Personality Differences on the Rorschach of Dissociative Identity Disorder, Borderline Personality Disorder, and Psychotic Inpatients

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Patients with dissociative identity disorder (DID) are often diagnosed with borderline personality disorder (BPD) and misdiagnosed with psychotic illnesses. This study is designed to determine whether the Rorschach protocols of 67 patients with DID differ from those of 40 patients with BPD and 43 patients with psychotic disorder (PSD) in variables reflecting capacity for working alliance, complexity of experience, and ability to reason despite traumatic flooding. As theoretically and clinically predicted, the DID group could be distinguished from the PSD sample by the DID group's significantly higher level of traumatic associations alongside their more logical reasoning (e.g., Trauma Content Index [TCI], WSUM6). In comparison to the BPD group who, by definition, were also likely to dissociate and struggle with other trauma based symptoms, the DID sample showed greater social interest (Sum H), self-reflective capacity (FD; Form Dimension), ability to perceive more accurately and think more logically (X-, WSUM6). The authors discuss the treatment applications of these findings and make suggestions for further research.

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Dissociative identity disordered (DID), borderline personality disordered (BPD), and psychotic spectrum disordered (PSD) inpatients are often difficult to distinguish from a symptom perspective alone (Dell, 1998; Ellason, Ross, &

Fuchs, 1996; Horevitz & Braun, 1984; Ross, Miller, Reagor, Bjornson Fraser, Anderson, 1990; Yargic, Sar, Tutkun, & Alyanak, 1998). These patient groups offer different clinical challenges and, especially in a time-limited inpatient setting, efficient decision-making based on accurate diagnoses is crucial to outcome. People with DID typically receive three to four prior diagnoses, often in the psychotic and personality disordered dimensions (typically BPD), prior to being appropriately diagnosed and treated (Ross, Norton, & Wozney, 1989; Putnam, Guroff, Silberman, Barban, & Post, 1986). Their long road to diagnosis is understandable, not only because diagnosing and treating dissociative disorders is a relatively new area, but because from a behavioral and symptomatic standpoint these three disorders can appear indistinguishable. For example, both patients with BPD and DID show major fluctuations in self-image and affective presentation, and both have high rates of self-harm and suicidality (e.g.,

Acklin, 1993; American Psychiatric Association, 2000; Foote, Smolin, Neft, & Lipschitz, 2008; Stone, 1980; Zalewski & Archer, 1991; Zanarini, Frankenburg, Hennen, & Silk, 2003; Putnam et al., 1986). Both disorders are linked to trauma in the developmental years (e.g., Herman, Perry, & van der Kolk, 1989; Ross et al., 1991, 1989; Zanarini et al., 1997; Putnam et al., 1986) and thus, are defined in part by dissociation and other traumatic stress symptoms (American Psychiatric Association, 2004).

Regarding the symptom overlap between DID and PSD, Schneiderian first-rank symptoms such as hearing voices and experiencing "made" thoughts and feelings are more commonly reported in patients with DID than in patients with schizophrenia, even though first-rank symptoms have long been thought to indicate psychosis (Dell, 2006; Kluft, 1987; Ross et al., 1990; Schneider, 1959). Indeed, it is difficult to imagine holding a belief more delusional than that several distinct people inhabit one's body. Yet in contrast to most patients with psychotic disorders, people with DID respond to insight-oriented therapy (Kluft, 1993) and typically do not stop hearing voices when treated with neuroleptics (Loewenstein, 1991a). Careful phenomenological assessment of patients with DID as compared with psychotic patients shows many salient differences between the psychotic experience of Schneiderian passive influence and that of dissociative patients (Loewenstein, 1991b). Moreover, because DID voices reflect dissociated aspects of self, attending to these voices can provide insight and enable these patients and their therapists to gain a fuller, developmentally based perspective on the issues of the patient as a whole (Kluft, 2006).

The Rorschach Profiles of Dissociative, BPD, and Psychotic Patients

The Rorschach Comprehensive System (RCS; Exner, 1993) has been useful in documenting distinctive personality traits of dissociative patients in several studies (Armstrong, 1991; Armstrong & Loewenstein, 1990; Brand, Armstrong, & Loewenstein, 2006; Scroppo, Drob, Weinberger, & Eagle, 1998). Two studies compared dissociative patients' protocols to Exner's (1986) published BPD norms to determine which features distinguished the disorders

(Armstrong, 1991; Scroppo et al., 1998). Armstrong's (1991) pilot study of 14 dissociative patients found that dissociative patients demonstrated heightened introspection (FD; Form Dimension), and cognitive complexity (blends) compared with Exner's patients with BPD. Scroppo and colleagues (Scroppo et al., 1998) compared Exner's BPD sample to 21 patients with DID and found that patients with DID had significantly lower Lambda than did the patients with BPD, indicating a tendency to become caught up in inner experience. Using her small sample, Armstrong had not found differences in Lambda. Consistent with Armstrong (1991); Scroppo et al. (1998) found that patients with DID had significantly higher capacity for intellectual self-reflection (high FD and V) than patients with BPD. Scroppo et al. suggested that a fundamental difference between DID and BPD was the tendency among dissociative individuals to "elaborate upon and imaginatively alter their experience" (p. 281) in contrast to patients with BPD, who simplify experience and respond in an affectively driven manner. Scroppo and colleagues concluded that DID is a relatively distinct diagnostic entity from BPD, one that is "imaginatively based" and relies upon a "cognitively complex response style."

Brand et al. (2006) published the first large ($N = 100$) sample of Rorschach data from severely dissociative disorders (DDs), which included both patients with DID and dissociative disorder not otherwise specified (DDNOS). Brand and colleagues compared the DD protocols with those of published nonpatients, posttraumatic stress disorder (PTSD), and depressed patients. In agreement with earlier findings in pilot studies (Armstrong, 1991; Armstrong & Loewenstein, 1990), the protocols of the patients with DD in this sample were characterized by heightened intellectual introspection (high FD) and a very high level of intrusions of traumatic material, which they referred to as traumatic flooding (Traumatic Content Index, i.e., Bl + Sx + An + AG + MOR/R). Despite being able to modulate affect fairly well (FC > CF + C + 1), the patients avoided affect (Afr). Patients with DD showed high cognitive complexity and a tendency to become overinvolved in experience (Lambda, blends/R). In addition, subjects with DD gave short, although quite complex, records. The authors interpreted these seemingly contradictory findings as indicating

that the patients attempted to limit the emotions and traumatic associations stirred up by the Rorschach.

Brand and colleagues (2006) also found that subjects with DD showed a moderate impairment in reality testing (moderately high X- and WSUM6) compared with the nonpatients, although they were less impaired than most of the other patient groups in their study. In terms of relational capacity, the patients with DD showed features suggestive of being able to participate in insight-oriented psychotherapy, such as enhanced self-reflection (high FD) and an ability to view others as collaborative (high COP; Cooperative Movement) although they also showed a tendency to misperceive others (high M-). Brand et al. did not compare their DD sample to a BPD or PSD sample.

In addition to being diagnosed with BPD, patients with DID are often misdiagnosed with a variety of psychotic disorders. Only one study to date has compared the Rorschachs of patients with DD with those with of patients diagnosed with schizophrenia (Armstrong & Loewenstein, 1990). This pilot study compared the Rorschachs of 14 consecutively admitted patients with DD with the schizophrenic norms published by Exner (1985). Armstrong and Loewenstein (1990) found that patients with DD had similarly high levels of misperceptions about others (M-), as did the patients with schizophrenia. The patients with DD had higher levels of self-reflection (FD), cognitive complexity (blends), and a tendency to become overly involved in complexity (Lambda) compared with the patients with schizophrenia.

The two studies (Armstrong, 1991; Scroppo et al., 1998) that compared the Rorschachs of patients with DD and BPD suffer methodologically from reliance on a single published sample of BPD Rorschachs (Exner, 1986). Similarly, the only study (Armstrong & Loewenstein, 1990) that compared DD protocols with those from schizophrenic patients also relied on a previously published sample. Another limitation in the prior research is the reliance on small samples and the intermingling of patients with DID and DDNOS in several studies. The goal of the current study is to compare the personality features of the subset of patients with DID from the Brand et al. (2006) DID/DDNOS study to those of previously unpublished samples of patients

with BPD and psychotic disorder (PSD) to explore the Rorschach variables that distinguish DID from BPD and PSD.

Our hypotheses are as follows:

> *Hypothesis 1:* We hypothesize that all three diagnostic groups will show serious misunderstanding of others (M-) because of the disruptive impact of interpersonal trauma on the object relations in both patients with DID and BPD and the psychosis-based misperceptions of patients with PSD. However, we expect that the DID group will demonstrate a greater *capacity for a working alliance* than the BPD and PSD groups as shown by their higher capacity for interpersonal collaboration (COP), greater ability to be introspective (FD), and greater social interest (Sum H; see Table 1 for a listing of the hypotheses and the results).

> *Hypothesis 2:* We further expect that, compared with the BPD and PSD samples, the DID sample will show a greater *ability to reason despite significant traumatic flooding.* Specifically, we predict that despite their significantly higher TCI, the DID group will show greater capacity to modulate emotion (CF + C − FC), better reality testing (lower X-) and less thought disorder (lower WSum 6) than the BPD and PSD groups.

> *Hypothesis 3:* Finally we propose that despite giving a lower number of responses (R) than the other groups, the DID sample will be distinguished from the patients with BPD and PSD by greater *complexity of their experience* as measured by their low Lambda and their higher Blends/R.

Method

Participants

The RCS protocols in this study were not used in making a clinical diagnosis. Rather, our assessment results were used to make recommendations to treatment providers about how to adapt treatment to each person's presenting struggles and strengths. Getting diagnostically "pure" groups and using standardized administration was less important then being therapeutic with these destabilized patients. In other words, our goal was primarily to use the assess-

Table 1
Hypotheses and Summary of Results

Variable	Hypothesis	Regression results
Capacity for working alliance		
COP	DID higher than BPD, PSD	Hypotheses supported
Sum H	DID higher than BPD, PSD	Hypotheses supported only for PSD
M-	DID not different from BPD, PSD	Hypotheses supported
FD	DID higher than BPD, PSD	Hypotheses supported
Ability to reason despite traumatic flooding		
TCI	DID higher than BPD, PSD	Hypotheses supported only for PSD
CF + C − FC	DID lower than BPD, PSD	Hypotheses supported
WSUM6	DID lower than BPD, PSD	Hypotheses supported
X-	DID lower than BPD, PSD	Hypotheses supported only for BPD
Complexity of experience		
R	DID lower than BPD, PSD	Hypotheses supported
Lambda	DID lower than BPD, PSD	Hypotheses supported only for PSD
Blends	DID higher than BPD, PSD	Hypotheses supported only for PSD

Note. DID = dissociative identity disorder; BPD = borderline personality disorder; PSD = psychotic spectrum disorders; FD = Form Dimension; COP = Cooperative Movement.

ment results therapeutically (Finn, 2007). The hypotheses for this study were not known to the people diagnosing, administering, or scoring the protocols for the groups.

Dissociative identity disorder sample. There were 77 patients diagnosed with DID in the sample of 100 severely dissociative patients from our earlier descriptive study (Brand et al., 2006). The protocols were gathered approximately 12 years ago at a private psychiatric hospital in the Mid-Atlantic region as part of the psychological assessment that was conducted with most patients. Five cases were removed because their protocols were too short and simplistic (see below), leaving 72 cases. Seven of the 77 patients with DID were diagnosed with comorbid BPD, of which two protocols had already been removed because of being too brief. Thus, 5 cases that had comorbid DID/ BPD were removed, leaving a final DID sample size of 67. The DID cases were diagnosed by the third author, a senior psychiatrist highly experienced in the assessment and treatment of dissociative patients. The diagnoses were made via a detailed semistructured interview that assessed the presence/absence of dissociative amnesia, autohypnotic symptoms, somatoform symptoms, PTSD symptoms, mood disorder symptoms, and dissociative process symptoms such as the presence of alter self-states, passive influence, inner voices, and switching phenomena (Loewenstein, 1991b) and a review of their responses on the Dissociative Experiences

Scale (Bernstein & Putnam, 1986). The patients were diagnosed with DID prior to their participation in the research project assessment. In addition to the RCS, these patients typically completed a battery including intellectual and personality assessment tests. Structured clinical interviews for the diagnosis of dissociative disorders were not yet available at the time the data were collected.

BPD and psychotic samples. The RCS data from the BPD and psychotic samples were culled from data collected approximately 12 years ago as part of standard psychological testing conducted with most patients at an urban Midwestern academic medical center. Both of these were samples of convenience in that the data had been collected at approximately the same time as that from the DID sample. The diagnoses were billing diagnoses, which were assigned by inpatient treatment teams (consisting of psychiatrists, psychologists, and other mental health professionals) based on observations and interviews with the patients over the course of the hospitalization. For outpatients, diagnoses were assigned by the treating clinician following an extended intake evaluation that did not include the psychological assessment. From an initial sample of 127 archival records, all patients with a diagnosis of BPD were selected for this study. To create the largest BPD sample possible, the protocols of 34 inpatients as well as 6 outpatients were used, creating a BPD sample of 40. Of the remain-

ing 87 nonborderline inpatients with mixed diagnoses, the patients with psychotic spectrum disorders (i.e., those with schizophrenia, psychotic mood disorders, delusional disorders, brief psychotic disorders, and psychotic disorder not otherwise specified) were selected to create a sample of 43 mixed psychotic patients, the majority (60%) of whom were diagnosed with schizophrenia.

Group demographics. More patients with DID were women (95%) compared with the BPD (88%) and PSD groups (65%), and more patients with DID were White (91%) than in the BPD (65%) or PSD groups (33%; see Table 2). For this reason, both gender and ethnicity (White vs. nonwhite) indicators were included as covariates in all analyses. Race/ethnicity was dichotomized for the regression analyses because of the considerable imbalance among the number of ethnicities represented in the samples. A majority of respondents with BPD had never been married (60%) compared with respondents with DID and PSD, although this difference was not significant between the groups so it was not added as a covariate. Likewise, age did not differ between the groups so it was not used as a covariate. Respondents with PSD had fewer years of education than respondents with BPD (15.2 vs. 13.6; $p = .035$, Tukey's HSD). Years of education was considered as a covariate but because the difference was between the two comparison groups (i.e., PSD and BPD), the effects of adjustment for education were judged negligible.[1]

Procedure

Rorschach administration. Rorschachs were administered and scored according to the RCS (Exner, 1993), with three exceptions for the DID group. Typically within the RCS, the patient must give at least 14 responses for the interpretations to be considered valid. However, severely dissociative patients tend to give fewer responses than other patients (Brand et al., 2006). In the DID sample, 38.9% gave fewer than 14 responses. The lowest number of responses was 10. Because low responses are a common feature of this disorder and are one of our hypothesized differences between the samples, we chose not to discard these low response profiles. Furthermore, Gregory J. Meyer (personal communication, April 1, 2006), who was

consulted regarding this issue, advised that brief records among highly dissociative patients may be potentially useful if the protocols contain complex, detailed responses (e.g., low Lambda, high blends, lengthy responses). The brief protocols in our DID sample did not show signs of defensiveness. Highly complex responses found in a brief record might reflect the posttraumatic experience of being both flooded with traumatic associations, yet attempting to defensively constrict as a way to limit being overwhelmed. Following Meyer's (personal communication, 2006) suggestion, we removed cases with less than 14 responses if Lambda was greater than .50, which resulted in the removal of 5 DID cases and keeping 26 cases with fewer than 14 responses. Following this same procedure for the BPD and psychotic sample, no cases from either group met criteria for removal.

The second and third deviation from standard administration relate to the process of administering the RCS to patients with DID. The RCS is particularly valuable with dissociative patients because it elicits emotions and traumatic associations from which their dissociative defenses have helped them disconnect (Brand et al., 2006). When completing the RCS, dissociative patients frequently dissociate, rock, show observable fear of the cards, experience flashbacks, and sometimes switch personality states (Armstrong, 1991, 2002; Brand et al., 2006). These behaviors were recorded systematically on the Dissociative Behaviors Checklist (Armstrong, 2002). Some of these patients even begin to harm themselves during or shortly after completing the RCS. We interpret these behaviors as the outward manifestations of the patients becoming overwhelmed by the associations and emotions they had previously dissociated. Typically, the RCS is readministered if an individual gives less than 14 responses. However, because of how destabilizing this test is for severely dissociative patients (Armstrong, 1991), if it appeared that a patient could not tolerate a second administration, the patient was not required to complete a second RCS. This alteration was not made for the other two samples because they did not show the same reac-

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[1] All models were run with and without years of education as a covariate. No differences in diagnostic group comparisons were found.

Table 2
Demographics by Diagnostic Group

	n (%)		
	DID ($N = 67$)	BPD ($N = 40$)	PSD ($N = 43$)
Female[a]	64 (95)	35 (88)	28 (65)
Marital status[b]			
Never married	27 (40)	24 (60)	21 (49)
Married	2 (3)	13 (32)	12 (28)
Widowed	26 (39)	1 (2)	1 (2)
Divorced	7 (10)	1 (2)	8 (19)
Separated	4 (6)	1 (2)	1 (2)
Race/ethnicity[c]			
White	61 (91)	26 (65)	14 (33)
Black	6 (9)	11 (27)	25 (58)
Hispanic	0 (0)	1 (2)	2 (5)
Asian	0 (0)	2 (5)	2 (5)
	M (SD)		
Age	32.1 (8.2)	33.5 (8.3)	34.1 (10.4)
Years of education[c]	14.0 (2.2)	15.2 (3.2)	13.6 (3.3)

Note. DID = dissociative identity disorder; BPD = borderline personality disorder; PSD = psychotic spectrum disorders.
[a] $\chi^2 (2) = 18.99$; $p < .001$. [b] Marital status was collapsed into ever married versus never married. No differences between groups in proportion of ever married were found. [c] Race/ethnicity was collapsed into White versus non-White and significantly more Whites were in the DID group, $\chi^2 (2) = 40.87$; $p < .001$. Respondents with PSD had significantly fewer mean years of education than did respondents with BPD (Tukey's HSD, $p = .035$).

tivity to the RCS, so they were able to tolerate a second administration.

The third deviation from standard administration relates to our quandary about how to obtain a RCS protocol that accurately reflected the patients' divided, complex inner world. Early attempts at using the Rorschach (Erickson & Rapport, 1980) with patients with DID found that different personality states within one patients with DID gave protocols so different that they appeared to be from different individuals. The results from one dissociated part of the person do not usually generalize to the entire person (Erickson & Rappaport, 1980). When the standard administration of the RCS had been used, feedback from therapists indicated that the results were not accurate, such as when a well-functioning college professor gave a protocol suggesting that she was seriously thought disordered (Loewenstein, personal communication, 1989; Putnam, personal communication, 1989). One of the fundamental principles to working therapeutically with patients with DID is to work with and develop an alliance with all dissociated parts of the person (Putnam, 1989). Translating that clinical imperative into the testing room, we developed a way of introducing testing that had two goals: fostering rapport with the dissociated self-states of the DID clients and yielding information that was likely to be clinically more useful in that it applied to more than one dissociated state within the person. Thus, prior to starting the testing with the patients with DID, the testers said, "People often have different moods or aspects to them. If you feel that you have different moods or aspects to yourself, I invite you to allow all aspects of yourself to enter into the testing."

Reliability. The RCS for the patients with DID were administered and scored by two Caucasian female masters-level psychology technicians, who worked as full-time assessors in the psychology department of the hospital. They were trained in administration and scoring of the RCS and supervised by the second author. The BPD and PDS Rorschachs were administered by a Caucasian male senior psychologist with extensive expertise in the RCS or a student intern under the supervision of the senior psychologist. The senior psychologist scored all the

protocols, and 63 protocols from the larger ($N = 127$) mixed psychiatric sample were also scored by the intern.

A random sample of DID ($n = 10$) and mixed psychiatric protocols ($n = 20$) from the large sample ($N = 127$) of protocols from which the BPD and PSD were selected were used in the reliability analyses (Meyer, personal communication, July 24, 2007). Reliability was assessed by interrater agreement using intraclass correlation coefficients (ICCs) (2,1) (Shrout and Fliess (1979), yielding satisfactory levels. ICCs are found in Table 3.

Data Analysis

Confidence intervals. We analyzed the data using both confidence intervals on raw means and multiple regressions on transformed RCS variables because each technique has important advantages that offset the disadvantages of the other. The advantage of using confidence intervals is that they present data in a metric familiar to clinicians. The disadvantages are that confidence intervals on the raw RCS variables assume normal distributions and do not control for covariates such as number of responses. Many RCS variables are not normally distributed, and statistically controlling for covariates such as R is impor-

tant especially since some RCS variables (e.g., COP) covary with number of responses. The advantage for using a multiple regression approach is that variables can be transformed if assumptions of normality are violated and covariate control is straightforward. The disadvantage of a multiple regression approach is that clinicians cannot apply the results easily within their practices because transformation of the RCS variable and statistical control changes the scale of the variable. Moreover, conclusions may vary based on the approach. We interpret the results from the regressions as well as provide the confidence intervals for clinical use. To best illustrate our findings, we graphically display the means and confidence intervals of our three clinical groups.

Interval widths were calculated for 95% confidence. Count variables (e.g., COP, FD, H, R) were treated as continuous for the purposes of creating confidence intervals. Confidence intervals allow easy visual comparison of group summary data; means with intervals that overlap no more than a quarter width can be considered significantly different at $p = .05$ and intervals that abut one another reflect a mean difference significant at $p = .01$ (Cumming & Finch, 2005). Half widths for DID confidence intervals are shaded in the figures (Figures 1–3). Groups whose intervals overlap the shaded area for the DID means cannot

Table 3
Interrater Agreement for Selected Rorschach Variables

Variable	DID sample ($n = 10$)		BPD and PSD sample ($n = 20$)	
	ICC (2,1)	Interpretation[a]	ICC (2,1)	Interpretation[a]
Capacity for working alliance				
COP	0.84	Excellent	0.82	Excellent
FD	0.95	Excellent	0.82	Excellent
Sum H	0.96	Excellent	0.76	Excellent
MQ-	0.65	Good	0.89	Excellent
Ability to reason despite traumatic flooding				
TCI	0.94	Excellent	0.82	Excellent
CF + C − FC	0.61	Good	0.70	Good
WSUM6	0.95	Excellent	0.83	Excellent
X-%	0.92	Excellent	0.87	Excellent
Complexity of experience				
R	1.00	Excellent	1.00	Excellent
Lambda	0.97	Excellent	0.98	Excellent
Blends/R	0.96	Excellent	0.96	Excellent

Note. DID = dissociative identity disorder; BPD = borderline personality disorder; PSD = psychotic spectrum disorders; ICC = intraclass coefficient; TCI = Trauma Content Index; FD = Form Dimension; COP = Cooperative Movement.
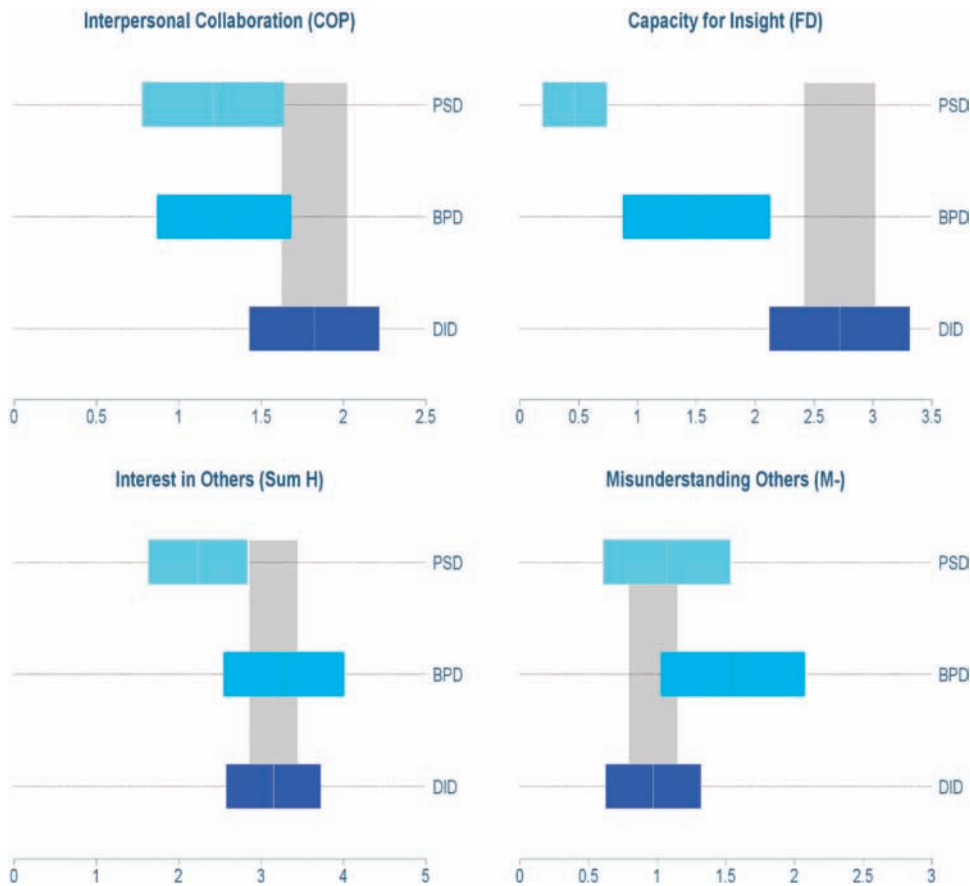[a] Ciccheti (1994).

Figure 1. Confidence intervals by group related to capacity for working alliance. "PSD" from $N = 43$ psychotic spectrum disorder inpatients. "BPD" from $N = 40$ borderline personality disorder patients. "DID" from $N = 67$ dissociative identity disorder inpatients.

be considered significantly different from one another whereas intervals that do not touch the shaded area can be considered different from the patients with DID at $p < .05$.

Multiple regression. COP, FD, and H were analyzed with Poisson regression. The remaining variables were analyzed with ordinary least squares regression, but transformations of the dependent variable were employed to improve the symmetry of their distributions using Box-Cox power transformation estimates: X-%, WSUM6, and Blends/R underwent square root transformations; TCI and Lambda log transformations; and CF + C – FC a cube root transformation. R and M- were inverse square root transformed so that their scales are inverted and interpretation of group differences are in the

opposite direction of the untransformed variables (e.g., a low inverse square root R indicates a high untransformed R and vice versa).

Number of responses, race/ethnicity, and gender were associated with diagnostic groups, thus they were included as covariates in the multiple regressions. Race/ethnicity was recoded to a dichotomous variable indicating white versus nonwhite respondent. Number of responses was log transformed and included in all analyses except when it was an outcome.

Test statistics, *p* values, and effect sizes (Cohen's *d*; Cohen, 1992) are reported for the DID versus BPD and DID versus PSD comparisons, controlling for covariates. Effect sizes are reported in the transformed version of the variable used in the regression analysis. Raw means and

other descriptive statistics are reported for all variables (see Table 4). Analyses were conducted using R 2.5.0 (R Development Core Team, 2006).

Results

DID Versus BPD

Statistically significant differences between DID and BPD groups using both confidence intervals and multiple regressions were found for six of 11 RCS variables. On variables related to capacity for working alliance, compared to the BPD comparison group, patients with DID provided more FD and COP responses (Figure 1 and Table 5). Effect sizes for these differences were small to large. On variables related to ability to reason, patients with DID had smaller average X-% and WSUM6 scores, fewer responses, and smaller CF + C – FC means than BPD respondents (Figure 2 and Table 5). Effect sizes for these differences were moderate to large. On variables related to the complexity of experience, the patients with DID did not show the expected differences on Lambda and Blends/R, although as expected, they had fewer responses than patients with BPD. There were three inconsistencies between the confidence interval and multiple regression interpretations. Significant differences between DID and BPD respondents in TCI and Blends/R found from comparing confidence intervals were not found in the multiple regressions, but controlling for covariates in the multiple regression revealed a difference between respondents with DID and BPD in the average number of COP responses not apparent in the confidence interval overlap.

DID Versus PSD

Comparing the DID group with the PSD group resulted in differences on 9 of 11 RCS variables with both confidence interval and multiple regression approaches. In the working alliance category, respondents with DID produced more FD, COP, and H responses (Figure 1 and Table 5). Effect sizes ranged from small to large. Among the ability to reason variables, the DID group had a larger mean TCI score but smaller mean WSUM6 and CF + C – FC scores than the PSD group (Figure 2 and

Table 5). The groups did not differ on their X-scores. Effect sizes for these comparisons were moderate to large. In the complexity of experience category, patients with DID had lower average Lambda scores and responses and higher average Blends/R scores than patients with PSD (Figure 3 and Table 5). Effect sizes were small to moderate. Two inconsistencies between the confidence interval and multiple regression approaches were found, one for COP and one for R. In both cases, controlling for covariates revealed that the DID group produced more COP responses and fewer overall responses than patients with PSD on average. These differences were not apparent when comparing confidence intervals.

Discussion

Our results suggest that patients with DID, compared with patients with BPD and psychotic patients, generally have some aspects of enhanced capacity to develop a working relationship and show adequate reasoning even in the context of traumatic intrusions. The differences found in personality functioning as measured by the RCS may assist clinicians making differential diagnoses between these diagnostic groups. These findings have implications for these individuals' social functioning in general and treatment in particular.

Capacity for Working Alliance

The dissociative individuals showed a greater interest in collaborative engagement with others (greater COP) than either those with BPD or psychotic individuals. Because patients with DID view others as more collaborative, they may be more willing to interact with others (Weiner, 1998). They also showed a much greater capacity to be self-reflective (FD) than the other two groups. The large effect sizes for FD indicate that this variable may be particularly useful in making differential diagnoses between the groups. With the individuals with DID individuals producing an average of 2.72 FD responses, they show an unusual degree of introspection, perhaps suggestive of "self-consciousness and soul-searching" (Weiner, 1998, p. 160). This high level of FDs may also allow patients with DID to reflect on their behaviors and feelings in relationships, and in

Table 4
Descriptive Statistics for Selected Rorschach Variables by Group

	DID (n = 67)							BPD (n = 40)							PSD (n = 43)						
	M	SD	Min	Max	Med	Skew	Kurtosis	M	SD	Min	Max	Med	Skew	Kurtosis	M	SD	Min	Max	Med	Skew	Kurtosis
Capacity for working alliance																					
COP	1.82	1.60	0.00	6.00	2.00	0.61	−0.65	1.28	1.26	0.00	4.00	1.00	0.54	−0.97	1.21	1.39	0.00	6.00	1.00	1.35	1.58
FD	2.72	2.43	0.00	14.00	2.00	1.81	5.39	1.50	1.93	0.00	7.00	1.00	1.45	1.25	0.47	0.88	0.00	4.00	0.00	2.24	5.08
Sum H	3.15	2.34	0.00	10.00	3.00	1.15	0.64	3.27	2.26	0.00	9.00	2.00	0.73	−0.44	2.23	1.94	0.00	8.00	2.00	1.08	0.60
M-	0.97	1.41	0.00	7.00	0.00	1.92	4.06	1.55	1.63	0.00	6.00	1.00	1.52	1.45	1.07	1.49	0.00	7.00	1.00	1.92	4.16
Ability to reason despite traumatic flooding																					
TCI	0.57	0.44	0.03	1.90	0.42	1.38	1.09	0.38	0.33	0.00	1.82	0.30	2.40	7.41	0.23	0.24	0.00	1.11	0.17	1.49	2.65
CF + C − FC	0.16	2.32	−4.00	6.00	0.00	0.47	−0.50	2.75	3.82	−3.00	16.00	2.50	1.67	3.75	1.60	2.36	−4.00	7.00	1.00	0.11	−0.37
X-%	0.17	0.12	0.00	0.46	0.13	0.87	0.06	0.28	0.12	0.05	0.73	0.27	1.33	4.08	0.22	0.11	0.00	0.48	0.21	0.45	−0.11
WSUM6	17.73	20.11	0.00	95.00	13.00	1.49	2.23	42.13	33.14	1.00	137.00	38.00	1.29	1.17	39.07	28.71	0.00	112.00	35.00	0.63	−0.39
Complexity of experience																					
R	17.89	7.51	10.00	35.00	15.00	0.75	−0.74	27.28	13.35	11.00	72.00	23.00	1.77	2.90	20.44	5.83	14.00	37.00	19.00	1.07	0.24
Lambda	0.40	0.30	0.00	1.43	0.33	1.48	2.13	0.60	0.51	0.00	2.38	0.52	1.75	3.08	0.84	1.14	0.08	6.00	0.50	3.16	10.02
Blends/R	0.39	0.18	0.00	0.80	0.42	0.04	−0.72	0.28	0.17	0.04	0.70	0.23	0.70	−0.51	0.22	0.13	0.00	0.53	0.20	0.42	−0.38

DID = dissociative identity disorder; BPD = borderline personality disorder; PSD = psychotic spectrum disorders; TCI = Trauma Content Index; FD = Form Dimension; COP = Cooperative Movement.

particular in the therapeutic relationship, enabling them to benefit from insight-oriented therapy. As predicted, the patients with DID showed a greater ability to modulate emotion (CF + C − FC) than the other two groups. Deficits in affect modulation are associated with greater impulsivity and have been found in inpatients diagnosed with schizophrenia (Exner, 1986; Hartmann, Norbech, & Gronnerod, 2006) and BPD (Acklin, 1993; Exner, 1986; Stone, 1980; Zanarini et al., 2003). As expected, patients with DID showed greater interest in others (Sum H) than did the psychotic patients, but they did not differ from the patients with BPD on this variable. The lack of interest in the psychotic group is expected, given that social withdrawal is a characteristic feature of schizophrenia (American Psychiatric Association, 2000).

As hypothesized, the level of social misunderstanding (M-) was similar across the groups. However, the etiology of these symptoms is likely quite different. Interpersonally traumatized patients often hunger for, yet retreat from intimate relationships because of having learned that attachment figures are the source of comfort as well as terror (Liotti, 2004). Their hypervigilant search for potential threat from others (Liotti,

2004) may translate into M- scores. In contrast, the classic analytical perspective would suggest that schizophrenic patients are unable to tolerate closeness with others because of boundary diffusion (Searles, 1979). Improving the accuracy of interpretations about others should be a focus in treatment for all three groups of patients, although it is likely to require different interventions due to having different etiologies.

Ability to Reason Despite Traumatic Flooding

The DID group gave significantly more TCI responses than did the psychotic patients but, unexpectedly, they did not differ from the BPD group. Nonetheless, there was a stepwise progression in the expected direction in the TCI scores, with the patients with DID reporting the most trauma content, BPD less, and the psychotics the least (DID $M = .57$ vs. BPD $M = .38$ vs. PSD $M = .23$). This progression parallels the stepwise progression of prevalence rates of childhood abuse found in the literature for these groups. Patients with DID report rates of childhood sexual abuse, childhood physical abuse, or both with 95% to 97% frequency (e.g.,

Table 5
Test Statistics, p Values, and Effect Sizes by Group Comparisons on Selected Rorschach Variables

	DID versus BPD			DID versus PSD		
	Test statistic	*p*	*d*	Test statistic	*p*	*d*
Capacity for working alliance						
COP	$Z = 2.19$	.03	0.35	$Z = 2.31$	.02	0.35
FD	$Z = 5.21$	<.0001	0.82	$Z = 6.81$	<.0001	1.04
Sum H	$Z = 1.00$	.32	0.16	$Z = 2.03$	.04	0.31
M-	$t = 1.63$	.11	0.26	$t = 0.46$	.64	0.07
Ability to reason despite traumatic flooding						
TCI	$t = 0.86$	.39	0.14	$t = 3.18$	.002	0.49
CF + C − FC	$t = -4.78$	<.0001	−0.76	$t = -3.04$	.003	−0.46
X-%	$t = -4.11$	<.0001	−0.65	$t = -1.28$	.20	−0.20
WSUM6	$t = -3.29$	.001	−0.52	$t = -3.70$	.0003	−0.56
Complexity of experience						
R	$t = 5.64$	<.0001	0.89	$t = 2.61$	.01	0.41
Lambda	$t = -1.24$	.22	−0.20	$t = -2.30$	.02	−0.35
Blends/R	$t = 1.31$	.19	0.21	$t = 2.81$	.005	0.43

Note. DID = dissociative identity disorder ($n = 67$); BPD = borderline personality disorder ($n = 40$); PSD = psychotic spectrum disorders ($n = 43$); TCI = Trauma Content Index; FD = Form Dimension; COP = Cooperative Movement. Cohen's *d* adjusted for race/ethnicity, gender, and log number of responses. COP, FD, and H analyzed with Poisson regression and test statistics are Zs. Ordinary least squares regression with transformations included square root (X-%, WSUM6, and Blends/R), log (TCI, Lambda), cube root (CF + C − FC), and inverse square root (R, M-). Effect sizes for R and M- are inverse square root transformed and reflect smaller R and M- means for DID respondents relative to BPD and PSD respondents, controlling for covariates.
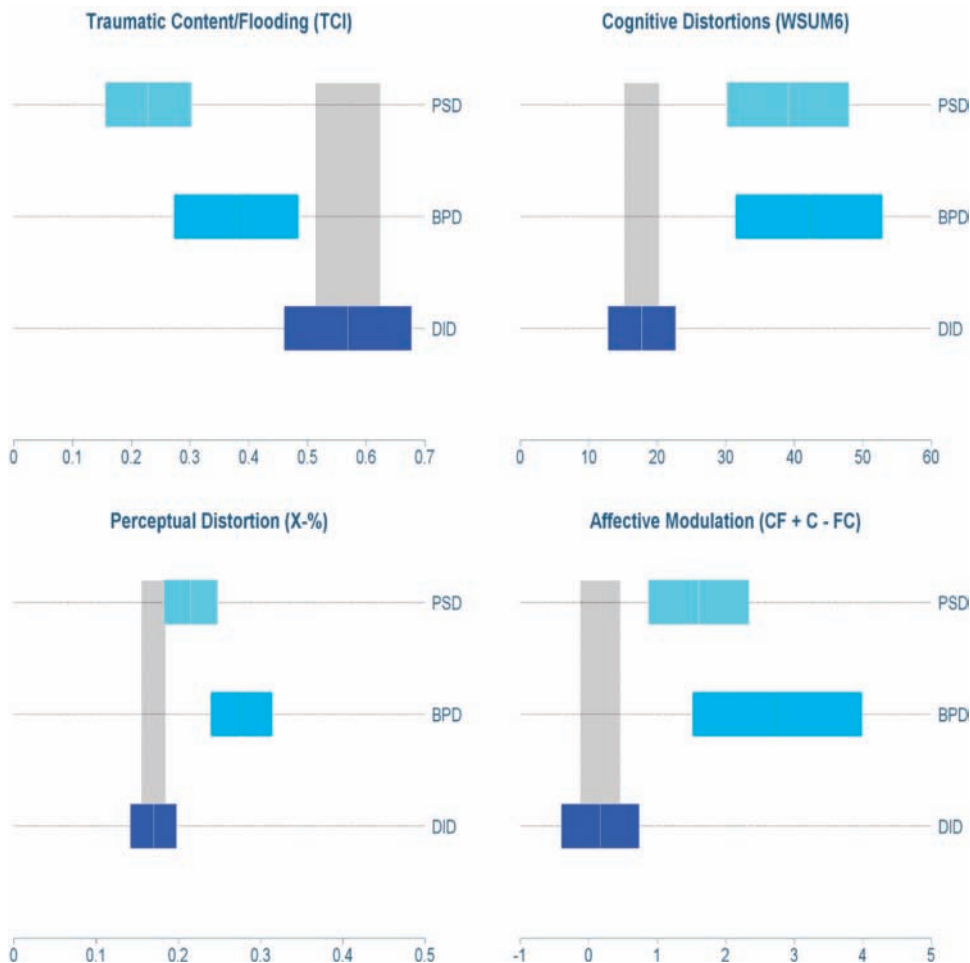
Traumatic Content/Flooding (TCI)

PSD
BPD
DID

0   0.1   0.2   0.3   0.4   0.5   0.6   0.7

Cognitive Distortions (WSUM6)

PSD
BPD
DID

0   10   20   30   40   50   60

Perceptual Distortion (X-%)

PSD
BPD
DID

0   0.1   0.2   0.3   0.4   0.5

Affective Modulation (CF + C - FC)

PSD
BPD
DID

-1   0   1   2   3   4   5

Figure 2. Confidence intervals by group related to ability to reason despite traumatic flooding. "PSD" from $N = 43$ psychotic spectrum disorder inpatients. "BPD" from $N = 40$ borderline personality disorder patients. "DID" from $N = 67$ dissociative identity disorder inpatients.

Ross et al., 1991; Putnam et al., 1986) compared with 80% to 91% for patients with BPD (Zanarini et al., 1997; Zanarini, Gunderson, Marino, Schwartz, & Frankenburg, 1989) and 62% to 64% for severely mentally ill inpatients (Goodman et al., 2001). We believe that the stepwise progression in TCI scores between the groups may partially reflect greater trauma exposure for the DID and BPD groups relative to the psychotic group. However, we do not have data on trauma exposure to test this hypothesis. At the time when the data were collected, information on trauma exposure was not systematically gathered largely because measures of trauma

exposure were just beginning to be developed. No study to date has directly compared trauma exposure in patients with BPD and PSD versus those with DID. It will be important for future researchers to attempt to replicate this stepwise progression in TCI and explore the relationship between the TCI and levels of trauma exposure.

The DID group TCI mean in the current sample is consistent with that found in the only other independent sample of severely dissociative individuals that used all five contents that comprise the TCI (.57 in this study compared with .50 in Armstrong & Loewenstein, 1990). This high level of traumatic content is consis-
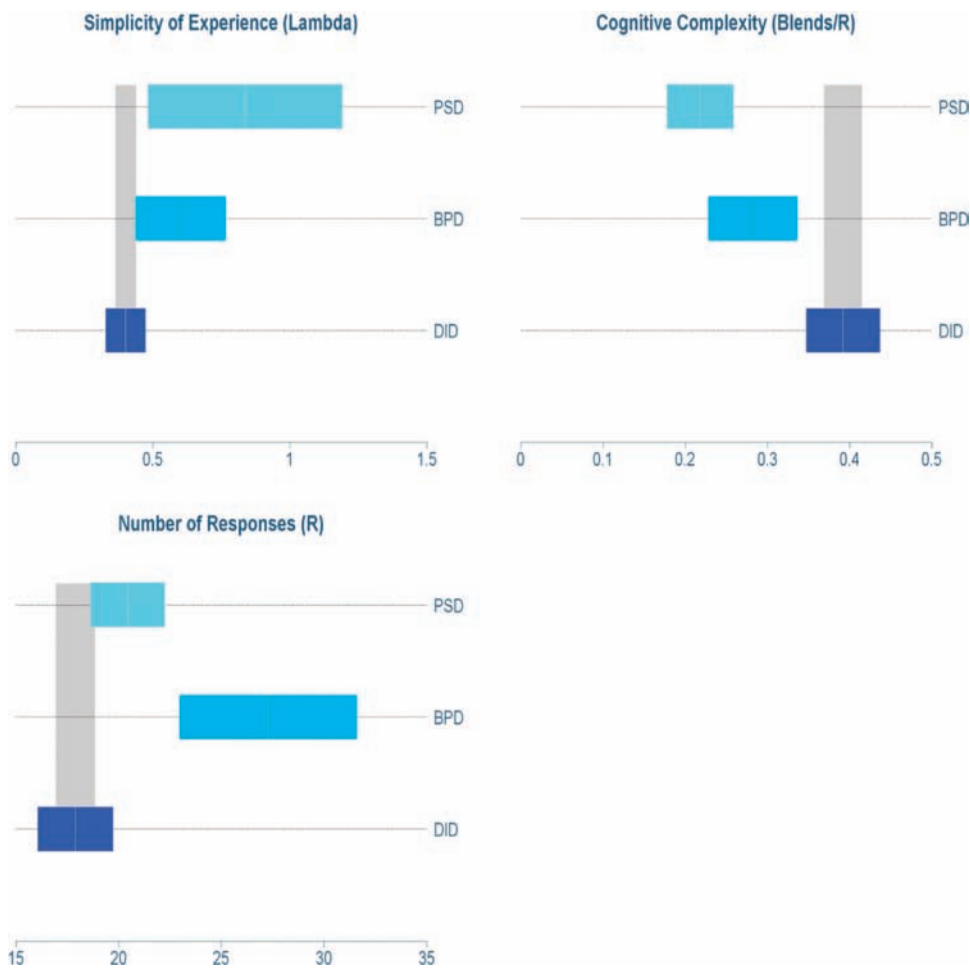
Figure 3. Confidence intervals by group related to complexity of experience. "PSD" from $N = 43$ psychotic spectrum disorder inpatients. "BPD" from $N = 40$ borderline personality disorder patients. "DID" from $N = 67$ dissociative identity disorder inpatients.

tent with Scroppo et al.'s findings as well, although those researchers looked at only three of the five TCI content scores (i.e., Bl, MOR, An; Scroppo et al., 1998). The present study's BPD TCI mean of .38 is similar to TCI means for Dutch samples of childhood sexual abuse survivors (.26–.32; Kamphuis, Kugeares, & Finn, 2000), whereas the psychotic group's TCI score of .23 is similar to Dutch adults who have experienced trauma that did not include childhood sexual abuse (.21; Kamphuis et al., 2000) and an inpatient depressed sample in which trauma exposure was not assessed (.18; Exner's [2001] sample cited in Brand et al., 2006). These consistent findings

across different research teams, countries and types of clinical samples indicate that the TCI may be the most robust indicator on the RCS of intrusions of traumatic material that has been found to date. Furthermore, the effect size was moderate for the difference between TCI scores of the DID and psychotic groups ($d = .49$), suggesting that the TCI may be useful for differential diagnosis between DID and PSD.

The findings regarding FD may have a bearing regarding the ability of patients with DID to reason logically, despite a fairly high level of misperception and traumatic flooding. First, as noted earlier, the patients with DID were much

more introspective than either the BPD or psychotic groups. Second, the number of FD responses shows a stepwise progression: the DID group gave the highest number followed by the BPD group, then the psychotic group (FD M = 2.72, 1.50, and .47, respectively). Third, the effect sizes are large, with the largest being between the DID and psychotic group. We speculate that this stepwise progression may relate to the function of FD in traumatized patients. While the traditional interpretation of FD is that it relates to the ability to be introspective, we have documented that FD responses often occur in, or immediately after, responses with TCI content (Brand, Armstrong, Kaplan, & Becker, 2007). This suggests the possibility that FD responses are an attempt to defensively distance oneself from painful, intrusive imagery of trauma. In some DID protocols, there are alternating patterns of intrusion of traumatic content and FD that parallel the PTSD symptoms of intrusions alternating with avoidance of traumatic material (Brand et al., 2006). This biphasic response pattern was noted in one of the earliest papers on trauma in the Rorschach (van der Kolk & Ducey, 1989) although these authors did not report that FD responses were part of the biphasic pattern. The stepwise progression in FD's may relate to the stepwise progression in TCI and trauma exposure, as reported in the literature. This led us to suggest elsewhere that FD responses may be a form of dissociative distancing from overwhelming traumatic material (Brand et al., 2006). Another possibility is that dissociative patients, who frequently complain that they cannot feel emotions or sensations in their bodies (American Psychiatric Association, 2000), may engage in so much self-reflection that they are not able to sufficiently engage in self-experiencing.

The reality testing (X-) of the DID group was better than the BPD group, but did not differ from the PSD group. However, the DID group showed more organized and logical thinking (WSUM6) than either the BPD or PSD groups. This is an important finding because it shows clearly that despite having high levels of apparent first rank Schneiderian symptoms such as "made" feelings, impulses, or acts, or voices commenting on their actions, patients with DID are not frankly psychotic as measured by the RCS, despite being frequently misdiagnosed with schizophrenia (Ellason & Ross, 1995;

Kluft, 1987; Ross et al., 1990). Hallucinations and other first-rank symptoms have been viewed as classic signs of schizophrenia; however, research indicates patients with DID show higher rates of these symptoms than do patients with schizophrenia (Ellason & Ross, 1995; Ross et al., 1990). The phenomenology and etiology of DID passive influence differs from that experienced by patients with schizophrenia in that it is not given a delusional explanation and is not *experienced* as coming from external agencies. Rather, it is experienced as stemming from the overlap and interference among self-states. The DID group's ability to think relatively more clearly and logically than the patients with PSD despite severe traumatic flooding and histories of chronic and severe trauma suggest that the ability to dissociate may confer some degree of resiliency (Armstrong, 1994). Nonetheless, the DID group's reality testing (X-) was not different from that of the PSD group, suggesting that patients with DID are prone to significant misinterpretations of stimuli in their inner and outer reality.

Complexity of Experience

As expected, the DID group showed significantly more complex thinking (Blends/R) and less simplicity of experience (Lambda) than did the PSD group. This suggests that they have a greater tendency to get caught up in their complex inner world of associations and emotions than do psychotic individuals. Although the means were in the predicted directions, the patients with DID did not differ from the patients with BPD on these variables.

The findings that the DID group had areas of healthy as well as impaired object relations, with moderate problems in reality testing yet logical thought processes is intriguing, given the extremely high rates of severe childhood physical and or/sexual abuse and neglect reported by patients with DID (Ross et al., 1991; Putnam et al., 1986). In this sample, patients with DID have several personality strengths that were not found in the borderline or psychotic patients, although many in both the BPD and PSD groups likely also experienced abuse and neglect in childhood (Goodman et al., 2001; Zanarini et al., 1997). These relative personality assets are not limited to comparisons with patients with BPD and psychotic patients. In ear-

lier comparisons involving the larger dissociative sample from which these patients with DID were drawn, we found highly dissociative individuals showed greater empathic and collaborative capacity, more self-reflection, and less perceptual and cognitive distortions than did depressed inpatients and nondissociative, yet traumatized individuals (Brand et al., 2006).

Although chronic dissociation is associated with tremendous suffering including the loss of a coherent identity and continuous memory, theorists (Armstrong, 1994; Putnam, 1989, 1997) have suggested that dissociation provides some protection from the chronic danger and tumultuous emotions by which they may otherwise have been paralyzed, and from which perhaps patients with BPD could not find escape. Armstrong (1994) theorized that the ability to dissociate among severely abused dissociative individuals placed them on an atypical developmental pathway, rather than leading to developmental arrests that are theorized to occur with BPD individuals (Stone, 1980). Our findings in the present study, as well those in our prior report, provide some support for this theory (Brand et al., 2006). Because of having dissociative amnesia, the individuals with DID would have been unlikely to have continually recalled how devastating others could be and instead may have, at least in some personality states, viewed others as potentially collaborative. For some patients with DID, this more balanced view of others, paired with the other personality traits documented here, may have contributed to their participation in at least some supportive relationships. These findings of personality strengths, especially in relational capacity, are in line with research showing that dissociation preserves attachment (Freyd, 1996; George & West, 2003; Liotti, 2004).

Despite having some areas of relative strength, the patients with DID also demonstrated areas of weakness. Individuals with BPD, DID, and PSD are prone to similar levels of misunderstanding others. Given their tendency to misread others, developing a relationship with the therapist is likely to be a critical, yet triggering, opportunity to learn how to build a relationship with others despite misunderstandings and mistrust (Wallin, 2007). Furthermore, patients with DID are prone to misper-

ceiving reality at about the same level as individuals with PSD. Thus, reality testing is an important area of intervention for all three groups.

We acknowledge the limits of our study. The data were collected before trauma exposure measures and structured interviews for dissociative disorders had been developed. We relied on clinical diagnoses made by teams of clinicians to determine the diagnoses, which may lead to less accurate diagnoses. Given the general lack of awareness of dissociative disorders in most mental health settings back in the late 1980s, it is possible that some of the patients with BPD and PSD suffered from a dissociative disorder. As Sar, Akyuz, Kugu, Ozturk, and Ertem-Vehid (2006) have reported, comorbid *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (*DSM–IV*) Axis I dissociative disorders are commonly underdiagnosed in patients diagnosed with BPD. Some of the patients with BPD and psychotic disordered patients may actually have met diagnostic criteria for a dissociative disorder. However, despite this, the number of significant differences between the groups in this report underscores the magnitude of the differences we detected. Given the advances that have been made with new grouping variables for the RCS, further studies may bring greater refinement of the findings if they use the current grouped variables. Hospitalized borderline patients typically report higher rates of childhood abuse than do outpatient samples (Golier et al., 2003). Thus, larger differences in TCI might be found if outpatient samples were compared. In addition, it is possible that including 6 outpatients in the sample of 40 patients with BPD obscured differences between DID and BPD by creating a somewhat healthier BPD group. It is also possible that some of our findings could be because of sampling and administration differences between the groups. Future studies should utilize outpatient samples gathered using similar sampling procedures, validated structured diagnostic inventories and trauma exposure measures, and new grouped RCS variables to further clarify the relationships between level of traumatic flooding and trauma exposure. In light of these limitations, the current findings

are considered preliminary and need to be replicated.

In summary, this study found that patients with DID showed numerous personality differences, several of which are relative strengths in comparison to psychotic patients and those with BPD. The RCS protocols of the individuals with DID showed greater capacity to be self-reflective, to modulate affect, and to see others as potentially helpful. These abilities may contribute to some individuals with DID being able to more easily develop a working alliance than some patients with BPD and PSD. The patients with DID were able to think relatively clearly compared with the other patients, despite having high levels of traumatic flooding. These personality characteristics may contribute to patients with DID being able to engage in, and benefit from, insight-oriented therapy.

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Correction to Brand et al. (2009)

In the article "A Naturalistic Study of Dissociative Identity Disorder and Dissociative Disorder Not Otherwise Specified Patients Treated by Community Clinicians," by Bethany Brand, Catherine Classen, Ruth Lanius, Richard Loewenstein, Scot McNary, Clare Pain, and Frank Putnam (*Psychological Trauma: Theory, Research, Practice, and Policy*, 2009, Vol. 1, No. 2, pp. 153–171), author Ruth Lanius's name was misspelled as Ruth Lanins; author Scot McNary's name was misspelled Scott McNary; author Clare Pain's name was misspelled Claire Pain; and the affiliation for Richard Loewenstein should have read Sheppard Pratt Health System.