Discriminating Borderline Personality Disorder (BPD) From Major Depression and Refining Diagnostic Criteria for BPD.

Betty Susan Head
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Discriminating borderline personality disorder (BPD) from major depression and refining diagnostic criteria for BPD

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The Louisiana State University and Agricultural and Mechanical Col., 1991
Discriminating Borderline Personality Disorder (BPD)  
From Major Depression and Refining  
Diagnostic Criteria for BPD

A Dissertation

Submitted to the Graduate Faculty of the  
Louisiana State University and  
Agricultural and Mechanical College  
in partial fulfillment of the  
requirements for the degree of  
Doctor of Philosophy  

in  
The Department of Psychology

by

Betty Susan Head  
B.S., Louisiana State University, 1978  
M.A., Louisiana State University, 1988  
December, 1991
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Abstract

Investigators have sought to clarify the Borderline Personality Disorder (BPD) category by comparing it with other personality disorders (e.g., Clarkin, Widiger, Frances, Hurt, & Gilmore, 1983; Zanarini, Gunderson, Granenborg, & Chauncey, 1990), schizophrenia (see review by Siever & Gunderson, 1978), and major depression (see review by Gunderson & Phillips, 1991). The current study investigated the discriminative validity of the DSM-III-R (American Psychiatric Association, 1987) borderline criteria and qualitative differences in depression between borderlines (BPD) and patients diagnosed with major depressive episode (MDE). The 100 subjects were inpatients (n=94) and outpatients (n=6), assigned to one of three groups according to diagnosis. Subjects were diagnosed as borderline without major depression (BPD, n=23), depressed borderline (BPD/MDE, n=36), or non-borderline depressed (MDE, n=41) by structured interview with the Personality Disorder Examination (Loranger, Susman, Oldham, & Russakoff, 1987) and the Structured Clinical Interview for DSM-III-R (Spitzer, Williams, Gibbon, & First, 1990). Qualitative differences in depression were assessed by the Clinical Interview for Depression (Paykel, 1985). Conditional probabilities analysis, chi-square, and stepwise multiple regression were used to analyze differences between the groups.
The results indicate that the DSM-III-R borderline criteria discriminate depressed and non-depressed borderlines from patients who are depressed, but that self-mutilation and suicide threats are unique features of BPD compared with MDE. "Identity disturbance" was the best criterion for discriminating borderlines from depressed subjects. Although the BPD "impulsiveness" criterion discriminated borderlines from depressed patients overall, driving while intoxicated, binge eating, and shoplifting as specific types of impulsiveness did not discriminate between groups. However, impulsive sexual behavior may be a type of impulsiveness specifically related to borderlines.

Depression in borderlines was qualitatively different from depression in nonborderlines, as measured by the Clinical Interview for Depression (Paykel, 1985). It was characterized by reports of greater severity of depression, over-emphasis of symptoms, and paranoid ideas in borderlines. The findings contribute to a refinement of the borderline category, and suggest new directions for research on borderline personality disorder.
Discriminating Borderline Personality Disorder (BPD) From Major Depression and Refining Diagnostic Criteria for BPD

One of the earliest documented uses of the term "borderline" can be traced to Stern's 1938 article appearing in the Psychoanalytic Quarterly. Stern was attempting to describe patients who did not fit into standard neurotic or psychotic categories, and who were, additionally, difficult to treat. More recently, "borderline" has been used to describe symptoms that appear to fall on the border of schizophrenia or mood disorder (see review by Gunderson & Zanarini, 1984; Spitzer, Endicott, & Gibbon, 1979).

An etiological relationship between borderline disorders and schizophrenia was often presumed by various researchers and clinicians based on the observation that some patients with borderline symptoms experienced brief psychotic episodes during periods of high stress (Siever & Gunderson, 1979). Also, speculation regarding the association between borderline conditions and mood states arose because depression was often noted in borderline patients (see review by Gunderson & Elliott, 1985).

Currently, the term "borderline" is used most often in the context of Borderline Personality Disorder (BPD). Although BPD has gained acceptance as a personality disorder distinct from other personality disorders (see,
for example, Barrash, Kroll, Carey, & Sines, 1983; Clarkin, Widiger, Frances, Hurt, & Gilmore, 1983; Zanarini, Gunderson, Frankenburg, & Chauncey, 1990) there are many who still consider BPD a variant of Major Depression (MDE) (e.g., Akiskal, Chen, Davis, Puzantian, Kashgarian, & Bolinger, 1985; Stone, Kahn, & Flye, 1981).

The original borderline concept emerged as a collection of clinical observations, and contained both schizophrenia- and mood-related features. In a well-known study involving a large number of borderline patients and controls, Spitzer, Endicott, and Gibbon (1979) performed a factor-analysis of the most common borderline descriptors. In their analysis, two factors emerged, one characterizing the schizophrenia-like symptoms, the other the more mood-related symptoms. These factors were termed "schizotypal personality" and "borderline personality," respectively.

The criteria developed by Spitzer and colleagues (1979) became the criteria used by DSM-III (APA, 1980) to define schizotypal and borderline personality disorders. The DSM-III-R (APA, 1987) criteria for these two personality disorders did not change significantly from the earlier version of the DSM-III. Criteria for schizotypal personality disorder (SPD) include more schizophrenia-like features, such as "ideas of reference" and "unusual perceptual experiences" (see Table 1), while borderline
personality disorder (BPD) criteria include more mood-related features, such as "recurrent suicidal threats" and "chronic feelings of emptiness and boredom" (see Table 2). Etiological investigations of BPD, including family history, pharmacological response, follow-up, and phenomenological studies, have sought to delineate BPD, schizophrenia, and mood disorders. As empirical data have accumulated, an association between schizophrenia and borderline disorders has not been supported. However, one between BPD and mood disorders remains possible. The following section summarizes etiological findings.

Etiological Findings

Family Studies

Neither family history nor twin studies support a common biological basis for borderline personality disorder and schizophrenia (see reviews by Gunderson & Elliott, 1985; and Tarnopolsky & Berelowitz, 1984). Monozygotic twin siblings of schizotypal patients, a disorder thought to be related to schizophrenia (Rosenberger & Miller, 1989), were found to have schizotypal disorders rather than borderline disorders (Torgerson, 1984). Other investigators have found the relatives of borderline patients to be borderline themselves, rather than schizotypal or schizophrenic (Baron, Gruen, Asnis, & Lord, 1985; Gunderson, Siever, & Spaulding, 1983; Loranger, Oldham, & Tulis, 1982; Pope, Jonas, Hudson, Cohen, &
### Table 1

**DSM-III-R Criteria for Schizotypal Personality Disorder**

A. A pervasive pattern of deficits in interpersonal relatedness and peculiarities of ideation, appearance, and behavior, beginning by early adulthood and present in a variety of contexts, as indicated by at least five of the following:

1. Ideas of reference (excluding delusions of reference)
2. Excessive social anxiety, e.g., extreme discomfort in social situations involving unfamiliar people
3. Odd beliefs or magical thinking influencing behavior and inconsistent with subcultural norms, e.g., superstitiousness, belief in clairvoyance, telepathy, or "sixth sense," "others can feel my feelings" (in children and adolescents, bizarre fantasies or preoccupations)
4. Unusual perceptual experiences, e.g., illusions, sensing the presence of a force or person not actually present (e.g., "I felt as if my dead mother were in the room with me")
5. Odd or eccentric behavior or appearance, e.g., unkempt, unusual mannerisms, talks to self

*(table continues)*
Table 1 (continued)

(6) no close friends or confidants (or only one)
other than first-degree relatives

(7) odd speech (without loosening of associations or
incoherence), e.g., speech that is impoverished,
digressive, vague, or inappropriately abstract

(8) inappropriate or constricted affect, e.g., silly,
aloof, rarely reciprocates gestures or facial
expressions, such as smiles or nods

(9) suspiciousness or paranoid ideation

B. Occurrence not exclusively during the course of
Schizophrenia or a Pervasive Developmental Disorder.
Table 2

**DSM-III-R Criteria for Borderline Personality Disorder**

A pervasive pattern of instability of mood, interpersonal relationships, and self-image, beginning by early adulthood and present in a variety of contexts, as indicated by at least five of the following:

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 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

*(table continues)*
Table 2 (continued)

6. marked and 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].)

Although some investigations of the familial association of BPD and MDE supported an affiliation between the two (Soloff & Millward, 1983; Stone, et al., 1981), closer examination revealed that the observed increase in prevalence of depression in families of borderlines resulted from the concurrent diagnosis of major depression in the borderline samples (Andrulonis & Vogel, 1984; Pope, et al., 1983). That is, when "pure" borderlines were separated from those with coexisting major depression, increased incidence of depression was found only in the relatives of depressed borderline patients (Andrulonis & Vogel, 1984; Pope et al., 1983).

In summary, family studies do not support a genetic link between "pure" BPD and either MDE or schizophrenia. However, depression is a common feature of borderline patients and the relatives of depressed borderlines.

Pharmacological Response Studies

Pharmacological studies also have produced equivocal results concerning the response of borderline patients to antipsychotics and antidepressants (see review by Gunderson & Phillips, 1991; Kroll, 1988). Some borderlines have improved with antidepressants, and some with the administration of antipsychotic medications. Additionally, little efficacy has been found for antidepressants with non-depressed borderlines, and the response to
antidepressants has not been as positive in depressed borderlines as in depressed non-borderline patients (Gunderson & Phillips, 1991; Kroll, 1988). In reviews of drug responses in borderline patients Cole, Salomon, and Gunderson (1984), Cowdry (1987), and Soloff (1989) concluded independently that response to antidepressants and antipsychotics was heterogeneous. Drug response apparently is more dependent on the primary complaints of the patient rather than the diagnosis of BPD, per se. For example, Cowdry (1987) summarized the literature pertaining to psychopharmacology of BPD and concluded that monoamine oxidase inhibitors (MAOIs) are the drugs of choice for BPD patients with depressive symptoms, while low-dosage neuroleptics are more effective for patients with prominent cognitive dysfunction. Recently, some investigators have concluded that the main effect of both antidepressants and antipsychotics in borderlines is behavioral (e.g., decrease in impulsive behaviors) rather than mood regulatory, and that improved mood is inferred from improved behavior (Cornelius, Soloff, & Perel, 1990; Cowdry & Gardner, 1988; Links, Steiner, & Boiago, 1990).

Follow-up Studies

Follow-up studies have sought to establish validity for the BPD diagnosis by addressing the following questions: (1) Are borderline patients suffering from an early form of schizophrenia?; (2) Is BPD a variant of a
mood disorder?; and (3) Is the BPD diagnosis stable over time?

In several follow-up studies ranging from three to 15 years, few borderlines, if any, developed schizophrenia (Carpenter & Gunderson, 1977; Barasch, Frances, Hurt, Clarkin, & Cohen, 1985; McGlashan, 1983; Pope, et al., 1983). In studies investigating the development of mood disorders in BPD, the majority of "pure" borderline patients (i.e., those without a concurrent diagnosis of MDE) did not develop mood disorders over time periods ranging from three to seven years (Akiskal, et al., 1985; Pope, et al., 1983). Barasch et al. (1985) reported that the percentage of "pure" borderlines who developed mood disorders at three-year follow-up was not significantly different from the percentage of persons with other personality disorders who developed mood disorders during that time period. In reference to diagnostic stability, most borderline patients retained their BPD diagnosis at four-to-seven- (65%) (Pope et al., 1983) and three-year (60%) (Barasch et al., 1985) follow-ups. Both studies used the Diagnostic Interview for Borderlines (DIBs) (Gunderson & Kolb, 1978) to diagnose borderline personality disorder.

Thus, the BPD diagnosis appears stable over time, and follow-up studies do not support a relationship between schizophrenia and BPD. The relationship between MDE and
BPD is less clear-cut, given that many borderline patients are also depressed. However, as noted above, there are cases in which BPD is diagnosed without MDE; and, the likelihood that these "pure" borderlines will develop major depression is apparently no greater than that of patients with other personality disorders (Barasch et al., 1985).

Phenomenological Studies

Phenomenological studies have investigated the construct validity of BPD by asking whether patients diagnosed with BPD can be distinguished from patients with other psychiatric diagnoses. Several studies have established the diagnostic distinction between borderline and schizophrenic in-patients. Using patients from the International Pilot Study of Schizophrenia, Gunderson, Carpenter, and Strauss (1975) found that borderline patients were more likely to have unstable interpersonal relationships and lifestyles, and fewer and less severe psychotic symptoms compared to schizophrenic subjects. Kroll, Sines, and Martin (1981) found only one DSM-III schizophrenic among 21 BPD patients diagnosed using the Diagnostic Interview for Borderlines (DIBs) (Gunderson & Kolb, 1978). Pope et al. (1983) found no DSM-III schizophrenics among 33 inpatients diagnosed as borderline according to the DIBs criteria.

The coincidence of MDE with BPD is much greater than statistically expected, ranging from 40% to 60% (Gunderson
& Elliott, 1985; Perry, 1985). However, notable differences between borderline and depressed patients include the tendency of borderline patients to act impulsively, express rage, and to engage in self-destructive and self-mutilative behavior (Barrash, et al., 1983; Gunderson & Kolb, 1978; Soloff & Ulrich, 1981; Sheehy, Goldsmith, & Charles, 1980).

It has also been suggested that depression is experienced differently by borderline patients relative to non-borderline depressed patients (Gunderson & Zanarini, 1987; Soloff, George, Nathan, & Schulz, 1987). In Gunderson and Elliott's (1985) review of the literature examining depression in BPD, they suggested that an inner sense of badness, deprivation, and rage may be distinctive components of depression in BPD. Gunderson and Phillips (1991) suggested that borderlines experience a "dependent" depression in which they feel lonely, rejected, yearning, and self-destructive, while nonborderline depression is characterized by increased self-criticism, in which patients are agitated, defeated, and withdrawn. Others have noted that the depression in borderlines has the characteristics of "hysteroid dysphoria" (Soloff et al., 1987), defined as "a chronic nonpsychotic disturbance involving repeated episodes of abruptly depressed mood in response to feeling rejected" (Soloff et al., p. 156). Such individuals were also described as approval-seeking,
dramatic, hostile, and manipulative (Soloff et al., 1990). Zanarini et al. (1990) reported that depression was not specific to BPD compared with other personality disorders, but that borderlines seemed to have a strong need to "convince others of the unique depth of their affective suffering" (p. 164). Westen, Moses, Silk, Lohr, Cohen, and Segal (1990) reported that depression in borderlines is distinguished by chronic feelings of emptiness and boredom. Perry and Cooper (1985) stated that depression in borderlines is distinguished by angry acting out, while depression in nonborderline patients is marked by self-criticism and social withdrawal. The differences between the quality of depression in BPD compared with non-BPD depressed patients is of particular interest in the present study.

Collectively, findings of family, follow-up, pharmacological, and phenomenological studies, suggest the existence of subtypes of BPD. Pharmacological studies, for example, provide evidence of borderline patients with prominent cognitive dysfunction who benefit from antipsychotic medications. The occurrence of mild psychosis in some borderlines is an interesting area of inquiry. Perhaps, as suggested by McGlashan (1987) and others, these cases would be more appropriately subsumed under the Schizotypal Personality Disorder category. Also, there apparently are cases in which BPD is diagnosed
without MDE. Such cases suggest that BPD is not a variant of depression. However, in a large proportion of cases BPD and MDE are diagnosed concurrently. These cases may represent a subtype of BPD which differs from "pure" borderlines (i.e., BPD without MDE).

The large percentage of BPD patients with concurrent diagnoses of MDE is conceptually problematic; this is partly because of the notions underlying categorical classification, which assumes that diagnostic categories are homogeneous and mutually exclusive, as opposed to prototypical classification, which assumes heterogeneity and overlap among categories. The presence of an Axis I disorder, such as depression, should not necessarily exclude the presence of a personality disorder. However, those who adhere to traditional categorical concepts of classification may have difficulty reconciling consistent, and specific overlap between Axis I and Axis II disorders, such as noted in MDE and BPD. Research can play an important role in recognizing coexisting psychological syndromes and highlighting similarities and differences between diagnoses.

A related issue concerns the emphasis on mood in the borderline criteria. In their review of the DSM-III-R personality disorder revisions, Widiger, Frances, Spitzer, and Williams (1988) pointed out a general lack of consistency in the emphasis on cognitive, mood, behavioral,
and interpersonal features across the personality disorder criteria sets. The emphasis on mood features (i.e., affective instability, anger, emptiness and boredom) in the borderline criteria tends to highlight the overlap between BPD and MDE. It may be that aspects of mood are the most obvious features of borderlines. However, there may be subtle characteristics that are as discriminative of BPD as is mood. Widiger et al. (1988) suggested that in future revisions of the DSM-III-R, it may be desirable for each personality disorder to systematically include areas of personality functioning including interpersonal, cognitive, behavioral, and mood.

At this point it may be helpful to examine the diagnostic criteria for BPD to consider how they may overlap with criteria for MDE.

Comparison of DSM-III-R Diagnostic Criteria for Borderline Personality Disorder and Major Depression

DSM-III-R outlines eight criteria for the diagnosis of BPD (see Table 2) and nine criteria for the diagnosis of a Major Depressive Syndrome (see Table 3). In the following discussion, the criteria for MDE will be considered in the context of the BPD criteria.

DSM-III-R Diagnostic Criteria for Borderline Personality Disorder

1. **Unstable and intense interpersonal relationships.**

   Problems with interpersonal relationships is not listed as
Table 3

**DSM-III-R Criteria for a Major Depressive Syndrome**

At least five of the following symptoms have been present during the same two-week period and represent a change from previous functioning; at least one of the symptoms is either (1) depressed mood, or (2) loss of interest or pleasure. (Do not include symptoms that are clearly due to a physical condition, mood-incongruent delusions or hallucinations, incoherence, or marked loosening of associations.)

1. **depressed mood** (or can be irritable mood in children and adolescents) most of the day, nearly every day, as indicated either by subjective account or observation by others

2. **markedly diminished interest or pleasure** in all, or almost all, activities most of the day, nearly every day (as indicated either by subject account or observation by others of apathy most of the time)

3. **significant weight loss or weight gain** when not dieting (e.g., more than 5% of body weight in a month), or decrease or increase in appetite nearly every day (in children, consider failure to make expected weight gains)

4. **insomnia or hypersomnia** nearly every day

*table continues*
Table 3 (continued)

(5) psychomotor agitation or retardation nearly every day
    (observable by others, not merely subjective feelings
    of restlessness or being slowed down)

(6) fatigue or loss of energy every day

(7) feelings of worthlessness or excessive or
    inappropriate guilt (which may be delusional) nearly
    every day (not merely self-reproach or guilt about
    being sick)

(8) diminished ability to think or concentrate, or
    indecisiveness, nearly every day (either by subjective
    account or as observed by others)

(9) recurrent thoughts of death (not just fear of dying),
    recurrent suicidal ideation without a specific plan,
    or a suicide attempt or a specific plan for committing
    suicide
a specific criterion for a Major Depressive Syndrome. Also, relationship difficulties are not alluded to in the general description of MDE. Thus, this criterion specifically differentiates BPD from MDE in DSM-III-R. In studies investigating the diagnostic efficiency of the BPD criteria for differentiating BPD from other personality disorders (as in Clarkin et al., 1983) "unstable and intense interpersonal relationships" emerged as the most sensitive and specific criterion for BPD.

2. Impulsiveness. Although impulsiveness, per se, is not listed in the criteria for MDE, there may be some overlap between BPD and MDE on this criterion. The BPD criterion includes binge eating as one of the areas in which impulsiveness may be observed. The MDE criterion (#3) indicates an increase in appetite and weight gain as a symptom of MDE. One might interpret the increased appetite and weight gain associated with MDE as impulsive binge eating. Such a person presumably would meet the MDE criterion and would partially meet the BPD criterion, since it calls for impulsive behavior in at least two areas of functioning.

3. Affective instability. The criteria for MDE specifically states that depressed mood must be present for at least two weeks. The BPD criterion describes "marked shifts from baseline mood to depression, irritability, or anxiety, usually lasting a few hours and only rarely more
than a few days" (p. 347). Provided that the BPD criteria are strictly interpreted, this criterion should not create diagnostic uncertainty.

4. **Inappropriate, intense anger, or lack of control of anger.** The criteria for MDE do not mention problems with anger control. If the incidence of problems with anger is high in the borderline population, this criterion may be a significant indicator of BPD.

5. **Recurrent suicidal threats, gestures, or behavior, or self-mutilating behavior.** Suicidal ideation and suicidal attempts are included in criterion #9 for MDE. Although self-mutilating behavior is not listed in the MDE criteria, it might be inferred from or a consequence of suicidal attempts. These two criteria are a likely area of diagnostic overlap.

6. **Marked and persistent identity disturbance.** This criterion states that identity disturbance may be manifested by uncertainty in several areas including "self-image, sexual orientation, long-term goals or career choice, type of friends desired, preferred values."

Criterion #8 for MDE indicates "diminished ability to think or concentrate, or indecisiveness." A person experiencing difficulties in concentrating and indecisiveness concerning major areas of functioning, such as those listed under this BPD criterion, would likely meet criterion #8 for MDE and #6 for BPD.
7. **Chronic feelings of emptiness and boredom.** This criterion is likely to overlap with MDE criterion #6, "fatigue or loss of energy nearly every day." If a patient reports feeling empty and bored, lack of energy or fatigue may be inferred. Similarly, if a patient reports loss of energy and chronic fatigue, boredom may be inferred.

This criterion may also overlap with MDE criterion #2, "markedly diminished interest or pleasure in all, or almost all, activities...." Webster's dictionary (G. & C. Merriam Company, 1981) defines "boring" as "devoid of interest." Therefore, if one has lost interest in many activities, one may be said to be bored.

8. **Frantic efforts to avoid real or imagined abandonment.** This criterion appears to be specific to BPD, and may be helpful in discriminating BPD from MDE.

Table 4 presents a summary of areas of potential overlap between diagnostic criteria for BPD and MDE following from the previous discussion. It is speculated that four BPD criteria (2, 5, 6, & 7) may potentially overlap with five MDE criteria (2, 3, 6, 8, & 9). This means that each diagnostic category retains four criteria unique to either BPD or MDE.

The construct validity of BPD has been the focus of studies comparing BPD with other personality disorders. Among other things, researchers have investigated the discriminant validity of the diagnostic criteria for BPD.
Table 4  
Potential Areas of Overlap Between BPD and MDE Criteria

<table>
<thead>
<tr>
<th>BPD</th>
<th>MDE</th>
<th>Content Domain</th>
</tr>
</thead>
<tbody>
<tr>
<td>#2</td>
<td>#3</td>
<td>Impulsiveness, binge eating, weight gain</td>
</tr>
<tr>
<td>#5</td>
<td>#9</td>
<td>Suicidal threats, behaviors</td>
</tr>
<tr>
<td>#6</td>
<td>#8</td>
<td>Identity disturbance, uncertainty, indecisiveness</td>
</tr>
<tr>
<td>#7</td>
<td>#2 &amp; 6</td>
<td>Emptiness, boredom, fatigue, loss of interest</td>
</tr>
</tbody>
</table>
These studies provide useful guidelines for researchers investigating the construct validity of BPD relative to mood disorders. The following section provides a discussion of research comparing BPD with other personality disorders.

**Discriminating Borderline Personality Disorder from Other Personality Disorders**

Studies comparing BPD with other personality disorders (OPD) have evaluated whether the incidence of the BPD criteria in the borderline samples is significantly greater than would be expected by chance. Several studies have found unstable, intense interpersonal relationships (McGlashan, 1987; Sheehy et al., 1980; Zanarini et al., 1990), and self-mutilative behaviors and/or suicide gestures and threats (Barrash et al., 1983; McGlashan, 1987; Zanarini et al., 1990) to significantly differentiate BPD from OPDs. Two studies reported a significantly greater incidence of impulsiveness (McGlashan, 1987; Sheehy et al., 1980) in borderlines compared to OPDs, but Zanarini et al. (1990) found no significant differences in impulsiveness between the two groups. Sheehy et al. (1980) and Barrash et al. (1983) found affective instability more often in BPD compared to OPDs, but McGlashan (1987) and Zanarini et al. (1990) found no differences in affective instability between the two groups.

McGlashan's (1987) study, compared BPD to Schizotypal
personality disorder (SPD), and found that transient psychosis was more frequent in SPD. McGlashan also reported that, of the eight BPD criteria, inappropriate anger and intolerance of being alone were the least characteristic features of BPD. Zanarini et al. (1990), however, found intolerance of being alone significantly more common in BPD.

Only one study (Sheehy et al, 1980) found emptiness and boredom to discriminate borderlines from other personality disorders.

Clarkin et al. (1983) compared a group of 20 BPD outpatients with 56 OPD outpatients to determine the conditional probability (CP) of obtaining a BPD diagnosis given the presence of each DSM-III criterion for BPD. These authors used a structured clinical interview plus the DIBs to document the presence of each of the eight DSM-III criteria for BPD. Clarkin et al. (1983) reported percentages of BPDs and OPDs possessing each borderline feature, most valid single features for predicting BPD, and the most valid combinations of features for predicting BPD.

Table 5 shows the percentages from each group possessing each feature of the DSM-III criteria for BPD, and the conditional probability of a BPD diagnosis given the presence of each criterion. The CP estimate represents the validity of each feature for discriminating BPD from other personality disorders. The formula for calculating
Table 5

**Percentages of Cases With BPD Features and Associated Conditional Probability of a BPD Diagnosis**

<table>
<thead>
<tr>
<th>Feature</th>
<th>BPD (n=20)</th>
<th>OPD (n=56)</th>
<th>BPD Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impulsiveness</td>
<td>100%</td>
<td>61%</td>
<td>.59</td>
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<tr>
<td>Unstable/Intense</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Relationships</td>
<td>90%</td>
<td>46%</td>
<td>.69</td>
</tr>
<tr>
<td>Intense/Uncontrolled</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Anger</td>
<td>90%</td>
<td>64%</td>
<td>.50</td>
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<tr>
<td>Identity Disturbance</td>
<td>65%</td>
<td>40%</td>
<td>.59</td>
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<tr>
<td>Affective Instability</td>
<td>95%</td>
<td>68%</td>
<td>.50</td>
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<td>Intolerance of being</td>
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<tr>
<td>Alone</td>
<td>25%</td>
<td>23%</td>
<td>.38</td>
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<tr>
<td>Physically Self-Damaging</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Acts</td>
<td>75%</td>
<td>48%</td>
<td>.56</td>
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<tr>
<td>Chronic Boredom/</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emptiness</td>
<td>80%</td>
<td>45%</td>
<td>.64</td>
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conditional probability includes base rates of the disorder, the sensitivity (i.e., probability of having the symptom given that the person has the disorder) and specificity (i.e., probability of not having the symptom given that the person does not have the disorder) of each feature and yields an estimate of the validity of each feature for predicting the disorder relative to the comparison group. For example, although impulsiveness had high sensitivity in the BPD sample (i.e., 100% of BPD cases met criteria for impulsiveness), its sensitivity in the OPD cases was also somewhat high (61%), which decreased its specificity. Taking into consideration these contingencies and incorporating base rates, the conditional probability estimate for impulsiveness was .59. Compare this with the conditional probability for unstable/intense relationships: .69. Although the sensitivity for the BPD group (90%) was somewhat lower than that for impulsiveness, the sensitivity for the OPD group (46%) was lower than that for impulsiveness, yielding a higher conditional probability of a diagnosis of BPD given the presence of unstable/intense relationships.

The best predictors of BPD in Clarkin et al.'s (1983) study were unstable/intense relationships and chronic feelings of emptiness and boredom. Intense/uncontrolled anger and affective instability were sensitive yet relatively nonspecific features in the BPD group. That is,
these two features were almost as indicative of OPDs as they were of BPDs. The least discriminative single feature was intolerance of being alone.

The differences between the conditional probability estimates indicate that some features may be more important than others in discriminating BPD other personality disorders. Clarkin et al. (1983) also found that combining features improved the efficiency of diagnosis overall.

Table 6 shows the conditional probabilities for a BPD diagnosis given a combination of two features, and percentages of BPD patients with each combination (Clarkin et al., 1983). When any two BPD features are present, conditional probability estimates are greater than .50 for discriminating BPD from OPDs. Several combinations were even better predictors of BPD. For example, unstable/intense relationships combined with impulsiveness yielded a CP of .90 for a BPD diagnosis. Additionally, 80% of the BPD cases exhibited this combination. Identity disturbance combined with unstable/intense relationships yielded a CP of 1.0; that is, this combination occurred only in BPD (60%) but not at all in OPD cases. Physically self-damaging acts became a relatively efficient predictor (CP=.93) when combined with unstable/intense relationships. Intolerance of being alone remained relatively inefficient as a predictor, regardless of the accompanying feature.

Clarkin et al. (1983) also examined the diagnostic
Table 6

**Conditional Probabilities and Percentages for a BPD Diagnosis Given a Combination of Two Criteria**

<table>
<thead>
<tr>
<th>Feature</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
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<tr>
<td>B</td>
<td>.90</td>
<td>.80</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>C</td>
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<td>.84</td>
<td>.80</td>
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<td></td>
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<tr>
<td>D</td>
<td>.87</td>
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<td>.60</td>
<td>.80</td>
<td></td>
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</tr>
<tr>
<td>E</td>
<td>.70</td>
<td>.74</td>
<td>.85</td>
<td>.65</td>
<td>.85</td>
<td>.80</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>.62</td>
<td>.60</td>
<td>.15</td>
<td>.57</td>
<td>.20</td>
<td>.57</td>
<td>.20</td>
</tr>
<tr>
<td>G</td>
<td>.71</td>
<td>.93</td>
<td>.65</td>
<td>.67</td>
<td>.70</td>
<td>.82</td>
<td>.45</td>
</tr>
<tr>
<td>H</td>
<td>.89</td>
<td>.88</td>
<td>.70</td>
<td>.88</td>
<td>.70</td>
<td>.75</td>
<td>.45</td>
</tr>
</tbody>
</table>

Key: A=Impulsiveness; B=Unstable/intense relationships; C=Intense/uncontrolled anger; D=Identity disturbance; E=Affective instability; F=Intolerance of being alone; G=Physically self-damaging acts; H=Chronic boredom/emptiness.

best combination of three features for predicting BPD was impulsiveness, unstable/intense relationships, and intense/uncontrolled anger, which occurred in 80% of the BPD cases and did not occur in any of the OPD cases. The best combination of four features for predicting BPD was impulsiveness, unstable/intense relationships, intense uncontrolled anger, and affective instability, which occurred in 75% of the BPD cases, and did not occur in any of the OPD cases.

Consideration of three features as opposed to four or more features in making a diagnosis, while producing a more homogeneous group, may result in underinclusion. The optimum number of features for a diagnostic category varies depending on the uniqueness of the category. Examining combinations of features draws attention to the varying degrees of importance of each feature for the BPD diagnosis. For example, unstable/intense relationships is a powerful predictor both as a single feature and in combination with other features. On the other hand, intolerance of being alone appears to lack predictive power, regardless of the context. These observations suggest potential changes for the DSM-III-R (1987) BPD criteria.

Clarkin et al. (1983) discussed the implications of their findings and concluded that: 1) BPD is a heterogeneous disorder that overlaps with OPDs to some
degree on all features; 2) one might not need five features 
as is currently the practice in DSM-III-R) to diagnose BPD 
with confidence; 3) some features might be weighed more 
heavily in diagnosing BPD (e.g., unstable/intense 
relationships), while others might be given less emphasis 
(e.g., intolerance of being alone).

It is important to note that Clarkin et al. (1983) did 
not compare BPD with specific categories of other 
personality disorders, and conditional probabilities may 
change depending on the comparison group. For example, it 
may be more difficult to differentiate Schizotypal 
personality disorder from BPD than it would be to 
differentiate Avoidant personality disorder from BPD 
because of greater overlap between Schizotypal and 
Borderline personality disorders. This distinction is lost 
when the categories are combined into a single OPD group.

Several replications of Clarkin et al.'s (1983) 
findings have been attempted. Dahl (1986) and Modestin 
(1987) reported results similar to Clarkin et al., with 
unstable/intense relationships retaining the highest 
predictive power of the eight BPD criteria. However, Pfohl 
Coryell, and Zimmerman (1986) found physically 
self-damaging acts to be the best overall predictor of BPD. 
Dahl (1986) also found physically self-damaging acts to be a good predictor for BPD. Intolerance of being alone 
retained low predictive power in all three studies (Dahl,
All of the conditional probability studies discussed above have excluded schizophrenia and organic psychoses in their patient samples. Clarkin et al. (1983) included U. S. outpatients, excluded major depression and mania, and reported a base rate of .26 for BPD. Dahl (1986) studied young Norwegian inpatients and reported a base rate of .37 for BPD. Modestin (1987) studied Swiss inpatients and reported a base rate of .26. Pfohl et al. (1986) used U. S. inpatients and outpatients and reported a base rate of .22. In spite of the differences in patient populations and settings, the DSM-III BPD criterion unstable/intense relationships maintained high predictive power and intolerance of being alone failed to discriminate.

In summarizing the research comparing BPD to OPDs on the DSM-III criteria for BPD, unstable/intense relationships stands out as the most discriminative feature. Another fairly discriminating feature appears to be self-mutilative behaviors and/or suicide gestures and threats. Chronic feelings of emptiness and boredom as a discriminating feature was also supported. The features of impulsiveness, intense/uncontrolled anger, and affective instability received equivocal support, even though these features were common in the borderline samples. Intolerance of being alone and identity disturbance were found lacking in predictive power across most studies.
Research Questions and Hypotheses

Because of the "catch-all" nature of the early borderline concept, the BPD category presents challenging questions for researchers. Not only has it been necessary to distinguish BPD from other Axis II disorders, but it has also been necessary to establish its diagnostic integrity relative to Axis I disorders -- especially Major Depression.

As discussed above, researchers comparing BPD with OPDs have concluded that although BPD often overlaps with OPDs, there are also characteristics of BPD which distinguish it from OPDs. Researchers examining the association between BPD and Axis I disorders have concluded that BPD is not associated with Schizophrenia. The association between BPD and MDE is less clear. Although it appears that BPD and MDE are distinct diagnostic entities, these two disorders apparently overlap in many cases.

In the present study it was proposed that the overlap between BPD and MDE is much like that noted between BPD and OPDs; that is, there are some features that the two disorders share, but there is a distinct pattern of behaviors that distinguish BPD from MDE. The purpose of this study was to define those features that distinguish BPD from MDE and those features that are common in both groups. Additionally features shared by both groups were examined more closely to determine whether fine
distinctions occurred even among shared characteristics. The ultimate goal was to integrate research findings from studies investigating differences between BPD and OPD with these findings, and possibly to suggest revisions of the DSM-III-R criteria for BPD.

One question pertained to how depressed borderlines differ from "normal" depressed patients. As Kroll (1988) succinctly phrased it, "'normal' depressives do not behave the way borderlines do" (p. 95). Recalling earlier comparisons of BPD and MDE criteria, it was expected that depressed BPDs would differ from "normal" depressives by their endorsement of different BPD symptoms and in the quality of their depressive experience. On the BPD criteria it was expected that borderlines would report more problems with unstable, intense interpersonal relationships, affective instability, inappropriate, intense anger, and frantic efforts to avoid abandonment (i.e., BPD criteria 1, 3, 4, & 8; see Table 2).

Concerning the quality of the depressive experience, several researchers have suggested that the depressive experience of borderlines is qualitatively different from that of "normal" depressives, and is characterized by an inner sense of badness, rejection-sensitivity, feelings of deprivation, approval-seeking, rage, hostility, angry acting out, emptiness and boredom, and the need to convince others of their suffering (e.g., Gunderson & Elliott, 1985;
Gunderson and Phillips (1991) also suggested that depression in borderlines stems from problems with interpersonal relationships, and that borderlines are more self-destructive, while depressed nonborderlines are more self-critical, agitated, and withdrawn. The present study attempted to distinguish qualitative differences in mood between borderlines and depressed subjects. It was proposed that depression in borderlines would be characterized by a greater reactivity to the social environment (i.e., approval-seeking, rejection-sensitivity) (Soloff et al., 1987), over-emphasis of symptoms (i.e., a need to convince others of their suffering) (Zanarini et al., 1990), more severe ratings of worthlessness, irritability, and hostility (i.e., inner sense of badness, rage, hostility) (Gunderson & Elliott, 1985), and more extreme suicidal tendencies (i.e., increased self-destructiveness) (Gunderson & Phillips, 1991).

Conversely, it was expected that nonborderline depression would be characterized by increased anxiety (i.e., greater agitation), and greater declines in work and interests (i.e., increased social withdrawal) (Gunderson & Phillips, 1991). It was proposed that some reports of qualitative differences in depression between BPD and MDE (e.g., Westen et al., 1990; Perry & Cooper, 1985) may actually be
referring to differences in baseline personality: that is, personality characteristics, such as chronic emptiness and boredom, and angry acting out, that are representative of the individual's long-term functioning, present before the onset of major depression. This study attempted to separate differences between baseline personality and characteristics unique to the depressive experience by analyzing these aspects separately.

Another area of inquiry pertained to similarities between depressed BPD subjects and "normal" depressives. Following from the earlier discussion of overlapping criteria (see pp. 14-17 and Table 4), it was expected that areas of overlap between BPD and MDE subjects would include impulsiveness (as it relates to binge eating), suicidal threats and behaviors, uncertainty and indecisiveness, and emptiness and boredom (i.e., BPD criteria 2, 5, 6, & 7; see Table 2).

It was suggested that more precise definitions of the overlapping criteria may produce better discrimination between BPDs and MDEs. For example, under the impulsiveness criterion, if binge eating were common in both the BPD and the MDE subjects, perhaps an exclusionary statement concerning the presence of binge eating during depression should be added. In consideration of BPD criterion #5, a more complete definition of self-mutilative behavior might distinguish BPDs from MDEs. If this were
true, perhaps self-mutilative behavior should be a criterion in and of itself, rather than included with suicidal threats and behaviors. Criterion #6 may be too broad in defining identity disturbance as uncertainty about at least two areas of functioning. A more precise definition of identity disturbance may distinguish BPDs from MDEs. It was proposed that "chronic feelings of emptiness and boredom" would be the most likely of all the BPD criteria to overlap with MDE. If it is a common feature in both groups, perhaps an explanatory statement should be added noting the difference between chronic emptiness and boredom and that associated with the more transitory symptoms of depression. Since emptiness and boredom apparently discriminates borderlines from other personality disorders, it probably should not be dropped from the criteria.

It was suggested that criteria discriminating borderlines from both major depression and other personality disorders should be highlighted as the most distinctive features in diagnosing BPD. Likewise, features that lacked validity for discriminating BPD from either OPDs or MDE should either be dropped or re-defined to reflect more specific borderline features.

This study hoped to improve on previous studies by examining the distinction between BPD and MDE and integrating these findings with previous findings comparing
BPD with OPDs; a more comprehensive definition of borderline personality disorder would then follow. Also, this study was designed to clarify the areas of overlap between BPD and MDE (e.g., quality of depression, specific areas of impulsiveness). It was speculated that, in examining qualitative differences in depressed mood, some researchers have actually looked at differences in baseline personality, irrespective of depression. By distinguishing between personality differences and depression differences, this investigation attempted to clear up confusion regarding personality versus mood differences.

**Method**

**Subjects**

Subjects were 100 psychiatric inpatients and outpatients between the ages of 18 and 63. Subjects were assigned to one of three groups based on information obtained with the Structured Interview for DSM-III-R (SCID; Spitzer, Williams, Gibbon, & First, 1990), the Personality Disorder Examination (PDE; Loranger, Susman, Oldham, & Russakoff, 1987), and chart review. These groups included: Borderline Personality Disorder without Major Depression (BPD; n=23), Borderline Personality Disorder with Major Depression (BPD/MDE; n=36), and Major Depression without Borderline Personality Disorder (MDE; n=41). Subjects were primarily inpatients recruited from the psychiatric units at Duke University Medical Center in Durham, N.C. (n=49),
Greenwell Springs Hospital in Baton Rouge, La. (n=30), John Umstead Hospital in Butner, N.C. (n=8), and Institute of Pennsylvania Hospital in Philadelphia, Pa. (n=7). Outpatients were recruited from the outpatient clinic at Duke University Medical Center (n=6).

A summary of subject characteristics is presented in Table 7. Under the category 'other diagnoses' in Table 7, the subheading 'psychotic symptoms' refers to patients experiencing mood congruent symptoms in the context of a major depressive episode. Subjects reporting mood-incongruent symptoms were not included in the study because of the apparent association of these types of symptoms with schizophrenia. Also under this category, 'bipolar' refers to patients reporting past episodes of mania. Subjects experiencing current manic episodes were not included.

As a group, the BPDs were younger. At the time of interview, they had been hospitalized for a shorter period of time. The depressed borderline group was younger than the pure depressed group and had an earlier age at onset of major depression. It is notable that the groups did not differ significantly on education level, number of hospitalizations, sex, race, psychotropic medication, or
Table 7
Summary of subject characteristics

<table>
<thead>
<tr>
<th></th>
<th>BPD</th>
<th>MDE</th>
<th>BPD/MDE</th>
<th>TOTAL</th>
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*(table continues)*
Table 7 (continued)

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<td>21</td>
<td>24</td>
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</table>

*a* substance abuse, bipolar disorder, bulimia, PTSD

*b* chi-square=17.70, df=2, p<.0001

*c* F=16.03, df=2,98, p<.001

*d* F=6.67, df=2,75, p<.01
the presence of other diagnoses.

**Assessment Instruments**

Structured interviews based on DSM-III-R criteria -- the Structured Clinical Interview for DSM-III-R (SCID) and the Personality Disorder Examination (PDE) -- were used to determine diagnoses for each group and to rule out psychotic disorders, organic disorders, and mania. Structured diagnostic interviews are noted for their reliability in determining the presence or absence of diagnostic criteria compared with other methods (e.g., clinical judgement, self-report) (Morrison, 1988).

Antisocial was the first personality disorder to be systematically assessed by structured interview (Klerman, 1978), and it is the first on which acceptable levels of inter-rater reliability were obtained (Mellsop, Varghese, Joshua, & Hicks, 1982).

In evaluating the psychometric properties of structured interviews, measures of reliability are not difficult to assess. Unfortunately, measures of validity are not as clearly identified. Researchers (e.g. Loranger, Susman, Oldham, & Russakoff, 1987; Robins, 1985; Widiger & Frances, 1987) agree that to study the validity of an instrument, ideally one would like to have an absolute standard against which to compare it. The question becomes, What constitutes the "gold standard" against which to validate an interview? If clinical diagnosis, as
usually practiced (e.g., clinical judgement, self-report inventories), were perfectly valid, there would be no need for structured interviews. On the other hand, it would be meaningless to compare structured interviews to less adequate measures (i.e., clinical judgement, self-report) of the same construct.

Spitzer (1983) has proposed a method of evaluating validity that involves gathering comprehensive data (e.g., longitudinal, expert clinical judgment, chart review, reports from family and friends) and comparing diagnoses based on these sources with diagnoses derived from structured interviews. At present, no one has attempted such a major undertaking. Therefore, reported validity data on structured interviews is scant. In the current study, chart review, clinical judgement, and interviews with staff members familiar with each patient, were considered in conjunction with the interview in making final diagnoses.

SCID. The SCID (Spitzer et al., 1990) is a semi-structured interview for Axis I and Axis II diagnoses. It was designed to be used by clinicians or other trained mental health professionals familiar with DSM-III-R classification. The SCID can be administered to psychiatric inpatients or outpatients, and may also be used with nonpsychiatric subjects. It is most appropriate for use with adults over age 18, but may also be modified for
use with adolescents. Portions of the SCID were used to
diagnose major depression and to rule out current manic
syndrome, and non-mood related psychoses. Appendix A
contains sample questions from the mood disorders section
of the SCID.

The SCID is divided into sections that parallel the
DSM-III-R diagnostic categories. The interview begins with
an overview section that allows the patient to describe the
development of the current episode and enables researchers
to eliminate consideration of major diagnostic classes that
are irrelevant to their study. The diagnostic sections
contain many open-ended questions to encourage subjects to
describe symptoms in their own words. Although the subject
is the main source of information, interviewers are
encouraged to use all sources of information available
about the subject in making the ratings. The SCID
determines lifetime prevalence of Axis I diagnoses and
whether or not there is a current episode (defined as
meeting diagnostic criteria within the past month). The
interview is scored at the end of each section.

A test-retest reliability study was conducted on 590
pairs of interviews at six sites using an earlier version
of the Axis I SCID (Williams et al., in press). Of the
total sample, 390 subjects were patients, and 202 subjects
were non-patients. In the patient sample, the average
kappa for diagnosis of major depression was .64. The
average kappa for diagnosing patients with bipolar disorder was .84. Using the total sample, the authors (Williams et al., in press) reported kappas above .60, with a mean kappa of .61 for current, and .68 for lifetime diagnoses for most of the major categories (bipolar disorder, major depression, schizophrenia, alcohol abuse/dependence).

PDE. The PDE (Loranger et al., 1987) is a 126-item, semi-structured interview for DSM-III-R personality disorders. The PDE has been used extensively in research and is currently being used in a World Health Organization (WHO) international pilot study on personality disorders (Widiger & Frances, 1987). In the present study, only the BPD items of the PDE (see Appendix B) were administered to diagnose BPD and to compare the presence or absence of each criterion among subjects. Because other personality disorders are commonly diagnosed with BPD (see for example, Clarkin, et al., 1983; DSM-III-R, 1987; Stone, 1990) other personality disorders were not ruled out. Subjects were also compared on more specific aspects of each criterion (e.g., specific types of impulsiveness, specific problems with identity disturbance) that would, it was hoped, provide better discrimination among the diagnostic groups. The PDE reorganizes DSM-III-R criteria into categories pertaining to work, self, interpersonal relations, affect, reality testing, and impulse control. Each section begins with an open-ended, broad question
concerning the area of interest, followed by questions relevant to personality disorder criteria. The PDE mandates that each question be asked verbatim, but encourages additional probing, chart review, and informant interviewing to determine the status of the criterion of interest. The PDE manual provides detailed instructions for training of interviewers and scoring of each criteria.

Inter-rater reliability for the PDE was reported based on joint interviews of 60 nonpsychotic inpatients (Loranger et al., 1987). The rarity of some of the Axis II disorders in the sample precluded the use of kappa to measure diagnostic agreement for some conditions. Kappas were reported for five disorders: schizotypal (.80), histrionic (.77), borderline (.96), antisocial (.70), and compulsive (.88). Validity data on the PDE have not been reported.

To enhance the validity of the PDE, Loranger et al. (1987) recommended using information from outside sources to help objectify the patient's self-report. In the present study, chart records, information from the referring clinician, family, and friends, and nursing reports were considered in making diagnoses.

Clinical Interview for Depression (CID). The CID (Paykel, Klerman, & Prusoff, 1970; Paykel, 1985) is a 36-item, semi-structured interview that was developed from a modification of the Hamilton Rating Scale for Depression (Hamilton, 1967). The CID is comprehensive in its coverage
of the various dimensions of depression and includes nine items to assess mood, 14 items measuring biological symptoms, nine items measuring behavioral changes, and eight items to assess cognitive symptoms. Several items measure more than one aspect of depression (e.g., cognition and behavior). Compared with the Hamilton, the CID contains more items measuring mood and cognition, and it offers more detailed item definitions and a more sensitive rating system. The CID was designed for use in description, classification, and measurement of outcome in depression. The authors note that the CID can also be used to score the Hamilton.

The CID was used in the present study to measure severity and qualitative dimensions of depression (see Appendix C). To ensure that information gained during the CID interview reflected symptoms specific to major depression, questions were prefaced with the phrase "during this depression, how would you describe . . . ."

The format of the CID is consistent throughout, with a full definition of each item followed by specific questions to determine ratings on a 7-point scale. Questions can be modified if necessary, and further probing is encouraged. The 7-point scale is based on severity, frequency, and/or quality. Although each point is specific for each item, there is consistency across all the scales, where 1 = absent, 2 = minimal/very mild, 3 = mild, 4 = moderate, 5 =
marked, 6 = severe, 7 = extremely severe.

Inter-rater reliability for the CID was reported based on two studies (see Paykel, 1985) with mean correlations of .81 and .82. Correlations ranged from .57 to .98 on all scales except hypochondriasis, retardation, agitation, and depressed appearance. The author attributed low correlations on these items to relative absence of these symptoms in the samples. Agreement on specific items within one point was found in 95% and 97% of ratings in the two studies reported.

Construct validity has been reported on comparisons of the CID with the Hamilton, the Raskin Three Area Depression Scale (Raskin, Schulterbrandt, Reatig, & McKeon, 1969), and the Brief Psychiatric Rating Scale (BPRS) (Overall & Gorham, 1962). Ratings of severity of depression on the CID correlated .70 with the Hamilton, .73 with the Raskin scale, and .53 with the BPRS (Paykel, 1985). A lower correlation with the BPRS was attributed to the BPRS's including more than depressive symptoms.

Procedure

Training of raters. Five clinical psychology graduate students were trained to use the SCID, the PDE, and the CID. Training followed general guidelines set forth by the authors of each instrument. Raters were provided manuals for the SCID and the PDE (there is no manual for the CID). They were required to read the manuals, and a meeting was
held to discuss the instructions for each interview. Each rater administered practice trials of the interviews, and raters interviewed some subjects jointly. Another meeting was held to discuss questions about or problems with the interviews, and to compare results of joint interviews. After the raters had used the interviews about ten times, it was determined that they had achieved sufficient competence for the study. Raters continued to communicate with each other about once a month during the 10-month data collection process to assure consistency and to discuss any problems that arose.

**Referral and assessment of subjects.** Subjects were identified for inclusion in the study based upon clinician's referral and chart review. Patients suspected of meeting criteria for major depression, borderline personality disorder, or concurrent diagnoses of MDE and BPD were assessed.

All inpatient subjects had been given a mental status exam as part of the standard hospital admission procedure. The chart for each patient was reviewed and the results of the mental status exam were checked to rule out organic disorders (such as head injury, mental retardation, problems with memory) that might give rise to unreliable responses, or cause depression and/or personality changes. Several approaches were taken to rule out organic disorders in outpatient subjects. In three cases the subjects' old
inpatient records were reviewed and results of the mini-mental status exams were checked. In the other three cases, a combination of background history checks through interview and chart review, discussions with the referring clinicians about the patients, and clinical interviews were used to rule out organicity.

Each subject was required to complete a consent form for research prior to assessment (see Appendix D). Assessment proceeded as follows:

1. Administration of the SCID to diagnose a current episode of major depression, and rule out non-mood-related psychotic symptoms, organic etiology of mood disorder, and current manic syndrome.

2. Administration of the BPD items of the PDE to determine whether a subject met criteria for BPD, and for comparison of the criteria among the three groups (BPD, BPD/MDE, MDE).

3. Administration of the CID to obtain a measure of the severity of depression and to assess qualitative dimensions of depression.

Data Analysis

Inter-rater reliability. Measures of inter-rater reliability were obtained for the SCID, PDE, and CID. A notebook listing the study participants was kept on the inpatient units and subjects were chosen at random to be
interviewed a second time by a different rater.

Inter-rater reliability was determined for the SCID and PDE on 23% of the total population. Kappa coefficient for diagnoses of Borderline Personality Disorder and Major Depressive Episode using the SCID and PDE was .92. Kappa coefficients for single criteria on the PDE averaged .65, and ranged from .38 for "chronic emptiness and boredom", to .91 for "affective instability." Single criterion reliability for the SCID averaged .40 and ranged from .06 for "appetite/weight changes" to .60 for "depressed mood" and "loss of interest". Because overall diagnostic agreement using the SCID was excellent (i.e., one disagreement out of 23), the low kappa for "appetite/weight changes" did not seem problematic, particularly since the single items of the SCID were not used in further analyses. There may be several explanations for the low kappa (.38) for "chronic emptiness and boredom" relative to the other criteria on the PDE. "Emptiness" as a construct may have been difficult to explain to the examinee, and, therefore, difficult to score. Also, to score the item affirmatively, the examinee must report that feeling empty and bored was upsetting and/or caused problems. Often it was difficult to assess whether or not "emptiness and boredom" directly contributed to upsetting feelings or other problems. Because "emptiness and boredom" has been documented as an important feature of borderlines (Clarkin
et al., 1983; Dahl, 1986; Pfohl et al., 1986; Zanarini et al., 1990), it seemed more logical to leave it in the analyses than to exclude it because of marginal inter-rater agreement.

Intra-class correlations (ICC) using one-way random effects ANOVA for a single rater (as suggested by Shrout & Fleiss, 1979) were computed for 12% of CID ratings. ICC for CID severity of depression was .88. Single-item ICCs averaged .74, and ranged from .06 to 1.0. Eight items with inter-rater agreement less than .50 were dropped from further analyses. These items were "feelings of depressed mood," "symptoms worse in a.m.," "reactivity to environment," "self-pity," "hysterical symptoms," "hostility," "agitation," and "depressed appearance."

There are several possible explanations for low inter-rater agreement on the eight items with ICCs less than .50. One possibility is the low frequency of occurrence of these symptoms. Also, some of the rating scales are not worded as specifically as others. Many of the items, including "hostility," "self-pity," "agitation," "hysterical symptoms," and "depressed appearance," rely on observation of symptoms during the interview; patients may behave differently during different interviews, or with different raters. Unfortunately, elimination of these items limited further analyses to some extent; ("reactivity to the environment" and "hostility"
were items of particular interest to the present investigation).

**Conditional probabilities analysis.** Conditional probabilities statistics have been used in medical research (see review by Satz, Fennell, & Reilly, 1970) and in business for making diagnostic and personnel decisions (e.g., Birnbaum & Maxwell, 1965). The major advantage of the conditional probabilities approach is the consideration of both the sensitivity and the specificity of a particular sign or criterion in conjunction with base rates for predicting classification. Meehl and Rosen (1955) showed that using test scores to predict group membership without accounting for base rates could lead to higher rates of erroneous classification than if the test had not been used at all.

Recently, conditional probabilities methodology has been applied to psychological classification decision-making (see review by Widiger, Hurt, Frances, Clarkin, & Gilmore, 1984). Proponents of this methodology assert that because conditional probabilities take into account the base rate of the disorder, this method is superior to significance testing in determining the validity of a sign for predicting a disorder.

The formula for conditional probabilities is based on Baye's theorem (Birnbaum & Maxwell, 1965; Dawes, 1967). The conditional probability technique uses base rates
instead of prior probability estimates in Baye's formula in determining the predictive validity of a sign. The use of a concrete proportion (i.e., base rate) in place of an estimate (i.e., prior probability) overcomes certain shortcomings of Bayesian logic and enhances the accuracy of the prediction. (See Dawes, 1967, for a detailed description of the formula and its use in predictive validity studies.)

Conditional probability coefficients are useful predictors when the ratio of the base rate of the diagnostic group to that of the comparison group exceeds the ratio of the false positive rate to the true positive rate (see for example, Dawes, 1967; Meehl and Rosen, 1955). That is, when:

$$\frac{BR_b}{BR_d} > \frac{SR_d}{SR_b}$$

where:

- $BR_b$ = base rate of borderlines
- $BR_d$ = base rate of depressed group
- $SR_b$ = criterion rate for borderlines (true positive)
- $SR_d$ = criterion rate for depressed group (false positive).

the criterion is a good discriminator between groups.

The present investigation used conditional probabilities to examine the validity of the DSM-III-R Borderline criteria for predicting BPD. Base rates were calculated relative to the percentages of the respective
groups in the current sample. Depressed and non-depressed borderlines were compared with depressed non-borderlines to determine which criteria distinguished BPD from major depression, and which criteria were nonspecific to BPD. The formula suggested by Dawes (1967) and Meehl and Rosen (1955) was used to determine the utility of the conditional probability estimates as predictors of BPD.

Chi-square analysis. An important area of inquiry in the present study concerned the BPD criteria that do not differentiate BPD from MDE. It was proposed that the problem with these overlapping criteria is that they are defined too broadly, and more specific definitions may help clarify borderline features.

To examine this hypothesis, overlapping criteria were examined more carefully by using the questions from the PDE (see Appendix B). The PDE questions examining identity disturbance serve as a good example of how these data were analyzed. Identity disturbance (BPD criterion #6) was assessed by questions 18, 19, 20, 45, and 95 of the PDE. It was hypothesized that although the criterion, "identity disturbance," may not differentiate BPD and MDE, specific types of identity disturbance as represented by PDE questions may differentiate the groups.

Presence or absence of each borderline criterion as scored with the PDE and specific features of each criterion were recorded for each group. Chi-square was used to
analyze differences among groups on frequency distributions of the specific aspects of each BPD criterion as scored with the PDE.

**Multiple Regression Analysis.** Stepwise multiple regression analysis was used to differentiate BPD/MDE from MDE based on items from the CID.

**Statistical Control of Demographic Variables.** A series of ANCOVAs and partial correlations was calculated to assess the change in variance accounted for by the diagnostic groups after the influence of demographic variables on which the groups differed was controlled.

**Results**

ANCOVAs and partial correlations showed that the significant association of five dependent variables with the three diagnostic groups was mostly due to the influence of demographic variables on which the groups differed. These dependent variables—PDE items "reckless driving" and "behavior depends on environment", and CID items "suicidal tendencies," "depersonalization," and "guilt and worthlessness"—were dropped from subsequent analyses. The demographic variable, "age," was associated with "reckless driving," "suicidal tendencies," and "depersonalization." "Age at onset of first major depressive episode" was associated with "behavior that depends on the environmental context" and "depersonalization." "Length of hospitalization" was associated with "guilt and
Comparison of the Three Groups on BPD Criteria

Conditional probability analysis was used to determine the effectiveness of each BPD criterion for discriminating between BPD and MDE. Both borderline groups were compared to the MDE group. Table 8 illustrates the conditional probabilities for each criterion given these comparison groups, and the percentages of each group meeting that criterion.

The BPD criteria obtained the same ranking in order of conditional probability magnitude comparing both BPDs and BPD/MDEs to MDEs. Identity disturbance had the highest conditional probability coefficient comparing BPDs to MDEs (.85), and BPD/MDEs to MDEs (.90). Also, a substantial percentage of BPDs (74%) and BPD/MDEs (75%) met this criterion, while only 7% of the MDEs scored positively. Chronic emptiness and boredom had the lowest conditional probabilities (.51 & .58), even though 96% and 81% of the BPDs and BPD/MDEs met this criterion, respectively. This low conditional probability resulted from 51% of the MDEs also scoring positively, making "emptiness and boredom" a less effective predictor of BPD.

The formula for determining the utility of conditional probability coefficients (i.e., $BR_b/BR_d > SR_d/SR_b$, Dawes, 1967; Meehl & Rosen, 1955), all of the BPD criteria had good utility for discriminating both borderline groups from the major depression group.
Table 8

Conditional Probabilities of BPD Criteria for Predicting BPD and Percentages of Cases Meeting each Criterion

<table>
<thead>
<tr>
<th>Comparison</th>
<th>Conditional Probabilities</th>
<th>Groups</th>
<th>Rel</th>
<th>Imp</th>
<th>Aff</th>
<th>Ang</th>
<th>Sui</th>
<th>Idds</th>
<th>Bor</th>
<th>Abn</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>BPD to MDE</td>
<td>.75</td>
<td>.70</td>
<td>.60</td>
<td>.68</td>
<td>.62</td>
<td>.85</td>
<td>.51</td>
<td>.82</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BPD to BPD/MDE</td>
<td>.36</td>
<td>.40</td>
<td>.40</td>
<td>.42</td>
<td>.42</td>
<td>.39</td>
<td>.43</td>
<td>.41</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BPD/MDE to MDE</td>
<td>.85</td>
<td>.78</td>
<td>.59</td>
<td>.75</td>
<td>.59</td>
<td>.90</td>
<td>.58</td>
<td>.87</td>
</tr>
</tbody>
</table>

Percentages

<table>
<thead>
<tr>
<th>Groups</th>
<th>Rel</th>
<th>Imp</th>
<th>Aff</th>
<th>Ang</th>
<th>Sui</th>
<th>Idds</th>
<th>Bor</th>
<th>Abn</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPD (n=23)</td>
<td>.65</td>
<td>.70</td>
<td>.91</td>
<td>.91</td>
<td>.91</td>
<td>.74</td>
<td>.96</td>
<td>.61</td>
</tr>
<tr>
<td>MDE (n=41)</td>
<td>.12</td>
<td>.17</td>
<td>.34</td>
<td>.24</td>
<td>.32</td>
<td>.07</td>
<td>.51</td>
<td>.07</td>
</tr>
<tr>
<td>BPD/MDE(n=36)</td>
<td>.75</td>
<td>.67</td>
<td>.86</td>
<td>.81</td>
<td>.81</td>
<td>.75</td>
<td>.81</td>
<td>.56</td>
</tr>
</tbody>
</table>

Rel=Unstable relationships; Imp=Impulsiveness;
Aff=Affective instability; Ang=Intense anger; Sui=Suicide gestures/self mutilation; Idds=Identity disturbance;
Bor=Emptiness and boredom; Abn=Efforts to avoid abandonment
Table 9
Utility of Conditional Probability Coefficients for Discriminating Between the Experimental Groups

<table>
<thead>
<tr>
<th>Comparison</th>
<th>Groups</th>
<th>Rel</th>
<th>Imp</th>
<th>Aff</th>
<th>Ang</th>
<th>Sui</th>
<th>Idds</th>
<th>Bor</th>
<th>Abn</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BPD to MDE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.36/.64 = .56</td>
<td>.18</td>
<td>.24</td>
<td>.37</td>
<td>.26</td>
<td>.35</td>
<td>.09</td>
<td>.53</td>
<td>.11</td>
</tr>
<tr>
<td></td>
<td>BPD/MDE to MDE</td>
<td>.47</td>
<td>.53</td>
<td>.89</td>
<td>.16</td>
<td>.25</td>
<td>.40</td>
<td>.30</td>
<td>.40</td>
</tr>
<tr>
<td></td>
<td>.61/.64 = 1.15</td>
<td>.96</td>
<td>.95</td>
<td>.89</td>
<td>.89</td>
<td>1.01</td>
<td>.84</td>
<td>.92</td>
<td></td>
</tr>
</tbody>
</table>

*BR_b = base rate of Borderline group, BR_d = base rate of Depressed group

**SR_d = sign rate of Depressed group, SR_b = sign rate of Borderline group

Note: The BPD/MDE group is considered a Borderline group for this analysis

Rel = Unstable relationships; Imp = Impulsiveness; Aff = Affective instability; Ang = Intense anger; Sui = Suicide gestures/self mutilation; Idds = Identity disturbance; Bor = Emptiness and boredom; Abn = Efforts to avoid abandonment

major depression. However, none of the criteria
discriminated the pure borderline group from the depressed borderline group (see Table 9). A discriminant analysis was used to compare the three groups on the DSM-III-R Borderline criteria. All BPD criteria significantly discriminated the BPD group from the MDE group (p< .0001), and the BPD/MDE group from the MDE group (p< .0001), but none significantly discriminated the BPD group from the BPD/MDE group. One significant discriminant function (Chi-square = 148.25, p< .0001) separated the MDE group from both the BPD and the BPD/MDE group, with a correct classification of 95% for the MDE group. Two (5%) of the MDE subjects were incorrectly classified as BPD/MDE. Ten (27%) of the BPD/MDE group were misclassified as BPD, and 14 (60%) of the BPD group were misclassified as BPD/MDE. Because of lack of discrimination between BPD/MDE and BPD groups as determined by conditional probabilities and discriminant analysis, these groups were combined into a single Borderline group for the conditional probability analyses that follow.

Conditional Probability Analyses Comparing the Combined Borderline Group With the Major Depression Group

Single criteria. Table 10 illustrates the conditional probability estimates for the borderline criteria and percentages of each group meeting the respective criterion. Combining the two borderline groups had no effect on the order of magnitude of the conditional probability
estimates, but did increase the probability estimates overall. Apparently the increase in the base rate of Borderlines improved the predictive validity of the criteria. It is interesting to note how the differences in percentages and base rates affect the conditional probabilities. For instance, even though "emptiness and boredom" was the second highest in terms of endorsement by the Borderline group (86%), it received the highest percentage of endorsement in the Depressed group (51%), thereby decreasing its effectiveness as a discriminator between the two groups. The conditional probability estimate of .71 was the lowest of all the criteria.

Using the formula suggested by Dawes (1967) and Meehl and Rosen (1955) to determine the utility of the conditional probability estimates as predictive validity coefficients, each criterion served as a good discriminator between borderline and major depression subjects (see Table 11). Again, the greater the difference between the ratio of base rates of borderlines to depressives and the rate of false positives to true positives, the greater the utility. Rank order for utility was essentially the same as rank order for conditional probabilities. That is, the greatest difference in ratios was found for "identity disturbance"
Table 10

Percentages of Cases Meeting BPD Criteria and Associated Conditional Probability of a BPD Diagnosis

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Borderline Group (n=59)</th>
<th>MDE Group (n=41)</th>
<th>BPD probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unstable relationships</td>
<td>71%</td>
<td>12%</td>
<td>.89</td>
</tr>
<tr>
<td>Impulsiveness</td>
<td>68%</td>
<td>17%</td>
<td>.85</td>
</tr>
<tr>
<td>Affective instability</td>
<td>88%</td>
<td>34%</td>
<td>.79</td>
</tr>
<tr>
<td>Intense anger</td>
<td>85%</td>
<td>24%</td>
<td>.83</td>
</tr>
<tr>
<td>Suicide gestures/self-mutilation</td>
<td>85%</td>
<td>32%</td>
<td>.79</td>
</tr>
<tr>
<td>Identity disturbance</td>
<td>75%</td>
<td>7%</td>
<td>.94</td>
</tr>
<tr>
<td>Emptiness &amp; boredom</td>
<td>86%</td>
<td>51%</td>
<td>.71</td>
</tr>
<tr>
<td>Efforts to avoid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>abandonment</td>
<td>58%</td>
<td>7%</td>
<td>.92</td>
</tr>
</tbody>
</table>
Table 11

Utility of Conditional Probability Coefficients for Discriminating Between the Experimental Groups

<table>
<thead>
<tr>
<th>Groups</th>
<th>Rel</th>
<th>Imp</th>
<th>Aff</th>
<th>Ang</th>
<th>Sui</th>
<th>Idds</th>
<th>Bor</th>
<th>Abn</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPD to MDE</td>
<td>.59/.41=1.44</td>
<td>.17</td>
<td>.25</td>
<td>.39</td>
<td>.28</td>
<td>.38</td>
<td>.09</td>
<td>.59</td>
</tr>
</tbody>
</table>

*BR_b/BR_d > **SR_d/SR_b*

Comparison

*BR_b=base rate of Borderline group, BR_d=base rate of Depressed group*

**SR_d=sign rate of Depressed group, SR_b=sign rate of Borderline group*

Rel=Unstable relationships; Imp=Impulsiveness;
Aff=Affective instability; Ang=Intense anger; Sui=Suicide gestures/self mutilation; Idds=Identity disturbance;
Bor=Emptiness and boredom; Abn=Efforts to avoid abandonment
and the least difference was found for "emptiness and boredom."

**Combinations of two criteria.** Table 12 illustrates the 28 different ways of combining two of eight BPD criteria. All but seven combinations occurred in at least 50% of the BPD sample. Six combinations occurred in more than 70% of the BPD sample, and of these "intense anger and suicide gestures/self-mutilation" obtained the highest conditional probability (.91). That combination occurred in 12% of the MDE group. Six combinations of two also occurred in 60%-70% of the borderlines. Of these, one combination, "suicide gestures/self-mutilation and identity disturbance," received a conditional probability of 1.0, indicating that this combination was a perfectly valid discriminator between the two groups in this study (i.e., none of the MDE sample endorsed this combination). Three combinations occurring in 60%-70% of borderlines obtained conditional probabilities of .97: "unstable relationships and affective instability," "unstable relationships and suicide gestures/self-mutilation," and "intense anger and identity disturbance." The highest percentage of combinations of two for the MDE group was 20%, found for "affective instability and emptiness and boredom," and "suicide gestures/self-mutilation and emptiness and boredom." These two combinations were found in greater
Table 12

Conditional Probabilities for Diagnosis of BPD Given a Combination of Two Criteria and Percentages of BPD Subjects With the Two Criteria

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Rel</th>
<th>Imp</th>
<th>Aff</th>
<th>Ang</th>
<th>Sui</th>
<th>Idds</th>
<th>Bor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imp</td>
<td>.88/51</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aff</td>
<td>.97/63</td>
<td>.92/59</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ang</td>
<td>.97/59</td>
<td>.94/58</td>
<td>.88/75</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sui</td>
<td>.97/63</td>
<td>.97/56</td>
<td>.90/75</td>
<td>.91/71</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Idds</td>
<td>1.0/53</td>
<td>1.0/56</td>
<td>.95/68</td>
<td>.97/64</td>
<td>1.0/61</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bor</td>
<td>.97/59</td>
<td>.97/56</td>
<td>.85/76</td>
<td>.90/75</td>
<td>.84/73</td>
<td>.93/64</td>
<td></td>
</tr>
<tr>
<td>Abn</td>
<td>1.0/44</td>
<td>.96/42</td>
<td>1.0/49</td>
<td>1.0/46</td>
<td>.96/46</td>
<td>.96/39</td>
<td>.97/49</td>
</tr>
</tbody>
</table>

Rel=Unstable relationships; Imp=Impulsiveness; Aff=Affective instability; Ang=Intense anger; Sui=Suicide gestures/self mutilation; Idds=Identity disturbance; Bor=Emptiness and boredom; Abn=Efforts to avoid abandonment
than 70% of the BPD sample, but received lower conditional probability estimates than might be expected (i.e., .85 and .84, respectively) because of their relatively high frequency in the MDE group. Six combinations did not appear at all in the MDE sample, which explains the conditional probabilities of 1.0 for these combinations (see Table 12). Three of these combinations occurred in less than half of the borderlines, indicating that although these combinations were highly specific, they were not particularly sensitive indicators of BPD.

Several single criteria were important as predictors of BPD as gauged by the frequency of their occurrence in combinations of criteria. Several individual criteria occurred in two-criteria combinations in greater than 50% of the Borderline sample. "Affective instability," "intense anger," "suicide gestures/ self-mutilation," and "emptiness and boredom" each occurred in three combinations in greater than 70% of borderlines. These four criteria occurred in three combinations in 50%-70% of the borderline sample. "Identity disturbance" occurred four times and "unstable relationships" occurred two times in combinations in 60%-70%; they occurred two and four times respectively in combinations in 50% of borderlines. "Impulsiveness" occurred five times in combinations in 50% of the borderline group. "Efforts to avoid abandonment" did not appear in any combinations in greater than 50% of the
Combinations of three criteria. There are 56 combinations of three of eight BPD criteria (see Table 13). Thirty-eight of these three-criteria combinations had conditional probability estimates of 1.0, indicating that they did not occur at all in the MDE sample. The highest percentage of borderlines obtaining combinations with conditional probability estimates of 1.0 was 56% for "affective instability, suicide gestures/self-mutilation, and identity disturbance." There were seven combinations with conditional probabilities of .97; of these, the highest percentage of borderlines endorsing a combination was 59% for "affective instability, intense anger, and identity disturbance." All of the combinations of three criteria received conditional probabilities of .93 or greater.

The highest percentage of endorsements by borderlines was 66%, for "affective instability, intense anger, and emptiness and boredom." Five percent of the MDE group endorsed that combination, and it received a conditional probability of .95. The lowest percentage of endorsements by borderlines was 29% for "suicide gestures/self-mutilation, identity disturbance, and efforts to avoid abandonment." It received a conditional probability of 1.0 since none of the depressed subjects endorsed that combination.
Table 13
Conditional Probabilities and Percentages for a BPD Diagnosis Given a Combination of Three Features

<table>
<thead>
<tr>
<th>Combinations</th>
<th>BPD p*</th>
<th>%BPD</th>
<th>Combinations</th>
<th>BPD p*</th>
<th>%BPD</th>
</tr>
</thead>
<tbody>
<tr>
<td>REL/IMP/AFF</td>
<td>.96</td>
<td>46%</td>
<td>IMP/AFF/IDDS</td>
<td>1.0</td>
<td>53%</td>
</tr>
<tr>
<td>REL/IMP/ANG</td>
<td>.96</td>
<td>42%</td>
<td>IMP/AFF/BOR</td>
<td>1.0</td>
<td>49%</td>
</tr>
<tr>
<td>REL/IMP/SUI</td>
<td>.96</td>
<td>44%</td>
<td>IMP/AFF/ABN</td>
<td>1.0</td>
<td>36%</td>
</tr>
<tr>
<td>REL/IMP/IDDS</td>
<td>1.0</td>
<td>44%</td>
<td>IMP/ANG/SUI</td>
<td>.97</td>
<td>47%</td>
</tr>
<tr>
<td>REL/IMP/BOR</td>
<td>.96</td>
<td>41%</td>
<td>IMP/ANG/IDDS</td>
<td>1.0</td>
<td>49%</td>
</tr>
<tr>
<td>REL/IMP/ABN</td>
<td>1.0</td>
<td>34%</td>
<td>IMP/ANG/IDDS</td>
<td>1.0</td>
<td>49%</td>
</tr>
<tr>
<td>REL/AFF/ANG</td>
<td>.97</td>
<td>53%</td>
<td>IMP/ANG/BOR</td>
<td>1.0</td>
<td>49%</td>
</tr>
<tr>
<td>REL/AFF/SUI</td>
<td>.97</td>
<td>56%</td>
<td>IMP/ANG/ABN</td>
<td>1.0</td>
<td>34%</td>
</tr>
<tr>
<td>REL/AFF/IDDS</td>
<td>1.0</td>
<td>46%</td>
<td>IMP/SUI/IDDS</td>
<td>1.0</td>
<td>46%</td>
</tr>
<tr>
<td>REL/AFF/BOR</td>
<td>1.0</td>
<td>53%</td>
<td>IMP/SUI/BOR</td>
<td>1.0</td>
<td>46%</td>
</tr>
<tr>
<td>REL/AFF/ABN</td>
<td>1.0</td>
<td>39%</td>
<td>IMP/SUI/ABN</td>
<td>1.0</td>
<td>34%</td>
</tr>
<tr>
<td>REL/ANG/SUI</td>
<td>.97</td>
<td>53%</td>
<td>IMP/IDDS/BOR</td>
<td>1.0</td>
<td>47%</td>
</tr>
<tr>
<td>REL/ANG/IDDS</td>
<td>1.0</td>
<td>46%</td>
<td>IMP/IDDS/ABN</td>
<td>1.0</td>
<td>31%</td>
</tr>
<tr>
<td>REL/ANG/BOR</td>
<td>1.0</td>
<td>51%</td>
<td>IMP/BOR/ABN</td>
<td>1.0</td>
<td>36%</td>
</tr>
<tr>
<td>REL/ANG/ABN</td>
<td>1.0</td>
<td>36%</td>
<td>AFF/ANG/SUI</td>
<td>.93</td>
<td>63%</td>
</tr>
<tr>
<td>REL/SUI/IDDS</td>
<td>1.0</td>
<td>44%</td>
<td>AFF/ANG/IDDS</td>
<td>.97</td>
<td>59%</td>
</tr>
<tr>
<td>REL/SUI/BOR</td>
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<td>53%</td>
<td>AFF/ANG/BOR</td>
<td>.95</td>
<td>66%</td>
</tr>
<tr>
<td>REL/SUI/ABN</td>
<td>1.0</td>
<td>37%</td>
<td>AFF/ANG/ABN</td>
<td>1.0</td>
<td>37%</td>
</tr>
<tr>
<td>REL/IDDS/BOR</td>
<td>1.0</td>
<td>44%</td>
<td>AFF/SUI/IDDS</td>
<td>1.0</td>
<td>56%</td>
</tr>
<tr>
<td>REL/IDDS/ABN</td>
<td>1.0</td>
<td>32%</td>
<td>AFF/SUI/BOR</td>
<td>.93</td>
<td>64%</td>
</tr>
</tbody>
</table>

*(table continues)*
<table>
<thead>
<tr>
<th>Combinations</th>
<th>BPD p*</th>
<th>%BPD*</th>
<th>Combinations</th>
<th>BPD p*</th>
<th>%BPD*</th>
</tr>
</thead>
<tbody>
<tr>
<td>REL/BOR/ABN</td>
<td>1.0</td>
<td>36%</td>
<td>AFF/SUI/ABN</td>
<td>1.0</td>
<td>39%</td>
</tr>
<tr>
<td>IMP/AFF/ANG</td>
<td>0.94</td>
<td>51%</td>
<td>AFF/IDDS/BOR</td>
<td>0.94</td>
<td>58%</td>
</tr>
<tr>
<td>AFF/IDDS/ABN</td>
<td>1.0</td>
<td>36%</td>
<td>ANG/IDDS/ABN</td>
<td>1.0</td>
<td>32%</td>
</tr>
<tr>
<td>AFF/BOR/ABN</td>
<td>1.0</td>
<td>42%</td>
<td>ANG/BOR/ABN</td>
<td>1.0</td>
<td>41%</td>
</tr>
<tr>
<td>ANG/SUI/IDDS</td>
<td>1.0</td>
<td>53%</td>
<td>SUI/IDDS/BOR</td>
<td>1.0</td>
<td>53%</td>
</tr>
<tr>
<td>ANG/SUI/BOR</td>
<td>0.95</td>
<td>63%</td>
<td>SUI/IDDS/ABN</td>
<td>1.0</td>
<td>29%</td>
</tr>
<tr>
<td>ANG/SUI/ABN</td>
<td>1.0</td>
<td>36%</td>
<td>SUI/BOR/ABN</td>
<td>1.0</td>
<td>39%</td>
</tr>
<tr>
<td>ANG/IDDS/BOR</td>
<td>0.97</td>
<td>56%</td>
<td>IDDS/BOR/ABN</td>
<td>0.95</td>
<td>34%</td>
</tr>
</tbody>
</table>

Rel=Unstable relationships; Imp=Impulsiveness; Aff=Affective instability; Ang=Intense anger; Sui=Suicide gestures/self mutilation; Idds=Identity disturbance; Bor=Emptiness and boredom; Abn=Efforts to avoid abandonment
The highest percentage of endorsements by depressed subjects for combinations of three criteria was 7% for "affective instability, intense anger, and suicide gestures/self-mutilation," and "affective instability, suicide gestures/self-mutilation, and emptiness and boredom." As stated above, these combinations resulted in the lowest conditional probability for a borderline diagnosis (.93), but were still quite high.

Eighteen combinations of three criteria occurred in greater than 50% of the borderline subjects. In these three-criteria combinations "unstable relationships" occurred six times, "impulsiveness" occurred twice, "affective instability" occurred 10 times, "intense anger" occurred 10 times, "suicide gestures/self-mutilation" occurred 9 times, "identity disturbance" occurred 6 times, "emptiness and boredom" occurred 9 times, and "efforts to avoid abandonment" did not occur at all.

Having examined combinations of three criteria and finding that the BPD criteria are quite robust in distinguishing borderlines from depressed individuals, it is not likely that examining combinations of more than three would yield significant additional information. Therefore, conditional probability analysis was not extended beyond combinations of three.
Comparison of the Three Experimental Groups on Single Items of the PDE

Table 14 lists the 29 single-items of the PDE that were used to score the eight criteria for Borderline Personality Disorder. Chi-square analyses were computed comparing the three groups. The Bonferonni correction for experiment-wise error indicated that an alpha of .002 was required to meet an overall alpha of .05 (see Table 14). Two-group chi-square analyses were performed on those items with alphas < .002. PDE items 18B ("behavior dependent on environmental context") and 104B ("reckless driving") were excluded from the analysis because the major part of their variance between groups was accounted for by the demographic variables "age" and "age at onset of major depression."

Although DSM-III-R BPD criteria performed well in distinguishing borderline from depressed subjects (see previous section comparing the three experimental groups on the BPD criteria), single item analyses of PDE borderline items revealed four areas of overlap: "driving while intoxicated," "binge-eating," "shoplifting," and "suicide attempts."

As described above, both Borderline (BPD and BPD/MDE) groups differed from the MDE group overall on the "impulsiveness" criterion. "Sexual impulsiveness" was a particularly effective discriminator between the borderline
Table 14

Single Items of the PDE for Diagnosing Borderline Personality Disorder

<table>
<thead>
<tr>
<th>Criteria/single items</th>
<th>(n=23)</th>
<th>(n=41)</th>
<th>(n=36)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Unstable relationships</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>46. Pattern of instability</td>
<td>70%</td>
<td>29%</td>
<td>86%</td>
<td>.000*</td>
</tr>
<tr>
<td><strong>2. Impulsiveness in 2 areas</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>92a. Sexual</td>
<td>57%</td>
<td>20%</td>
<td>61%</td>
<td>.000*</td>
</tr>
<tr>
<td>92b. Pxs assoc. w/sexual</td>
<td>43%</td>
<td>10%</td>
<td>61%</td>
<td>.000*</td>
</tr>
<tr>
<td>104a. Driving while intox.</td>
<td>35%</td>
<td>20%</td>
<td>33%</td>
<td>NS</td>
</tr>
<tr>
<td>104b. Reckless driving</td>
<td>39%</td>
<td>5%</td>
<td>14%</td>
<td>NAa</td>
</tr>
<tr>
<td>106a. Spending</td>
<td>39%</td>
<td>17%</td>
<td>47%</td>
<td>.02</td>
</tr>
<tr>
<td>106b. Substance abuse</td>
<td>65%</td>
<td>27%</td>
<td>64%</td>
<td>.001*</td>
</tr>
<tr>
<td>106c. Binge eating</td>
<td>30%</td>
<td>29%</td>
<td>50%</td>
<td>NS</td>
</tr>
<tr>
<td>106d. Shoplifting</td>
<td>17%</td>
<td>5%</td>
<td>14%</td>
<td>NS</td>
</tr>
<tr>
<td><strong>3. Affective instability</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>85. Frequent mood changes</td>
<td>100%</td>
<td>39%</td>
<td>89%</td>
<td>.000*</td>
</tr>
<tr>
<td><strong>4. Inappropriate, intense anger</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>79a. Frequently feeling anger</td>
<td>83%</td>
<td>27%</td>
<td>69%</td>
<td>.000*</td>
</tr>
<tr>
<td>79b. Others describe as angry</td>
<td>13%</td>
<td>0%</td>
<td>17%</td>
<td>.03</td>
</tr>
<tr>
<td>79c. Angry acting-out</td>
<td>96%</td>
<td>46%</td>
<td>81%</td>
<td>.000*</td>
</tr>
<tr>
<td><strong>5. Suicide gestures/self-mutilation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>107a. Threats</td>
<td>87%</td>
<td>37%</td>
<td>89%</td>
<td>.000*</td>
</tr>
<tr>
<td>107b. Suicide attempts</td>
<td>83%</td>
<td>61%</td>
<td>72%</td>
<td>NS</td>
</tr>
</tbody>
</table>
### Frequency of Occurrence

<table>
<thead>
<tr>
<th>Criteria/single items</th>
<th>BPD</th>
<th>MDE</th>
<th>BPD/MDE</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>107c. Self-mutilation</td>
<td>70%</td>
<td>12%</td>
<td>61%</td>
<td>.000*</td>
</tr>
<tr>
<td>6. Identity disturbance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18a. Unexpected behavior</td>
<td>48%</td>
<td>15%</td>
<td>47%</td>
<td>.003</td>
</tr>
<tr>
<td>18b. Bx depends on environ.</td>
<td>70%</td>
<td>34%</td>
<td>56%</td>
<td>NAa</td>
</tr>
<tr>
<td>18c. Uncertain self-image</td>
<td>70%</td>
<td>37%</td>
<td>67%</td>
<td>.008</td>
</tr>
<tr>
<td>19a. Uncertain goals</td>
<td>22%</td>
<td>12%</td>
<td>36%</td>
<td>.05</td>
</tr>
<tr>
<td>19b. Uncertain about career</td>
<td>65%</td>
<td>30%</td>
<td>61%</td>
<td>.004</td>
</tr>
<tr>
<td>20a. Uncertain about morals</td>
<td>22%</td>
<td>5%</td>
<td>47%</td>
<td>.000*</td>
</tr>
<tr>
<td>20b. ? what's important</td>
<td>61%</td>
<td>22%</td>
<td>61%</td>
<td>.001*</td>
</tr>
<tr>
<td>45a. ? types of friends</td>
<td>22%</td>
<td>7%</td>
<td>36%</td>
<td>.008</td>
</tr>
<tr>
<td>45b. Often changes friends</td>
<td>35%</td>
<td>2%</td>
<td>50%</td>
<td>.000*</td>
</tr>
<tr>
<td>95. ? sexual preference</td>
<td>22%</td>
<td>2%</td>
<td>22%</td>
<td>.02</td>
</tr>
<tr>
<td>7. Chronic emptiness and boredom</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>81a. Emptiness/boredom</td>
<td>100%</td>
<td>61%</td>
<td>86%</td>
<td>.000*</td>
</tr>
<tr>
<td>81b. Leads to other pxs</td>
<td>91%</td>
<td>46%</td>
<td>86%</td>
<td>.000*</td>
</tr>
<tr>
<td>8. Efforts to avoid abandonment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>89. Several frantic efforts</td>
<td>70%</td>
<td>12%</td>
<td>67%</td>
<td>.000*</td>
</tr>
</tbody>
</table>

*a items removed because of association with demographics

b All groups differed significantly from each other in two-group comparisons

* meet corrected alpha level of .002
groups and the depressed group. Both borderline groups also differed significantly from the MDE group on "substance abuse." However, the borderline groups did not differ from the MDE group on three types of impulsiveness--"driving while intoxicated," "binge eating," and "shoplifting."

The Borderline groups also differed from depressed patients on PDE criterion #5, "suicide gestures/self-mutilation." Specifically, both borderline groups differed significantly from the MDE group on "self-mutilation." Sixty-nine percent of BPDs and 61% of BPD/MDEs endorsed "self-mutilation," but only 12% of the MDE group endorsed this item. Both borderline groups also differed from the MDE group on "suicide threats," with 87% of BPDs, 86% of BPD/MDEs, and 37% of MDEs endorsing "suicide threats." However, the groups did not differ from each other on "suicide attempts/gestures." Eighty-two percent of BPDs, 63% of BPD/MDEs, and 61% of MDEs endorsed "suicide attempts."

The two-group comparisons assessing "identity disturbance" indicated that depressed borderlines endorsed "uncertainty about morals" significantly more often than did the pure borderlines (chi-square(1)=4.87, p < .05), or the MDE group (chi-square(1)=17.94, p < .001). Pure borderlines (BPDs) also differed significantly from the depressed subjects on that item (chi-square(1)=4.30, p <
Qualitative Differences in Depression Between Borderline and Nonborderline Depressed Groups

The mean CID severity score for the BPD/MDE group, 66.1, was significantly greater than that for the MDE group, 60.8 (F=6.67, df=1,75, p < .01).

A stepwise multiple regression was performed on preselected items from the CID. These items reflected speculations of various researchers that qualitative differences in depression would be characterized by greater levels of reactivity to the environment (Soloff et al., 1987), self-destructiveness (Gunderson & Phillips, 1991), intense rage and hostility (Gunderson & Elliott, 1985; Perry & Cooper, 1985; Soloff et al., 1987), and a need to convince others of their suffering (Zanarini et al., 1990), in the BPD/MDE sample; it also has been speculated that there would be greater levels of anxiety and social withdrawal (Gunderson & Phillips, 1991; Perry & Cooper, 1985) in the MDE sample. Furthermore, additional items were added to the analysis because of their presumed association with either atypical or endogenous types of depression. With the above rationale, the 14 CID items included: "distinct quality of depression," "withdrawal from work and interests," "generalized anxiety," "panic attacks," "phobic anxiety," "phobic avoidance," "somatic anxiety," "decreased appetite," "irritability," "initial
insomnia," "paranoid ideas," "over-emphasis of symptoms," "hypochondriasis," and "motor retardation." CID items 5 (reactivity) and 31 (hostility) were not included in the analysis because of inadequate inter-rater reliability. Items 6 (guilt and worthlessness) and 8 (suicidal tendencies) were excluded because the major part of their variance between groups was found to be accounted for by the demographic variables age and length of hospitalization.

Seventy-seven subjects were included in the analysis (BPD/MDE n=36; MDE n=41). The tolerance level for entry into the analysis was .001. Minimum alpha to enter and maximum alpha to remove variables was set at .05. The dependent variable was group membership: BPD/MDE or MDE. The analysis entered two variables (over-emphasis of symptoms, paranoid ideas) into a significant model predicting diagnostic group membership (adjusted R-square=.11, df=2,74, F=4.63, p<.01); both variables were associated with membership in the BPD/MDE group.

Discussion

The purpose of this study was to investigate the similarities and differences between Borderline Personality Disorder and Major Depression. The results support the prediction that there would be symptoms common to both disorders, though there was not as much symptom overlap as expected--the differences between BPD and MDE were more
prominent than the similarities. The results of this study indicate that precise differentiation of the experimental groups on personality characteristics and qualitative aspects of depression as measured by the CID is possible.

The DSM-III-R borderline criteria discriminated borderline from depressed patients remarkably well. The pure borderlines and the depressed borderlines differed significantly from the MDE group on all borderline criteria as indicated by discriminant analysis and conditional probability calculations. Interestingly, the BPD group did not differ from the BPD/MDE group on any of the Borderline criteria. This suggests that, in spite of depressive symptoms in the BPD/MDE group, the borderline characteristics held up as a pattern of behaviors distinguishable from major depression. This lends validity to the construct of borderline as a personality disorder, and supports the contention of many researchers (e.g., Gunderson & Phillips, 1991; Kroll, 1988; Soloff et al., 1987) that borderline symptoms are evident with or without major depression.

Although the BPD/MDE group did not differ from the BPD group on the DSM-III-R criterion, identity disturbance, depressed borderlines did differ significantly from "pure" borderlines on the "uncertainty about moral values" aspect of identity disturbance. This may be an indication of the effect of depression in the BPD/MDE group. Depressed
borderlines may be more likely than nondepressed borderlines to question their moral values.

The conditional probabilities in this study were much higher than those comparing BPD with other personality disorders (Clarkin et al., 1983; Dahl, 1986; Modestin, 1987; Pfohl et al., 1986). This finding is not surprising given that personality disorders supposedly represent an area of functioning different from that noted in Axis I disorders. Thus, the results of this study provide some support for the concept of personality disorders—that is, disorders characterized by "features [that] are typical of the person's long-term functioning and are not limited to discrete episodes of illness" (DSM-III-R, 1987, p. 335). These findings may also support the validity of the PDE for discriminating Axis II from Axis I features.

The high discriminative validity of the BPD criteria found in this study may lead to questions about why there have been problems with differential diagnosis between BPD and MDE. One possible explanation is that borderlines often present with complaints of depression or other negative affect that may actually reflect affective instability or boredom rather than major depression. However, their self-report may be taken at face value, resulting in their being diagnosed as depressed. Furthermore, if other symptoms are then seen in the context of depression, borderline features may be viewed as a
result of depression. The use of a structured interview in the current study facilitated differentiation between symptoms of major depression and borderline features such as affective instability, chronic emptiness and boredom, suicide threats, and self-mutilation. The present findings illustrate the value of structured interviews, not only for research, but also in clinical settings.

Identity disturbance emerged as an excellent criterion for discriminating depressed borderlines from nonborderline depressed subjects. It was originally predicted that, because of their uncertainty and indecisiveness, many depressed patients would also meet the identity disturbance criterion. This was not the case in the present study. Apparently the uncertainty often observed in major depression does not include uncertainty about one's identity. It should be noted, however, that identity disturbance was found lacking in discriminative power in studies comparing BPD with other personality disorders (e.g., Clarkin et al., 1983; Dahl, 1986; McGlashan, 1987; Modestin, 1987; Zanarini et al., 1990). This is an important consideration when differentiating among depression, BPD, and other personality disorders. That is, the presence of identity disturbance in a depressed patient may indicate a diagnosis of a personality disorder in general, rather than BPD in particular.

Another criterion that received a high conditional
probability was efforts to avoid abandonment. Unlike identity disturbance, which was found in 94% of borderlines, efforts to avoid abandonment was present in only 58% of the BPD sample. However, it was much less often found in the MDE sample (7%). Efforts to avoid abandonment is apparently an excellent discriminator between borderlines and MDE patients. If a patient presents with depressive symptoms and also reports a consistent pattern of efforts to avoid abandonment, a diagnosis of BPD in addition to MDE should probably be considered. Because most of the studies examining BPD in relation to OPDs (e.g., Clarkin et al., 1983; Dahl, 1986; McGlashan, 1987; Modestin 1987; Pfohl et al., 1986) were conducted prior to the DSM-III-R inclusion of efforts to avoid abandonment as a BPD criterion, the ability of this criterion to differentiate BPD from other personality disorders has been reported in only one other study (Zanarini et al., 1990). Zanarini et al. (1990) reported efforts to avoid abandonment as a relatively specific feature of BPD compared with other personality disorders. It was also more prevalent in their borderline sample (80%) than found in the current study. It appears that efforts to avoid abandonment is a highly specific predictor of BPD, though it's sensitivity is less certain.

Unstable relationships obtained the third highest conditional probability in the single criterion
comparisons, and it maintained high rankings in combinations of two and three criteria. Only 12% of the depressed patients reported problems with unstable relationships. Apparently, depression does not typically predispose a person to experience problems in interpersonal relationships, but such problems are typical of borderlines whether or not they are depressed. Because unstable relationships was highly discriminative in the current study, and in many studies comparing BPD with OPDs (e.g., Clarkin et al., 1983; Dahl, 1986; McGlashan, 1987; Modestin, 1987; Pfohl et al., 1986; Sheehy, 1980; Zanarini, 1990), it should probably be considered one of the major features of BPD.

Impulsiveness and intense, uncontrollable anger each achieved moderate conditional probability rankings in the current study. In comparisons with OPDs (e.g., Clarkin et al., 1983; Dahl, 1986; Modestin, 1987; Pfohl et al., 1986) intense anger also achieved a moderate ranking because it was frequently observed in OPDs. Because it was observed in 85% of borderlines in this study, and has been reported in a large percentage of borderlines in several other studies (e.g., Clarkin et al., 1983; Pfohl et al., 1986; Zanarini et al., 1990) intense anger should be considered an important but not specific feature of BPD.

Impulsiveness can be evaluated in a similar fashion. It has been observed in a large percentage of borderlines
in several studies (Clarkin et al., 1983; Dahl, 1986; Modestin, 1987; McGlashan, 1987; Pfohl et al., 1986; Zanarini et al., 1990), but is not specific to BPD. The present study found that, relative to major depression, impulsiveness in sexual areas is characteristic of borderlines.

As predicted, the three groups did not differ on the binge eating aspect of the impulsiveness criterion. It may be that binge eating represents something other than impulsive behavior for some subjects. Eating disorder patients often describe binge eating as an attempt to cope with anxiety and/or boredom (see, for example, Brownell, 1981; Williamson, Prather, Upton, Davis, Ruggiero, & Van Buren, 1987). Thus, binge eating may reflect a common feature, such as anxiety or boredom, for the subjects in the current study. The groups also did not differ on the shoplifting aspect of impulsiveness, although this behavior occurred infrequently in the current sample; shoplifting may not be useful for diagnosing impulsiveness in BPD. Driving while intoxicated also did not discriminate the three groups.

Suicide threats, gestures/self-mutilation, affective instability, and chronic emptiness and boredom were the criteria that overlapped most between borderlines and depressed subjects. It was expected that suicide threats, gestures/self-mutilation and chronic emptiness and boredom
would overlap. However, affective instability was not expected to overlap, but rather was expected to differentiate the groups. The amount of overlap of these three criteria can make differential diagnosis very confusing. An individual reporting suicide attempts, unstable mood, and feelings of emptiness and boredom, falls within the overlap between BPD/MDE and MDE categories. In such instances a structured clinical interview would elicit detailed information about the disorders that would be helpful in differential diagnosis.

The results of this study showed that suicide threats and self-mutilation discriminate BPD and BPD/MDE subjects from MDE subjects, but suicide attempts do not. This suggests that suicide threats and self-mutilation are not related to suicide attempts. Perhaps self-mutilation and suicide threats should become criteria separate from suicide attempts. Comparisons of BPD with OPDs have also supported self-mutilation as a distinct feature of BPD (Gunderson & Kolb, 1978; Zanarini et al., 1990). Suicide threats may be an example of manipulative attention-seeking behavior. Several researchers have speculated on the manipulative nature of some of the self-destructive behaviors in BPD (Gunderson & Kolb, 1978; Zanarini et al., 1990). A functional analysis of suicide threats and self-mutilation in BPD may reveal antecedents other than hopelessness and depressed mood for these behaviors. For
example, if problems in interpersonal relationships and efforts to avoid abandonment are common characteristics of borderlines, then suicide threats and/or self-mutilation may be methods of gaining attention and support from others.

However, borderlines apparently do make authentic suicide attempts as indicated by Stone's (1990) longitudinal study reporting completed suicides in 9% (17 of 206 subjects) of the borderline sample. In Stone's (1990) study, major depression was co-diagnosed in 76% of borderlines who completed suicide. Thus, serious suicide attempts in borderlines may indicate a concurrent diagnosis of major depression, whereas suicide threats and self-mutilation may indicate manipulative, attention-seeking behavior. Understanding the function of these behaviors (i.e., manipulative, attention-seeking, versus relieving depressed mood) may be important in gaining a more accurate clinical picture of patients with these symptoms.

Qualitative aspects of depression were examined by comparing depressed borderlines with nonborderline depressed subjects on the items of the CID. Depressed borderlines reported more severe depression as indicated by the CID severity of depression score. An analysis of the qualitative differences in depression between the groups showed that an over-emphasis of symptoms and paranoid ideas
were characteristics of borderline depression.

The current findings support some of the hypotheses of other researchers (see review by Gunderson & Phillips, 1991; Zanarini et al., 1990), that borderline depression is characterized by a need to convince others of their suffering (i.e., over-emphasis of symptoms); the increased severity of depression score by borderlines on the CID may also be an indication of this characteristic. Over-emphasis of symptoms may also serve a function similar to that speculated for suicide threats; that is manipulative or attention-seeking. The association of paranoid ideas with borderline depression is an interesting finding, and one not previously reported. The implication of this particular finding is not clear, and awaits clarification.

The present findings did not support the prediction that BPD subjects would exhibit increased reactivity, anger, and suicidal tendencies, hostility, and guilt and worthlessness. Unfortunately, reactivity and hostility could not be assessed in the current study because the CID items representing these symptoms had poor inter-rater reliability. The CID items suicidal tendencies and guilt and worthlessness were dropped from the analyses because of the confounding influence of the demographic variables age and length of hospitalization—younger subjects were much more likely to report increased suicidal tendencies, and subjects hospitalized longest were much
more likely to report feelings of guilt and worthlessness. Increased suicidal tendencies in younger subjects may indicate a tendency to act out rather than seek help for their problems. The correlation between increased feelings of guilt and worthlessness and length of hospitalization may indicate that patients with these feelings are hospitalized longer, or that lengthy hospitalization results in increased feelings of guilt and worthlessness.

One of the intentions of the present study was to examine qualitative differences in depression separately from personality differences. It was thought that some researchers had not adequately discriminated between these factors in their comparisons of borderline and nonborderline depression. If the distinction between personality and depression is not maintained, then presumed differences in depression between groups may simply reflect differences that were determined by diagnosing the two groups as borderline or nonborderline. That is, we know by definition that borderlines will differ from nonborderlines on the BPD criteria. If so-called qualitative differences in depression reflect no more than personality differences, then we have learned little about qualitative differences in depression between BPD and OPD.

The study by Westen et al. (1990) serves as an example of this problem. Westen et al. (1990) found that borderline depression was marked by a sense of emptiness
and boredom. They derived a Borderline Depression Factor from the Depressive Experiences Questionnaire (Blatt, Quinlan, Chevron, McDonald, & Zuroff, 1982) that was described as reflecting chronic emptiness (Westen et al., 1990). These authors acknowledged that their Borderline Depression Factor might simply reflect items on the Diagnostic interview for Borderlines (DIBs; the instrument they used to diagnose borderlines), and, in fact, reported a correlation with the DIBs "impulse" score of .51. The Borderline Depression Factor from Westen et al.'s (1990) study contained items reflecting "emptiness, loneliness, diffuse negative affect (including anger, loneliness, fear and desperation), markedly inconsistent self-concept and self-esteem, dependency, fears of abandonment and related interpersonal concerns" (p. 10). Of course, most researchers would recognize that these are the criteria for BPD as listed in DSM-III-R. In spite of this, Westen et al. (1990) maintained that these characteristics represented distinct qualities of depression.

Chronic emptiness and boredom was noted in both depressed and nondepressed borderlines in the current study, which supports the inclusion of chronic emptiness and boredom as a personality characteristic. In studies investigating other personality disorders compared with BPD (Clarkin et al., 1983; Dahl, 1986; Modestin, 1987; Pfohl et al., 1986) the report of emptiness and boredom in OPDs
averaged about 50%. Fifty-one percent of the MDE group in the present study also reported chronic emptiness and boredom. However, the incidence of emptiness and boredom for the MDE group in the current study does not necessarily indicate that emptiness and boredom is a characteristic of depression. In fact, given that subjects with other personality disorders report emptiness and boredom about as frequently as the present MDE group (Clarkin et al., 1983; Dahl, 1986; Modestin, 1987; Pfohl et al., 1986), and since other personality disorders were not ruled out in this study, it is possible that in some cases the emptiness and boredom found here indicated the presence of other personality disorders.

Chronic emptiness and boredom, however, is not necessarily an exclusive feature of personality disorders. It is conceivable that a chronic history of major depression could result in feelings of chronic emptiness and boredom. However, given the description of Westen et al.'s (1990) Borderline Depression Factor, it appears that these researchers were describing differences in personality rather than differences in depression between depressed borderlines and nonborderline depressed subjects.

Perry and Cooper (1985) found depression in borderlines to be marked by angry acting out, and nonborderline depression to be characterized by self-criticism and social withdrawal. Gunderson and
Elliott (1985) and Soloff et al. (1987) also found that hostility and rage were hallmarks of borderline depression. The current study did not support these findings in that the irritability item on the CID did not differentiate the BPD/MDE group from the MDE group. However, intense, uncontrollable anger was noted as a personality characteristic in both borderline groups. Perhaps these researchers (Gunderson & Elliott, 1985; Perry & Cooper, 1985; Soloff et al., 1987) were confusing personality characteristics (i.e., intense, uncontrolled anger) with depressive characteristics when they described borderline depression as characterized by angry acting out, hostility and rage. This would be similar to the way in which Westen et al. (1990) were apparently mislabeling emptiness as a symptom of depression rather than a personality characteristic. Unfortunately, the CID hostility item was dropped from the current analysis because inter-rater reliability was unacceptable. This item may have been a better measure of the angry acting out described elsewhere (Gunderson & Elliot, 1985; Perry & Cooper, 1985; Soloff et al., 1987) than the CID irritability item used to measure hostility in the current study.

Conclusions

DSM-III-R Borderline criteria were good discriminators between borderline personality disorder and major depression. They have also been shown to discriminate BPD
from other personality disorders fairly well (Clarkin et al., 1983; Dahl, 1986; Modestin, 1987; Pfohl et al., 1986), although there is more overlap there. One would expect greater overlap with other personality disorders if the concept of personality disorders is a valid one. That is, if the Axis II category represents an area of functioning different from Axis I functioning, then one would expect that Axis II disorders would have more in common with each other than with Axis I disorders. The present findings suggest several changes that may help refine the DSM-III-R BPD criteria. The suggestions below integrate the current findings with previous research comparing BPD with OPDs and major depression:

1. Unstable and intense interpersonal relationships is a major feature of BPD that is important in comparisons with other personality disorders and major depression.

2. Depression is often noted in borderlines, but the quality of depression may differ from depression without BPD by the presence of a tendency to over-emphasize symptoms and paranoid ideas.

3. In assessing impulsive behavior, it should be noted that binge eating often overlaps with depressive symptoms. Neither driving while intoxicated nor shoplifting were good indicators of impulsiveness in BPD, but impulsiveness in
sexual areas appears characteristic of BPD relative to MDE.

4. Self-mutilation is a major feature of BPD and should be considered separately from suicide attempts and gestures. Suicide threats may also be unique to BPD, at least compared with major depression.

5. Efforts to avoid abandonment may be a unique feature of borderlines, but one that is not as common as some of the other features of BPD.

6. Emptiness and boredom is a common feature of BPD but is also reported about half the time in major depression and other personality disorders.

7. Affective instability, intense, uncontrollable anger, and impulsiveness are common features of BPD, but are also noted about half the time in other personality disorders.

8. Identity disturbance is a powerful discriminator between BPD and MDE, but it is also commonly observed in other personality disorders. Depressed borderlines may be more likely nondepressed borderlines to experience uncertainty about moral issues.

There are no findings in the current study that support the hypothesis that BPD is a variant of major depression. That the quality of depression may be
experienced differently by borderlines compared with nonborderlines suggests that the depressive experience may be influenced by baseline personality characteristics. It may be that problematic baseline characteristics, such as self-mutilation and uncertainty about moral issues, become more intense during a major depressive episode. The present findings also suggest that depression in borderlines may elicit symptoms such as those found in this study: reports of greater severity of depression, over-emphasis of symptoms, paranoid ideas. As suggested by Westen et al. (1990), studies of the present type may be improved by examining the quality of depression in specific categories of OPDs relative to depression in BPD.

Other researchers have provided strong support for the diagnostic integrity of the BPD criteria relative to other personality disorders (e.g., Clarkin et al., 1983; Dahl, 1986; McGlashan, 1987; Modestin, 1987; Pfohl et al., 1986; Soloff et al., 1987; Zanarini et al., 1990). Given the historical background of the borderline concept (i.e., its presumed association with both Axis I and Axis II disorders), it seemed necessary to establish the discriminative validity of the BPD criteria relative to major depression. The present study contributes toward the refinement of the Borderline Personality Disorder category by providing support for major characteristics of BPD (e.g., unstable relationships) relative not only to other
personality disorders (as suggested by Clarkin et al., 1983; Dahl, 1986; Modestin, 1987), but also to major depression. The present findings also suggest that self-mutilation should be treated as a criterion distinct from suicide attempts, that binge eating may represent something other than impulsiveness in borderlines, and that shoplifting and driving while intoxicated are not valid indicators of impulsive behavior in borderlines relative to MDE.

A notable distinction between this study and others investigating differences in depression between borderlines and nonborderlines is that an attempt was made here to control for personality influences on depressive symptoms. The results indicate that depressed borderlines differ from depressed nonborderlines not only by their endorsement of different personality characteristics (e.g., self-mutilation), but also by new symptoms such as an over-emphasis of symptoms, report of more severe depression, and paranoid ideas.

This study also offered speculation about the function of some of the behaviors in BPD. The idea of manipulativeness as a key feature of borderline psychopathology is shared by other researchers (Gunderson & Kolb, 1978; Zanarini et al., 1990). However, research specifically examining the function of behaviors in BPD apparently has not been conducted. As speculated earlier,
it may be that suicide threats and self-mutilation are functionally related to interpersonal problems or efforts to avoid abandonment. That is, suicide threats and self-mutilation may serve manipulative, attention-seeking, purposes for borderlines. Research investigating the function of these behaviors may provide further understanding of the complex clinical picture of borderline personality disorder.
References


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CONSENT FOR RESEARCH

We are asking you to take part in a research study in association with the Department of Psychology at L.S.U. The nature of the study, procedures, and other pertinent information about the study are discussed below.

The purpose of the study is to examine the association between personality characteristics and depression. Research participants will be asked to answer questions pertaining to depression, personality characteristics, and memory. The entire procedure will take approximately one and a half to two hours. Some of the interview process may be audiotaped. The interviews that will be administered to research participants are listed below:

1. Structured Clinical Interview for DSM-III-R (SCID): a semi-structured clinical interview used to diagnose depression and other problems
2. Personality Disorder Examination (PDE): a structured interview pertaining to personality characteristics
3. Clinical Interview for Depression (CID): an interview examining depressive symptoms
4. Mini Mental Status Exam (MMSE): an interview examining memory and concentration

Patients will be referred to the study by their attending physician and/or chart review. Your participation is entirely voluntary and refusal to participate will not influence your care. There will be no charge to you for the research procedures. Significant new findings developed during the course of the research which may relate to the your willingness to continue participation will be provided to you. You may withdraw from the study at any time without penalty.

There are no potential discomforts or risks involved in this study. Personal benefit may not result from taking part in this study, but knowledge may be gained that will benefit others. Potential benefits include improving the
psychiatric diagnostic and classification system, and enhancing our understanding of personality characteristics associated with depression.

When results of a study such as this are reported in professional journals or at meetings the identification of those taking part is withheld. Your confidentiality will also be protected by using subject numbers instead of names on all research materials.

"I have read the above and have been given the opportunity to discuss it and to ask questions. I agree to participate as a subject with the understanding that I may withdraw at any time without interfering with my regular care."

Date Signature of Subject

Date Signature of person obtaining consent
Vita

Susan Head is a native of Louisiana who began her college career at Louisiana State University in 1968. She received a B.S. in 1978 and an M.A. in psychology in 1988. She completed her internship in clinical psychology at Duke University Medical Center in 1991, and currently holds a clinical/research position at Duke University, in Durham, NC. She continues to pursue research in personality disorders. She used to be an avid jogger.
DOCTORAL EXAMINATION AND DISSERTATION REPORT

Candidate: Betty Susan Head

Major Field: Psychology

Title of Dissertation: Discriminating Borderline Personality Disorder (BPD) From Major Depression and Refining Diagnostic Criteria for BPD

Approved:

[Signatures]

Major Professor and Chairman

Dean of the Graduate School

EXAMINING COMMITTEE:

[Signatures]

Date of Examination: November 7, 1991