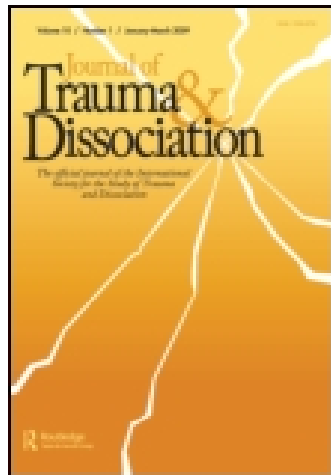


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Dissociation and Psychosis in Dissociative Identity Disorder and Schizophrenia

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TARGET ARTICLE

Dissociation and Psychosis in Dissociative Identity Disorder and Schizophrenia

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Dissociative symptoms, first-rank symptoms of schizophrenia, and delusions were assessed in 40 schizophrenia patients and 40 dissociative identity disorder (DID) patients with the Multidimensional Inventory of Dissociation (MID). Schizophrenia patients were diagnosed with the Structured Clinical Interview for the DSM–IV Axis I Disorders; DID patients were diagnosed with the Structured Clinical Interview for DSM–IV Dissociative Disorders–Revised. DID patients obtained significantly (a) higher dissociation scores; (b) higher passive-influence scores (first-rank symptoms); and (c) higher scores on scales that measure child voices, angry voices, persecutory voices, voices arguing, and voices commenting. Schizophrenia patients obtained significantly higher delusion scores than did DID patients. What is odd is that the dissociation scores of schizophrenia patients were unrelated to their reports of childhood maltreatment. Multiple regression analyses indicated that 81% of the variance in DID patients' dissociation scores was predicted by the MID's Ego-Alien Experiences Scale, whereas 92% of the variance in schizophrenia patients' dissociation scores was predicted by the MID's Voices Scale. We propose that schizophrenia patients' responses to the MID do not index the same pathology as do the responses of DID patients. We argue that neither phenomenological definitions of dissociation nor the current generation of dissociation instruments

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(which are uniformly phenomenological in nature) can distinguish between the dissociative phenomena of DID and what we suspect are just the dissociation-like phenomena of schizophrenia.

KEYWORDS *dissociation, passive influence, delusion, intrusion, symptom exaggeration, dissociation-like, phenomenology*

Persons with dissociative identity disorder (DID) and persons with schizophrenia share some phenomenological similarities: depersonalization, derealization (e.g., Steinberg, 1994a; Yargıç, Şar, Tutkun, & Alyanak, 1998), and many of Schneider's (1959) first-rank symptoms of schizophrenia (FRS; Dell, 2006b; Ellason & Ross, 1995; Kluft, 1987; Read, Agar, Argyle, & Aderhold, 2003). Perhaps most important, auditory hallucinations (i.e., voices) are almost routinely present in DID (for a review, see Dell, 2006b).

Eight of the FRS are passive-influence symptoms (Kluft, 1987; Mellor, 1970)—somatic and mental activities that are experienced as “not mine.” In schizophrenia, passive-influence symptoms are usually accompanied by delusional beliefs about those symptoms (i.e., delusions of control). Three studies have found FRS to be more frequent in DID than in schizophrenia (Ross, Anderson, & Clark, 1994; Ross et al., 1990; Yargıç et al., 1998). The presence of these passive-influence symptoms in DID—especially voices—has been diagnostically problematic (Ross, 2004). The *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV*; American Psychiatric Association, 1994) states that the presence of either “voices commenting” or “voices conversing” is sufficient to diagnose schizophrenia. Accordingly, many persons with DID meet the symptom criteria for a *DSM-IV* diagnosis of schizophrenia.

Two comments appear to be essential at this point. First, DID patients seldom harbor delusional beliefs about their passive-influence experiences. Second, many persons who hear voices do not suffer from schizophrenia—often they do not suffer from any mental disorder at all (e.g., Honig et al., 1998). In keeping with this research about voices, as of this writing the American Psychiatric Association (2010) is planning to discontinue according special status to “voices commenting” and “voices conversing” for the diagnosis of schizophrenia.

HYPOTHESES

We proposed three hypotheses. First, DID patients will score higher on the Multidimensional Inventory of Dissociation (MID; Dell, 2006a) than will schizophrenia patients. Second, DID patients will score higher on scales that measure eight experiences of passive influence (FRS) than will schizophrenia patients. Third, DID patients will score significantly lower on a measure of delusions than will schizophrenia patients.

METHOD

The study was approved by the institutional review board of the Massachusetts Department of Mental Health.

Participants

Participants were 40 persons with DID and 40 persons with schizophrenia. All participants were in active treatment. Participants with DID were recruited from private practice settings; participants with schizophrenia were recruited from a community mental health setting. The DID sample was 92% female ($n = 37$); the schizophrenia sample was 35% female ($n = 14$); (χ^2 ($N = 80$) = 28.61; $df = 1$; $p < .001$). Participants with DID had a mean educational level of 13.9 years ($SD = 2.2$); participants with schizophrenia had a mean educational level of 12.3 years ($SD = 1.5$), $t(76) = 5.76$, $p < .001$. Participants with DID had a mean age of 40.1 years ($SD = 8.0$); participants with schizophrenia had a mean age of 42.1 years ($SD = 10.0$), $t(76) = -0.98$, ns . Exclusion criteria were current substance abuse, current severity that impaired the person's ability to participate, brain damage, history of bipolar disorder, and an earlier diagnosis of a dissociative disorder (schizophrenia sample only).

Procedure

Participants with DID were administered the MID and the Structured Clinical Interview for *DSM-IV* Dissociative Disorders–Revised (SCID-D-R) as part of their clinical evaluation. They gave written permission for their data to be used for research purposes.

Participants with schizophrenia were recruited after we obtained consent from their treating psychiatrist or psychotherapist. After giving their informed consent, they were administered the psychotic disorders module of the Structured Clinical Interview for the *DSM-IV* Axis I Disorders (SCID-1), the MID, and the Traumatic Experiences Questionnaire (TEQ). Twenty patients with schizophrenia (Group B) were instructed to rate their current experiences (i.e., during relative remission). The other 20 patients with schizophrenia (Group A) were instructed to rate their answers to the MID retrospectively, according to their experiences from times of relapse. Andreas Laddis was present throughout their testing and periodically reminded patients to focus exclusively on their experiences during a time of relapse. No hypothesis was proposed, but it seemed possible that dissociation might differ during remission as opposed to during relapse.

Materials

MID. The MID is a comprehensive measure of dissociation. It has 218 items: 168 dissociation items and 50 validity items (Dell, 2006a). The

MID has fourteen 12-item dissociation scales and five validity or response set scales (Defensiveness, Emotional Suffering, Rare Symptoms, Attention-Seeking Behavior and Factitious Behavior). The MID assesses 23 dissociation symptoms (these 23 scales assist diagnosis via an alternative apportionment of the MID's 168 dissociation items). The 168 dissociation items of the MID have 12 first-order factors and 1 second-order factor (i.e., pathological dissociation; Dell & Lawson, 2009). MID scores correlate highly with other measures of dissociation.

Of particular importance to the present study are the MID's Psychosis Screen and eight FRS scales: Voices Arguing (e.g., "Hearing voices in your head that argue or converse with one another"), Voices Commenting, "Made" Feelings (e.g., "Having an emotion that does not feel like it is yours"), "Made" Impulses, "Made" Actions, Influences on the Body, Thought Withdrawal (e.g., "Some thoughts are suddenly 'taken away from you'"), and Thought Insertion.

In the dissociative disorders field, eight of Schneider's (1959) FRS are generally understood to be symptoms of passive influence (Kluft, 1987; i.e., experiences of somatic and mental activity that are initiated or inhibited independent of one's will, typically accompanied by delusional explanations in schizophrenia). Some may object to including Voices Commenting and Voices Arguing as passive-influence experiences, but we suspect that this point of view has less to do with rigorous classification of the phenomena of schizophrenia than with the familiar, classical "rut" of the voices category. If one looks anew at the generally acknowledged passive-influence phenomena—and asks why or how voices differ from them—it is quickly apparent that hearing voices is really no different from thought insertion, made actions, and so on.

The Psychosis Screen assesses delusional beliefs about peculiar experiences (e.g., "Your mind being controlled by an external force [microwaves, the [Central Intelligence Agency], radiation from outer space, etc.], "Your thoughts being broadcast so that other people can actually hear them," "Feeling that your mind or body has been taken over by a famous person [for example, Elvis Presley, Jesus Christ, Madonna, President Kennedy, etc.], "Hearing voices, which come from unusual places [for example, the air conditioner, the computer, the walls, etc.], that try to tell you what to do").

SCID-D-R. The SCID-D-R (Steinberg, 1994b) is a semistructured interview that rates five dissociative symptoms (i.e., amnesia, depersonalization, derealization, identity confusion, and identity alteration). The SCID-D-R diagnoses the *DSM-IV* dissociative disorders and has good to excellent reliability.

TEQ. The TEQ is a slightly earlier version of the Traumatic Experiences Checklist (Nijenhuis, Van der Hart, & Kruger, 2002). Like the Traumatic Experiences Checklist, it assesses 25 potentially traumatic life events,

including five kinds of abuse. Cronbach's alpha coefficients have ranged from .86 to .90.

SCID-1. The SCID-1 (First, Spitzer, Gibbon, & Williams, 1996) is the most commonly used structured interview for diagnosing *DSM-IV* Axis I disorders. The present study used only the psychotic disorders module.

RESULTS

Dissociation

Analysis of variance (ANOVA) of the mean MID scores and the 14 primary MID dissociation scale scores was significant across the three groups (hereafter the DID, Schiz-A, and Schiz-B groups), Wilks's $\Lambda = 0.46$, $F(12, 144) = 5.76$, $p < .001$. On every dissociation scale but one (Somatoform) DID patients obtained higher dissociation scores (see Table 1).

We calculated the point-biserial correlations of diagnosis (i.e., schizophrenia vs. DID) with many continuous variables (see Tables 1–4). *Positive* point-biserial correlations indicate that the continuous variable in question was *positively related to the diagnosis of DID* (and, simultaneously,

TABLE 1 Mean Scores and Point-Biserial Correlations of Diagnosis and the 14 Primary Scales of the MID

Variable	DID (<i>n</i> = 40)	Schiz-A ^a (<i>n</i> = 20)	Schiz-B ^a (<i>n</i> = 20)	<i>r</i> ^b
Identity Confusion Scale	72.8 (20.3)	33.4 (24.0) ^c	24.0 (21.4) ^{d,e}	.72
Self-States/Alters Scale	62.0 (25.6)	26.0 (22.7)	14.2 (15.0)	.67
Mean MID score	51.1 (18.4)	27.0 (20.6)	18.4 (19.2)	.60
Memory Problems Scale	62.5 (20.1)	35.4 (22.1)	24.8 (24.6)	.60
Depersonalization Scale	54.1 (20.6)	27.1 (25.4)	18.8 (18.1)	.59
Ego-Alien Experiences Scale	59.7 (22.3)	31.7 (25.4)	22.3 (23.5)	.58
Self-Alteration Scale	49.6 (22.3)	24.3 (22.3)	15.9 (17.7)	.57
Voices Scale	54.6 (27.2)	27.8 (22.2)	18.9 (21.4)	.54
Discontinuities of Time Scale	45.4 (24.0)	21.3 (18.6)	15.0 (17.9)	.54
Flashbacks Scale	53.7 (26.0)	24.0 (22.5)	20.4 (25.2)	.54
Ancillary Scale	47.0 (20.6)	27.5 (20.7)	18.8 (20.2)	.50
Disremembered Behavior Scale	37.0 (21.9)	20.0 (21.8)	11.5 (17.0)	.48
Trance Scale	48.4 (22.0)	27.8 (24.2)	21.7 (22.5)	.47
Derealization Scale	45.0 (21.5)	29.6 (24.3)	19.6 (22.3)	.42
Somatoform Scale	23.9 (17.4)	22.1 (21.0)	11.6 (17.2)	.19

Notes: MID = Multidimensional Inventory of Dissociation; DID = dissociative identity disorder.

^aSchiz-A are persons with schizophrenia who answered the MID according to their experience during relapse. Schiz-B are persons with schizophrenia who answered according to their experience during remission. ^bPositive correlations are positively related to a diagnosis of DID *and* negatively related to a diagnosis of schizophrenia. ^cAll comparisons of the Schiz-A group with the DID group are $p < .001$, with the exception of Disremembered Behavior ($p < .009$), Trance ($p < .006$), Ancillary ($p < .004$), and Somatoform (*ns*). ^dAll comparisons of the Schiz-B group with the DID group are $p < .001$, with the exception of Somatoform, which did not differ significantly from DID. ^eAll comparisons between Schiz-A and Schiz-B are nonsignificant.

TABLE 2 Mean Scores and Point-Biserial Correlations of Diagnosis and Selected MID Scales (FRS Scales and Psychosis Screen)

Scale	DID	Schiz-A ^a	Schiz-B ^a	r^b
"Made" Feelings	67.1 (20.7) ^c	34.5 (26.3) ^d	22.1 (22.0)	.65
"Made" Impulses	60.2 (25.2)	33.7 (26.6)	25.5 (25.1)	.52
"Made" Actions	58.7 (23.6)	33.2 (30.0)	21.8 (24.6)	.52
Influences on the Body	46.6 (25.4)	20.5 (25.4)	16.3 (18.2)	.52
Voices Commenting	55.2 (31.9)	26.6 (24.1)	21.4 (26.6)	.48
Thought Insertion	56.7 (24.9)	35.8 (26.2)	22.5 (25.7)	.48
Thought Withdrawal	53.3 (27.6)	30.1 (28.6)	20.4 (22.3)	.47
Voices Arguing	66.5 (34.7)	48.5 (32.7)	27.0 (33.4)	.39
Psychosis Screen	3.2 (6.6)	30.3 (25.1)	17.8 (23.0)	-.51

Notes: MID = Multidimensional Inventory of Dissociation; FRS = first-rank symptoms; DID = dissociative identity disorder.

^aSchiz-A are persons with schizophrenia who answered the MID according to their experience during relapse. Schiz-B are persons with schizophrenia who answered according to their experience during remission. ^bPositive correlations indicate a positive relationship with a diagnosis of DID *and* a negative relationship with a diagnosis of schizophrenia. Negative correlations indicate a positive relationship with a diagnosis of schizophrenia *and* a negative relationship with a diagnosis of DID. ^cAll comparisons of the two schizophrenia groups with the DID group are significant ($p < .01$), with the exception of Voices Arguing for Schiz-A (*ns*). ^dAll comparisons between Schiz-A and Schiz-B are nonsignificant.

TABLE 3 Mean Scores of Selected "Parts" Scales of the MID and Their Point-Biserial Correlations with Diagnosis

Scale	DID ($n = 40$)	Schiz-A ^a ($n = 20$)	Schiz-B ^a ($n = 20$)	$r^{b,c}$
Child Part Scale	59.1 (29.2) ^d	21.6 (20.4) ^c	13.9 (15.7)	.65
"I Have DID" Scale	63.8 (31.9)	22.4 (25.4)	11.4 (15.2)	.65
"I Have Parts" Scale	61.8 (26.5)	30.2 (25.4)	20.1 (21.0)	.60
Persecutory Part Scale	56.2 (31.5)	27.4 (27.2)	17.9 (23.5)	.51
Angry Part Scale	55.5 (27.3)	30.5 (27.6)	20.4 (26.3)	.49

Notes: MID = Multidimensional Inventory of Dissociation; DID = dissociative identity disorder.

^aSchiz-A are persons with schizophrenia whose MID answers reported their experience during relapse. Schiz-B are persons with schizophrenia whose MID answers reported their experience during remission.

^bPositive correlations indicate a positive relationship with a diagnosis of DID *and* a negative relationship with a diagnosis of schizophrenia. Negative correlations indicate a positive relationship with a diagnosis of schizophrenia *and* a negative relationship with a diagnosis of DID. ^cAll point-biserial correlations are significant ($p \leq .01$). ^dAll comparisons of Schiz-A and Schiz-B with DID are significant ($p < .005$). ^eAll comparisons between Schiz-A and Schiz-B are nonsignificant.

negatively related to the diagnosis of schizophrenia). Conversely, *negative* point-biserial correlations indicate that the continuous variable in question was *positively related to the diagnosis of schizophrenia* (and, simultaneously, negatively related to the diagnosis of DID).

Several point-biserial correlations are of particular note. First, scores on MID dissociation scales were moderately to strongly correlated with a diagnosis of DID (and thus negatively correlated with schizophrenia). Second, DID patients experienced much more confusion about themselves and their

TABLE 4 Mean Scores of Selected Nondissociation Scales from the MID and Their Point-Biserial Correlations with Diagnosis

Validity Scale	DID (<i>n</i> = 40)	Schiz-A ^a (<i>n</i> = 20)	Schiz-B ^{a,b} (<i>n</i> = 20)	<i>r</i> ^{c,d}
Cognitive Distraction	66.7 (16.0)	42.8 (21.4) ^e	34.1 (22.6) ^e	.59
Rare Symptoms	3.2 (5.7)	21.5 (20.1) ^e	13.0 (16.7) ^f	−.46
Factitious Behavior	6.3 (9.0)	20.1 (21.2) ^g	11.2 (17.6) ^h	−.30
Attention-Seeking Behavior	17.8 (17.9)	31.7 (21.1) ^f	25.9 (18.6) ^h	−.28
Emotional Suffering	54.0 (23.8)	42.6 (25.1) ^h	36.7 (21.5) ^f	.29

Notes: MID = Multidimensional Inventory of Dissociation; DID = dissociative identity disorder.

^aSchiz-A are persons with schizophrenia who reported their experience during relapse. Schiz-B are persons with schizophrenia who reported their experience during remission. ^bAll comparisons between Schiz-A and Schiz-B are nonsignificant. ^cAll point-biserial correlations are significant ($p \leq .01$). ^dPositive correlations indicate a positive relationship with a diagnosis of DID and a negative relationship with a diagnosis of schizophrenia. Negative correlations indicate a positive relationship with a diagnosis of schizophrenia and a negative relationship with a diagnosis of DID. ^eComparison with DID is significant ($p < .001$). ^fComparison with DID is significant ($p < .03$). ^gComparison with DID is significant ($p < .005$). ^hComparison with DID is nonsignificant.

actions than did schizophrenia patients (point-biserial r of Diagnosis \times Identity Confusion = .72). That is, *Identity Confusion scores were negatively correlated with a diagnosis of schizophrenia* (and thus positively correlated with DID). Third, Voices scores were positively correlated with a diagnosis of DID (point-biserial $r = 0.54$) and thus negatively related to schizophrenia. The highest incidences of voices for DID patients were child voices (90%) and voices that converse or argue (85%); the highest incidences of voices for schizophrenia patients were voices that converse or argue (65%) and hearing a voice that “tells you what to do” (63%). Fourth, schizophrenia patients’ dissociation scores during relapse did not differ from their scores during remission (see Table 1).

ANOVA of selected MID “parts” scales (see Table 3) was significant across the three groups (DID, Schiz-A, and Schiz-B), Wilks’s $\Lambda = 0.51$, $F(10, 146) = 5.79$, $p < .001$. Scheffé post hoc comparisons indicated that the DID group had higher scores than the two schizophrenia groups on all “parts” scales ($p < .005$).

Experiences of Passive Influence and Delusional Beliefs About Such Experiences

ANOVA of the Psychosis Screen and the eight passive-influence scales (see Table 2) was significant across the three groups (DID, Schiz-A, and Schiz-B), Wilks’s $\Lambda = 0.22$, $F(18, 138) = 8.63$, $p < .001$. Scheffé post hoc comparisons indicated that DID patients consistently obtained higher FRS scores than did schizophrenia patients, with the single exception of Voices Arguing during psychotic relapse (see Table 2). It is striking that each passive-influence

experience was significantly positively correlated with a diagnosis of DID (and negatively related to schizophrenia; point-biserial $r_s = .40$ to $.70$; all $p_s < .01$). Conversely, scores on the MID's Psychosis Screen, a measure of delusional thinking, were significantly positively related to a diagnosis of schizophrenia ($r = -.51$, $p < .001$). All post hoc comparisons between Schiz-A and Schiz-B were nonsignificant.

The Relation Between MID Scores and Childhood Maltreatment Scores

Because the TEQ was not administered to the DID patients, we compared the MID and TEQ data from the schizophrenia patients with the MID and TEQ data from two previous studies of mixed samples of clinical and non-clinical participants (Dell, 2006a; Somer & Dell, 2005; see Table 5). The differences are stark. In the mixed samples (Dell, 2006a; Somer & Dell, 2005), mean MID scores were significantly correlated with TEQ scores ($r_s = .38$ to $.70$; median $r = .56$), whereas this was not the case with our sample of schizophrenia patients ($r_s = -.22$ to $.08$; median $r = -.02$). This result raises a question: Is this finding a Type II error, or does the MID measure something different in schizophrenia patients than it does in DID?

MID scales that do not measure dissociation. The possibility that schizophrenia patients' MID scores may index something different receives some support from the analysis of several MID scales that do not measure dissociation—namely, the Cognitive Distraction scale (a measure of normal cognitive lapses) and four validity scales (see Tables 4 and 6). Elevated Cognitive Distraction scores and elevated Emotional Suffering scores (an indicator of negative affectivity) were significantly, but modestly, correlated with a diagnosis of DID (see Table 4). Conversely, elevated scores on three measures of symptom exaggeration were very strongly related to a diagnosis

TABLE 5 Correlations Between the Traumatic Experiences Questionnaire (TEQ) and the Multidimensional Inventory of Dissociation

TEQ Scale	Dell (2006a) ($n = 204$)	Somer & Dell (2005) ($n = 125$)	Present Study ($n = 40$)
Composite trauma score	.58	.70	-.11
Sexual Abuse	.54	.64	.08
Emotional Abuse	.49	.61	-.22
Physical Abuse	.47	.53	.05
Emotional Neglect	.38	.61	-.15
Sexual Harassment	.38	.57	-.03

Notes: All correlations for Dell (2006a) and Somer and Dell (2005) for DID are $p < .01$. All correlations for Present Study are nonsignificant. The data from Dell (2006a) and Somer and Dell (2005) are based on a mixed sample of clinical and nonclinical participants; the data reported for Present Study are those of 40 persons with schizophrenia.

TABLE 6 Correlations of Mean Scores on the MID with Selected MID Nondissociation Scales

Validity Scale	DID (<i>n</i> = 40)	<i>p</i>	Schizophrenia (<i>n</i> = 40)	<i>p</i>
Rare Symptoms	.31	.05	.93	.001
Cognitive Distraction	.70	.001	.85	.001
Attention-Seeking Behavior	.00	<i>ns</i>	.84	.001
Factitious Behavior	.16	<i>ns</i>	.82	.001
Emotional Suffering	.34	.03	.70	.001

Notes: MID = Multidimensional Inventory of Dissociation; DID = dissociative identity disorder.

of schizophrenia: Rare Symptoms (e.g., “Having flashbacks of poor episodes of your favorite television show”), Attention-Seeking Behavior (e.g., “Being willing to do or say almost anything to get somebody to think that you are special”), Factitious Behavior (e.g., “Exaggerating something bad that once happened to you [e.g., combat, rape] in order to get attention or sympathy”).

ANOVA of the Cognitive Distraction and validity scales (see Table 4) was significant across the three groups (DID, Schiz-A, and Schiz-B), Wilks’s $\Lambda = 0.25$, $F(10, 146) = 14.32$, $p < .001$. Scheffé post hoc comparisons showed that (a) the Schiz-A group obtained significantly different scores from the DID group on all variables except Emotional Suffering; and (b) the Schiz-B group obtained significantly different scores from the DID group on Cognitive Distraction ($p < .001$), Emotional Suffering ($p < .03$), and Rare Symptoms ($p < .03$) but not on Factitious Behavior or Attention-Seeking Behavior. All post hoc comparisons between Schiz-A and Schiz-B were nonsignificant.

To better illuminate the relationship of these nondissociation scales to DID and schizophrenia, we calculated these correlations separately for each diagnostic group (see Table 6). The results are quite striking. DID patients’ dissociation scores were strongly correlated with normal cognitive lapses ($r = .70$) and mildly (but significantly) correlated with rare symptoms ($r = .31$) and negative affectivity ($r = .34$). Schizophrenia patients’ dissociation scores were strongly correlated with negative affectivity ($r = .70$), normal cognitive lapses ($r = .85$), and measures of symptom exaggeration: Rare Symptoms, Attention-Seeking Behavior, and Factitious Behavior ($r_s = .93$, $.84$, and $.82$, respectively).

Multiple Regression Analyses of Mean MID Scores

We conducted multiple regression analyses for each diagnostic group in order to investigate the dissociative and nondissociative predictors of MID scores (see Table 7). We entered in a block the five *nondissociation* scales in Table 6 and one dissociation subscale. Because the 14 primary subscales have very high multicollinearity (Dell & Lawson, 2009), we entered only one dissociation subscale—namely, the one that correlated

TABLE 7 Multiple Regression Analyses of Nondissociation Scales and the Dissociation Scale That Most Highly Correlated with Mean Scores of the Multidimensional Inventory of Dissociation

Scale	β	SE	B	SE	p	ΔR^2	R	R^2
Dissociative identity disorder								
Ego Alien	.900	.071	.741	.058	.000	.809	.900	.809
Schizophrenia								
Step 1								
Voices	.957	.047	.877	.043	.000	.915	.957	.915
Step 2								
Voices	.634	.096	.581	.091	.000			
Rare Symptoms	.357	.096	.384	.091	.001	.023	.969	.938
Step 3								
Voices	.556	.092	.510	.085	.000			
Rare Symptoms	.301	.091	.323	.098	.002			
Factitious Behavior	.167	.061	.170	.062	.009	.011	.974	.949
Step 4								
Voices	.438	.099	.402	.091	.000			
Rare Symptoms	.293	.085	.315	.091	.001			
Factitious Behavior	.166	.057	.169	.058	.006			
Attention-Seeking	.153	.061	.155	.062	.02	.008	.978	.957

most highly with mean MID scores (Schizophrenia = Voices Scale; DID = Ego-Alien Experiences Scale). Backward elimination established that Ego-Alien Experiences was the only significant predictor of dissociation in DID patients, accounting for 81% of the variance in mean MID scores (see Table 7). Backward elimination established that the MID scores of schizophrenia patients had four significant predictors that jointly accounted for 96% of the variance in mean MID scores: Voices, Rare Symptoms, Attention-Seeking Behavior, and Factitious Behavior. Voices alone accounted for 91.5% of the variance. Table 7 reports the predictors as a forward stepwise multiple regression analysis in order to display their relative contributions.

Delusions and Dissociation

We examined the relation between delusions and dissociation in each diagnostic group (see Table 8). The MID's Psychosis Screen was highly correlated with dissociation scores for schizophrenia patients but not for DID patients. For schizophrenia patients, Voices had the highest correlation with delusions ($r = .84$).

DISCUSSION

This is the first article to report MID data from schizophrenia patients; it replicates previous findings with other dissociation instruments and provides

TABLE 8 Correlations Between Delusions (Psychotic Screen) and Dissociation on the MID

Variable	DID ^a (<i>n</i> = 40)	Schizophrenia ^b (<i>n</i> = 40)
Voices Scale	.10	.84
Mean MID score	.07	.81
Depersonalization Scale	.03	.81
Ego-Alien Experiences Scale	.08	.80
Ancillary Scale	–.07	.80
Trance Scale	.21	.78
Memory Problems Scale	.04	.78
Self-States/Alters Scale	–.30	.78
Identity Confusion Scale	.11	.77
Derealization Scale	.13	.76
Self-Alteration Scale	.04	.73
Somatiform Scale	.17	.68
Disremembered Behavior Scale	–.00	.67
Flashbacks Scale	.17	.67
Discontinuities of Time Scale	.08	.67

Notes: MID = Multidimensional Inventory of Dissociation; DID = dissociative identity disorder.

^aAll correlations in this column are nonsignificant. ^bAll correlations in this column are $p < .001$.

several new findings. Compared to DID patients, schizophrenia patients obtained significantly lower dissociation scores (Ellason & Ross, 1995; Steinberg, 1994; Yargıç et al., 1998) and significantly lower passive-influence scores (Ross et al., 1990, 1994; Yargıç et al., 1998). In addition, this is the first study to provide statistical evidence that schizophrenia patients hear voices less frequently than do DID patients (see also Dorahy et al., 2009). Finally, schizophrenia patients endorsed significantly more delusional items on the MID than did DID patients.

A MID Portrait of DID

The MID provides a detailed dissociative portrait of DID. First, DID patients report very high levels of dissociation—higher than any other mental disorder. Second, DID patients routinely endorse passive-influence items on the MID—especially voices—yet they seldom harbor delusional beliefs about those experiences. Third, the most frequent voices of DID patients were child voices, voices that converse or argue, a voice that “wants you to hurt yourself,” a voice that “tells you what to do,” a voice that “tells you to ‘shut up,’” and “a voice that calls you ‘worthless’ or ‘a failure.’”

Fourth, the single greatest difference between DID patients and schizophrenia patients occurred on the MID’s Identity Confusion Scale (e.g., “Being puzzled by what you do or say”). Fifth, the Ego-Alien Experiences Scale predicted 81% of the variance in DID patients’ mean MID scores. This finding is meaningful because it is congruent with Dell’s (2006b) definition of dissociation: “recurrent, jarring intrusions into executive functioning and

sense of self" (p. 8). However, the reader should keep in mind that the high multicollinearity of the MID subscales caused us to enter *only* the Ego-Alien Experiences Scale (which had the highest subscale correlation with mean MID scores) into the multiple regression analysis.

Sixth, neither attention-seeking behavior nor factitious behavior was a significant predictor of DID patients' dissociation scores. This finding undermines the contention that DID patients are attention-seeking individuals who are responding to their therapists' overly suggestive inquiries.

A MID Portrait of Schizophrenia

There are nine notable aspects of schizophrenia patients' MID profiles. First, their mean MID scores during remission (18.4) were significantly lower than those of DID patients (51.1) but significantly higher than those of nonclinical controls (~ 5.0). Second, their dissociation scores were consistently but non-significantly higher during relapse (27.0). Third, schizophrenia patients had significantly *lower* scores for each of the eight passive-influence symptoms than did DID patients.

Fourth, on every voices subscale (child voices, persecutory voices, angry voices, voices commenting, voices arguing, command voices, etc.) schizophrenia patients obtained significantly lower scores than did DID patients. The sole exception is that, during a relapse, schizophrenia patients' Voices Arguing scores (48.5) did not differ significantly from those of DID patients (66.5). Fifth, the most frequent voices of schizophrenia patients were voices arguing (reported by 65%) and hearing a voice that "tells you what to do" (reported by 63%).

Sixth, schizophrenia patients obtained significantly lower scores on every "parts" scale than did DID patients. The largest difference occurred on the Child Scale (e.g., hearing the voice of a child). Dorahy et al. (2009) have also reported more child voices in DID patients than in schizophrenia patients. Seventh, schizophrenia patients obtained a significantly higher score than DID patients on only one of the MID's 50 scales—the Psychotic Screen, a measure of delusional beliefs.

Eighth, in contrast to almost all previous research on trauma and dissociation, the dissociation and trauma scores of our schizophrenia patients were not significantly related ($r = -.11$). Conservatively speaking, we would consider this finding to be a Type II error. Still, we would like to see additional research on the issue of trauma and dissociation in schizophrenia because many methodological criticisms of that literature remain unaddressed (especially equating "psychosis" with "schizophrenia" and failing to rule out comorbidity with posttraumatic disorder; Bendall, Jackson, Hulbert, & McGorry, 2008). Ninth, schizophrenia patients' scores on the MID's Voices Scale predicted 91.5% of the variance in their mean MID scores. Three symptom exaggeration scales (Rare Symptoms,

Attention-Seeking Behavior, and Factitious Behavior) predicted another unique 4.2% of that variance.

Limitations

This study is limited by potential confounds of gender and education. Our DID sample was 92% female (vs. 65% males in the schizophrenia sample) and significantly more educated than the schizophrenia sample. However, these gender and education differences are consistent with the gender distribution (e.g., Farhall & Voudouris, 1996; Ross & Norton, 1989) and education (e.g., Goldstein, Allen, & van Kammen, 1998; Ross & Norton, 1989) levels of DID and chronic schizophrenia patients. Thus, the gender distribution and education levels of these samples represent true population differences.

Perhaps more problematic is the fact that our two samples came from very different settings—chronic schizophrenia patients from the community mental health system and chronic DID patients from private practice settings. This may be an unresolvable methodological weakness of any study that compares schizophrenia and DID; it is extremely difficult to obtain samples of persons with DID and schizophrenia from comparable settings.

These are the first reported MID data on schizophrenia patients. Thus, we acknowledge that these data await replication, perhaps especially regarding the results of our multiple regression analysis. We also acknowledge that comparisons of schizophrenia and DID are complicated by the puzzling question of whether to include schizophrenia patients with prominent dissociative symptoms. We chose to include all persons diagnosed with schizophrenia *so long as they had never received a previous diagnosis of dissociative disorder*. The reader should keep this exclusion criterion in mind when considering our findings.

We asked half of our schizophrenia sample to retrospectively report their dissociative symptoms during a time of relapse. Their ratings appear to have face validity (i.e., higher scores during relapse than during remission). Still, their retrospective reports of symptoms during relapse must be considered with caution.

Finally, patients who receive a diagnosis of schizophrenia are known to be quite heterogeneous. Moreover, Ross (2004) has proposed the existence of a dissociative subtype of schizophrenia. Thus, although our sample was SCID-diagnosed, we acknowledge that other well-diagnosed samples of schizophrenia might yield findings that differ from ours.

Do Schizophrenics Dissociate, or Do They Just Seem to?

Do schizophrenia patients experience the same kind of intrusions, derealization, voices, and so on as patients with DID? At the phenomenological level (as assessed by the current generation of dissociation instruments),

the answer to this question is “Yes, they do.” At the etiological level, however, we think the answer is “No, they don’t.” We believe that the underlying mechanisms of the seemingly dissociative phenomena in schizophrenia are different from the underlying mechanisms of the dissociative phenomena in DID.

Put succinctly, like others, we believe that (a) phenomenological definitions of dissociation and (b) the current generation of dissociation instruments (which are solely phenomenological in nature) are overinclusive (Dell, 2009; Steele, Dorahy, Van der Hart, & Nijenhuis, 2009; Van der Hart, Nijenhuis, Steele, & Brown, 2004). They subsume under a single rubric (dissociation) a wide variety of similar-appearing alterations of consciousness, intrusions, and unintended behavior. The field needs to draw meaningful distinctions among these different kinds of “dissociation” (Dell, 2009; Holmes et al., 2005) and among the many symptoms that resemble them but are actually something quite different (Steele et al., 2009; Van der Hart et al., 2004).

Our position is counter to that of Moskowitz and colleagues; they view schizophrenia as a member of the spectrum of posttraumatic disorders (Moskowitz & Corstens, 2007; Moskowitz, Read, Farrelly, Rudegeair, & Williams, 2009). They appear to deem differences in the etiology of dissociation to be irrelevant or nonexistent. As noted previously, we think that equating the apparently dissociative phenomena of schizophrenia with those of, for example, DID will prove to be a counterproductive expansion of the domain of “dissociation.”

Our analysis indicated that 91.5% of the variance in schizophrenia patients’ dissociation scores was predicted by the MID’s 12-item measure of voices. We think that this impressive statistic should be understood in terms of the relation between schizophrenic voices and *delusions* (rather than the relation between schizophrenic voices and *dissociation*). Remember that the voices and delusions scores of our schizophrenia patients were highly correlated ($r = .84$), whereas the voices and delusions scores of our DID patients were not ($r = .10$). We are not reassured by the fact that MID dissociation scores in schizophrenia are far better predicted by voices (91.5% of the variance) than the MID scores of DID patients are predicted by their best predictor (i.e., ego-alien, passive-influence experiences—“only” 81% of the variance). In light of (a) voices’ extremely strong relationship to delusions in our schizophrenia patients ($r = .84$) and (b) voices’ extremely strong relationship to dissociation in our schizophrenia patients ($r = .92$), we interpret their dissociation-like experiences to be a schizophrenic phenomenon (related to voices and, most notably, to the high scores for delusions of control in schizophrenia) rather than a phenomenon of a dissociative disorder. Nevertheless, we concede that future research may yet support the contention of Moskowitz and others that the auditory hallucinations of schizophrenia are intimately related to these patients’ dissociation scores because schizophrenia really *is* a dissociative disorder.

The important point here is that we believe the dissociative-like, delusional experiences of passive-influence in schizophrenia to be somewhat phenomenologically similar to, but etiologically quite different from, the dissociative, passive-influence symptoms of DID. We anticipate that additional important phenomenological differences between the two will eventually be identified, but none (other than delusions) are known at this time. It should also be noted that alternative explanations have been proposed, namely true comorbidity or a dissociative subtype of schizophrenia (Ross, 2004). In any case, the fate of putative differences between the dissociation of DID and the semblance of dissociation in schizophrenia can only be resolved via future research.

Measuring Dissociation

If persons with schizophrenia just appear to dissociate, then current measures of dissociation have a problem. Despite being rigorously validated to assess the dissociative experiences of persons with a dissociative disorder, current measures of dissociation can only tell their users about phenomenology, not etiology or an underlying mechanism. These measures cannot detect subtle differences that might exclude similar-appearing phenomena from a very different etiology.

This is not a new idea. Van der Hart and colleagues (Steele et al., 2009; Van der Hart et al., 2004) and one of us (Dell, 2009) have previously stated this thesis more broadly. As Van der Hart and colleagues have put it, current measures of dissociation tap a wide variety of alterations of consciousness, only some of which are produced by a dissociative mechanism (e.g., a structural dissociation of the personality). This leads us to a sober conclusion: The current generation of dissociation instruments and the current definitions of dissociation (especially those that emphasize the *phenomenology* of dissociative events) have a significant shortcoming. They do not and cannot distinguish between the classical dissociation of DID and what we suspect are just the dissociation-*like* phenomena that occur in schizophrenia (and perhaps in other disorders as well).

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