

## The Prevalence of Thought Disorder in Personality-Disordered Outpatients

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Patients with borderline personality disorder (BPD) have been found to exhibit thought-disordered responses on unstructured psychological tests, but not on more structured tests. My study compared outpatients diagnosed with BPD to those who qualified for other personality disorders (OPD). Johnston and Holzman's (1979) Thought Disorder Index was applied to the Rorschach and Wechsler Adult Intelligence Scale-Revised (WAIS-R) protocols of two outpatient groups. The results of this study demonstrated that the BPD group produced a significantly greater number of thought-disordered responses on the Rorschach but not on the WAIS-R compared to the OPD group. Thus, the test pattern of individuals with BPD was confirmed by this study and successfully differentiated these patients from OPD outpatients. Further exploration of the degree of thought disorder on structured versus unstructured tests is suggested.

Accurately defining borderline personality disorder (BPD) has persisted as one of the most challenging diagnostic problems that clinicians encounter. Borderlines often function adequately in structured interviews, which belies their tendency toward unstable, chaotic relationships and psychotic thinking revealed in psychological testing and unstructured therapeutic settings. Thus, expedient and accurate diagnosis is essential in order to anticipate their destructive behavior and need for limit setting so often necessary during treatment (Edell, Joy, & Yehuda, 1990; Knight, 1953).

Early descriptions of borderlines posited a relationship between thought disorder during unstructured circumstances and this diagnosis. Herman Rorschach (1942) was the first to recognize a group of seemingly normal individuals whose flamboyant and disorganized responses to his inkblots were similar to those of schizophrenics. He labeled these patients *latent schizophrenics*, but his description is now thought to refer to the borderline. Further, Rapaport, Gill, and Schafer

(1945–1946) conducted research regarding the psychological test performance of various diagnostic groups. Their *preschizophrenics* displayed pervasively odd Rorschach records while maintaining an intact performance on the Wechsler–Bellevue Intelligence Scale. This test pattern contrasted those of with schizophrenic individuals who produced disordered responses on both structured and unstructured tests. This specific test performance by borderlines had become the accepted diagnostic indicator of the disorder (Gunderson & Singer, 1975; Singer, 1977; Singer & Larson, 1981).

Rapaport and associates (1945–1946, 1968) devised a system that evaluated categories of deviant thinking in both structured and unstructured tests. Watkins and Stauffacher (1952) introduced a system of weights to these instances of thought disorder as originally defined by Rapaport. Johnston and Holzman (1979) revised these previous systems and developed the Thought Disorder Index (TDI), which can be applied to responses from the Wechsler Adult Intelligence Scale–Revised (WAIS–R) and the Rorschach. The TDI has been employed in research studies designed to measure thought disorder in psychotic and high-risk populations (Holzman, Shenton, & Solovay, 1986; Johnston & Holzman, 1979).

Descriptive reviews and more recent empirical studies continue to identify the prevalence of thought-disordered responses within Rorschach protocols, coupled with a relatively intact performance on structured tests, such as the WAIS–R, as indicative of borderline psychopathology (Carr, E. G. Goldstein, Hunt, & Kernberg, 1979; Edell, 1987; Hymowitz, Hunt, Carr, Hurt, & Spear, 1983; Shapiro, 1978; Stone & Dellis, 1960; Weiner, 1966).

There have been challenges to the widely held view that borderlines display disordered thinking on structured versus unstructured tests. Widiger (1982) contended that there was little empirical evidence to support the hypothesis that borderlines are disturbed on the Rorschach but not on the WAIS–R. He felt that methodological weaknesses had contributed to the assumptions regarding borderline test patterns. He advised that future research be more stringent about delineating diagnostic criteria, demographic data, and the defense and symptom features of the subjects (Gartner, Hurt, & Gartner, 1989; Widiger, 1982).

Most studies distinguish the borderline from broad diagnostic groups such as neurotics and psychotics. Few have attempted to differentiate the borderline from specific diagnoses, including other personality disorders (W. N. Goldstein, 1983). Even when such research was conducted, **borderlines often met the criteria for other personality-disorder diagnoses** (Frances, Clarkin, Gilmore, Hurt, & Brown, 1984; Pope, Jonas, Hudson, Cohen, & Gunderson, 1983). In addition, **outpatient populations have been neglected by most research on borderlines**. Outpatient borderlines may be more difficult to diagnose because fewer *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed., rev. [DSM–III–R]; American Psychiatric Association, 1987) criteria are in evidence as compared to inpatient groups (Koenigsberg, 1982). My study attempted to examine empirically the degree to which a specific psychological test measure of thought disorder was capable of distinguishing a group of borderline outpatients from outpatients with personality-disorders diagnoses other than borderline. It was hypothesized that significant amounts of thought disorder,

as measured by the TDI, would be demonstrated by the borderline group on the unstructured Rorschach. In contrast, on the structured WAIS-R the borderlines would not be distinguished from the group of other personality-disordered outpatients.

## METHOD

### Subjects

The subjects ( $N = 60$ ) were outpatients who sought treatment at a university psychological services clinic and were predominantly from white middle-class backgrounds. Two subject groups of 30 each were matched by age and sex. The average age of the 22 men and 38 women was 24.8 years and ranged in age from 18 to 49. Each subject completed the Personality Diagnostic Questionnaire-Revised (PDQ-R; Hurt, Hyler, Frances, Clarkin, & Brent, 1984) as part of a routine test battery. The PDQ-R is a self-report measure designed to correspond to the *DSM-III-R* personality disorder criteria. The patient's therapist also provided a diagnosis following *DSM-III-R* personality-disorder criteria. Originally, 82 subjects were considered for this study; however, 7 patients were excluded because they were referred exclusively for testing by private therapists and therefore had no intake evaluation. Also, 11 other patients dropped out prior to completion of the test battery. Finally, 4 additional patients were eliminated from the study because of disagreement between the therapist and self-report measure diagnosis within the borderline subject group.

To qualify for the BPD group ( $n = 30$ ), the patient must have met the criteria for BPD on both the PDQ-R and *DSM-III-R* measures but could also meet the criteria for additional personality disorders. The other personality disorder (OPD) group ( $n = 30$ ) comprised individuals who could meet the *DSM-III-R* and/or PDQ-R criteria for any personality disorder except the borderline criteria.

Patients diagnosed with a personality disorder often qualify for at least one other personality-disorder category (Pope et al., 1983). This assumption was consonant with the findings in my study. Based on the PDQ-R self-report measure, patients in the BPD group most frequently qualified for Histrionic personality disorder (24 subjects), Paranoid personality disorder (22 subjects), and Schizotypal and Obsessive-Compulsive personality disorders (both 14 subjects). On the PDQ-R measure, the OPD group received concurrent diagnoses of Paranoid personality disorder (10 subjects), Histrionic (8), Dependent personality disorder (6), Narcissistic and Obsessive-Compulsive (both 5 subjects), Passive-Aggressive, Schizotypal and Avoidant (3 subjects each), Antisocial (2), and Sadistic and Self-Defeating personality disorders (1 subject each). No subject in the OPD group qualified for the Schizoid classification. On the *DSM-III-R* diagnostic measure, the BPD group most frequently met the criteria for Dependent personality disorder (8 subjects) and Paranoid and Histrionic personality disorders (each 6 subjects). The OPD group was most often diagnosed as personality disorder Not Otherwise Specified (15),

followed by Narcissistic (8), Dependent (4), Avoidant and Histrionic (each 3 subjects), Passive-Aggressive (2), and one subject each for Paranoid, Antisocial, and Obsessive-Compulsive diagnoses (Harris, 1990).

All subjects were given a battery of psychological tests by doctoral-level graduate students, including the WAIS-R and the Rorschach. The test protocols of the subjects were coded and then scored by two independent raters (also doctoral-level graduate students), according to the instructions of the respective measures. Acceptable interrater reliability of 0.85 or more was achieved for all scales utilizing Cohen's kappa statistic. All protocols were scored blind to the subjects' group assignments.

### Procedure

Johnston and Holzman's TDI was applied to the WAIS-R and the Rorschach protocols to determine the presence of thought-disordered responses. The TDI weights verbal responses according to their pathological quality and contains 23 categories of thought disorder with assigned weights of 0.25, 0.50, 0.75, or 1.00, depending on the severity of the category (Johnston & Holzman, 1979; Solovay et al., 1986).

The 0.25 TDI level is characterized by the least pathological examples of thought disorder, and includes inappropriate distance, flippant response, vagueness, peculiar verbalizations and responses, word-finding difficulty, clangs, perseveration, and incongruous combinations. For example, "I see a couple of horns on the bird" is scorable on the 0.25 level for the incongruous combination category (Solovay et al., 1986, p. 489).

The 0.50 level categories include relationship verbalization, idiosyncratic symbolism, queer responses, confusion, looseness, fabulized combinations, playful confabulation, and fragmentation. The frequent use of 0.50 level responses would create the impression of an individual with questionable reality testing, lability of emotions, and unconventional thinking. For instance, a queer response sounds like a 0.25 level peculiar response, but is more extreme: "the outside lookers, the onlookers of the outside" (Solovay et al., 1986, p. 491).

Responses in the 0.75 level signify definite thought disturbance with difficulties in correctly perceiving reality. The 0.75 level categories include fluidity, absurd responses, confabulations, and autistic logic. An example from the Rorschach of an absurd response would be "This is sticking out there. Remember that's the, uh, cure there. It's our cure it's called. . . ." (Solovay et al., 1986, p. 494).

The most deviant responses are scored in the 1.0 TDI category. Reality testing is severely compromised, and the subject exhibits clear examples of psychotic thinking. The categories at this level include contamination, incoherence, and neologisms. An example of a neologism would be "That's tavor or neoglyphics" (Solovay et al., 1986, p. 496).

Finally, the intake interviewer gave each patient the Global Assessment Scale (GAS; Endicott, Spitzer, Fleiss, & Cohen, 1976) rating. The GAS assesses the

overall functioning level of a patient on a scale from 1, hypothetically representing the lowest level of functioning, to 100, representing the healthiest.

## RESULTS

*T* tests were performed on the dependent variables that were normally distributed, and any positively skewed variables were normalized using log transformations. The Mann-Whitney *U* test was applied to measure for statistical significance on any variable that required rank transformed scores to correct for skew. Table 1 presents the statistical analysis of all dependent variables.

As expected, the BPD group produced greater evidence of thought disorder in their Rorschach (TDIR) responses ( $M = 16.8$ ) as compared to the OPD group ( $M = 5.7$ ),  $t(58) = 4.71$ ,  $p < .001$ . Also, as predicted, the borderlines did not produce significantly more thought disorder on the structured WAIS-R (TDIW),  $z = -1.80$ ,  $p < .07$ . Interestingly, thought-disordered responses in only the 0.25 TDI level were recorded on the WAIS-R protocols for both diagnostic groups. However, the incidence of WAIS-R TDI 0.25 responses for the BPD group was 68, compared to 38 for the OPD group. Although these scores were not sufficient to differentiate the borderlines from the OPD group, they did approach significance. In contrast, in the Rorschach, the TDI 0.25 and TDI 0.75 level responses significantly differentiated the BPD from the OPD group. Neither outpatient group produced any 1.0 category content on the WAIS-R or the Rorschach. Table 2 indicates the incidence of TDI scores in each category by group.

Thus, for this study, thought disorder, as measured by the TDI, was prevalent on the unstructured versus the structured borderline test results. These findings

TABLE 1  
Analyses of Thought Disorder Index (TDI) Scores on the Rorschach  
and WAIS-R by Group

	Group				<i>t</i>	<i>p</i>
	OPD <sup>a</sup>		BPD <sup>a</sup>			
<i>t</i> Test	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
TDIR	5.7	6.3	16.8	13.1	-4.71	.001**
Mann-Whitney <i>U</i> Test			<i>z</i>			<i>p</i>
TDIW			-1.80			.07 ns
TDIR 0.25			-4.12			.001**
TDIR 0.50			-1.22			.22 ns
TDIR 0.75			-1.90			.05*

Note. TDIW = Thought Disorder Index WAIS-R Score; TDIR = Thought Disorder Index Rorschach scores for three scoring levels. ns = not significant. BPD = Borderline Personality Disorder, OPD = Other Personality Disorder.

<sup>a</sup>*n* = 30.

\* $p < .05$ . \*\* $p < .001$ . All two-tailed tests.

TABLE 2  
 Scored Occurrences of Each Thought Disorder Index (TDI) Response Level on  
 the Rorschach and WAIS-R by Group

	Group			
	OPD <sup>a</sup>		BPD <sup>a</sup>	
	0 Score	0 Score	0 Score	0 Score
TDIR Scoring Levels				
0.25	68	6	190	2
0.50	28	13	54	7
0.75	6	27	18	17
1.00	0	30	0	30
TDIW Scoring Levels				
0.25	38	13	62	9
0.50	0	30	0	30
0.75	0	30	0	30
1.00	0	30	0	30

Note. TDIR = Thought Disorder Index on Rorschach protocols. TDIW = Thought Disorder Index on WAIS-R protocols. BPD = Borderline Personality Disorder. OPD = Other Personality Disorder.

<sup>a</sup>n = 30.

would appear to support the widely held notion regarding the test patterns produced by individuals with BPD. However, it should be emphasized that the BPD group did produce relatively more thought-disordered responses approaching statistical significance on the WAIS-R.

## DISCUSSION

This study examined the ability of the TDI to assess levels of thought disorder and discriminate borderline outpatients from those with personality disorders other than borderline. **The empirical results supported the clinical observation that borderlines demonstrate greater evidence of thought disorder, particularly in unstructured situations.** Therefore, initial clinical encounters, which usually rely on more efficient yet inadequate structured interviews, may miss the chaotic internal world of the borderline (Edell et al., 1990; Knight, 1953). The predictably intense and troubled treatment relationship that ensues over time has been confirmed by numerous clinicians (Adler, 1985; Adler & Buie, 1983; Kernberg, 1975, 1984; Searles, 1986). Yet, if the therapist or the treatment organization is unprepared for such an onslaught, the patient risks forfeiture of his or her recovery; thus, expedient diagnosis of patients organized at the borderline level is essential during the initial evaluation sessions so that appropriate referrals can be made. As this research has illustrated, **the use of psychological testing with specific test indices provides a reliable diagnostic method as well as invaluable data regarding the psychological functioning of the patient.**

Further, results of this study also demonstrate the TDI to be a valid measure of thought disorder that can successfully discriminate borderlines from other personality-disordered patients. The belief that borderlines display disordered thinking exclusively in unstructured situations, while maintaining their ability to reality test in structured situations, had been thought to be a distinguishing feature of such patients (Carr et al., 1979; Gunderson & Singer, 1975; Kernberg et al., 1981). However, researchers challenged this notion and clearly believed that studies had inadequately demonstrated the maintenance of reality testing on structured tests (Gartner et al., 1989; Widiger, 1982).

The findings of this study support the theoretical position that borderlines function at higher levels in structured situations, yet also concur with the view that thought disorder exists under these conditions. In fact, both diagnostic groups produced some TDI 0.25 level responses on the WAIS-R, which was unexpected. Thus, the severity of thought disorder scored in the structured test was limited to the least pathological 0.25 category as compared to the unstructured test, where scores in the 0.25 and 0.75 categories were obtained and differentiated the two groups. However, it should be emphasized that the BPD group produced a greater number of 0.25 level responses on the WAIS-R that approached significance ( $p < .07$ ). Such scores may prove clinically useful despite the failure to achieve the statistical cutoff. Therefore, it is not a question of whether thought disorder is present within structured situations, but rather the degree to which reality testing is compromised under structured versus unstructured situations.

The data of my study are consistent with the original results obtained by Johnston and Holzman (1979), which included a more severely disturbed schizophrenic group. The mean TDI score for the schizophrenic group on the WAIS was 4.29 in comparison to their mean TDI Rorschach score, which was 17.45. Also, all groups, whether the more disturbed schizophrenic group or the nonpsychotic group, which included some borderlines, obtained a preponderance of WAIS and Rorschach TDI scores in the least pathological category (0.25), with a decreasing number of scored responses reported as the progression was made toward the most pathological category (1.0); thus, for Johnston and Holzman, as with my study, the frequency of thought disorder was more prevalent in the unstructured Rorschach test versus the structured WAIS.

The results of this study indicate that although borderlines do display disordered thinking in both structured and unstructured tests, the degree of pathology is less evident in the structured situation. One must consider the possibility, however, that the TDI categories are less sensitive and specific to the WAIS-R protocols as compared to the seemingly greater opportunity for scoring on the Rorschach. Perhaps more subtle evidence of thought disorder exists in structured situations and requires the development of a more sensitive instrument to assess cognitive slippage. Future research should concentrate on the comparison of a variety of such measures applied to wider spectrum of several structured tests. Also patient populations should be tested.

Despite the ever present need for refinement of research methodology, my study demonstrated that outpatient borderlines can be differentiated from a group of

personality-disordered individuals based on the application of the TDI to psychological test data. Replication of the findings in this study has the potential to expedite the diagnosis of borderlines so their complex treatment needs can be accommodated.

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