsivity, and anxiety are not unique to borderline personality disorder. It might be difficult to distinguish these features in borderlines compared to other diagnostic groups who manifest these symptoms.

Although DSM-III does not include transient psychotic-like episodes in its criteria, the DIB incorporates them as a central diagnostic feature. Data from previously discussed studies (Pope et al., 1983; Silk et al., 1984; Soloff, 1981b) support the inclusion of psychotic-like experiences of depersonalization and derealization as features of borderline personality disorder. The data from psychological testing studies generally parallel and support the hypothesis that borderlines are prone to mild, psychotic-like experiences while rarely presenting with symptoms of major psychosis such as enduring hallucinations or delusions. As discussed above, Armstrong et al.'s data (1986) offered support for the idea that adolescent borderline

inpatients tended to produce signs of disordered thought on the Rorschach while failing to do so on the WAIS-R. This was in contrast to schizophrenics who manifested disorder on both instruments and depressives who showed little disorder on either test. Hymowitz, Hunt, Carr, Hurt, and Spear (1983), in comparing inpatient borderline and schizophrenic adults who were classified using Kernberg's conceptualization of borderline and psychotic personality organization, found that psychotic patients differed from the borderline patients by manifesting a greater degree of thought disorder on the WAIS; however, they could not be discriminated based upon reality testing indices on the Rorschach. Using data from the Rorschach, several studies (Exner, 1986a; Patrick & Wolfe, 1983; Singer & Larson, 1981) found that borderlines typically manifested moderate levels of thought disorder compared schizophrenics and that they evidenced more disturbance than normals or individuals with neurotic-level conditions. These studies indicate that borderlines typically manifest moderately poor form quality indices (an indication of reality testing ability) relative to normals and less difficulty compared to the more disturbed schizophrenics.

Psychological testing studies examining the expression of poorly modulated affect have been less helpful in differentiating borderlines from other diagnostic groups. As Gartner et al. (1989) suggest, this may be due to the con-



siderable percentage of individuals who present with concurrent affective disorders, particularly in an inpatient setting. With the exception of Exner's (1986a) study discussed above which showed that borderlines produced significantly more responses indicative of unmodulated affective expression than nonborderlines, no other studies appear to have documented this feature on psychological testing.

In general, individuals diagnosed as borderline have shown characteristic patterns of responding on psychological tests such as the Rorschach, WAIS-R and MMPI. While many studies have examined the psychological test performances of adults identified as borderline, relatively little is known about the test performances of adolescents identified as borderline.

Theories regarding the etiology of borderline personality disorder typically emphasize the importance of early childhood experiences. Mahler's concept of separation-individuation and the rapprochement subphase have received considerable attention as a critical phase of development with regard to subsequent personality development.

Few systematic studies have been conducted which examine the actual life experience of individuals diagnosed as borderline using DSM-III or other operationalized diagnostic criteria. Zanarini, Gunderson, Marino, Schwartz, and Frankenburg (1989) attained detailed self-report historical information using a semi-structured interview from out-

patients who carried diagnoses of DSM-III and DIB-defined borderline personality disorder; DSM-III-defined dysthymic disorder who manifested a concurrent personality disorder other than borderline personality disorder; and a group who warranted a diagnosis of antisocial personality disorder. They determined that individuals diagnosed as borderline were significantly more likely to report histories of verbal and sexual abuse than either comparison group. Relative to the antisocial group, they were more likely to report experiences of general neglect and compared to the dysthymic with other personality disorders group, acknowledged more experiences of early separation. Their data support the hypothesis that individuals diagnosed with borderline personality disorder have histories of chronically disturbed relationships with caregivers (>90%) and that this factor appears to be more important than actual physical separation. In addition, active abuse appears to have greater etiological significance than more passive forms of neglect. Verbal abuse appears to be the most discriminating with regard to borderline personality disorder. Although this study did not specifically examine the relationship between the development of borderline personality disorder and phase-specific difficulties during the separation-individuation phase of development, it is consistent with the idea that early trauma and neglect play specific roles in the development of borderline personality disorder rela-

tive to other personality disorders.

From a theoretical perspective, the process of separation-individuation is one of the critical periods in terms of subsequent development; however, the manifestations of healthy and pathological experiences through this period and their observable impact on subsequent development is unclear. In an effort to study possible phase-related factors in the etiology of adolescent and adult psychopathology, Levine, Green, and Millon (1986) developed the Separation-Individuation Test of Adolescence. This instrument has demonstrated theoretical-substantive, internal-structural, and external-criterion validity. In so doing, it has offered tentative support to the hypothesis that psychological functioning in adolescence has a developmental component that can be related to and potentially operationalized as reflecting various phases in the initial separation-individuation process. For example, they determined that scales which assess separation and engulfment anxiety were elevated in individuals who manifested borderline psychopathology (Levine et al., 1986). This finding is consistent with the observed preponderance of these anxieties in toddlers who have difficulty successfully negotiating the rapprochement subphase. This effort represents one of the few which have sought to develop valid and reliable psychometric instruments for the study of psychoanalytic developmental principles.

### statement of Problem and Hypotheses

The existing literature on borderline personality disorder is controversial regarding issues such as diagnostic criteria, comorbidity and overlap with other more firmly established diagnostic categories, construct validity, etiology, treatment, and prognosis. Despite this confusion, there is an emerging body of data to indicate that at the descriptive level, patients with DSM-III and DIB-defined borderline personality disorder can be differentiated from others with adequate reliability. Recent psychological testing data offers tentative construct validity for the diagnosis and early studies on the etiology of borderline personality disorder suggest that these individuals typically experience greater levels of family discord during development than do individuals with comparable levels of psychopathology.

The issue of personality disorder in general and borderline personality disorder in particular is further clouded in adolescence. While this developmental period has commonly been referred to a period of inner turmoil, crisis, and upheaval, recent methodologically sound studies have suggested that this is not the case for the vast majority of adolescents. While approximately 20% of the adolescent population might warrant a psychiatric diagnosis of mild severity and 5% could be considered severely disturbed, the

vast majority of adolescents negotiate this period without manifesting intense inner turmoil or behavior problems. In addition, most disorders which become manifest in adolescence are similar to established adult disorders and do not represent specific disorders which remit in adulthood.

The DSM-III and DIB criteria for borderline personality disorder contain many descriptive behaviors which are not atypical in adolescents. For example, sexual activity and alcohol use are commonly initiated during the adolescent years. It is unclear at what point these normative behaviors might become symptoms of personality disorder. While relatively few studies have examined the phenomena of borderline personality disorder in adolescence, the existing investigations are consistent with the findings using adult populations.

While the DSM-III criteria for borderline personality disorder include a time dimension, the majority of the criteria cannot be easily quantified and exist along a continuum of severity. The DSM-III does not provide cut-off indicators of severity and leaves this decision up to the evaluating clinician. In contrast, the DIB requires that relatively strict criteria be met before a symptom or symptom pattern can be positively endorsed. It has demonstrated adequate inter-rater and test-retest reliability and has generally performed well in differentiating borderline personality disorder from other Axis I and II disorders.

Although the DSM-III criteria may be more frequently utilized in clinical practice, the psychometric features of the DIB make it a preferential instrument for research. In a review of the recent literature on borderline personality disorder, Zanarini et al. (1989) determined that DIB criteria either separately or in conjunction with DSM-III criteria have been used in the majority of studies investigating borderline personality disorder. For these reasons, the present study utilized DIB criteria for borderline personality disorder.

The above discussion summarizes several of the controversies regarding the diagnosis of borderline personality disorder. In an effort to clarify these issues, the present study examined borderline phenomena as a theoretical and a psychodiagnostic issue. This study addressed borderline phenomena in adolescence as well as the diagnostic validity of several projective and objective testing instruments. This study examined a group of adolescents identified as borderline by the DIB. Individuals so identified manifested a significant amount of pathology in the areas of social adaptation, impulse/action patterns, affects, psychotic symptoms, and interpersonal relations. This DIB-identified group was compared to a group of hospitalized, nonborderline adolescents and a comparison group of nonhospitalized comparison adolescents. A crucial component of this design was the incorporation of the two comparison groups of adoles-

cents. This provided data regarding general personality functioning, intrapsychic processes, and the impact of separation-individuation issues across a range of normal and disturbed adolescents. If borderline personality disorder is an extreme variation of typical adolescent behavior, one would not expect borderlines to appear markedly different from the nonclinical comparison group on psychological tests. The broad diagnostic criteria for the diagnosis and the fact that many of these symptoms are not specific to borderline personality disorder, suggest that this group may be as diagnostically heterogeneous as any other group of disturbed adolescents. If DIB-identified borderline adolescents represent a distinct diagnostic entity, it would be expected that they would differ in significant ways from the nonborderline adolescents on other indices of psychological functioning.

The DIB was able to identify a group of adolescents who manifested a significant degree of borderline pathology. DIB scores and the subject's hospitalization status were used to form groups for subsequent analyses. Three groups were formed based on DIB scores with a score of seven serving as the cut-off. The three groups were DIB-identified borderline inpatients, nonborderline inpatients, and the comparison group of nonborderline, nonhospitalized adolescents. None of the nonhospitalized adolescents attained DIB scores of seven or more so a fourth group of nonhospital-

ized, borderline individuals was not utilized.

Millon Adolescent Personality Inventory. A variety of psychological tests have been used to determine if borderlines significantly differ from other diagnostic groups on their performance. In the present study, the Millon Adolescent Personality Inventory (MAPI) was used to yield a personality profile for each of the three groups. The profiles are interpreted according to a pattern analysis based on high-point codes. Interpretation of the profile is multidetermined; i.e., both relative elevations and norm-referenced elevations are considered. It was hypothesized that differences would be evident among the three groups on scales from each of the three sections of the MAPI: the Forceful and Sensitive scales from the personality styles section, all eight scales from the expressed concerns section (Self-Concept, Personal Esteem, Body Comfort, Sexual Acceptance, Peer Security, Social Tolerance, Family Rapport, Academic Confidence), and the four scales from the behavioral correlates section (Impulse Control, Societal Conformity, Scholastic Achievement, Attendance Consistency).

First, it was hypothesized that two of the scales from the eight personality style scales of the MAPI (Forceful and Sensitive) would be elevated in the hospitalized, borderline group relative to the hospitalized, nonborderline group and the nonhospitalized comparison group. The hospitalized, nonborderline group was expected to show moderate elevations



relative to the nonhospitalized comparison group on these two scales. Finally, the nonhospitalized comparison group was hypothesized to show no elevations on either scale and was expected to perform within the normal range relative to the instrument's standardization sample.

Second, and more exploratory in nature, it was hypothesized that the hospitalized, borderline group would show a significant pattern of elevations on all eight expressed concerns scales (Self-Concept, Personal Esteem, Body Comfort, Sexual Acceptance, Peer Security, Social Tolerance, Family Rapport, Academic Confidence) relative to the other two groups. In addition, the hospitalized, nonborderline group was expected to show moderate elevations on these scales relative to the nonhospitalized comparison group. This latter group was expected to perform within the normal range on all eight scales relative to the instrument's standardization sample.

Finally, the four scales from the behavioral correlate section (Impulse Control, Societal Conformity, Scholastic Achievement, Attendance Consistency) were hypothesized to be elevated in the hospitalized, borderline group relative to the other two groups. The hospitalized, nonborderline group was expected to show elevation on these four scales relative to the nonhospitalized comparison group. The nonhospitalized comparison group was not expected to show significant elevations on these four scales relative to the instrument's

standardization sample.

Rorschach. Individuals diagnosed as borderline were expected to manifest characteristic response patterns on the Rorschach test indicative of thought disorder, poor reality testing, affective lability, and immature object relations.

First, it was expected that borderlines would present with significantly more special scores indicative of potential thought disorder on the structural summary (FABCOM, PER, AG, ALOG, MORE, SPACE, DVER, INCOM, DR). In particular, personalized responses, aggressive and morbid content, measures of contaminated thinking, and indicators of poor judgment and faulty logic were expected to be elevated in the borderline group relative to the other two groups.

Second, reality testing indicators were hypothesized to indicate that borderlines have more difficulty perceiving and interpreting reality than either the hospitalized, nonborderline or the nonhospitalized comparison group. The borderlines were expected to show relatively low scores on the X+%, F+%, and P variables and to exhibit elevations on the X-%, SZCI, and SWUM6 variables compared to the other two groups.

Third, it was hypothesized that the indicators of affect modulation difficulties would suggest that borderlines have more difficulty in this realm than either comparison group. In particular, it was predicted that the

borderlines would demonstrate a greater use of color on the test which would be reflected in elevations on the Afr and WTC variables and lower scores on the Lambda (L) variable relative to the other two groups.

Finally, borderlines were hypothesized to produce records with more part objects and quasi-human responses (QHQHD, QAQAD, SHDAD) suggesting that they have greater difficulties in interpersonal relationships than either comparison group.

Separation-Individuation Test of Adolescence. The adolescents identified as borderline by the DIB were considered to represent a specific diagnostic group. Consonant with current psychoanalytic theories, this psychopathology could reflect developmental failures or inadequacies which occurred during the separation-individuation process, in particular, the rapprochement subphase.

While recognizing that there is not necessarily a direct relationship between borderline pathology and the rapprochement subphase of separation-individuation, early deficiencies in this process are thought to impact significantly on the development of personality patterns and structure. Parallels have been drawn between adolescent borderline behavior and pathologically negotiated developmental processes during the rapprochement subphase. Elevations on the SITA scales were considered to reflect the degree of resolution of the various subphases of the

separation-individuation process. This study examined the hypothesis that phase-specific developmental deficiencies in the rapprochement subphase might be reflected in current manifestations of borderline personality disorder.

First, it was expected that borderlines would show a characteristic pattern of responses on the SITA reflecting current manifestations of failures in the initial separation-individuation process. Borderline adolescents were expected to demonstrate elevations on the Separation Anxiety and Engulfment Anxiety scales relative to either comparison group. In addition, they were expected to have lower scores on the healthy separation scale than either comparison group.

Second, it was expected that the hospitalized, non-borderline adolescents would manifest significant elevations on other subscales (Nurturance/Succorance, Interpersonal Enmeshment, Need Denial, Self-Centeredness); however, given the expected diagnostic heterogeneity of this group it was not expected that a significant profile would emerge.

Finally, the nonhospitalized comparison group was not expected to demonstrate significant elevations on the SITA subscales with the exception of the Healthy-Separation subscale relative to the two hospitalized groups.

## CHAPTER III

### METHOD

#### subjects

The study pool consisted of three groups of adolescents: a comparison group of nonhospitalized adolescents; a group of hospitalized, nonborderline adolescents; and a group of hospitalized, borderline adolescents. The non-hospitalized comparison group was composed of 42 adolescents attending a moderately-sized high school in a medium-sized Midwestern community. An equal number of students were randomly selected according to student number from each of three classes (sophomore, junior, and senior). Following the initial selection of 75 students from each class, a check was made to determine if any of these students received special services for learning disabilities. Two sophomores, two juniors, and one senior were so classified and were not included in the initial group. Alternate students were selected at random from the remaining pool and were similarly checked to determine if they were receiving special services. No students from this second draw were excluded. Thus, 225 students comprised the initial pool.

Subjects in this group were contacted through the mail. They and their parents received a letter explaining

the nature of the study, the potential benefits and risks, and a stamped, pre-addressed consent form offering them the opportunity to participate or to decline. A nominal payment of five dollars was offered as an incentive for participation. Of the initial sample, 48 (21%) of the students agreed to participate. Complete data were collected from 42 students. Seventeen students were sophomores (41%), 14 were juniors (33%), and 11 (26%) were seniors. The six students who were not included consisted of two students who declined after initially agreeing to participate and four who had to be eliminated because of scheduling conflicts.

Of the 42 participating students, 14 were male (33.3%) and 28 were female (66.7%). The ages of these subjects ranged from 15 to 18 with a median age of 16 (40%). Thirty-nine (93%) of the subjects were white, two (5%) of the subjects were hispanic, and the remaining subject was oriental. The average total score on the Hollingshead Four Factor Index of Social Position was 44.21 ( $SD = 12.46$ , range 17-66) (Hollingshead, 1975).

The hospitalized groups were formed from two independent populations of adolescents. The first population consisted of patients admitted to an adolescent inpatient hospital in Chicago, Illinois. Patients were eligible if they and a parent or legal guardian signed the informed consent form, they remained in the hospital long enough to complete the initial diagnostic evaluation including psycho-

logical testing, and they cooperated with the additional procedures involved in the study. Patients were considered for the study beginning in the late fall of 1986 and were recruited through the spring of 1988. A total of 84 patients met the initial criteria and completed all of the necessary procedures. All patients between the ages of 12 and 18 years old were considered regardless of sex, educational status, race, or psychiatric diagnosis including a history of substance abuse. Patients who achieved a Full Scale IQ of less than 80 on either the Wechsler Adult Intelligence Scale - Revised (Wechsler, 1981) or the Wechsler Intelligence Scale for Children - Revised (Wechsler, 1974) were excluded. This produced a final sample of 76 patients. Thirty-two females (42%) and 44 males (48%) comprised this group. The participants' ages ranged from 12 to 18 with a median age of 15 (30%). Twenty-five (33%) of the subjects were from the city of Chicago while the remaining 51 (67%) subjects were from suburban Chicago or northern Indiana. The average score on the Hollingshead Four Factor Index of Social Position was 40.61 ( $SD = 10.64$ , range 19-66). Fifty-five (72%) of the subjects were white, 18 (24%) were either black or hispanic, and 3 (4%) were from other racial backgrounds.

The second population of hospitalized adolescents consisted of patients admitted to a general psychiatric hospital in New York City. Subjects were considered eli-

gible for the study if they and a parent or legal guardian signed the informed consent form, the hospitalization continued long enough for them to complete the initial evaluation including psychological testing, and they were able to complete the additional procedures required of the study. Subjects were recruited beginning in the fall of 1988 and were approached through the spring of 1989. Patients were considered eligible to participate if they were between the ages of 12 and 18. No subjects were excluded based on school status, psychiatric history, substance abuse history, sex, or race. Twenty-seven patients agreed to participate and complete data were collected from all of them. Three patients were eliminated from the study after they were measured to have Full Scale IQ's of less than 80 using the appropriate Wechsler Scale. Of the final 24 subjects, five (21%) were male and 19 (79%) were female. The median age was 15 (25%). All 24 subjects were from New York City. The average score on the Hollingshead Four Factor Index of Social Position was 41.33 (SD = 13.00, range 14-61). Nine (38%) of the subjects were white, 13 (54%) were black or hispanic, and the remaining two (8%) were of other racial descent.

After the two hospitalized populations were combined, subjects were placed in either the borderline or nonborderline group based on their performance on the Diagnostic Interview for Borderlines (DIB). Individuals receiving a



score of six or lower were not classified as borderline and individuals with a score of seven or higher received a research diagnosis of borderline personality disorder. Twenty-three (30%) of the Chicago sample and seven (29%) of the New York sample were designated as the borderline group. Fifty-three (70%) Chicago subjects and 17 (71%) New York subjects comprised the nonborderline, hospitalized group. Since none of the subjects in the comparison group attained scores of seven or higher on the interview, there was no need to include a fourth group consisting of nonhospitalized, borderline adolescents. These 42 subjects comprised the nonhospitalized comparison group.

### Materials

Diagnostic Interview for Borderlines (DIB). (Gunderson, Kolb, & Austin, 1981) This semi-structured interview characterizes individuals according to five areas of functioning: social adaptation, impulse action patterns, affects, psychosis, and interpersonal relations. The social adaptation section addresses academic and work history, special achievements and talents, social activity, and social presentation. The impulse action pattern questions deal with self-destructive behaviors (i.e. suicidal gestures, self-mutilation), sexuality, substance abuse, and antisocial activity. The affects section addresses affectively related behavioral observations; symptoms of dysthymic disorder and major depression; the individual's

ability to tolerate and modulate anger; and other affective states such as hypomania, emptiness, anxiety, and boredom. Questions concerning psychosis focus on experiences of depersonalization, derealization, formal thought disorder, and symptoms such as delusions, hallucinations, and paranoia. The final section concerning interpersonal relationships deals with qualitative and quantitative aspects of relationships as well as more general attributes such as dependency, hostility, and masochistic behaviors.

The interview consists of 132 assessment items which are scored with regard to severity. These items are grouped under 29 summary statements which reflect the presence or absence of borderline features. A score of zero, one, or two, is assigned to each of the 29 statements based on the interviewer's clinical judgement. A score of zero is given when the symptom is absent or minimal, one is given if it is present but not severe, and a score of two is given when the symptom is severe. Several symptoms which have been theoretically considered to be incompatible with a primary diagnosis of borderline personality disorder have been negatively weighted (scores of -1 or -2 are assigned) such as frank hallucinations, delusions, and significant symptoms of bipolar disorder. The number of summary statements varies among the five sections and ranges from four to eight, making a maximum total score on each section of eight to sixteen. These scores are then transformed into a scaled

section score ranging from zero to two based on the presence and severity of a given symptom or behavior. These scores are then added to produce a scaled score ranging from zero to ten for each individual. A scaled score of seven has been reliably determined to correspond to a diagnoses of DSM-III borderline personality disorder in adults (Kolb & Gunderson, 1980; Frances et al. 1984). As a result, a score of seven or higher was selected to classify subjects in the borderline personality disorder group in the present study. An extensive discussion of the reliability and validity of the DIB is provided in the previous chapter.

Millon Adolescent Personality Inventory (MAPI). The MAPI (Millon, Green, & Meagher, 1982) is a true-false questionnaire consisting of 150 items which yield a personality profile made up of 20 scales grouped into three areas of functioning. Area I consists of eight personality style scales: Introversive, Inhibited, Cooperative, Sociable, Confident, Forceful, Respectful, and Sensitive. High scores on these scales suggest that these personality dimensions are particularly pronounced in a given individual. The clinical interpretation of these scales utilizes the two highest scores above a base rate of 65 as the anchor for a basic description of an individual's personality. Area II addresses eight areas of expressed concern: Self-Concept, Personal Esteem, Body Comfort, Sexual Acceptance, Peer Security, Social Tolerance, Family Rapport, and Academic

Confidence. Higher scores are indicative of more intense concern regarding these respective areas. The final four scales (Area III) contain behavioral correlates: Impulse Control, Societal Conformity, Scholastic Achievement, and Attendance Consistency. These scales address the degree of similarity between a given subject and other individuals who manifest difficulties with these behaviors. Higher scores are indicative of greater similarity between the respondent and individuals who manifest the behavior in question. The MAPI is computer scored by National Computer Systems who provide a personality profile on each subject. Raw scores and base rate scores are provided for each subject as well as an indication of the reliability and validity of the profile. Reliability and validity interpretations are provided based on a subjects' response to questions such as, "I have not seen a car in the last ten years." and "I haven't been paying much attention to the questions on these pages."

The MAPI was constructed in a three-step procedure advocated by Loevinger (1957). This procedure calls for an initial substantive-theoretical phase in which test items are developed according to a specific theoretical model. Millon's (1969) theoretical system was used in the development of this instrument. This theory is based upon a 4x2 matrix consisting of an active versus passive dimension on one axis and detached, dependent, independent, and ambival-

ent personality dimensions on the other axis. Eight primary personality styles are produced within this matrix. Each of these eight cells corresponds to one of the eight personality style designations in the MAPI. For example, the cell made up of the passive dimension and detached personality dimension is equivalent to the Introversive scale and the active dimension and independent personality dimension corresponds to the Forceful personality scale. Following this theoretical model, over 1000 items were developed which were considered to reflect characteristics of these eight personality styles. These items were then classified into one of the eight personality styles by eight skilled clinicians familiar with the theoretical model. Items were retained if they were sorted into the same personality style category by six or more of the clinicians.

The second phase in the MAPI's development addressed internal-structural issues of the instrument. During this phase, items were retained which were demonstrated to have adequate internal consistency as well as overlap with other theoretically related scales. This phase of the test's development follows the idea that personality does not consist of discreet, independent factors. Rather, it adheres to the notion that certain personality styles and expressed concerns are statistically correlated as well as theoretically related. For example, individuals who score highly on the Inhibited personality style scale might be

expected to score at a low level on the Sexual Acceptance scale under the expressed concerns section. This would be predicted based on the assumption that shy and socially ill at ease individuals (Inhibited) may view sexuality and its expression (Sexual Acceptance) as problematic. Of the over 1000 items initially developed, 289 were retained. These items were given to a group of over 2500 adolescents. Item-scale homogeneities and correlations were calculated. Questions having a correlation of less than .30 with their assigned personality scale were eliminated from the provisional pool of 289 items. Sixty-four questions were retained for the final version of the MAPI. The eight scales constituting the expressed concerns section of the MAPI were formed from a larger pool of items developed by clinicians regarding the common feelings and attitudes experienced with varying intensity by many adolescents during development. Eighty items were added to the final inventory after they had been sorted into one of the eight categories by 75 percent of the consulting clinicians.

During the final phase of the MAPI's development (external-criterion validation), it was administered to a large number of adolescents who had been identified by mental health professionals as manifesting some form of psychological difficulty. After selecting a given criterion measure, for example, impulse control problems, a group of individuals exhibiting impulse control problems was compared to a

group of individuals with problems other than impulse control difficulties. Items which differentiated the two groups were considered to be externally valid. These items were then included in the four behavioral correlate scales.

Millon's theoretical model predicts that there should be considerable overlap between scales representing the eight personality styles, the eight expressed concerns scales, and the four behavioral correlate scales. All of the scales on the MAPI were examined in the present study; however, as identified in the hypotheses, the personality scales of Forceful and Sensitive were predicted to show the greatest elevations for individuals identified as borderline. The Forceful scale describes individuals who are strong-willed, tough-minded, and tend to lead and dominate others. They frequently question the abilities of others and prefer to take over responsibility and direction in most situations. They are often blunt and unkind, tending to be impatient with the problems and weaknesses of others. Individuals who score highly on the Sensitive scale are described as discontented, pessimistic, moody, and unpredictable. These people often feel guilt about their moodiness and apologize to the people involved, but are soon just as moody as ever.

Research conducted during the development of the MAPI suggests that elevations on these two scales are frequently associated with elevations on all of the expressed concerns

scales with the exception of Peer Security. The eight expressed concern scales can be described briefly as follows: Self-Concept examines issues of identity consolidation; Personal Esteem is a measure of the adolescent's comfort with his or herself relative to an internal ideal; Body Comfort focuses on the adolescent's relative comfort with his or her body and its maturation; Sexual Acceptance addresses issues of satisfaction regarding gender identity and comfort with heterosexual relationships; Peer Security is designed to assess an adolescent's degree of comfort with and acceptance by a peer group; Social Tolerance attempts to measure a subject's capacity for empathy; Family Rapport examines the youth's satisfaction with his or her family situation; and the Academic Confidence scale assesses the subject's thoughts and attitudes regarding success in school.

The four behavioral correlates are all expected to be elevated in adolescents identified as borderline relative to the comparison group as well as the hospitalized, nonborderline group of adolescents. These empirically-derived scales are self-explanatory and are thought to address issues related to impulsivity, social conformity, academic performance, and school attendance.

Rorschach. The Comprehensive System developed by John Exner (1986b) was utilized in the present study. This system incorporates aspects of commonly used Rorschach



administration and scoring techniques as well as a number of innovations. It was developed in an effort to standardize the test with a goal of increasing its reliability and validity. The system includes extensive and explicit instructions for administering, scoring, and interpreting the data. Age-based normative data are provided in the form of descriptive statistics for all Rorschach variables.

The Comprehensive System is frequently used in studies of psychopathology. For example, Archer and Gordon, (1988) utilized aspects of this system in their study of schizophrenia and depression in adolescence; Acklin and Alexander (1988) found that several important variables differentiated members of four groups of psychosomatic patients; Exner (1986a) found significant differences on important aspects of the structural summary in discriminating among individuals diagnosed as schizophrenic, schizotypal personality disorder, and borderline personality disorder; and Weiner and Exner (1978) found differences between indices of disordered thinking in patient and nonpatient adolescents and adults.

A standard ten-card Rorschach was administered to all participants in the present study in the manner delineated by Exner. This was accomplished in the standard side-by-side seating arrangement with the ten cards presented in order followed by a detailed inquiry to facilitate scoring. Scoring followed the guidelines specified in the Comprehen-

sive System. Scoring commenced after the principal investigator had established adequate reliability with the scoring workbook (Exner, 1985). Location and form quality tables are provided for assigning a form quality designation to every response; however, clinical judgement is to be utilized for all responses not included in the table. As a general rule, all responses which are not included are automatically assigned a "-" (poor form quality) or a "u" (unusual form quality). The scorer is instructed to score a response as unusual if it can be quickly and readily seen and does not require the arbitrary use of boundaries. Despite these instructions, there remains an element of subjective judgement in each of these decisions. For purposes of this investigation, all "-" or "u" responses were also coded for their presence or absence in the table. All responses that were not in the table were rescored by an independent scorer who was familiar with the basic tenets of the Comprehensive System. Differences of opinion regarding form quality were resolved by a third independent scorer similarly familiar with the Comprehensive System.

The Comprehensive System provides a large number of variables for consideration by researchers and clinicians. As stated in the Hypotheses, several of these scores were of particular interest in the present study and are briefly described below. The X+ and F+ measure the accuracy of an individual's perception of the blot (form quality). The X+

is a percentage calculated as the number of good form quality responses over the total number of responses. The  $F+\%$  is the number of pure form responses which have good form quality over the total number of pure form responses. Both of these indices are thought to reflect an individual's capacity for reality testing. The special scores (Deviant Verbalizations (DV), Deviant Responses (DR), Incongruous Combinations (INCOM), Fabulized Combinations (FABCOM), Contaminations (CONTAM), and Inappropriate Logic (ALOG) are all felt to reflect various degrees of thought disorder and perceptual disturbance and were predicted to be elevated in the borderline sample. The Schizophrenia Index (SCZI) is a composite variable based on presence of certain other variables considered to reflect disordered thinking and was similarly predicted to be elevated among borderlines.

Individuals identified as borderline are thought to have difficulty modulating affect. The Rorschach contains several indices of affective regulation including the Affective Ratio (AFR), and the Weighted Sum C (WTC). These were predicted to be elevated in the borderline sample. Given the theory that borderlines tend to have disturbed interpersonal relationships, it was expected that borderlines would produce more part- and quasi-human responses. Part-human or part-animal responses are scored when individuals report seeing incomplete humans or animals. Quasi-human and quasi-animal responses are often considered to reflect a defensive

move against genuine closeness with others. This score is given when a subject perceives a mythological or fictional human or animal such as a witch or a dragon. It was postulated that Lambda ( $\underline{L}$ ) would similarly be high in borderline individuals relative to the other two groups. This score is calculated as the sum of all pure form responses over the total number of responses minus the pure form responses.

Separation-Individuation Test of Adolescence (SITA).

The SITA (Levine, Green, & Millon, 1986) is an inventory based on the developmental theory of Margaret Mahler (Mahler, 1968; Mahler, Pine & Bergman, 1975). Mahler and others have posited that phase-specific developments in the first three years of life might form the precursors for similar developments in adolescence. This notion can be applied to normal, adequately-negotiated development as well as to pathological development. In particular, difficulties during the initial rapprochement subphase are thought to be related to the subsequent development of borderline personality disorder in adolescents and young adults. The SITA was developed in an effort to demonstrate a relationship between separation-individuation and future personality development. It appears to be one of the few nonprojective measures which might help to provide construct validity for Mahler's developmental theory and its applicability to later development.

The SITA consists of 103 items which are answered on a

five-point likert scale. It's development parallels the construction of the MAPI in its adherence to Loewinger's three-stage, theory-based model. During the first phase of its development (theoretical substantive), 119 test items were developed which were considered to reflect issues related to six basic separation-individuation themes: Nurture-Symbiosis, Engulfment Anxiety, Separation Anxiety, Need Denial, Self-Centeredness, and Healthy Separation. These six basic dimensions were developed in accordance with several psychoanalytically-oriented adolescent specialists, such as Blos, Esman, Erikson, and Weiner. These questions regarding the separation-individuation process were presented to six graduate students and two skilled clinicians with the instructions to sort them into one of these six categories. Items which were not sorted into the same basic dimension by six of the eight raters were eliminated or revised. This procedure was repeated until a final pool of 100 items was attained.

The second, internal-structural validation phase was accomplished by presenting the instrument to three populations of adolescents who formed a group of 305 subjects. The entire sample was subjected to a factor analysis with six a priori factors expected to emerge. Items that did not correlate most significantly to their respective factor were eliminated resulting in a final inventory consisting of 76 items.

During the final external criterion validation phase, results on the SITA were analyzed according to MAPI personality styles using the one or two highest personality scale elevations above a base rate of 70. The different personality styles served as the independent variables for a series of ANOVA's with the six SITA scales serving as dependent variables. These analyses generally supported the instrument in its theoretical foundation and psychometric construction. For example, the Confident-Outgoing group from the MAPI had a significantly lower score than the other groups on the SITA Engulfment Anxiety scale. This procedure as well as the previous internal-structural validation phase offered support for the original and subsequently modified versions of the Self-Centeredness, Dependency Denial, Engulfment Anxiety, Separation Anxiety, and Healthy Separation scales. The additional sixth factor was dichotomized into two scales called Nurturance Seeking and Enmeshment Seeking. This decision was supported following an additional external-criterion validation procedure.

All seven scales were utilized in the present study. In addition, the Symbiosis Seeking scale was included even though it was not included in the initial publication regarding the SITA. Normative data available from the author (J. Levine, personal communication, April 18, 1987) indicate that this scale also significantly differentiated among the groups.

Levine et al. (1986) suggested that the Separation Anxiety and Engulfment Anxiety scales might be elevated in individuals classified as borderline. The Separation Anxiety scale is thought to assess an individual's attitudes about losing physical or emotional contact with important, often idealized others. These individuals are expected to manifest anxiety and depression in the face of actual or fantasized loss of an important other. The Engulfment Anxiety scale is thought to measure an individual's fear of close relationships with others. High scorers on this scale appear to fear the possibility that their independence and sense of self will be eradicated by a more powerful other. Individuals identified as borderline are felt by many theorists to alternate between a fear of losing support from an idealized other and the fear of losing autonomy if they become too close to another. This might be manifested behaviorally in their tendency quickly to switch from feelings of idealization to feelings of devaluation. The remaining scales might show elevations in other diagnostic groups. The Healthy Separation scale measures the degree to which an individual has negotiated successfully the process of adolescent individuation and has reached a consolidation of young adult identity. The Need Denial scale was developed to assess the degree to which an individual avoids or denies dependency needs. This is felt to be a defensive maneuver intended to avoid the hurt of rejection or aband-

onment. The Self-Centeredness Scale is thought to measure the degree of narcissism experienced by an individual. subjects who score highly on this scale would be predicted to exhibit an over-valued sense of self and would come to expect praise and admiration from others. The Nurturance seeking scale appears to assess the individuals desire to have emotional intimacy with others, whereas the Symbiosis seeking scale seems to measure the need for dependency and gratification at a more basic level.

Demographic Data Questionnaire. Demographic data were collected by the examiner using a standard form including questions such as age, grade, sex, ethnic background, and marital status of the subject's parents. The appendix contains a copy of the demographic form. The Hollingshead method of determining socioeconomic status was utilized in the present study (Hollingshead, 1975).

Intelligence Testing. Depending upon the subject's age, all hospitalized subjects were administered either the Wechsler Adult Intelligence Scale - Revised (Wechsler, 1981) or the Wechsler Intelligence Scale for Children - Revised (Wechsler, 1974). In an effort to reduce the possible confound intelligence may have on normal and pathological personality development, a Full Scale IQ of 80 was selected as the minimum value for inclusion in the study. This corresponds to the boundary between low average intellectual functioning (Full Scale IQ greater or equal to 80 but less



than or equal to 89) and borderline mental retardation (Full scale IQ greater or equal to 70 and less than or equal to 79). Although the comparison group was not administered a standardized measure of intelligence, they were carefully screened to determine if they had a history of academic difficulty. These subjects were replaced with individuals who had not exhibited learning difficulties.

### Procedure

Nonhospitalized Comparison Group. After agreeing to participate, subjects were contacted via telephone and appointments were scheduled for them at the high school. All testing was completed either after school or during vacations to avoid disrupting classroom time. All subjects were administered the Diagnostic Interview for Borderlines followed by the Rorschach. After these procedures, subjects were read the instructions for the Millon Adolescent Personality Inventory and the Separation Individuation Test of Adolescence. They were invited to complete these forms in the administrator's presence during the same testing session. Following the completion of these procedures, the subjects were compensated five dollars for their participation.

In an effort minimize bias and to assure confidentiality, all subjects were given code numbers which appeared on all required forms. The Diagnostic Interview was scored immediately after completion of the testing. The Rorschach

protocols were scored months afterward by the examiner without knowledge of an individual's performance on the DIB. The MAPI inventories were computer scored and the SITA inventories were hand scored by the examiner.

Hospitalized Adolescents. Subjects hospitalized in Chicago all received a full battery of psychological tests from an independent psychologist. The independent psychological testing was completed by one of two examiners routinely utilized by the hospital. Each examiner was asked to administer the Rorschach according to standard procedures and to include a detailed inquiry. Subjects were subsequently approached by the investigator to complete the additional procedures (DIB, MAPI, SITA). The investigator was unaware of the patient's working diagnosis or the results of the psychological testing prior to the administration of the experimental procedures. Code numbers were utilized on all forms to protect anonymity and to minimize investigator bias. After subjects had agreed to participate, demographic data were collected and subjects were interviewed using the DIB procedure. Although the instructions on the DIB allow for the use of additional information such as staff and therapist reports, this was avoided in nearly all cases except to verify specific information such as the number and length of previous hospitalizations. After completing the DIB, subjects were read the instructions and asked to complete the two additional question-

naires in the same session with the examiner present.

Rorschach data were collected from the patients' charts and rescored by the examiner according to the Exner system after the data collection phase of the project had been completed. Results of the intellectual assessments were obtained at this time as well as verification of important demographic variables.

The procedure for patients hospitalized in New York City essentially followed that used in Chicago. Subjects were approached for participation after they had completed a full battery of psychological tests including intelligence testing and a Rorschach. Examiners consisted of psychology interns who were all skilled with standard Rorschach procedures. They were instructed to include a detailed inquiry to facilitate rescoring of the data by the principal investigator. In several instances, the investigator also administered the entire battery of psychological tests. This was always done prior to the administration of the experimental procedures. All Rorschach protocols received code numbers and were rescored after the data collection phase in an effort to reduce potential bias.

## CHAPTER IV

### RESULTS

#### Preliminary Analyses

Prior to undertaking hypothesis testing, the three groups of subjects were compared with regard to important demographic variables. Table 1 illustrates the chi square,  $t$  test and analysis of variance statistics comparing the three groups. No significant differences were found for SES,  $F(2,139) = 1.43$ ,  $p = .24$ . Significant differences were found for age,  $F(2,139) = 11.25$ ,  $p < .001$ . The nonhospitalized comparison group was significantly older ( $M = 16.21$ ,  $SD = .84$ ) than either the hospitalized, nonborderline group ( $M = 15.14$ ,  $SD = 1.42$ ) or the hospitalized, borderline group ( $M = 15.27$ ,  $SD = 1.01$ ); however, the two hospitalized groups did not differ with respect to age (post-hoc comparison using Tukey-B Multiple Range Test at .05 level). The population of the home community,  $X^2 (2, N = 142) = 32.03$ ,  $p < .001$ , varied significantly with the nonhospitalized comparison group being entirely suburban and the other two groups having an approximately equal numbers from urban and suburban backgrounds. Group differences were evident for gender among the three groups,  $X^2 (2, N = 142) = 7.20$ ,  $p < .05$ , with the nonhospitalized comparison group and the

Table 1

Demographic Characteristics of the three Groups:Comparison; Hospitalized, Nonborderline; andHospitalized, Borderline

Group	Comparison (N=42)	Hosp NonBPD (N=70)	Hosp BPD (N=30)	F or $\chi^2_a$
SES				
<u>M</u>	44.21	40.39	41.70	1.43
<u>SD</u>	12.46	11.75	9.89	
Age				
<u>M</u>	16.21	15.14	15.27	11.25***
<u>SD</u>	.84	1.42	1.01	
Full-Scale IQ				
<u>M</u>	na	100.54	101.07	1.41
<u>SD</u>	na	13.29	11.21	
Verbal IQ				
<u>M</u>	na	98.6	97.1	1.14
<u>SD</u>	na	12.25	11.49	
Performance IQ				
<u>M</u>	na	102.84	105.93	1.05
<u>SD</u>	na	15.25	14.87	
Gender				
male	14	39	10	7.20*
female	28	31	20	
Race				
white	39	44	20	13.31**
hispanic/ black	2	23	8	
other	1	3	2	
Population				
suburban	42	34	17	32.03***
urban	0	36	13	

a = chi-square (2, N = 142)

na = not available

\* p &lt; .05. \*\* p &lt; .01. \*\*\* p &lt; .001.

hospitalized, borderline group having twice as many females as males and the hospitalized, nonborderline group having more males ( $N = 39$ ) than females ( $N = 31$ ). Race differed significantly,  $X^2 (2, N = 142) = 13.31, p < .01$  among the groups. Both hospitalized groups had significantly more blacks and hispanics than did the comparison group, while the proportions of blacks and hispanics in the two hospitalized groups were comparable. There were no differences between the two hospitalized groups with regard to Full-Scale, Verbal, 0-Performance IQ's.

Correlational analyses (two-tailed correlations at the .01 level) were conducted between age and the major dependent variables to be examined. These analyses were undertaken for the entire sample as well as for the three separate groups of subjects. Correlations for the 20 scales of the MAPI with age for the entire sample ranged from  $-.02$  for the Body Comfort scale to  $-.26$  for the Social Tolerance scale. Two of these scales, Sexual Acceptance,  $r(129) = -.23, p = .01$ , and Social Tolerance  $r(127) = -.26, p = .01$ , showed significant correlations for the entire sample. Given the modest level of correlation between age and these two scales, the large number of correlations examined using this instrument, and the fact the scales were not hypothesized to be of primary interest in this study, statistical procedures were not used to adjust for age. In the border-

line group the correlations ranged from .11 for the Family Rapport scale to -.52 for the Sexual Acceptance scale. Only the correlation for the Sexual Acceptance scale reached significance,  $r(24) = -.52$ ,  $p = .01$ ; however, for the reasons discussed above, an analysis of covariance procedure was not undertaken. None of the correlations for the hospitalized, nonborderline group reached significance. They ranged from -.004 for the Sociable scale to -.19 for the Social Tolerance scale. Similarly, none of the correlations for the nonhospitalized group reached significance. They ranged from .002 for the Forceful scale to -.21 for the Sociable scale.

Correlations with age for the 21 major Rorschach variables failed to produce significant results for the entire sample or for the three groups. Correlations for the entire sample ranged from .014 for the Schizophrenia Index to .20 for the number of popular responses. Among the nonhospitalized group, correlations ranged from .003 for the  $\bar{X}\%$  to -.29 for the sum of all the quasi-animal responses. Correlations for the hospitalized, nonborderline group ranged from -.005 for the number of deviant verbalizations to .26 for the number of deviant responses. The borderline group attained correlations ranging from .041 for the number of FABCOM responses to .42 for the number of INCOM responses.

Correlations for the eight scales of the SITA failed to reach significance for the entire sample or for any of

the three groups. They ranged from .01 on the Symbiosis seeking scale to .21 for the Healthy Separation scale for the entire sample. Correlations for the borderline group ranged from .007 for the Healthy Separation scale to -.41 for the Dependency Denial scale. The hospitalized, nonborderline group attained correlations ranging from .006 on the Nurturance Seeking scale to .22 for the Healthy Separation scale. The nonhospitalized group's correlations ranged from -.014 on the Enmeshment Seeking scale to -.19 on the Nurturance Seeking scale. This suggests that age is not a major factor in the presence or severity of borderline symptomatology in this sample. Therefore, it was not considered necessary to statistically adjust for age in subsequent analyses.

#### Millon Adolescent Personality Inventory (MAPI)

Prior to subjecting the MAPI profiles to statistical analyses they were reviewed for reliability and validity indices. The MAPI assesses reliability through questions such as, "If I read these questions a month from now, I'm sure I would change most of my answers." and validity using questions such as, "I have not seen a car in the last ten years." Subjects were excluded if they answered any of the three validity questions in the direction indicative of either random or careless responding. Subjects who endorsed more than one of the three reliability questions were also excluded. One subject was eliminated from the comparison



group (2%), four were eliminated from the hospitalized, nonborderline group (6%), and three were eliminated from the borderline group (10%). A chi square analysis revealed no significant findings for reliability and validity with regard to group membership,  $\chi^2 (2, N=142) = 1.13, p=.57$ .

Data from the MAPI are provided in raw score and base rate format. Base rates are calculated as a function of age and sex with separate normative tables available for males and females fifteen years old and younger and additional tables for those between the ages of sixteen and eighteen. In an effort to maximize the diagnostic utility of the instrument, the authors established a base rate cut-off score (74) above which a personality style is considered to be present. A score above 84 represents a prominent personality characteristic. If a respondent fails to achieve a base rate score of greater than 74 on one or more of the eight personality style scales, base rate data are not calculated for any of the twenty scales. It is therefore possible to have a valid and reliable profile that nevertheless cannot be interpreted using base rate data. One subject from each of the three groups was eliminated from the subsequent base rate analyses after failing to achieve a single base rate score on the eight personality style scales of greater than 74.

It was predicted that group differences would emerge

on the Sensitive and Forceful scales from the eight personality style scales, all eight expressed concerns scales, and all four behavioral correlate scores. The hospitalized, borderline group was expected to show elevations on these scales relative to the other two groups, and the hospitalized, nonborderline group was expected to manifest elevations on these scales relative to the nonhospitalized comparison group. To test these hypotheses, each of the twenty scales was subjected to a oneway analysis of variance using both raw and base rate data. Although minor differences existed for the  $F$  ratios and probabilities between the raw and base rate statistics, none of the interpretations of significance differed. Given the norm-referenced nature of the base rate data, this was selected as the most appropriate for consideration. Post-hoc comparisons were conducted for all variables using the Tukey-B Multiple Range Test at the .05 level.

Personality Style Scales. Table 2 illustrates the means, standard deviations,  $F$  ratios, and probabilities for the eight personality style scales. Six of the eight scales reached significance for the overall  $F$  value at the .05 level. Two of the scales, Sociable and Confident, did not differ significantly among the groups. The personality styles of Forceful,  $F(2,128) = 16.38$ ,  $p < .001$ , and Sensitive,  $F(2,128) = 19.32$ ,  $p < .001$ , were hypothesized to be elevated in the hospitalized, borderline group. The three

Table 2

Oneway Analysis of Variance Statistics for the  
Millon Adolescent Personality Inventory:  
Personality Style Scales

Group	Comparison ( <u>N</u> =40)	Hosp NonBPD ( <u>N</u> =65)	Hosp BPD ( <u>N</u> =26)	<u>F</u>
Introversive				
<u>M</u>	39.28	41.25	20.15	8.38a**
<u>SD</u>	19.22	26.66	16.34	
Inhibited				
<u>M</u>	44.70	58.80	61.69	3.93b*
<u>SD</u>	25.88	28.05	32.85	
Cooperative				
<u>M</u>	55.22	41.26	28.73	10.59a**
<u>SD</u>	28.17	23.00	13.43	
Sociable				
<u>M</u>	61.93	50.12	59.19	2.88
<u>SD</u>	25.20	26.57	25.55	
Confident				
<u>M</u>	57.53	51.06	48.19	1.20
<u>SD</u>	26.35	25.59	26.77	
Forceful				
<u>M</u>	49.55	62.78	80.77	16.38a**
<u>SD</u>	25.38	20.92	16.73	
Respectful				
<u>M</u>	56.08	42.51	22.15	18.73a**
<u>SD</u>	24.74	22.95	13.20	
Sensitive				
<u>M</u>	48.28	69.37	88.19	19.32a**
<u>SD</u>	29.03	25.83	20.74	

a = all three groups significantly differ from each other, Tukey-B, post-hoc t-tests,  $p < .05$ .

b = comparison group significantly different from hospitalized, nonborderline group, Tukey-B, post-hoc t-tests,  $p < .05$ .

\*  $p < .05$ . \*\*  $p < .001$ .

groups were found to be significantly different in the predicted direction for both variables. Hospitalized, borderline adolescents endorsed significantly more items comprising the Forceful and Sensitive personality styles than did either the nonborderline comparison or hospitalized, nonborderline groups. In addition, significant differences were found between the hospitalized, nonborderline group and the comparison group on these two variables. As predicted, the hospitalized, borderline group manifested significant elevations on the Forceful and Sensitive scales relative to the other two groups. In addition, the hospitalized, nonborderline group showed elevations on these two scales relative to the nonhospitalized comparison group.

Although there were no specific hypotheses regarding the other six personality style scales, exploratory analyses were conducted to examine group differences on these scales. The three groups also differed significantly on the Respectful personality style scale,  $F(2,128) = 18.74$ ,  $p < .001$ . The comparison group endorsed significantly more items on this scale than either of the hospitalized groups. The hospitalized, borderline group endorsed significantly fewer items than did the hospitalized, nonborderline group. Similarly, the Cooperative scale showed significant group differences with the comparison group endorsing the greatest number of these items, followed by the hospitalized, nonborderline

group, and the hospitalized, borderline group  $F(2,128) = 10.59$ ,  $p < .001$ . Finally, the Inhibited personality style scale discriminated between the comparison group and the hospitalized, nonborderline group but did not reach significance for any other comparisons,  $F(2,128) = 3.93$ ,  $p < .05$ . The hospitalized, borderline group endorsed significantly fewer items comprising the Introversive scale than did either of the other two groups  $F(2,128) = 8.38$ ,  $p < .001$ . There were no differences between the comparison and the hospitalized, nonborderline group on this variable.

Expressed Concerns Scales. The eight expressed concerns scales were predicted to be elevated in the borderline group relative to the other two groups with the hospitalized, nonborderline group manifesting elevations compared to the nonhospitalized group. These scales were subjected to oneway analysis of variance procedures with post-hoc comparisons conducted with the Tukey-B Multiple Range Test at the .05 level. These data are illustrated in Table 3. Five of the eight scales reached significance for the overall F-ratio in the predicted direction, supporting the hypotheses that the hospitalized, borderline group would present with more indications of psychopathology on these scales than the other two groups. Scores on the Personal Esteem, Body Comfort, and Sexual Acceptance scales did not differ among the three groups. It was predicted that these scales would also be elevated in the hospitalized, borderline group

Table 3

Oneway Analysis of Variance Statistics for the  
Millon Adolescent Personality Inventory:  
Expressed Concerns Scales

Group	Comparison ( <u>N</u> =40)	Hosp NonBPD ( <u>N</u> =65)	Hosp BPD ( <u>N</u> =26)	<u>F</u>
Self-Concept				
<u>M</u>	48.55	59.74	66.81	4.69b*
<u>SD</u>	23.19	23.89	29.23	
Personal Esteem				
<u>M</u>	52.90	59.43	54.65	1.11
<u>SD</u>	22.05	22.66	24.73	
Body Comfort				
<u>M</u>	56.90	52.49	57.73	.60
<u>SD</u>	27.06	24.63	21.68	
Sexual Acceptance				
<u>M</u>	53.38	55.77	53.15	.23
<u>SD</u>	19.24	22.47	19.58	
Peer Security				
<u>M</u>	56.85	64.18	73.69	3.48c*
<u>SD</u>	27.54	24.15	24.99	
Social Tolerance				
<u>M</u>	39.45	60.23	64.73	12.99b**
<u>SD</u>	26.28	21.60	21.67	
Family Rapport				
<u>M</u>	52.70	73.02	90.85	20.49a**
<u>SD</u>	31.90	21.91	12.78	
Academic Confidence				
<u>M</u>	47.01	60.23	76.88	14.32a**
<u>SD</u>	23.97	22.81	17.09	

a = all three groups significantly differ from each other, Tukey-B, post-hoc t-tests,  $p < .05$ .

b = comparison group significantly differs from both hospitalized groups, Tukey-B, post-hoc t-tests,  $p < .05$ .

c = comparison group significantly differs from hospitalized, borderline group, Tukey-B, post-hoc t-tests,  $p < .05$ .

\*  $p < .05$ . \*\*  $p < .001$ .

relative to the other two groups. Thus, the hypotheses for these three scales were not supported. The Academic Confidence scale,  $F(2,128) = 14.32$ ,  $p < .001$ , and the Family Rapport scale,  $F=24.35$ ,  $p < .001$ , significantly differed among the three groups with the hospitalized, borderline group endorsing more items on each scale than the two other groups. In addition, the comparison group endorsed significantly fewer of these items than did the hospitalized, nonborderline group on both scales. Significant differences were found on the Social Tolerance scale,  $F(2,128) = 12.99$ ,  $p < .001$  and the Self-Concept scale,  $F(2,128) = 4.69$ ,  $p < .05$ , between the comparison and both of the hospitalized groups; however, there were no differences between the hospitalized groups on either variable. The Peer Security scale,  $F(2,128) = 3.48$ ,  $p < .05$ , showed a significant difference between the comparison group and the hospitalized, borderline group with none of the other comparisons reaching significance.

Behavioral Correlate Scales. The four Behavioral Correlate scales were predicted to be elevated in the borderline group relative to the other two groups, and the hospitalized, nonborderline group was expected to show elevations relative to the comparison group. These scales were subjected to the same statistical procedures as above and the data are presented in Table 4. All four scales, Impulse Control,  $F(2,128) = 24.35$ ,  $p < .001$ ; Social Conform

Table 4

Oneway Analysis of Variance Statistics for the  
Millon Adolescent Personality Inventory:  
Behavioral Correlate Scales

Group	Comparison (N=40)	Hosp NonBPD (N=65)	Hosp BPD (N=26)	F
Impulse Control				
<u>M</u>	46.50	60.60	83.04	24.35a*
<u>SD</u>	21.25	20.33	21.19	
Social Conformity				
<u>M</u>	44.35	62.14	80.73	27.21a*
<u>SD</u>	24.49	17.92	15.52	
Scholastic Achievement				
<u>M</u>	38.15	51.50	63.29	10.57a*
<u>SD</u>	23.25	22.00	22.73	
Attendance Consistency				
<u>M</u>	39.58	57.18	70.38	14.14a*
<u>SD</u>	22.94	22.88	26.75	

a = all three groups significantly differ from each other,  
 Tukey-B, post-hoc t-tests,  $p < .05$ .

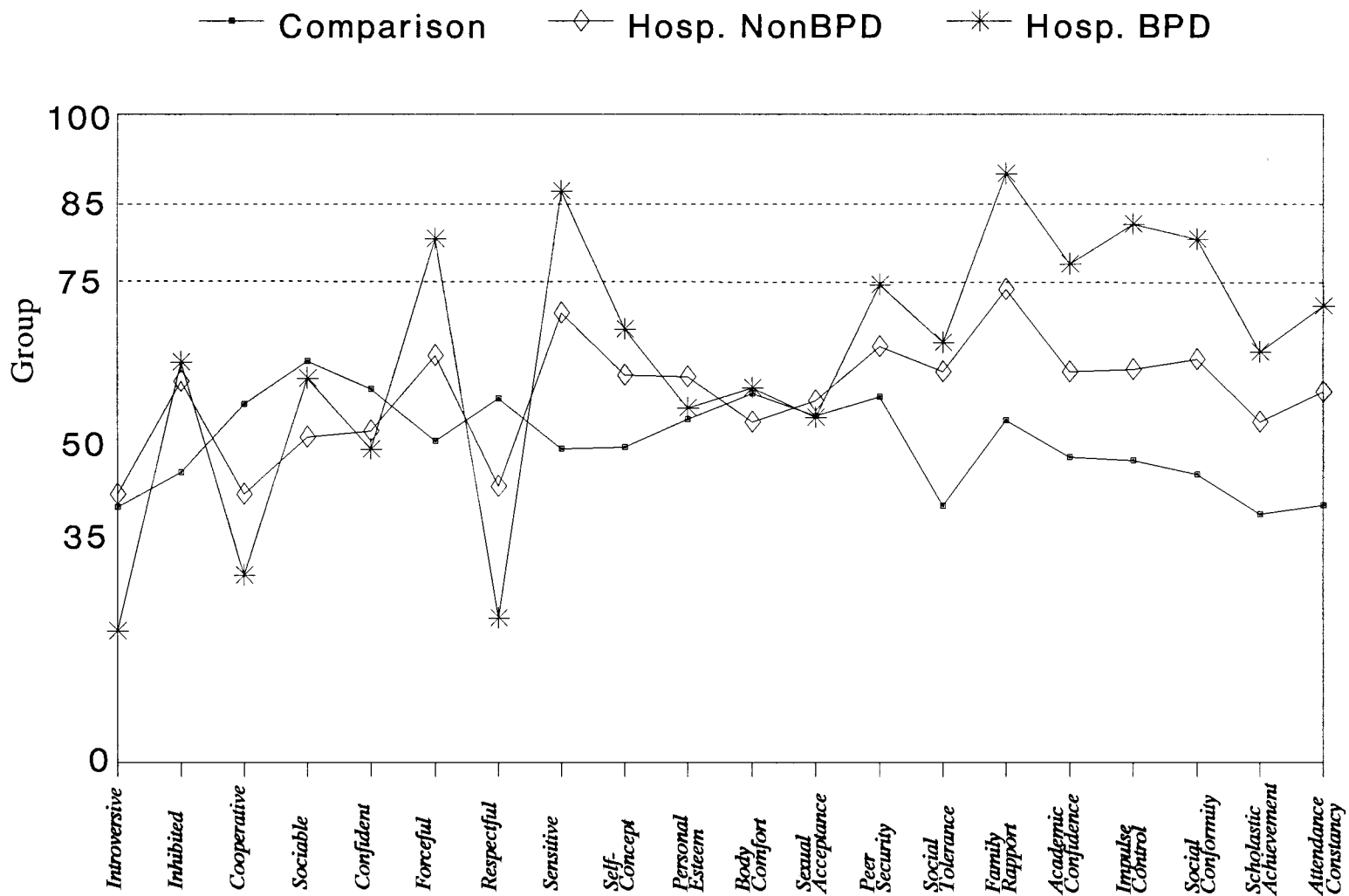
\*  $p < .001$ .



ity,  $F(2,128) = 27.21$ ,  $p < .001$ ; Scholastic Achievement,  $F(2,128) = 10.57$ ,  $p < .001$ ; and Attendance Consistency  $F(2,128) = 14.18$ ,  $p < .001$ , showed significant elevations in the predicted direction. The hospitalized, borderline group manifested the greatest indication of difficulties in all four areas. The hospitalized, nonborderline group evidenced a moderate range of pathology as measured by these scales, and the nonborderline comparison group endorsed fewer items on these scales and was found to be within the normal range with regard to each scale relative to the instrument's standardization sample.

Summary. Eleven of the 14 scales hypothesized to differ among the three groups on the MAPI were supported in the predicted direction. These data are illustrated in Figure 1. The two personality style scales of Forceful and Sensitive were elevated in the hospitalized, borderline group compared to the hospitalized, nonborderline group and nonhospitalized comparison group. In addition, the hospitalized, nonborderline group manifested significant, moderate elevations on these two scales relative to the nonhospitalized, comparison group. Although more exploratory in nature, the eight expressed concerns scales were predicted to be elevated in the hospitalized, borderline group relative to either comparison group. These hypotheses were totally or partly supported for five of the eight scales: Self-Concept, Peer Security, Social Tolerance, Family Rap

# Millon Adolescent Personality Inventory Mean Scores for Three Groups



port, and Academic Confidence. The Family Rapport and Academic Confidence scales were significantly elevated in the hospitalized, nonborderline group relative to the non-hospitalized group. The Social Tolerance and Self-Concept scales were elevated in both hospitalized groups relative to the nonhospitalized group without significant differences emerging between the two hospitalized groups. The hospitalized, borderline group endorsed more items indicative of problems on the Peer Security scale than did the nonhospitalized comparison group with no other comparisons reaching significance. The three scales which did not show significant group differences were the Personal Esteem, Body Comfort, and Sexual Acceptance scales. Finally, as hypothesized, all four behavioral correlate scales (Impulse Control, Social Conformity, Scholastic Achievement, and Attendance Consistency) were highly and significantly elevated in the borderline group with significant and moderate elevations occurring in the hospitalized, nonborderline group relative to the nonhospitalized comparison group.

### Rorschach

Prior to subjecting structural summary data from the Rorschach to statistical analyses, the records were reviewed for response number (R). Exner (1986b) suggested that all protocols with 10 or fewer responses be rejected as invalid with regard to the structural summary. While ten or fewer responses may provide important clinical data, this leaves

too few responses to allow for a valid interpretation of the norm-based structural summary. Of the 142 completed Rorschach protocols, 14 (9.9%) were eliminated for failing to have eleven or more responses. One protocol (2.3%) was eliminated from the comparison group, 12 (17%) were eliminated from the hospitalized, nonborderline group, and one (3.3%) protocol was eliminated from the hospitalized, borderline group. A chi square analysis of the invalid profiles revealed a significant effect for group membership,  $\chi^2(2, N=142) = 8.26, p=.02$ .

Categorical Rorschach data were subjected to chi square analyses comparing the three groups. These variables are scored by frequency of a given response type. These variables included: fabulized combinations (FABCOM), personalized responses (PER), aggressive responses (AG), responses manifesting autistic logic (ALOG), morbid responses (MOR), space responses (S), deviant verbalizations (DVER), incongruous combinations (INCOM), and deviant responses (DR). Dichotomous comparisons were made with the criterion being either zero, or one or more responses. As illustrated in Table 5, no statistically significant results emerged from these analyses. It was predicted that hospitalized, borderline adolescents would produce a greater number of these atypical responses than either comparison group. These hypotheses were not supported. As a further test, chi

Table 5

Descriptive Statistics for Selected Rorschach Variables:Comparison; Hospitalized, Nonborderline; andHospitalized, Borderline Adolescent Patients

(Frequency defined as one or more occurrence)

	Comparison (N=41)			Hosp. Non-BPD (N=58)			Hosp. BPD (N=29)		
	No. Responses	M*	SD	No. Responses	M*	SD	No. Responses	M*	SD
FABCOM	8	.20	.40	13	.22	.42	6	.21	.41
PER	12	.29	.46	10	.17	.38	6	.21	.41
AG	14	.34	.48	17	.29	.46	15	.52	.51
ALOG	3	.07	.26	7	.12	.33	4	.14	.35
MOR	20	.49	.51	26	.47	.50	18	.62	.50
SPACE	32	.78	.42	44	.76	.43	24	.83	.38
DVER	1	.02	.16	5	.09	.28	2	.07	.26
INCOM	9	.22	.42	23	.38	.49	10	.35	.48
DR	1	.02	.16	3	.05	.22	3	.10	.31

\*  $\chi^2$  (2, N = 128) analyses all nonsignificant at  $p < .05$ .

square analyses were conducted with the comparison group versus the entire sample of hospitalized adolescents. Again, no significant results emerged. These findings do not support the hypotheses that borderline adolescents or hospitalized adolescents in general produce more responses warranting special scores than a group of nonhospitalized comparison adolescents.

Normally distributed Rorschach variables were examined using oneway analyses of variance tests. Post-hoc comparisons were conducted using Tukey-B Multiple Range tests at the .05 level. These variables were organized into those which are thought to reflect aspects of perception and reality testing (X+%, X-%, F+%, P, SZCI, WSUM6), those which reflect the experience of and capacity to modulate affect (Afr, WTC, F%), and those which are thought to measure psychological maturity and object relations (QH QHD, QA QAD, SH DAD). As illustrated in Tables 6 and 7, several significant results emerged from these analyses with major differences found between the comparison group and the hospitalized, nonborderline adolescents and the comparison group as opposed to the hospitalized, borderline adolescents. In all cases, there were no significant differences between the hospitalized, borderline adolescents and the hospitalized, nonborderline adolescents.

Reality Testing Indices. Four of the six indices related to reality testing were significantly different

Table 6

Oneway Analysis of Variance Tests for  
Continuous Rorschach Variables:  
Reality Testing Indices

Group	Comparison (N=41)	Hosp NonBPD (N=58)	HospBPD (N=29)	F
<hr/>				
XPlus (X plus percent)				
<u>M</u>	68.12	58.34	57.31	7.02a**
<u>SD</u>	14.23	14.45	14.15	
XMinus (x minus percent)				
<u>M</u>	15.88	21.79	25.69	5.76a**
<u>SD</u>	9.79	13.05	13.89	
FPlus (f plus percent)				
<u>M</u>	63.10	56.02	50.45	2.58
<u>SD</u>	25.31	21.42	23.31	
P (popular)				
<u>M</u>	5.56	4.31	4.55	8.97a***
<u>SD</u>	1.53	1.51	1.33	
SZCI (schizophrenia index)				
<u>M</u>	1.39	2.03	2.14	3.50b*
<u>SD</u>	1.32	1.43	1.30	
WSUM6 (weighted sum of 6 special scores)				
<u>M</u>	1.98	3.66	3.72	2.31
<u>SD</u>	2.45	4.61	5.13	

a = comparison group significantly differs from both hospitalized groups, Tukey-B, post-hoc t-tests,  $p < .05$ .  
b = comparison group significantly different from hospitalized, nonborderline group, Tukey-B, post-hoc t-tests,  $p < .05$ . \* $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$

Table 7

Oneway Analysis of Variance Tests for Continuous  
Rorschach Variables: Affect Modulation and  
Object Relations Indices

Group	Comparison (N=41)	Hosp NonBPD (N=58)	Hosp BPD (N=29)	F
Afr (affective ratio)				
<u>M</u>	.53	.52	.48	.73
<u>SD</u>	.18	.21	.19	
WTC (weighted sum C)				
<u>M</u>	3.06	1.82	2.36	6.55b*
<u>SD</u>	1.79	1.51	1.77	
LAMBDA (log transformed)				
<u>M</u>	-.38	-.13	-.20	5.08b*
<u>SD</u>	.35	.39	.37	
QH QHD (sum of all quasi-human content)				
<u>M</u>	1.34	1.57	1.79	1.10
<u>SD</u>	.99	1.39	1.35	
QA QAD (sum of all quasi-animal content)				
<u>M</u>	.59	.47	.72	.86
<u>SD</u>	1.02	.71	.96	
SH DAD (sum of all part-human and part-animal responses)				
<u>M</u>	3.63	2.91	3.41	1.46
<u>SD</u>	2.30	1.69	2.67	

a = comparison group significantly differs from both hospitalized groups, Tukey-B, post-hoc  $t$ -tests,  $p < .05$ .

b = comparison group significantly different from hospitalized, nonborderline group, Tukey-B, post-hoc  $t$ -tests,  $p < .05$ .

\*  $p < .01$ . \*\*  $p < .001$ .



between the comparison group and the two hospitalized groups; however, post-hoc comparisons showed no significant differences between the hospitalized, borderline and hospitalized, nonborderline groups (Table 6).  $\bar{X}_+$  scores were significantly different in the predicted direction between the comparison group and the two hospitalized groups,  $F(2,125) = 7.02$ ,  $p < .01$ . As predicted, compared to the comparison group, both hospitalized groups produced significantly higher  $\bar{X}_-$  scores,  $F(2,125) = 5.76$ ,  $p < .01$ . In addition, the hospitalized samples produced significantly fewer popular responses,  $F(2,125) = 8.97$ ,  $p < .001$ , thus supporting this hypothesis. The Schizophrenia Index (SCZI),  $F(2,125) = 3.50$ ,  $p < .05$  was significantly elevated in the hospitalized, nonborderline group compared to the comparison group; however, the hospitalized, borderline group did not differ from the other two groups. While the hypothesis concerning the borderline group was not supported for this variable, the significant result for the comparison group and the hospitalized, nonborderline group was supported.  $\bar{F}_+$  scores were not significantly different among the three groups  $F(2,125) = 2.58$ ,  $p = .08$ . Given the lack of significant differences among the groups on the individual special scores which comprise the Weighted Sum 6 index (FABCOM, ALOG, INCOM, CONTAM, DR, DVER), it is not surprising that this weighted composite did not reach significance,  $F(2,125) = 2.31$ ,  $p = .10$ .

Affect Modulation Indices. Hospitalized, borderline adolescents were predicted to show the greatest difficulty with affect modulation on the Rorschach. This was expected to manifest itself in higher Affective Ratio (Afr) and higher Weighted Sum C (WTC) scores. As illustrated in Table 7, no significant results were found for the Affective Ratio variable  $F(2,125) = .73, p=.49$ . The results for the Weighted Sum C variable were significant but in a direction different than predicted,  $F(2,125) = 6.55, p<.01$ . Post-hoc comparisons indicated that the hospitalized, nonborderline group was significantly different from the comparison group; however, the hospitalized, borderline group did not differ from the other two groups. Lower WTC responses are indicative of guardedness and emotional constriction. Thus, relative to the comparison group, the hospitalized, nonborderline group is significantly more guarded and constricted as measured by the Rorschach.

Given the hypothesis that borderline individuals have difficulty suppressing affectively dominated responses on the Rorschach, it was predicted that borderline adolescents would produce relatively few pure form responses and thus have lower scores on the Lambda (L) variable which is a ratio representing the number of pure form responses over the total number of responses minus the number of pure form responses ( $(F/R-F)$ ). In the present study, the distribution of Lambda was highly skewed to the right thus challenging the

assumption of normality and making statistical interpretation problematic. Consequently, a log transformation was accomplished prior to subjecting this variable to further statistical tests. This new variable adequately approximated a normal distribution. A oneway analysis of variance revealed a significant effect for group membership,  $F(2,125) = 5.08$ ,  $p < .01$ . Post-hoc comparisons using the Tukey-B procedure at the .05 level indicated that the hospitalized, nonborderline group significantly differed from the non-hospitalized comparison group. None of the other comparisons reached significance.

Object Relations Indices. It was predicted that the borderline, hospitalized adolescents would produce more quasi-animal responses (QAQAD) than the other two groups. As illustrated in Table 7, this hypothesis was not supported,  $F(2,125) = .86$ ,  $p = .43$ . Similarly, the hypothesis regarding quasi-human (QH QHD) responses was not supported,  $F(2,125) = 1.10$ ,  $p = .34$ . Finally, borderlines were expected to produce more part-human and part-animal responses (SHDAD) than the other two groups. This hypothesis was not supported,  $F(2,125) = 1.46$ ,  $p = .24$ .

Summary. While significant results emerged from several of the Rorschach analyses, they offered only partial support for the hypotheses. No differences emerged between the two hospitalized groups. Unusual responses or those indicative of thought disorder were not found more frequent-

ly among either hospitalized group compared to the comparison group. Both hospitalized groups differed from the comparison group with regard to the indices of reality testing. Four of the six variables were indicative of more pathology in the hospitalized groups than the comparison group. The two variables related to affect produced one significant finding; however, it was in the direction opposite to that predicted. That is, the hospitalized adolescents did not exhibit more evidence of affective lability on the Rorschach than the nonhospitalized adolescents. No significant results emerged in those variables related to object relations. Finally, the number of form-dominated responses (an indication of guardedness and affective constriction) indicated that the hospitalized, nonborderline group was significantly more constricted and guarded than the nonhospitalized comparison group or the hospitalized borderline group.

#### Separation-Individuation Test of Adolescence (SITA)

The data from the SITA were first assessed to determine the validity of the individual protocols. The inventory contains three questions which, if answered in the obviously incorrect direction, suggest that the respondent did not adequately read the questions or may have responded randomly. Individuals who responded to one or more of these questions in this manner were eliminated from all subsequent analyses. Of the 142 completed protocols, 19 (13.3) had to

be eliminated because of their questionable validity. Four subjects (9%) from the comparison group were eliminated, 10 from the hospitalized, nonborderline group (14%) were eliminated, and five of the hospitalized, borderline subjects (16.7%) were eliminated. A chi square analysis of the validity data did not reveal a significant effect for group membership,  $\chi^2 (2, N = 142) = .87, p = .65$ .

It was predicted that the Separation Anxiety and Engulfment Anxiety scales would be elevated in the borderline group relative to the other two groups, and that the Healthy Separation scale would be elevated in the comparison group. To examine the predicted group differences, the eight scales of the SITA were subjected to oneway analysis of variance tests. As seen in Table 8, none of the scales were found to differ among the three groups. The two scales hypothesized to be elevated in the borderline group, Separation Anxiety,  $F(2,120) = 1.27, p = .28$ , and Engulfment Anxiety,  $F(2,120) = 2.96, p = .056$ , did not show significant elevations. Although there was a trend for the borderline group to have higher scores on the Engulfment Anxiety scale than the other two groups, this did not reach statistical significance. It was hypothesized that the comparison group would demonstrate higher scores on the Healthy Separation scale than the two hospitalized groups. While there was a trend in the predicted direction,  $F(2,120) = 2.73, p = .069$ , it failed to

Table 8

Oneway Analysis of Variance Statistics for the  
Separation-Individuation Test of Adolescence

Group	Comparison (N=38)	Hosp NonBPD (N=60)	Hosp BPD (N=25)	F
Dependency Denial				
<u>M</u>	24.68	27.38	26.76	1.92
<u>SD</u>	5.23	6.91	8.08	
Engulfment Anxiety				
<u>M</u>	23.42	26.02	26.52	2.96
<u>SD</u>	5.48	6.02	5.95	
Enmeshment Seeking				
<u>M</u>	29.74	28.67	30.04	.60
<u>SD</u>	5.74	6.59	5.54	
Healthy Separation				
<u>M</u>	47.21	44.48	44.36	2.73
<u>SD</u>	4.40	6.93	6.01	
Nurturance Seeking				
<u>M</u>	20.45	20.95	20.56	.13
<u>SD</u>	4.30	5.58	4.56	
Separation Anxiety				
<u>M</u>	22.31	20.67	21.56	1.27
<u>SD</u>	5.27	4.41	6.02	
Self-Centeredness				
<u>M</u>	28.97	30.20	30.52	.53
<u>SD</u>	5.10	6.99	7.98	
Symbiosis Seeking				
<u>M</u>	44.18	42.60	41.60	1.93
<u>SD</u>	5.81	7.54	6.27	

All tests not significant at  $p < .05$ .

reach significance.

In summary, it was predicted that the borderline group would manifest elevations on the Separation Anxiety and Engulfment Anxiety scales relative to the other two groups. Neither hypothesis was supported. It was also predicted that the comparison group would show elevations on the Healthy Separation scale. This hypothesis was not supported. No significant group differences emerged on the eight scales of this instrument.

### Summary

Three groups of adolescents were formed based on their hospital status and their scores on the Diagnostic Interview for Borderlines (DIB); a hospitalized, borderline group; a hospitalized, nonborderline group; and a nonhospitalized comparison group. It was predicted that the hospitalized, borderline group would manifest signs of significant psychopathology on the three instruments from which the dependent variables were selected: the Millon Adolescent Personality Inventory (MAPI), the Rorschach, and the Separation-Individuation Test of Adolescence (SITA). It was expected that the borderline group would show elevations on the Forceful and Sensitive scales from the eight personality styles scales on the MAPI relative to the other two groups. These hypotheses were supported. In addition, they were expected to manifest elevations relative to the other two groups on all eight expressed concerns scales and all four

behavioral correlate scales. While the predictions were supported for the four behavioral correlate scales (Impulse Control, Social Conformity, Scholastic Achievement, and Attendance Consistency), only five of the eight expressed concerns scales significantly differed among the groups. Scores on the Personal Esteem, Body Comfort, and Sexual Acceptance scales did not differ among the groups. The Academic Confidence and Family Rapport scales showed significant group differences across all three groups. The comparison group differed from both hospitalized groups on the Social Tolerance and Self-Concept scales; however, no differences emerged between the two hospitalized groups. Finally, scores on the Peer Security scale differed between the nonhospitalized group and the hospitalized, borderline group.

It was predicted that the hospitalized borderline group would show significant signs of psychopathology across several areas of functioning assessed by the Rorschach: reality testing and thought disorder, affect modulation, and object relations. The hypotheses concerning the thought disorder indices were not supported. No significant differences were found among the three groups on these variables. Scores on four of the six variables assessing reality testing abilities (X+, X-%, SCZI, and P) differed between the nonhospitalized group and the two hospitalized groups; however, the two hospitalized groups did not differ



from each other. Scores on the Affective Ratio (AFR) and the Weighted Sum of all Color Responses (WTC), which are thought to measure aspects of affect regulation, did not support the hypotheses that the borderlines would show greater difficulties in this area. No significant results were found for the Affective Ratio, and the results were significant, but in the opposite direction to that predicted for the Weighted Sum of all Color Responses. Finally, no significant results emerged from the variables assessing object relations.

It was predicted that three significant findings would emerge from the SITA. The borderline group was expected to manifest elevations on the Separation Anxiety and Engulfment Anxiety scales, and the nonhospitalized group was expected to show an elevation on the Healthy Separation scale relative to the two hospitalized groups. None of these hypotheses were supported.

## CHAPTER V

### DISCUSSION

Although research suggests that the majority of adolescents do not experience severe inner turmoil or engage in chronically impulsive or maladaptive behavior, as many as 50% report feelings of anxiety or depression at some point during the course of their development. Approximately 20% of all adolescents could warrant a psychiatric diagnosis, and 5% manifest symptoms of severe disorder. While the understanding of Axis I disorders is relatively better developed, significant controversy exists regarding the validity of Axis II disorders. This is most problematic in the case of borderline personality disorder, particularly in adolescent populations. Many of the diagnostic criteria for this disorder are considered to be within the realm of normal adolescent behavior when they are not chronic or intense. For example, many adolescents engage in limited amounts of alcohol use, sexual experimentation, and delinquent behaviors. In addition, identity confusion, depressed mood, and feelings of emptiness are not unusual. It is unclear at what point these behaviors should be regarded as pathological, whether they share a common etiology, respond similarly to intervention, or carry a similar prognosis.

Marked instability is a central feature in almost all of the diagnostic criteria. Indeed, a stable and chronic pattern of instability is essentially synonymous with a DSM-III diagnosis of borderline personality disorder. Given the potentially disruptive and rapid changes in behavior, cognition, and physical characteristics seen in many adolescents, it is unclear if observed personality traits or behaviors are sufficiently established to warrant a diagnosis that implies a chronic and inflexible manner of dealing with life and its challenges.

Although significant progress has been made in establishing the reliability of the diagnosis of borderline personality disorder, considerable work needs to be done to establish its validity. As highlighted above, this is particularly problematic with regard to adolescents. If adolescents diagnosed as borderline genuinely differ from other adolescents, it would be expected that they would manifest differences on other measures of psychological functioning. If they fail to demonstrate clear and predictable patterns on these measures, little support for the validity of the diagnosis can be claimed.

This study examined the validity of the borderline concept in adolescents from a diagnostic and psychometric point of view. Based on the severity and chronicity of the behaviors addressed in the semi-structured Diagnostic Interview for Borderlines (DIB) and a subject's hospital status,

three groups were formed: a group of nonhospitalized youth, none of whom attained a score within the borderline range; a group of hospitalized adolescents who did not score within the borderline range and were considered to be diagnostically heterogeneous; and a group of adolescents who warranted a research diagnosis of borderline personality disorder. The independent variables used to examine group differences included the 20 scales from the Millon Adolescent Personality Inventory, 21 variables from the Comprehensive System for the Rorschach, and the eight scales from the Separation-Individuation Test of Adolescence. The variables from these three instruments will be discussed individually. This will be followed by a discussion of the pattern of results regarding their support for the validity of the DIB and the borderline diagnosis in adolescence.

#### Millon Adolescent Personality Inventory (MAPI)

Personality Style Scales. This study examined personality characteristics as measured by the MAPI comparing three groups of adolescents: a nonhospitalized comparison group; a hospitalized group of nonborderline adolescents; and a group of hospitalized, borderline adolescents. It was predicted that two of the eight personality style scales, Forceful and Sensitive, would be elevated in the hospitalized, borderline group relative to the other two groups. This hypothesis was supported in the predicted direction with the hospitalized, borderline group manifesting sig-

nificant elevations on these two scales.

For the interpretation of elevated personality style scales, Millon et al. (1982) suggest that base rate scores greater or equal to 85 be considered indicative of a prominent personality characteristic. Base rate scores of greater or equal to 75 and less than or equal to 84 are indicative of a present but less prominent personality characteristic. The borderline group's mean score of 88.19 ( $SD = 20.74$ ) on the Sensitive scale suggests that this personality feature is particularly salient in adolescent borderline patients. Individuals with elevations on this scale are thought to be discontented, pessimistic, unpredictable, moody, and motivated by short-lived guilt. The hospitalized, borderline group's base rate mean score of 80.77 ( $SD = 16.73$ ) on the Forceful scale falls within the range of greater or equal to a base rate of 75 and less than or equal to a base rate of 84. This suggests that while this personality feature is present and clinically relevant, it should not be considered to be as pronounced as it would be if the score were greater or equal to 85. This moderate elevation on the Forceful scale suggests that borderline adolescents tend to be strong-willed, dominating, and critical of others. In addition, they could be characterized as blunt, unkind, and impatient.

Millon et al. (1982) advocate an interpretive procedure whereby the one or two highest clinically significant

elevations on the personality style scales are considered in formulating a description of a given individual. The personality attributes elevated in the borderline group are highly consistent with the descriptive features of borderline personality disorder measured by the DIB. In particular, the DIB contains items reflecting moodiness, unpredictability, degree of empathy, tendency to dominate others, and the propensity to be critical of others.

Interpretations of the MAPI do not incorporate the personality style scales that are significantly low; however, the borderline group achieved markedly low scores on three scales: Introversive ( $\bar{M} = 20.15$ ,  $\underline{SD} = 16.34$ ), Cooperative ( $\bar{M} = 28.73$ ,  $\underline{SD} = 13.43$ ), and Respectful ( $\bar{M} = 22.15$ ,  $\underline{SD} = 13.20$ ). High scores on the Introversive scale are thought to reflect a tendency to be quiet, unemotional, fair-minded, and relatively uninvolved socially. The Cooperative scale was developed to measure the degree to which an individual is dependent, reserved, kind, and cooperative. The Respectful scale measures an individual's propensity to be serious, rule-oriented, stable, and predictable. The low scores for all of these scales in the borderline group suggests that these personality attributes are lacking or over-shadowed by other personality variables. While one should not infer that low scores on these scales reflect the presence of the opposite characteristics, the relative absence of the personality attributes measured by these three scales is logi-

cally consistent with presence of the dominant personality features measured by the Forceful and Sensitive scales. In other words, the borderline group could be described as unpredictable, demanding, critical, and lacking in genuine empathy and would not be described as unemotional, reserved, rule-oriented, or predictable.

While specific predictions were not made for the diagnostically heterogeneous hospitalized, nonborderline group, they exhibited significant elevations relative to the nonhospitalized, comparison group on the Forceful ( $\bar{M} = 62.78$ ,  $\underline{SD} = 20.92$ ) and Sensitive ( $\bar{M} = 69.37$ ,  $\underline{SD} = 25.83$ ) personality style scales. Neither score reached the base rate cut-off score of greater or equal to 75 considered necessary to make an interpretation of clinical significance. In addition, while they attained significantly low scores on the Introversive ( $\bar{M} = 41.25$ ,  $\underline{SD} = 26.66$ ); Cooperative ( $\bar{M} = 41.26$ ,  $\underline{SD} = 23.00$ ); and Respectful ( $\bar{M} = 42.51$ ,  $\underline{SD} = 22.95$ ) scales, low scores are not utilized in the interpretation of the MAPI profile. Given the heterogeneity of this group, it is not surprising that none of their base rate scores surpassed the score considered necessary to make an interpretation of clinical significance.

The nonhospitalized comparison group did not manifest clinically significant elevations on any of the personality style scales (range for mean scores = 39.28 to 61.93). They remained within one standard deviation from the mean on all

of the personality style scales relative to the instrument's standardization sample. This supports the idea that the comparison group in the present study can be considered to be within the range of average relative to the adolescent population as a whole.

Expressed Concerns Scales. Given the lack of published studies which have utilized the MAPI, exploratory hypotheses were generated concerning the expressed concerns scales. It was predicted that the borderline group would manifest elevations on all eight scales relative to the other two groups. This was supported for two of the scales (Family Rapport & Academic Confidence), partly supported for three scales (Peer Security, Social Tolerance, & Self-Concept), and not supported for three scales (Personal Esteem, Body Comfort, & Sexual Acceptance). Millon et al. (1982) suggest that base rate scores within the range of 35 to 74 should be considered average for the expressed concerns scales. Scores of 75 to 84 are indicative of problem areas, and scores of greater or equal to 85 should be considered to be prominent areas of concern for the respondent. The borderline group manifested a significant and clinically relevant elevation compared to the other two groups on the Family Rapport scale ( $M = 90.85$ ,  $SD = 12.78$ ). This suggests that this group experiences considerable discord and conflict in the family situation. The Academic Confidence scale was also elevated in the borderline group relative to



the other two groups; however, the elevation was within the range indicative of significant but not prominent concern ( $M = 76.88$ ,  $SD = 17.09$ ). This suggests that the borderline group tends to experience school as a source of failure rather than as a source of mastery and success. While the Self-Concept, Peer Security, and Social Tolerance scales showed statistically significant differences between the borderline and one or both of the other two groups, none of these differences reached the level of clinical significance. The lack of statistically significant findings and group means within the normal range for the Personal Esteem, Body Comfort, and Sexual Acceptance scales suggests that these areas of expressed concern are not prominent for any of the three groups.

The hospitalized, nonborderline group manifested significant elevations on the Family Rapport ( $M = 73.02$ ,  $SD = 21.91$ ) and Academic Confidence ( $M = 60.23$ ,  $SD = 22.81$ ) scales relative to the comparison group; however, these elevations did not fall within the range considered to be clinically significant.

The nonhospitalized comparison group did not exhibit any clinically significant elevations on the expressed concerns scales (range for mean scores of 39.45 to 56.90), further supporting the normative nature of this group.

Behavioral Correlates Scales. It was hypothesized that the borderline group would manifest significant eleva-

tions on all four of the behavioral correlate scales. To varying degrees, these hypotheses were supported. Scores of zero to 60 for the behavioral correlate scales suggest that the respondent is dissimilar from individuals who manifest behavior problems in the given area. Scores ranging between 61 and 74 suggest that there are some similarities between the respondent and individuals who display the targeted behaviors. Scores of 75 to 84 suggest strong parallels, and scores of greater or equal to 85 are indicative of marked correspondence between the respondent and individuals who have shown the given target behavior. The hospitalized, borderline group manifested significant elevations within the strong parallel range on the Impulse Control ( $\bar{M} = 83.04$ ,  $SD = 21.19$ ) and Social Conformity ( $\bar{M} = 80.73$ ,  $SD = 15.52$ ) scales. As the scale names imply, this suggests that they tend to be impulsive and nonconforming in their attitudes and behaviors. The Scholastic Achievement ( $\bar{M} = 63.29$ ,  $SD = 22.73$ ) and Attendance Consistency ( $\bar{M} = 70.38$ ,  $SD = 26.75$ ) scales also reached statistical and clinical significance compared to the other two groups; however, the elevations were within the range interpreted to be somewhat similar to individuals who display the targeted behaviors. This suggests that the borderline adolescents tend to have difficulties with school attendance and performance. Difficulties with impulse control, nonconforming attitudes, truancy, and uneven school performance are all descriptive features of

DIB-defined borderline personality disorder. Elevations on these scales of the MAPI suggest a strong positive relationship between these behaviors as elicited by a semistructured interview and as measured by a true-false questionnaire designed to examine many aspects of adolescent personality.

While the hospitalized, nonborderline group showed significant elevations on all four behavioral correlate scales compared to the nonhospitalized comparison group, only the elevations on the Impulse Control ( $\bar{M} = 60.60$ ,  $SD = 20.33$ ) and Social Conformity ( $\bar{M} = 62.14$ ,  $SD = 17.92$ ) scales reached a clinically significant level. The moderate elevations on these two scales suggest that hospitalized, nonborderline adolescents tend to manifest greater difficulties with impulse control, are less conventional, and less conforming than the nonhospitalized comparison group.

The nonhospitalized comparison group manifested no clinically significant elevations on the behavioral correlate scales. Mean base rate scores ranged from 38.15 to 46.50. This indicates that this sample of adolescents from a nonclinical population is similar to the standardization sample used in the development of the instrument.

These findings suggest that the MAPI can be utilized to distinguish borderline adolescents as defined by the DIB from a nonclinical sample of adolescents as well as from a heterogeneous group of nonborderline, hospitalized adolescents. Given the degree of correspondence between many of

the descriptive features of borderline personality disorder and the personality characteristics measured by the MAPI, it is not surprising that both instruments should identify similar personality features. The elevations on the MAPI suggest that as a group borderline adolescents tend to be moody, irritable, hostile, assertive, and insensitive to the needs of others. They might be expected to have greater concerns in the areas of family rapport and academic confidence. Behaviorally, they are likely to be impulsive and to appear to be nonconforming or antisocial. These features are entirely consistent with both the DIB and DSM-III criteria for borderline personality disorder.

Kashini et al.'s study (1987b) utilized the MAPI and found similar results in a population of 150 randomly selected adolescents not seeking clinical treatment. Axis I psychiatric diagnoses were given to 28 of the 150 subjects utilizing a semi-structured interview. In comparing the 28 cases to the 132 noncases, they found elevations paralleling the results of the present study. The elevations for their group given a psychiatric diagnosis were nearly identical to the present study's hospitalized, nonborderline sample. The Sensitive and Forceful scales were elevated in their Axis I group as well as the expressed concerns scales of Family Rapport, Academic Confidence, Self-Concept, and Personal Esteem. Similarly, all four behavioral correlate scales were elevated in their Axis I group with the greatest eleva-

tions occurring on the Impulse Control and Social Conformity scales.

Their results from the MAPI appear to be quite consistent with the hypotheses of the present study. The significant elevations in the borderline group suggest that these individuals do indeed differ from a diagnostically heterogeneous sample of hospitalized adolescents as well as from a sample of nonhospitalized youth. In examining the MAPI, these differences appear to reflect the degree and intensity of given personality characteristics rather than the absolute presence or absence of these variables. For example, both hospitalized groups manifested elevations on the Sensitive and Forceful personality style scales relative to the nonhospitalized comparison group. Similarly, both hospitalized groups exhibited elevations on the Family Rapport and Academic Confidence scales from the expressed concerns section, and all four scales from the behavioral correlates section. This suggests that these personality characteristics exist along a continuum with nonhospitalized youth at one end and borderline adolescents at the other extreme.

Early studies using the DIB determined that a cut-off score of seven provided the greatest degree of diagnostic sensitivity and specificity using DSM-III diagnoses as the criterion; however, it should not be inferred that individuals who attain a score of five or six are definitely non-

borderline and therefore could more accurately be given a different diagnosis. Perhaps in adolescents the DIB should be seen as a measure of psychopathology reflecting quantitative rather than qualitative differences. This would suggest that borderline personality disorder is not a distinct, independent diagnostic entity. Frances et al. (1984) suggested that Axis II psychopathology might more realistically be considered to exist along a continuum. This hypothesis is consistent with the data in the present study: the nonhospitalized group showed no clinically relevant elevations; the borderline group showed clinically and statistically significant elevations on several scales; and the heterogeneous group's elevations mirrored those of the borderline group but to a notably less intense degree. It appears that as the DIB score increases as a function of more intense psychopathology, greater elevations are found on specific MAPI scales.

It is conceivable that there are relatively few differences between the personality attributes of individuals who attain a DIB score of six as compared to those who are given a seven. It is possible that low scorers on the DIB could manifest an entirely different personality profile. Individuals who warranted DIB scores of five or six who were consequently included in the heterogeneous hospitalized, nonborderline group may have contributed to the elevations on the same scales found to be elevated in the borderline

group. Additional analyses will be undertaken in the future to examine the possibility that the degree of borderline psychopathology is directly related to the personality profiles on the MAPI. If this is the case, further support would be given to the idea that borderline personality disorder could more accurately be considered in terms of intensity rather than categorically. This could have implications for the development of future diagnostic systems.

### Rorschach

Twenty-one Rorschach variables were examined in the present study. They were divided into indices considered to reflect reality testing abilities, thought disorder, affect regulation, object relations, and psychological maturity. It was predicted that the hospitalized, borderline group would manifest more signs of reality testing difficulties on these variables than either comparison group. In addition, the hospitalized, nonborderline group was predicted to evidence more signs of pathology on these variables than the nonhospitalized comparison group. Four of the six variables ( $X_+ \%$ ,  $X_- \%$ , Populars, & Schizophrenia Index) differed among the three groups; however, no significant differences were found between the two hospitalized groups. This indicates that while hospitalized adolescents manifested more signs of disturbed reality testing on the Rorschach than the non-hospitalized adolescents; hospitalized, borderline adolescents do not differ from a diagnostically heterogeneous

group of hospitalized adolescents. Consequently, reality testing indices would seem to be a good measure of general psychological distress but do not appear to contribute to diagnostic decisions regarding the presence of DIB-defined borderline personality disorder in adolescents. This is consistent with Lipovsky et al. (1989) and Exner's (1982) claim that the Rorschach alone should not be used to make diagnostic decisions.

The diagnostic heterogeneity of the hospitalized, nonborderline group may have functioned to negate differences among subgroups of this population. For example, Exner (1986a) found that while adult DSM-III diagnosed borderlines, schizotypals, and schizophrenics all evidenced signs of disturbed reality testing on the Rorschach compared to a nonclinical population, significant differences emerged between the Axis I schizophrenics and the Axis II borderlines and schizotypals. It is reasonable to assume that the hospitalized, nonborderline group contained individuals who warranted a diagnosis within the schizophrenic spectrum, and might be expected to do less well on the Rorschach. In addition, this group most likely contained relatively high functioning patients who would be expected to perform in a less pathological manner on the test. The presence of subjects along the continuum of reality testing abilities would tend to negate differences that might be found if more precisely defined diagnostic groups could have been made.



The X+'s of 58% and 57% for the hospitalized, nonborderline and borderline groups, respectively, in the present study correspond to the X+ of 57% found by Lipovsky et al. (1989) in their study of depression in adolescents. Similarly, Archer et al. (1988) found mean X+'s of 50% for a group of personality disordered inpatient adolescents. X+'s for their other diagnostic groups ranged from 46% for the schizophrenic group to 61% for the conduct disorder group. These findings are in stark contrast to Exner's (1985) normative data for adolescents. For example, the mean X+ of 81% reported for 150 nonclinical 16 year olds is much higher than those attained in the present study. This further supports the utility of the reality testing indices as measures of general psychological distress.

Exner's special scores (FABCOM, PER, AG, ALOG, MOR, DVER, INCOM, DR), considered to reflect aspects of thought disorder, were predicted to be more frequently assigned in the Rorschach protocols of the hospitalized, borderline adolescents followed by the hospitalized, nonborderline adolescents. Using a series of chi square analyses, no significant results emerged from the present study. Similarly, in comparing groups of adolescents warranting diagnoses of schizophrenia as opposed to those with major depression, dysthymic disorder, personality disorder, and conduct disorder, Archer and Gordon (1988) found no significant group differences for these indices of disordered

thinking. This is in contrast to Weiner and Exner's (1978) study which determined that troubled adolescents tended to produce a greater number of these responses than nontroubled youth. Their sample of troubled youth consisted of non-hospitalized subjects who had been referred for evaluations after a period of acting out behavior or significant withdrawal. No effort was made to formally assign diagnoses to these individuals. The clinical sample in the present study consisted of hospitalized adolescents. Both groups of hospitalized adolescents produced relatively constricted Rorschachs as evidenced by their low scores on the WTC variable and the high Lambda score for the hospitalized, nonborderline group. Essentially, these subjects tended to produce form-dominated responses and did not articulate the use of other features of the blots such as color, movement, or shading. This is generally considered to reflect a guarded test-taking attitude. This approach to the Rorschach would make it less likely that an individual would produce a bizarre or idiosyncratic verbalization warranting a special score. As further evidence of this constricted test-taking style, the hospitalized adolescents, particularly the nonborderline group, produced a significantly greater number of invalid profiles as a consequence of giving fewer than 10 responses on the test. It is possible that many of these subjects were very concerned about the manner in which their responses would be interpreted. Had these individuals

produced more responses, it is possible that they would have manifested more pathology. In contrast, the nonhospitalized comparison group did not manifest a similarly elevated Lambda. Consequently, their approach to the test was much less guarded and they would be more likely to produce responses which could be indicative of disordered thinking. This combination of guardedness in both hospitalized groups and the relative expressiveness in the nonhospitalized comparison sample would tend to cancel any possibly significant results.

For most adolescents, the experience of being hospitalized in a psychiatric facility is traumatic. It would not be unusual to expect that they would tend to be constricted and might make conscious efforts to avoid appearing disturbed. It would be helpful to include a group of outpatient adolescents who manifest some degree of psychopathology to determine the interaction between receiving psychological intervention and the extent of psychopathology. Weiner and Exner's data (1978) suggest that troubled youth in an outpatient setting tend to produce more responses indicative of thought disorder than do nontroubled adolescents. While there are many individual differences in response to being hospitalized, there might be a tremendous investment in appearing as conventional as possible in an effort to hasten discharge. Numerous authors have reported on the question of social desirability and test-taking

attitudes (Jacobs and Barron, 1968; Wilson, et al., 1989). Most of these studies have found that it is possible to appear more, or less disturbed on psychological tests depending on one's intent. It may be that these adolescents were consciously screening out associations or perceptions to the blots that they thought might be used as evidence that they were disturbed.

The indices of affect modulation (Afr and WTC) were predicted to indicate that hospitalized, borderline adolescents are more affectively labile than either comparison group. These hypotheses were not supported in the predicted direction. No differences were found for the affective ratio Afr; however, significant differences were found for the weighted sum of color responses (WTC) with the nonhospitalized comparison group scoring higher than either hospitalized group. This indicates that the nonclinical sample produced more responses utilizing color than did either hospitalized group. The use of color is generally considered to reflect an individual's responsiveness to external stimulation and his or her ability to acknowledge and deal with the subsequent affective response. The infrequent use of color in the hospitalized adolescents is consistent with their guarded and constricted stance as discussed above.

Finally, it was predicted that the hospitalized, borderline adolescents would produce more responses indicative of immature object relations as measured by their tendency

to produce more part-object responses (sum of quasi-human responses, sum of all quasi-animal responses, & sum of all part-human and part-animal responses) than the other two groups. These hypotheses were not supported. Several complicated scoring systems exist which have been used to measure object relations phenomena on the Rorschach and are well-described elsewhere (Blatt & Lerner, 1983; Kissen, 1986; Kwawer, Lerner, Lerner, & Sugarman, 1980). One of the primary indices in most of these systems involves the use of part or quasi-objects rather than nonquasi and whole objects. It has been postulated that more developmentally mature individuals should produce relatively more of the latter type of responses than less mature or disturbed populations. Much of psychoanalytic theory considers borderline psychopathology to be a severe and primitive personality disorder characterized by immature and polarized object relations. Borderlines are thought to have difficulty dealing with meaningful human relationships. Essentially, they are thought to struggle with issues of dependence versus independence. Because of the intensity of their conflicts, they might be expected to produce fewer responses involving whole or real humans because of the threatening nature of these interactions. While this might be true behaviorally, this tendency did not manifest itself through these indices in the present study.

In general, the findings using the Rorschach support

some of the hypotheses of this study. Most importantly, the reality testing indices were sensitive to an individual's hospitalization status. While no differences existed between the two groups of hospitalized patients, their performance was clearly different on these indices as compared to the nonhospitalized group. These findings are even more impressive given the highly guarded and constricted test-taking style exhibited by the hospitalized samples. Their perceptual and interpretative processes seem to differ from the nonhospitalized group. They are more likely to produce responses that are not easily seen by others or clearly violate the contours of the blot. As discussed above, finer diagnostic decisions could not be made in the present study and it is possible that the borderline adolescents do differ in fundamental ways from subgroups within the heterogeneous nonborderline sample.

#### Separation Individuation Test of Adolescence

Following the work of Levine et al. (1986), who found elevations on the SITA scales of Engulfment and Separation Anxiety in a group of adolescents who manifested borderline psychopathology, it was predicted that the DIB-identified group of inpatient borderlines would show significant elevations on these two scales relative to both comparison groups. In addition, it was predicted that the nonhospitalized comparison group would exhibit the most mature level of separation as measured by the Healthy Separation scale.

None of these hypotheses were supported. Indeed, no significant results emerged on any of the eight scales to the SITA.

The development of the SITA was strongly influenced by the writings and naturalistic observations of many psychoanalytically-oriented theorists such as Margaret Mahler, Peter Blos, and Fred Pine. The instrument represents an effort to operationalize and measure psychoanalytic concepts of development. Noting striking parallels between problematic behaviors often seen in developing infants and toddlers and behaviors seen as pathological in adolescents and adults, it has been tempting to assume that these later manifestations are etiologically related to difficulties in earlier development. In particular, borderline psychopathology has been compared to difficulties in the rapprochement subphase of the separation-individuation process as described by Mahler. Although the content of the tensions between the parental figures and the separating adolescent differ from the concerns of the toddler as described in the rapprochement subphase, the process and underlying nature of the conflicts has been described as essentially the same. The constant in these developmental transitions appears to be crystallized around issues of polarity. For example, independence versus dependence, passivity versus activity, good versus bad, and omnipotent versus helpless. The separating toddler and the maturing normal adolescent are both

described as needing to grapple with and somehow integrate these disparate thoughts and feelings into a coherent world view and personality structure. When this process is inadequate because of previous failures, traumas, or regressions, it is likely to be expressed as maladaptive behavior. Descriptively these maladaptive behaviors, theoretically related to the rapprochement subphase, show obvious similarities to the diagnostic criteria for borderline personality disorder. It is logically consistent to hypothesize that individuals who warrant a descriptive diagnosis of borderline personality disorder could be characterized as experiencing greater levels of separation and engulfment anxiety than psychologically better-functioning individuals. It would therefore be expected that this proclivity could be quantified. It would seem that comparisons between a highly disturbed group of adolescents and a group of nonhospitalized comparison high school students would reveal significant differences on measures of intrapsychic functioning. The lack of group differences found using the SITA, particularly in the context of very significant group differences using the MAPI, suggests that either the instrument is not adequately measuring a genuine phenomenon, or the theoretical conceptualization should be modified.

The possibility that the test fails to capture a genuine phenomenon encompasses a broader controversy regarding psychological testing. There has been considerable dispute



regarding the validity and utility of using so-called objective measures to evaluate intrapsychic phenomenon. The situation is analogous to using a magnifying glass to examine microscopic particles. While the instrument itself is not fundamentally flawed, it may not be appropriate for the examination of the studied object. Although the SITA represents an effort to operationalize and quantify phase-specific developmental difficulties in the etiology of adolescent psychopathology, it is essentially a consciously-mediated likert scale instrument. In other words, the test is purporting to measure an intrapsychic, unconscious entity or process but requires active evaluation and decision making at a conscious level. Given the guarded nature of the hospitalized patients' responses on the Rorschach as discussed above, it is conceivable that they were able to detect the intent of many items on the SITA and answered them in a direction less indicative of pathology.

Coonerty (1986) examined themes of separation-individuation on the Rorschach comparing a sample of DSM-III borderline adults to DSM-III adult schizophrenics. She found a preponderance of separation themes in borderlines and significantly more themes reflecting pre-separation issues in the schizophrenic group. She discussed these results in terms of their support for Mahler's developmental theory of psychopathology. This represents one of the few studies which directly examined the diagnostic significance

of separation-individuation themes. While the present study does not offer further support for a theory of developmental psychopathology as outlined by Mahler, there are major difference between her study and the present. Perhaps most significant are the ages of the subjects and differences in the dependent variables. Her sample consisted of adults whose personalities could more accurately be described as solidified. In addition, Axis I and II psychopathology are more difficult to distinguish in adolescents than in adults particularly with regard to schizophrenia. The early manifestations of schizophrenia in an adolescent may mimic the unstable nature of borderline personality disorder. With regard to her dependent variables, her use of a Rorschach scoring system thought to assess intrapsychic phenomenon differs from the SITA's more consciously-mediated likert scale format.

#### Validity of the DIB and the Borderline Diagnosis

While some progress has been made in establishing the reliability and validity of borderline personality disorder in adults, considerable controversy remains regarding issues such as comorbidity, etiology, treatment, and prognosis. These issues are further complicated in adolescence given the normative nature of several of the diagnostic criteria for the disorder. Instability of affect, relationships, identity, and behavior are critical components of the diagnosis. While not typically extreme, many adolescents mani-

fest potentially maladaptive behaviors and it is difficult to determine at what point these behaviors warrant clinical concern and qualify as symptoms of a disorder.

If the DIB successfully identifies adolescents who manifest extreme and chronic levels of instability across various levels of functioning, then it could be assumed that these individuals share maladaptive personality features and warrant the same personality diagnosis. Furthermore, these individuals should differ in predictable ways on psychological tests from individuals who do not manifest these behaviors. This study examined such potential differences using variables from three testing instruments. While some significant findings emerged, the overall pattern of results does not support the idea that the subjects identified as borderline differ markedly from other hospitalized adolescents. No significant differences were found between the two hospitalized groups on the Rorschach or the SITA. While significant results emerged on the MAPI between the two hospitalized groups, in every instance this was a quantitative rather than qualitative difference. The borderline group showed a marked elevation on the Sensitive personality style scale and a significant but less pronounced elevation on the Forceful scale. Similar quantitative elevations were found on all four behavioral correlate scales and several of the expressed concerns scales.

The DIB-identified borderlines all manifested an ex-

treme degree of general disturbance which seems to pervade almost all aspects of their functioning. Individuals who attained scores of eight to ten on the interview endorsed items across a wide range of pathology including significant depression, intense rage, underachievement, psychotic-like experiences, polysubstance abuse, sexual promiscuity or prostitution, frequent physical assaults or threats, intense, unstable interpersonal relationships, self-injurious behavior, suicide threats, and suicide attempts. It is clear that these individuals are intensely disturbed; however, it may be premature to assume that these behaviors have reached a level of stability and solidification to warrant a personality disorder diagnosis. The impact of chronic, severe polysubstance abuse; potential affective disorder; or a schizophrenic process may contribute to the clinical presentations of many of these patients and requires further study. These issues could be addressed in a prospective, longitudinal study of psychopathology.

Hurt et al. (1986) found that DIB scores were most predictive of a DSM-III diagnosis of borderline personality disorder in adults at the ends of the continuum but that its predictive power was relatively poor with scores from six to seven. They suggested that borderline pathology might be viewed as a matter of degree rather than as an exclusive diagnosis. It may be that individuals who warrant a DIB score of greater or equal to eight, or greater or equal to

nine represent a more distinct diagnostic entity. These individuals might genuinely differ from those who warrant a score of six or seven and most likely differ from individuals who attain low scores on the interview. Indeed, individuals who receive a score of six rather than seven on the interview are much more alike than different. There was a significant number of individuals who attained a score of six on the DIB who were placed in the nonborderline group. It is possible that these individuals blurred the distinctions between the more severely-disturbed borderline group and the nonborderline group. As previously mentioned, further studies should examine potential differences between individuals who attain scores of less than or equal to five on the interview and those who attain scores of greater or equal to eight. It may be that true qualitative differences would emerge in such analyses.

The data were more successful in identifying key features which differ between nonhospitalized and hospitalized adolescents. While no differences emerged on the SITA, significant differences emerged among one or both hospitalized groups and the nonborderline, comparison group on the MAPI and the Rorschach. Without exception, the average scores on the twenty scales of the MAPI for the nonhospitalized group were within one standard deviation of the mean as compared to the instrument's standardization sample. Almost all of the scales for one or both hospitalized groups were sig-

nificantly elevated or low compared to the nonhospitalized group. On the Rorschach, variables reflecting reality testing, affect modulation, and stress tolerance differed in the direction indicative of more pathology among the nonhospitalized group and one or both of the hospitalized groups. This suggests that there are significant differences between hospitalized and nonhospitalized adolescents on psychological testing; however, this appears to be more a function of hospital status than the DIB score.

While none of the nonhospitalized adolescents in the present study achieved a score of seven or more on the DIB considered necessary for a diagnosis of borderline personality disorder, four of the 42 subjects (9%) achieved a score of five or six representing a fairly significant level of borderline psychopathology. An additional eight subjects (19%) received a score of four which reflects difficulty in at least two areas of functioning as measured by the DIB. Thus 25% of the nonclinical subjects in the present study manifested a measurable degree of difficulty which corresponds to the larger longitudinal studies of adolescent development conducted by Golombek et al. (1986 & 1989), Rutter (1985), and Kashini et al. (1987a & 1987b). The presence of adolescents along the continuum of DIB-measured borderline psychopathology in the nonclinical sample further supports the idea that this disorder is not a distinct entity.

Given the range of scores on the DIB from two to six for the nonhospitalized group, it is conceivable that individuals who achieved a score of five or six have similar personality characteristics to the individuals in the hospitalized sample who also achieved a score five or a six. The nonhospitalized adolescents who received scores approaching the borderline range on the DIB may perform similarly to the hospitalized adolescents on the Rorschach and the MAPI. Future studies might examine the relationship between hospital status and the presence and extent of borderline psychopathology.

This study did not incorporate additional diagnostic procedures which would have gathered sufficient data to reliably assign other psychiatric diagnoses to the participants in this study. Consequently, no data are available regarding coexisting or comorbid disorders. Given the prevalence of other Axis I and II diagnoses in individuals diagnosed as borderline reported by other investigators (Fyer, et al. 1988; Friedman, et al. 1982; Bukstein, et al. 1989) it is possible that the majority of the hospitalized patients in this study could qualify for more than one diagnosis. Borderlines with significant substance abuse histories as well as borderlines with a major affective disorder might be expected to differ in fundamental ways from borderlines without these features. In addition, while a diagnostically heterogeneous comparison group can provide

important data, further knowledge could be attained from making finer comparisons among a variety of diagnostic groups. For example, it is probable that major differences would emerge between a group of individuals given a primary diagnosis within the schizophrenic spectrum and those with a primary diagnosis of borderline personality disorder. As a more stringent test, fewer difference might emerge if a group of adolescents given a primary diagnosis of conduct disorder were compared to those given a primary diagnosis of borderline personality disorder. Consistent with the above discussion, if borderline psychopathology can be more accurately conceptualized to exist along a continuum, it would be valuable to examine the presence and overlap of these features in so-called distinct personality disorders as they exist in DSM-III-R. One might expect a high degree of overlap and correlation among the theoretically related personality disorders such as narcissistic, histrionic, and borderline personality disorders.

The pattern of results from this study suggests that it is premature to consider borderline personality disorder to be a distinct diagnostic entity in adolescence. While the DIB appears to be identifying individuals who manifest severe levels of pervasive psychopathology, individuals given a research diagnosis of borderline personality disorder generally do not differ from a heterogeneous group of adolescents warranting other diagnoses in their performances



on other measures of psychopathology. Differences were found between the three groups of adolescents on the Millon Adolescent Personality Inventory; however, these differences appear to be a matter of intensity rather than representing specific qualitative differences.

## SUMMARY

Adolescence has been described as a period of development when inner turmoil and maladaptive behavior could be considered normal. Psychoanalytically-oriented individuals have hypothesized that a period of upheaval is necessary if adequate development is to proceed. Methodologically sound studies have not generally supported these hypotheses. While many adolescents experience some degree of distress and occasional impulsive behavior, this infrequently reaches a level of chronicity or intensity to warrant a psychiatric diagnosis. In adolescence, issues of chronicity and intensity are particularly problematic with regard to personality disorders. An Axis II disorder implies that a solidified and stable pattern of behaviors and characteristics has been established which is nearly inflexible. Given the potential for change in the context of often rapid alterations in behavior, affect, and cognition inherent in many adolescents, it may be premature to assign a diagnosis of borderline personality disorder to adolescents.

Using a sample of adolescents, this study examined the relationship between borderline personality disorder, as measured by the Diagnostic Interview for Borderlines, and indices of psychopathology on three other psychological

tests: the Millon Adolescent Personality Inventory; the Rorschach; and the Separation-Individuation Test of Adolescence. Three groups of adolescents were formed based on their scores on the diagnostic interview and their hospital status: a nonhospitalized comparison group; a hospitalized, nonborderline group; and a hospitalized, borderline group. While significant differences emerged on several of the dependent variables, the overall pattern of findings does not support the idea that a diagnosis of borderline personality disorder is meaningful in adolescents. Rather, this diagnosis appears to be indicative of extreme, often pervasive psychopathology.

The differences attained in this study were quantitative rather than qualitative. Adolescents identified as borderline tended to show intense levels of irritability, hostility, insensitivity, and aggressivity. They appeared to be impulsive and nonconforming. It would not be unusual for them to have difficulty at home and academically.

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## APPENDIX A

# DEMOGRAPHIC QUESTIONNAIRE

CODE NUMBER \_\_\_\_\_

The following questionnaire contains several questions about your general background. Please answer each question as accurately as possible.

1. Birthdate: \_\_\_\_\_ 2. Age: \_\_\_\_\_

3. Sex: a. Male b. Female

4. Number of brothers: \_\_\_\_\_

Number of sisters: \_\_\_\_\_

Your birth order: \_\_\_\_\_

5. Race:

- a. caucasian
- b. black
- c. hispanic
- d. oriental
- e. other \_\_\_\_\_

6. Status in school:

- a. seventh
- b. eighth
- c. freshman
- d. sophomore
- e. junior
- f. senior
- g. other \_\_\_\_\_

7. Do you plan on going to college? a. yes b. no

8. Population of your home community:

- a. rural/farm
- b. <5,000
- c. 5,000-50,000
- d. 50,000-500,000
- e. >500,000

9. Religion:

- a. Protestant
- b. Catholic
- c. Jewish
- d. other \_\_\_\_\_

## Parents' information:

## 10. Marital status:

- a. married
- b. divorced
- c. separated
- d. widowed
- e. never married

## 11A. Education, highest level completed (Head of Household):

- a. Grammar School
- b. Jr. High School
- c. Partial High School
- d. High School Grad
- e. Some College
- f. College Grad
- g. Graduate or Professional School

## 11B. Education, highest level completed (other parent)

- a. Grammar School
- b. Jr. High School
- c. Partial High School
- d. High School Grad
- e. Some College
- f. College grad
- g. Graduate or Professional School

## 12A. Occupation (Head of Household)

- a. Unemployed, unskilled, welfare
- b. Semi-skilled, manual labor
- c. Skilled manual labor
- d. Clerical/Sales employee
- e. Administration, low to mid-level
- f. Business Manager/Proprietor
- g. Higher Executive/Professional
- h. Other \_\_\_\_\_

## 12B. Occupation (Other Parent)

- a. Unemployed, unskilled, welfare
- b. Semi-skilled, manual labor
- c. Skilled manual labor
- d. Clerical/Sales employee
- e. Administration, low to mid-level
- f. Business Manager/Proprietor
- g. Higher Executive/Professional
- h. Other \_\_\_\_\_

APPROVAL SHEET

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The final copies have been examined by the director of the dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the dissertation is now given final approval by the Committee with reference to content and form.

The dissertation is therefore accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Clinical Psychology.

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