

Research Article

DISSOCIATIVE DISORDERS IN DSM-5

David Spiegel, M.D.,^{1*} Richard J. Loewenstein, M.D.,^{2,3} Roberto Lewis-Fernández, M.D.,^{4,5} Vedat Sar, M.D.,⁶ Daphne Simeon, M.D.,⁷ Eric Vermetten, M.D. Ph.D.,⁸ Etzel Cardeña, Ph.D.,⁹ and Paul F. Dell, Ph.D.¹⁰

Background: *We present recommendations for revision of the diagnostic criteria for the Dissociative Disorders (DDs) for DSM-5. The periodic revision of the DSM provides an opportunity to revisit the assumptions underlying specific diagnoses and the empirical support, or lack of it, for the defining diagnostic criteria. Methods:* *This paper reviews clinical, phenomenological, epidemiological, cultural, and neurobiological data related to the DDs in order to generate an up-to-date, evidence-based set of DD diagnoses and diagnostic criteria for DSM-5. First, we review the definitions of dissociation and the differences between the definitions of dissociation and conceptualization of DDs in the DSM-IV-TR and the ICD-10, respectively. Also, we review more general conceptual issues in defining dissociation and dissociative disorders. Based on this review, we propose a revised definition of dissociation for DSM-5 and discuss the implications of this definition for understanding dissociative symptoms and disorders. Results:* *We make the following recommendations for DSM-5:*

1. *Depersonalization Disorder (DPD) should derealization symptoms as well.*
2. *Dissociative Fugue should become a subtype of Dissociative Amnesia (DA).*
3. *The diagnostic criteria for DID should be changed to emphasize the disruptive nature of the dissociation and amnesia for everyday as well as traumatic events. The experience of possession should be included in the definition of identity disruption.*
4. *Should Dissociative Trance Disorder should be included in the Unspecified Dissociative Disorder (UDD) category.*

Conclusions: *There is a growing body of evidence linking the dissociative disorders to a trauma history, and to specific neural mechanisms. Depression and Anxiety 28:824–852, 2011. © 2011 Wiley-Liss, Inc.*

Key words: *hypnosis; breast cancer; sleep; stress*

¹Department of Psychiatry, Stanford University, Palo Alto, California

²Sheppard Pratt Health System, Towson, Maryland

³Department of Psychiatry, University of Maryland, Maryland

⁴Department of Psychiatry, Columbia University, Columbia

⁵New York State Psychiatric Institute, New York

⁶Department of Psychiatry, Istanbul University, Istanbul

⁷Psychiatry and Behavioral Sciences, Albert Einstein College of Medicine, New York

⁸University Medical Center, Utrecht, The Netherlands

⁹Department of Psychology, Lund University, Lund, Sweden

¹⁰Trauma Recovery Center, Norfolk, Virginia

*Correspondence to: David Spiegel, Department of Psychiatry, Stanford University, Palo Alto, California.

E-mail: dspiegel@stanford.edu

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INTRODUCTION

In this article, we present recommendations for revision of the diagnostic criteria for the Dissociative Disorders (DDs) for DSM-5. The periodic revision of the DSM^[1-3] provides an opportunity to revisit the assumptions underlying specific diagnoses and the empirical support, or lack of it, for the defining diagnostic criteria. This article reviews clinical, phenomenological, epidemiological, cultural, and neurobiological data related to the DDs in order to generate an up-to-date, evidence-based set of DD diagnoses and diagnostic criteria for DSM-5.

First, we review the definitions of dissociation and the differences between the definitions of dissociation and conceptualization of DDs in the DSM-IV-TR^[4] and the ICD-10,^[5] respectively. Also, we review more general conceptual issues in defining dissociation and DDs. Based on this review, we propose a revised definition of dissociation for DSM-5 and discuss the implications of this definition for understanding dissociative symptoms and disorders.

Next, we review a series of questions related to the proposed DSM-5 DDs section and, when needed, revised diagnostic criteria for the DSM-5 DDs. These include:

1. Should Depersonalization Disorder (DPD) remain in the DSM-5 DDs section, or should it be moved to another section of the DSM-5? Or, should DPD be considered a symptom of another disorder or disorders, such as anxiety disorders, psychotic disorders, personality disorders, etc.? If DPD continues as a distinct DD, what is the relationship of symptoms of depersonalization to symptoms of derealization in the proposed diagnostic criteria?
2. Should Dissociative Amnesia (DA) continue to be conceptualized as a DD, or should it be included in another section of the DSM that emphasizes, emphasizing its relationship to trauma, e.g. part of the symptom clusters for Acute Stress Disorder (ASD) or Posttraumatic Stress Disorder (PTSD)?
3. Does the totality of the data support Dissociative Fugue (DF) as a separate diagnostic category in the DSM? Or should this diagnosis be eliminated? Or is DF better conceptualized under the rubric of another DD such as Dissociative Identity Disorder (DID), or DA, or as an example of DD Not Otherwise Specified (DDNOS)?
4. Should the diagnostic criteria for DID be changed? If so, should the diagnostic criteria follow a polythetic form, a mixed polythetic/monothetic form, or remain a monothetic criteria set with modifications?
5. Should Dissociative Trance Disorder (DTD), currently included only in the appendix of DSM-IVTR, be conceptualized as a specific

DD in DSM-5? Or, if not, should it be conceptualized within the framework of another DD, such as DID?

6. Given the proposed reconceptualization of several of the DDs, what examples should be generated to assist the clinician in making a diagnosis of DDNOS, as opposed to a specific DD?
7. Finally, we review recent data, particularly neurobiological data, supporting the diagnostic categories of the DDs, in part to address lingering controversies about these disorders.

DEFINING DISSOCIATION AND DISSOCIATIVE DISORDERS

Neither the DSM-IVTR of the American Psychiatric Association (APA)^[3] nor the ICD-10 of the World Health Organization (WHO)^[5] provides a comprehensive definition of dissociation. Instead, each sets forth a brief description of the “essential features” (DSM-IV) or the “common theme” (ICD-10) of the DDs. Among other issues, the DSM-IV-TR and ICD-10 conceptualizations of dissociation are inconsistent regarding which disorders belong in the DD category, as well as the number, symptoms, course, and outcome of DDs. For example, ICD-10 regards all DDs as equivalent to Conversion Disorders, including among the DDs pseudo-epileptic seizures (non-epileptic seizures or NES), “psychogenic aphonia” and dissociative “anesthesia and sensory loss,” among others. The DSM-IV-TR/IVTR and ICD-10 DDs are listed in Table 1.

TABLE 1. DSM-IVTR dissociative disorders and ICD-10 dissociative (conversion) disorders

<i>DSM-IVTR dissociative disorders</i>	
Depersonalization disorder	
Dissociative amnesia	
Dissociative fugue	
Dissociative identity disorder	
Dissociative disorder NOS	
<i>ICD-10 dissociative disorders</i>	
Dissociative amnesia	
Dissociative fugue	
Dissociative stupor	
Trance and possession disorders	
Dissociative motor disorders	
Dissociative convulsions	
Dissociative anesthesia and sensory loss	
Mixed dissociative (conversion) disorders	
Other dissociative (conversion) disorders	
Ganser’s syndrome	
Multiple personality disorder (DID)	
Transient dissociative (conversion)	
Disorders in children and adolescents	
Dissociative [conversion] disorder, unspecified	

Recent research documents the utility of combining the concepts of the domain of dissociative symptoms from both the DSM-IV and the ICD-10 in a new definition for DSM-5.^[6–9]

Dissociation is a disruption of and/or discontinuity in the normal, subjective integration of one or more aspects of psychological functioning, including—but not limited to—memory, identity, consciousness, perception, and motor control. In essence, aspects of psychobiological functioning that should be associated, coordinated, and/or linked are not.

In more acute pathological dissociative presentations, the dissociation is primarily related to traumatic and/or overwhelming experiences. In life-long dissociative presentations such as Dissociative Identity Disorder (DID) dissociative symptoms may routinely also occur in circumstances that are unrelated to trauma or overwhelming circumstances.

Dissociative symptoms are not merely failures of normal neurocognitive functioning, they are also *perceived as disruptive*—as a loss of needed information, as discontinuity of experience, or as “recurrent, jarring, involuntary intrusions into executive functioning and sense of self”^[10] (p 226). Dissociative symptoms invade and interfere with the person’s continuity of normal psychological functioning by intruding on and/or deleting aspects of conscious experience, thought, or action.^[11] Dissociative symptoms can be classified as “positive” or “negative.” *Positive* dissociative symptoms (e.g. flashbacks and/or the sudden interruption of conscious experience by an aspect of identity that had not previously been part of the person’s awareness or social interaction) which interfere with or intrude upon the person’s normal interference, and intrusion symptoms). *Negative* dissociative symptoms disrupt normal conscious functioning via deficits in memory, sense of self, and/or the ability to sense or control different parts of the body.

In summary. Pathological dissociation is experienced as an involuntary disruption of the normal integration of conscious awareness and control over one’s mental processes. Dissociative symptoms can manifest in every area of psychological functioning. Dissociative symptoms are characterized by (a) unbidden and unpleasant intrusions into awareness and behavior, with accompanying losses of continuity in subjective experience: (i.e. “positive” dissociative symptoms); and/or (b) an inability to access information or to control mental functions that normally are readily amenable to access or control: (i.e. “negative” dissociative symptoms).

The DSM-IV states that “*the essential feature*” of the DDs is a disruption in the “*usually integrated functions* of consciousness, memory, identity, or perception.”^[3], p 519], whereas in the ICD-10, “*the common theme* shared by dissociative (or conversion) disorders is a partial or complete loss of the *normal integration* between memories of the past, awareness of identity

and immediate sensations, and control of bodily movements.”^[4], p 151]. Importantly, the ICD-10 describes DDs as primarily *acute disorders* that usually remit within a few weeks or months, and that have an onset in the immediate context of events that are highly stressful, traumatic, and/or that involve intolerable, insoluble problems. In contrast, the DSM-IVTR conceptualizes several DDs as long-term, chronic disorders, including DID and some forms of DPD, DA, and DDNOS.

In formulating a more rigorous definition of dissociation and the domain of dissociation, it is helpful to make explicit the conceptual confusion that has often afflicted the construct of dissociation. For example, one observer quipped, “the term dissociation suffers from multiple meaning disorder” (Stephen Marmer, M.D., personal communication, Chicago, IL, 1993). In short, the term dissociation has been used to describe a variety of different concepts at various levels of theoretical abstraction. This situation is reflected in Kluff’s (unpublished) description of over 20+ different uses of the term dissociation in the literature.

This article is not the place to review this complex issue; for an in-depth discussion of much of this, see the reviews of Cardena and Dell, as well as others.^[12–15] However, in the literature, dissociation has been used to describe a range of *dimensional, adaptive processes* not just categorical disorders). There is a tendency to conflate the dimensional and the categorical conceptualizations of dissociation, leading to confusion about what is being described. The ICD discussion of the DDs emphasizes the categorical psychopathological notion: “The term “conversion” is widely applied to some of these disorders and implies that the unpleasant affect, engendered by the problems and conflicts that the individual cannot solve, is somehow transformed into symptoms”^[4], p 152]. On the other hand, the DSM-IVTR minimizes the idea that dissociation can be adaptive (see, the sections on the DDs and Conversion Disorders).^[16]

The current DSM system places Conversion Disorders among the Somatoform Disorders. Indeed, Brown et al.^[17] among others, have recommended that Conversion Disorders be reunited with the DDs in DSM-5. The DSM-IV-TR classifies DPD as a DD, but the ICD-10 classifies DPD under “other neurotic disorders.” The ICD classifies “Multiple Personality Disorder” among “Other DDs, whereas the DSM-IVTR classifies DID as a separate disorder. ICD-10 includes Trance and Possession Disorders (TPD) among the DDs, but in DSM-IVTR DTD appears in Appendix B: “Criteria Sets and Axes Provided for Further Study.” In many ways, the ICD approach to the DDs bears greater similarity to the DSM-II^[18] where Hysterical Neurosis was divided into a “Conversion type” and a “Dissociative type” and DPD was listed as a separate “Depersonalization Neurosis.”

DIMENSIONAL AND CATEGORICAL CONCEPTS OF DISSOCIATION

The term dissociation has been used to describe a variety of processes of the human mind, including “normal” aspects of focused or divided attention and absorption,^[19,20] some of which may underlie hypnotic capacity;^[21] “semi-independent mental modules” that are not consciously accessible [⁶, p 16]; and altered states of consciousness that can be activated in a variety of contexts such as religious ecstasies, hypnotic experience, and/or during traumatic or overwhelming experiences.^[12,19,21–23] Dissociation also describes a psychobiological trait that can be measured in various populations.^[24] Taxon analysis has shown that there may be two categorically distinct dissociative dimensions: “nonpathological” and “pathological.”^[25–27] In addition, dissociation is used to describe an intrapsychic defense, conceptualized in psychodynamic terms, which can occur in the context of acute trauma, as well as in later responses to the person’s intrapsychic experience of trauma, overwhelming experiences, and/or intolerable conflict engendered by these.^[23,28,29]

Inherent in many of the dimensional conceptualizations is the *adaptive nature* of dissociation in the context of acute or chronic danger and/or trauma, as well as for psychological survival in the context of inescapable chronic threat or captivity.^[23,30–33] Thus, in the literature, dissociation is described both as a dimensional adaptation as well as a categorical form of psychopathology. This may seem inherently contradictory. However, in the treatment of DDs, attention to both conceptualizations of dissociation is helpful in recognizing the adaptive resources that many dissociative patients bring to treatment, as well as in not romanticizing the severely disruptive symptoms, life dysfunction, and distress that dissociative patients experience.^[34,35] Also, attention to the different ways in which the term dissociation is used may be helpful in clarifying discussions among different groups of clinicians and researchers who might otherwise appear to be talking past each other in discussing different aspects of dissociation and the DDs. However, it is difficult to describe DDs without making reference to the adaptive and maladaptive aspects of dissociation, as will be apparent in our subsequent discussions.

NONPATHOLOGICAL AND PATHOLOGICAL DISSOCIATION

Defining the “normal” or “usually integrated” functions of the mind is not a trivial issue, although an in-depth discussion is well beyond the scope of this review. In general, dissociative symptoms are conceptualized as more pervasive, disruptive, and/or distressing than normal psychobiological capacities and their failures (e.g. ordinary forgetting, absorption in imaginative activities, uncertainty whether one has done something or not, etc.) However, rather than a continuum of dissociation from “normal” to “pathological,” taxon

analysis suggests a categorical division between two continua: the normal and the pathological.^[26,36]

Dalenberg^[20] has offered an alternative view that, at least in part, normal dissociative capacities and responses, particularly the capacity for absorption, may more represent *substrates* for pathological dissociation, rather than phenomena that are categorically different. This view may have support in genetic studies of dissociation (see below, section on genetic studies).^[37] However, it is consistent with a stress-diathesis explanation of the adaptive/pathological dissociation distinction.^[25,38] Indeed, these may not be incompatible models. At extreme levels of pathological dissociation, with multiple chronic complex symptoms that pervasively recruit and modify normal tendencies, especially beginning in early development, qualitative and categorical differences may emerge between normal and pathological dissociation.

The DSM and ICD formulations originate in Janet’s conceptualization of dissociation, which he termed “*désagrégation mentale*.”^[39] Janet postulated that a failure of integration of mental elements was the fundamental aspect of hysterical (i.e. dissociative and conversion) disorders. These ideas also fit modern connectionist, “bottom-up” models of mental processing, such as the parallel distributed processing model proposed by McClelland and Rumelhart.^[40,41] In this computational model of neural networks, integration of information is a *goal*, rather than a given. Neural systems that process the simultaneous firing of millions of neurons must extract coherence. Accordingly, it is not surprising that complete integration of the information is not always achieved. Such neural nets may become “stuck” in *local minima*, unable to proceed, unless some new “activation energy” is introduced. This conceptualization has been used as a mathematical model for dissociative phenomena.^[42]

DISSOCIATIVE SYMPTOMS AND THE SUBJECTIVE EXPERIENCE OF DISSOCIATION

In addition, it may be helpful to understand that the subjective experience of dissociative symptoms may differ due to a variety of factors in different diagnostic groups within the DDs category. For example, DID is currently understood as a complex posttraumatic developmental disorder that usually begins before the age of 5–6.^[43,44] It is hypothesized that, after that developmental window, the consolidation of a more unified sense of subjective self and other developmental cognitive changes have occurred. This leads to different kinds of identity disturbances than that of the DID alternate identities in response to overwhelming and/or traumatic circumstances, although other complex dissociative symptoms may continue to develop.^[22]

Individuals with DID and related forms of childhood onset complex DDs experience a *life-long adaptation* to chronic complex dissociative symptoms. For example,

these individuals may only realize in later life that not everyone has amnesia for significant parts of ongoing experience and/or that, in most families, adults do not have sex with children. In addition, dissociation may protect the person from awareness of dissociative symptoms themselves. For example, individuals with DA may not recall that they have demonstrated amnesia for personal experience in the clinical interview; they display “amnesia for amnesia.”^[45]

Thus, individuals with childhood-onset DDs may have a different relationship to these life-long symptoms than individuals who develop *adult-onset* dissociative symptoms during an episode of acute trauma, and different again from chronic DPD patients who often describe continuous, painfully acute awareness and extreme distress at depersonalization symptoms that usually develop during adolescence or adulthood.^[46]

Due to the adaptive nature of dissociation, individuals with childhood-onset chronic DDs may experience more distress at the *consequences* of the dissociation, not necessarily at the dissociative symptom per se. For example, a teacher becomes angry at a child with dissociative identity disorder (DID) who cannot recall ever having known important academic information that the teacher insists the child seemed to know well previously.^[45] On the other hand, the DID person may experience more direct distress at intrusive symptoms: e.g. dysphoric “made” feelings, disquieting intrusions of painful body sensations without cognitive referent or sense of subjective ownership, finding him/herself in the midst of circumstances with no memory of how he/she has arrived there, and so on.^[47]

It is hypothesized that dissociative symptoms *reduce* subjective distress both in the immediate context of stress or trauma, as well as later when the dissociative processes protect the individual from full awareness of stressful, disquieting, and/or traumatic information.^[23] It is also hypothesized that dissociative symptoms (e.g. such as DA, ongoing derealization and depersonalization, sequestration of traumatic information from ongoing awareness, and other dissociative processes) may diminish distress for the dissociative child growing up under conditions of continual threat, fear, and helplessness in chronically dysfunctional, violent, and/or traumatizing circumstances. In this instance, dissociation may operate as a *resiliency factor*, allowing the development of the capacity for attachment, even to traumatizing and/or neglectful care-givers, as well as permitting the development of more normal social, cognitive, intellectual, and self-observation capacities.^[33,48,49] This is especially true in circumstances requiring conflicting roles in relation to a parent who is both protective and traumatizing, referred to as “betrayal trauma.”^[33,49]

From a dimensional and psychodynamic viewpoint, one can understand dissociation, particularly in the childhood-onset forms, as a major aspect of organizing psychological experience and of intra-psychic defense. Accordingly, dissociative processes characterize major

aspects of many of these individuals’ psychological life. An important consequence of childhood-onset DDs is that dissociative symptoms may occur in everyday contexts, in response to life stresses that are not traumatic stress.^[22] The notion that dissociative processes exist to *reduce* at least some aspects of subjective distress is consistent with the neurobiological data that individuals with dissociative forms of the PTSD show “emotional overmodulation” with increased activation of the orbitofrontal cortex inhibiting activation of the amygdala and insular cortex, as discussed below.^[50] Similarly, neurobiological data from studies of individuals with global DA and normal highly hypnotizable subjects with posthypnotic amnesia show frontal cortex inhibition of hippocampal areas, as well as occipital cortex, an area also thought to be associated with retrieval of episodic autobiographical memory.^[51–53]

Metaphorically speaking, fundamental aspects of dissociative responding can be conceptualized in terms of “detachment” or “compartmentalization.”^[54] Detachment includes depersonalization/derealization experiences; and compartmentalization includes dissociative experiences such as amnesia or separation of memory material from one’s ongoing sense of self, etc. Unfortunately, dissociation generally interferes with processing of traumatic experiences, leaving memory material in nonverbal, emotionally overwhelming, usually imagic and sensory form.^[55,56]

Episodic failures or breakdowns of dissociation may result in dissociative flashbacks and other forms of posttraumatic intrusive symptoms. At such times, presumably, the frontal cortex can no longer inhibit the hippocampus, amygdala, insula, and related structures. Executive functioning may also be problematic, since the intrusive symptoms overwhelm the dissociative person’s psychological resources and/or the traumatic memories are subject to re-dissociation with a return to impaired accessibility. These circumstances may have significant implications for treating dissociative forms of posttraumatic disorders.^[50] In particular, dissociative patients frequently may have a poor response to unmodified forms of exposure-based treatments. Thus, major proponents of exposure treatment for the PTSD consider viewing severe dissociation to be a contraindication for exposure-based therapy.^[57] Phasic treatment models with an emphasis on symptom management skills, modulation of dissociation, and development of safety as the primary tasks of treatment, appear to have better outcomes for dissociative forms of PTSD and severe DDs.^[35,58]

DIFFERENTIAL DIAGNOSTIC CONSIDERATIONS BETWEEN DDs AND PSYCHOTIC DISORDERS

Phenomenological studies show that psychotic and dissociative processes may produce symptoms that superficially resemble each other, but have differing

etiologies, treatment response, and presumptive psychobiology. For example, Kluft and Ross et al.^[47,59] reported high rates of apparent First Rank Symptoms (FRS)^[60] in DID patients—even higher than in some studies of patients with diagnosis of schizophrenia. In a general population study, Ross and Joshi reported that FRS were strongly correlated with reported childhood trauma and dissociative symptoms.^[61] Dell^[7] reviews a number of subsequent studies, as well as his own data, that have replicated these findings.

A number of studies have shown that DDs are often misdiagnosed as a psychotic disorder and such patients may suffer iatrogenic worsening of their disorders due to years of misdiagnosis and mistreatment.^[62,63] In addition, studies of both psychotic disorders and DDs may be confounded by the inclusion of misdiagnosed subjects. Indeed, if misdiagnosed dissociative subjects were removed from research cohorts of presumptive psychotic subjects, this could also enhance the study of the diagnosis, treatment, and psychobiology of psychotic disorders. The correct diagnosis of each diagnostic group is vital for clinical work as well as for research.^[35]

Some commentators have voiced concern that a broader definition of dissociation from those of the DSM-IV-TR and the ICD-10 will lead to overdiagnosis of DDs in individuals who actually meet diagnostic criteria for psychotic disorders or mood disorders with psychotic features (Michael First, American Psychiatric Association, San Diego, CA, May 23, 2007). However, validation studies of the Dissociative Experiences Scale (DES),^[26,64,65] the DDs Interview Schedule (DDIS),^[66] and the Structured Clinical Interview for DSM-IV DDs^[67–69] show that DDs can be distinguished from psychotic disorders (and other disorders^[70]) with excellent discriminant validity.^[8] Thus, there are a variety of clinical and psychometric inventories that robustly distinguish the DDs from the psychotic disorders.^[58]

Psychological testing studies have also shown significant differences in the extent of traumatic responding, personality organization, capacity for attachment, reality testing, relationship to reality, self-observation capacity, and capacity for logical, reality-based thinking in severely dissociative as compared to psychotic patients.^[48,71–73] Also, from a treatment perspective, hallucinations in DDs generally do not respond to very high-dose antipsychotic regimens, even with several antipsychotic medications.^[74] In general, dissociative hallucinosis *does* respond to psychotherapeutic interventions such as mobilizing the “hallucinations” in therapy, with or without the formal use of hypnosis.^[35,75]

Posttraumatic content may manifest in complex perceptual and somatosensory hallucinatory symptoms, without the person consciously knowing to what those hallucinations relate.^[76] Dissociative patients may have reexperiences or reenactments of trauma during which they believe that they are actually in a different time/place undergoing that traumatic experience.^[23]

Patients with this presentation, who also report multimodal dissociative hallucinosis, may fit the putative diagnostic construct of dissociative (hysterical) psychosis (see below)^[77–79] that was presumably subsumed under the DSM-III category of Brief Reactive Psychosis.^[80] From a reality-testing standpoint and due to temporarily disorganized behavior, they may appear functionally “psychotic,” but the etiology of the process is posttraumatic and dissociative.

Beside constituting a separate disorder on its own (see below the section on DDNOS-7), dissociative (hysterical) psychosis may be superposed on a chronic complex DD such as DID or DDNOS-1 in terms of a crisis condition (207, 210). In a patient with DID who is controlled by the host identity most of the time (with the alter identities being suppressed), this equilibrium may disappear when stressful events occur. This may reactivate many suppressed alternate identities as the host personality can no longer stay dominant, and severe dissociative symptoms and flashbacks may cause a “dissociative (hysterical) psychosis”^[81], pp. 165–175]. Internal conflicts may also lead to a struggle for control and influence between alternate identities who have frightening, fearful, aggressive, or delusional features, and some of whom may have been long dormant.^[82] This condition has been called a “revolving door”^[45] or “coconsciousness” crisis.^[81] The former refers to rapid switching between alternate identities because of a struggle for control, while the latter refers to a transient collapse of dissociative barriers. So, dissociative (hysterical) psychosis may be a “diagnostic window” for DID in some cases. As such, dissociative (hysterical) psychosis may be a gateway leading to the discovery of chronic DDs in countries where clinicians are more familiar with acute presentations of DDs.

These cases should not be confused with patients who not only have an underlying schizophrenic disorder but also report dissociative symptoms as an additional phenomenon. Some authors prefer to describe this phenomenon as a dissociative subtype of schizophrenia which is, unlike dissociative (hysterical) psychosis, not limited to an acute episode.^[83,84]

Dissociative patients do not report delusional explanations for hallucinations or FRS. Rather, they tend to experience these symptoms as *inexplicable and frightening*: indicators that they are “crazy.”^[85] Accordingly, they usually attempt to hide/rationalize the existence of the symptoms and may avoid disclosing them in a clinical interview due to fear and shame.^[71]

In Kluft’s classic 1987 study,^[86] the DID patients did not endorse thought broadcasting, audible thoughts, or delusional perception; i.e. they did not have a psychotic boundary disturbance nor show true delusional thinking. Further, dissociative/posttraumatic thought disorders differ from psychotic thought disorders in that the thought disturbances usually center on a sense of subjective self-division (e.g. that alter identities do not inhabit the same body), and misattribution of blame and responsibility for traumatic experiences.^[71,87,88]

Dissociative auditory hallucinations tend to be complex and personified. They have a range of subjective qualities, from “free-lance thoughts” to multiple simultaneous inner conversations. These dissociative auditory hallucinations have a variety of content: pejorative, commanding self-harm or suicide¹; supportive; childlike; neutral (i.e. discussing everyday topics like the weather or sports); joking; fearful and suspicious; protective and supportive; persecutory, etc. DD subjects may also have musical hallucinations and auditory hallucinations of a variety of other sounds.^[43]

Visual hallucinations in DDs are best understood as images of alternate identities, vivid partial flashbacks, or attempts to transform or disguise distressing mental contents.^[89] Posttraumatic content may also be a part of complex hallucinatory symptoms with perceptual and somatosensory phenomena that occur without the person consciously knowing what they relate to.^[76] Reports of dissociative FRS may have a complex, often almost poetic quality: “I feel like someone else wants to cry with my eyes”... “I get those ghost feelings,” etc..^[90]

Also, highly hypnotizable subjects can readily be made to hallucinate in all sensory dimensions, as well as to experience “negative” hallucinations (i.e. sensory experiences are ablated from conscious perception).^[91] Individuals with DID have been shown to have the highest hypnotizability of any clinical group and PTSD patients also have high hypnotizability.^[92,93] Patients with DID and related disorders commonly describe hallucinations in all perceptual domains: auditory, visual, olfactory, tactile, gustatory, and somatosensory, as well as negative hallucinations.^[90] Importantly, psychotic patients have significantly *lower* hypnotizability compared to other clinical groups, again suggesting that dissociative and psychotic hallucinatory phenomena have different etiologies.^[91,93–95]

In summary, the above findings are consistent with the hypothesis that dissociative FRS and hallucinations have a different etiology from psychosis.

DPD AND DEREALIZATION

- Should DPD remain in the DSM-5 DDs section, or should it be moved to another section of the DSM-5? Or, should DPD be considered a symptom of another disorder or disorders, such as anxiety disorders, psychotic disorders, personality disorders, etc.? If DPD continues as a distinct disorder, what is the relationship of symptoms of depersonalization to symptoms of derealization in the proposed diagnostic criteria? In DSM-IVTR, depersonalization is separated from derealization, with the latter placed in examples of DDNOS. In ICD-10, although DPD is not included in the DDs, the diagnostic criteria

TABLE 2. DSM-IVTR and ICD-10 diagnostic criteria for depersonalization disorder

<i>Diagnostic Criteria for DSM-IVTR Depersonalization Disorder (300.6)</i>	
A.	Persistent or recurrent experiences of feeling detached from, and as if one is an outside observer of, one's mental processes or body (e.g. feeling like one is in a dream)
B.	During the depersonalization experience, reality testing remains intact
C.	The depersonalization causes clinically significant distress or impairment in social, occupational or other important areas of functioning
D.	The depersonalization experience does not occur exclusively during the course of another mental disorder, such as Schizophrenia, Panic Disorder, ASD, or another Dissociative Disorder, and is not due to the direct physiological effects of a substance (e.g. a drug of abuse, a medication) or a general medical condition (e.g. temporal lobe epilepsy)
<i>Diagnostic Criteria for ICD-10 Depersonalization Disorder (F48.1)</i>	
Either of both (a) and (b) plus (c) and (d)	
a.	Depersonalization symptoms, i.e. the individual feels that his or her own feelings and/or experiences are detached, distant, not his or her own, lost, etc
b.	Derealization symptoms, i.e. objects, people, and/or surrounding seem unreal, distant, artificial, colourless, lifeless, etc
c.	An acceptance that this is a subjective and spontaneous change, not imposed by outside forces or other people (i.e. insight)
d.	A clear sensorium an absence of toxic confusional state or epilepsy

ASD, acute stress disorder.

include both depersonalization and derealization. The diagnostic criteria for DPD from both volumes are listed in Table 2. Support for the continuing inclusion of DPD in the DDs has several components. Depersonalization and derealization are highly prevalent in other DDs ranging from peritraumatic dissociation to DID, although they also occur in mood, anxiety, obsessive-compulsive, and schizophrenic disorders, among others.^[44]

RELATIONSHIP TO STRESS AND TRAUMA

Depersonalization and derealization are quintessential responses to acute trauma; they are highly prevalent in those subjected to motor vehicle accidents, emotional/verbal abuse, and imprisonment, among others.^[31,96–100] Clinical reports describe devastating effects of verbal/emotional abuse on traumatized individuals.^[101] Sierra,^[102] among others, has proposed that depersonalization is a “hard-wired” inhibitory response—part of the human psychobiological survival system—that attenuates anxiety and fosters psychobiological hyperarousal to help preserve adaptive behavior and to conserve physical resources under conditions of threat and danger. Disorders related to depersonalization may represent generalization and persistence of this response outside the context of immediate threat, just as PTSD fear reactivity can be understood, in part, to be as a generalization of the adaptive, conditioned fear response beyond the immediate context where it

¹These kinds of hallucinations may lead more to a diagnosis of a psychotic depression than schizophrenia.

was generated. Recent neurobiological studies have shown that childhood verbal/emotional abuse can be related to a variety of psychobiological alterations. These include high dissociation scores on the DES, limbic system abnormalities, alterations in gray matter volume, and changes in fractional anisotropy of white matter in the corpus callosum, corona radiata, and other areas, comparable to those found in individuals with histories of childhood sexual abuse.^[99,103,104]

NOSOLOGY

Studies of two large cohorts^[46,105] have documented a consistent nosology for DPD, including age of onset, acute and remote antecedents, symptomatology, cognitive organization, course, treatment response (primarily *lack* of treatment response), and gender ratio.^[106] Factor analysis from these studies suggest that DPD symptoms are characterized by either four or five factors: numbing, unreality of self, unreality of other, temporal disintegration, and perceptual alterations (i.e. micropsia/macropsia, out of body experiences, and feelings of unreality of objects and one's own body).^[106] These studies did not find any distinction between patients with predominant depersonalization versus those with predominant derealization, belying the DSM-IVTR's separate categorization of DPD and "IVTR derealization without depersonalization" (an example of DDNOS).

EPIDEMIOLOGY

Studies from countries including the United States, Canada, UK, Turkey, and Germany have shown a prevalence for DPD in the range of 0.8–2.8%,^[24,107–110] comparable to that of other DSM-IVTR disorders such as schizophrenia, bipolar disorder, and Obsessive Compulsive Disorder (OCD).

COMORBIDITY

Due to the high rates of depersonalization as a symptom in other disorders, some have asked whether DPD is a distinct disorder.^[111] The studies cited above only included subjects in whom the onset and course of DPD was clearly distinct from that of the comorbid disorders, such as mood, anxiety, and personality disorders. Chronic depersonalization has been reported to begin in a variety of contexts, including overwhelming and/or traumatic circumstances, during an episode of substance abuse, an episode of a mood or anxiety disorder, as well as spontaneously.^[106] However, in DPD the depersonalization persists after the comorbid conditions have remitted.

Like PTSD, DPD may become chronic early in life, or may have a delayed onset, triggered by a stress later in life. In some DPD patients, anxiety and mood disorders develop secondary to (i.e. after the onset of) DPD;^[44] this is similar to some patients with OCD who develop secondary mood disorders.^[112] In short,

just as anxiety or depression, comorbidity with other morbid psychiatric disorders does not preclude the existence of anxiety or depression as separate diagnostic entities, so too, the comorbidity of depersonalization with other psychiatric disorders does not preclude its existence as a separate diagnostic entity.

NEUROBIOLOGY

Persons with DPD have similar neurobiological patterns to those of persons with other DDs.^[50] In brief, neuroimaging studies of DPD have documented a consistent tripartite pattern of altered activation: (1) findings: activation in posterior cortical sensory association areas, especially the inferior parietal lobule; (2) prefrontal activation; and (3) limbic inhibition.^[46,50] These findings are unlike those seen in mood and anxiety disorders. They are consistent with the replicated finding of inferior parietal lobule involvement in simulated out-of-body experiences^[113] and altered experiences of agency in healthy volunteers.^[114] Also, these findings are similar to imaging findings in those PTSD patients displaying a unique pattern of psychobiological responses to trauma scripts, thought to characterize a distinct dissociative subtype of PTSD.^[115–117] In addition, these findings are consistent with rCBF studies of DID patients with alternate identities who do not report experiencing the person's unique trauma scripts as autobiographical memory.^[118] Individuals with DPD have a different pattern of hypothalamic–pituitary–adrenal axis dysregulation compared with patients with PTSD, as well as those with other mood and anxiety disorders.^[119] DPD is characterized by HPA axis baseline hyperactivity and diminished negative feedback inhibition^[119,120] with blunted reactivity to psychosocial stress. This pattern is different from that found in major depressive disorder, where baseline hypercortisolemia is accompanied by heightened HPA axis response to stressors in someone but not all^[121] studies. Simeon et al.^[122] found that, in DPD patients, basal norepinephrine declined markedly as dissociation increased in response to anxiety, despite evidence of increased noradrenergic tone. Sierra et al.^[123] found that DPD patients showed a blunted skin conduction response (SCR) to emotional stimuli, compared with normal controls and those with anxiety disorders. In summary, these findings are consistent with the hypothesis that there is autonomic blunting in DPD. In a review of the (limited) psychopharmacological treatments for DPD, Sierra^[102] suggested that possible agents and neurobiological targets for DPD might include CB1 cannabinoid agonists, κ opioid agonists, NMDA antagonists, and 5HT_{2C} agonists.

CROSS-CULTURAL ASPECTS OF DPD

Castillo^[124] has described a set of DPD symptoms that potentially broadens the cross-cultural validity of DPD. Castillo's cluster of symptoms is similar to the more recent data-derived factor analytic models in Western

samples: persistent or recurrent experiences of depersonalization and/or derealization in which familiar experiences of the self and environment become distorted, potentially resulting in physical and emotional numbing; alterations in body image; experiences of being an outside observer of one's mental processes or body; feeling like an automaton; time disturbances; feeling as if one's body or environment is "unreal" or dreamlike. Visual distortions (including micropsia, macropsia, teleopsia, pelopsia, metamorphopsia, and loss of stereoscopic depth perception). Relevant to diagnosis, the depersonalization/derealization experience does not occur exclusively during a culturally approved religious or ritual activity, and is not considered normal by the patient's own cultural standards.

PROPOSED DSM-5 DIAGNOSTIC CRITERIA

In summary, we propose that DPD should continue to be included in the DDs category in DSM-5. The totality of the data support the notion that chronic persistent depersonalization/derealization does comprise a distinct disorder, that this disorder more resembles than differs from other DDs, and can be understood in terms of the basic psychobiology of human response to threat and danger.

DPD symptoms are validated for more than a single symptom, and these symptom factors should be addressed in the diagnostic criteria and described in the text for the disorder. Recent research supports the ICD-10 notion that both depersonalization and/or derealization can characterize DPD and the diagnostic criteria for DPD and the DDNOS examples should be changed accordingly.

PROPOSED DSM-5 DIAGNOSTIC CRITERIA FOR DEPERSONALIZATION DEREALIZATION DISORDER (300.6)

- A. The patient can have either A1, A2 or both: A1. Persistent or recurrent experiences for at least 1 month of feeling detached from, or as if one is an outside observer of, one's mind or body (e.g. feeling like one is in a dream; sense of unreality of self, perceptual alterations; emotional and/or physical numbing; distorted sense of time) A2. Persistent or recurrent experiences for at least 1 month of unreality of surroundings (e.g. the world around the person is experienced as unreal, dreamy, detached, foggy, or visually distorted)
- B. During the depersonalization or derealization experiences, reality testing remains intact
- C. Significant distress or dysfunction
- D. The depersonalization or derealization experiences do not occur exclusively as symptoms of

another mental disorder, such as Schizophrenia, Panic Disorder, ASD, or another DD, and are not due to the direct physiological effects of a substance (e.g. a drug of abuse, a medication) or a general medical condition (e.g. complex partial seizures).

DISSOCIATIVE AMNESIA AND DISSOCIATIVE FUGUE

1. Should DA continue to be conceptualized as a DD, or should it be included in another section of the DSM, emphasizing its relationship to trauma, e.g. as part of the symptom clusters for ASD or PTSD? We begin the discussion of question 1 by discussing the definition, characteristics, and phenomenology of DA.

DEFINITION OF DISSOCIATIVE AMNESIA

DA has been described in the literature in three major ways

- A clinical symptom or phenomenon of reported or displayed prior or current autobiographical memory deficits for aspects of the life history, primarily related to reported traumatic, stressful, and/or overwhelming experiences (e.g. childhood sexual or physical abuse, combat, concentration camp experiences, sexual assault, natural disaster, etc). In many of these studies, the DA is only recognized subsequent to recall of the memories that were unavailable. This is often called "recovered memory," or, more neutrally and precisely, "delayed recall for traumatic experiences."^[125-131]
- A DSM-IVTR DD: DA.
- A diagnostic criterion symptom of other DSM-IVTR disorders: ASD, PTSD, Somatization Disorder, DE, Dissociative Identity Disorder, and DDNOS example 1. The diverse definitions of DA in the DSM-IVTR and the ICD-10, respectively, are found in Table 3. Apropos of their respective definitions of dissociation, DSM-IVTR, and ICD-10 have somewhat differing conceptualizations of DA. ICD-10 emphasizes recent, acute stressful events as precipitants of amnesia, whereas DSM-IVTR posits a broader domain of personal information (i.e. beyond the frankly traumatic) as precipitants of DA that may involve "some or all of one's past." Moreover, DSM-IVTR implies that DA may occur for events throughout the life history, not just recent events. Based on the above definitions, the domain of DA is bordered on the one hand by the Cognitive Disorders and, on the other, by "Ordinary Forgetfulness." Differential diagnosis of DA and Cognitive Disorders have been discussed in several reviews.^[43,132,133] Salient differences

TABLE 3. Definition of DA in DSM-IVTR and ICD-10

DSM-IVTR

PTSD: An inability to recall an important aspect of the trauma (p 468)

ASD: [I]nability to recall an important aspect of the trauma (p 471)

Somatization disorder: No definition, in Criterion B4: Pseudoneurological symptoms: ...dissociative symptoms such as amnesia (p 490)

DA: The essential feature of Dissociative Amnesia is an inability to recall important personal information, usually of a traumatic or stressful nature, that is too extensive to be explained by normal forgetting. (p 520)

DF: The essential feature of Dissociative Fugue is sudden, unexpected travel away from home or one's customary place of daily activities, with inability to recall some or all of one's past (p 523)

DID: Inability to recall important personal information that is too extensive to be explained by ordinary forgetfulness. (p 529)

ICD-10

DA: The main feature is loss of memory, usually for important recent events, which is not due to organic mental disorder and is too extensive to be explained by ordinary forgetfulness or fatigue. The amnesia is usually centered on traumatic events, such as accidents or unexpected bereavements, and is usually partial and selective... the most extreme instances usually occurring in men subject to battle fatigue (p 153–154)

DF: DF has all the features of dissociative amnesia, plus purposeful travel from home or place of work (p 155)

DA, dissociative amnesia; DF, dissociative fugue; DID, dissociative identity disorder; PTSD, posttraumatic stress disorder; ASD, acute stress disorder.

between DA and Cognitive Disorders are listed in Table 4. DSM-IVTR Cognitive Disorders include Delirium, the Dementias, and the Amnesic Disorders. These can be related to closed-head trauma, anoxia with interruption of blood flow to the hippocampus, penetrating missile wounds, cerebrovascular disease, etc.^[134] In some cases, DA and Cognitive Disorders may coexist (e.g. a patient with DID who also has cognitive deficits secondary to a severe head injury).

IS DISSOCIATIVE AMNESIA JUST A ORDINARY OR NORMAL FORGETFULNESS?

There has been a considerable debate about whether DA is really different from ordinary forgetting.^[33,125,135] Some cognitive psychologists have expressed skepticism about (1) the existence of DA, particularly for early life trauma, and (2) the presence of unique psychobiological processes that putatively explain DA.^[125,135,136] Briefly, many cognitive psychologists assert that clinicians underemphasize the role of normative kinds of forgetting and propose “special” mechanisms of dissociative forgetting that lie outside the mainstream of academic research on memory. Both of these criticisms are probably accurate, but both fail to account for these kinds of forgetting that is routinely reported by patients with DA.

While ordinary forgetting can and does occur among people with DA, in DA, the person loses autobiographical information that ordinarily would be a routine part of memory (i.e. what the person did, where he/she went, what he/she thought at the time, what emotions were experienced, who else was present, what they do or say, what happened next, etc.). This differs from ordinary forgetting when it involves events that occurred 5 min ago (i.e. the classic microamnesias of DID patient), one's personal identity (i.e. “I do not remember my name or who I am”), or the last 3 years (as often occurs in cases of DA). Thus, factors that

counter ordinary forgetting, such as recency and intensity, are compatible with DA.

In this review, it is impossible to give a full discussion of the complex nature of problems with memory subsumed by the (inadequate) term “ordinary forgetfulness.” In addition to description of memory problems identified by researchers in cognitive psychology,^[137] researchers in autobiographical memory have described a variety of normal memory problems, failings, and deficiencies that can occur in autobiographical memory.^[138–140] These problems are summarized in Tables 4 and 5, respectively. In particular, autobiographical memory problems are most relevant to contrast with DA, although individuals with DA can suffer from all of the more “ordinary” forms of “forgetfulness” identified in the tables.

CLINICAL STUDIES OF DISSOCIATIVE AMNESIA

Most of the modern data on memory in DA come from in-depth case studies or small case series of patients with generalized DA, severe selective DA, and generalized or selective DA subsequent to an episode of DF, and in the study of memory in case studies, or case series of DID patients.^[141–155] These studies are useful, but studies of larger samples of DA subjects are needed to make more definitive conclusions about DA. In clinical samples, DA manifests itself in several recognized forms. These are listed in Table 5.^[156]

Kritchevsky et al.^[144] studied 10 patients with persistent, severe DA for personal history and/or identity using standard neuropsychological batteries. In general, patients did well on tests of anterograde memory. On tests of remote memory for public events and famous faces, tests used in previous individual case studies of memory in DA, patients showed variable, idiosyncratic—but individually consistent—memory deficits. However, one subject admitted to malingering

TABLE 4. Differences between DA and amnesia in cognitive disorders

Differences	DA	Cognitive disorders
Due to known medical disorder or physical cause	No	Yes
Onset related to psychological trauma/extreme stress	Yes	No
Exacerbated by stress	Yes	Yes/No; anxiety can worsen memory performance in Cognitive Disorders
Memory deficits primarily in autobiographical information, personal identity	Yes	No, but may have circumscribed retrograde memory loss and/or general impairment in autobiographical recall that worsens with illness progression
Reversible with hypnosis	Yes	No
Improvement with sedative-hypnotics (e.g. pharmacologically facilitated interviews)	Yes or no change	No or may make worse
Varying extent and nature of the intrusion of the dissociated mental elements to consciousness	Yes	No
Ability to learn new information is intact. Ability to manipulate facts and neutral information is generally normal (e.g. finances, current events, etc.)	Yes	No
Disorientation to personal identity generally only occurs in late phases of illness	No	Yes

DA, dissociative amnesia.

TABLE 5. Types of DA

<i>Localized amnesia:</i> Inability to remember a specific period of time, or a specific event, such as a suicide attempt, or a circumscribed period of time, such as before age 12, all of second and third grade, etc
<i>Selective amnesia:</i> Inability to remember some, but not all, of the events during a circumscribed period of time, such as parts of a combat experience, a sexual assault, etc
<i>Systematized amnesia.</i> Inability to remember certain categories of memory, such as no recall of one's home-life during third grade, but recalling being at school; or inability to recall a particular person, e.g. a reportedly abusive brother
<i>Continuous amnesia:</i> Inability to remember successive events as they occur (i.e. ongoing anterograde dissociative amnesia); extremely rare; may present as dissociative pseudo-delirium, pseudo-dementia, or pseudo-amnesic-confabulatory syndrome
<i>Generalized (global) amnesia:</i> Forgetting one's entire life, generally including memory for personal identity
<i>Thematic DA:</i> In DID or DDNOS different identity states recall the same time period(s), but do not recall the events and/or themes recalled by other self states

DA, dissociative amnesia; DID, dissociative identity disorder; DDNOS, DD not otherwise specified.

amnesia, and two others were reported to have developed alternate identities with extensive, persistent DA. This last finding is consistent with clinical reports in the DID literature which have described incidents of generalized DA that occurred in the context of DIDDID or severe DDNOS with DID features.^[43,44]

Overall, the central phenomenon of DA is a deficit in both episodic and semantic aspects of autobiographical memory (i.e. dense amnesia for personal identity and a substantial portion of one's life history). In extreme cases, even procedural memory can also be affected.^[157]

Unlike the subjective wearing-away quality of autobiographical memory, DA often presents with distinct boundaries—i.e. a distinct onset and a distinct offset, lack of memory for a specific age, or lack of recall for a specific category of information.^[22]

Most reports of nonorganic amnesia in the literature entail memory loss that is far more extensive than the localized amnesia for aspects of traumatic experience) that may occur in ASD and PTSD. Thus, DA typically involves an inability to recall whole epochs of autobiographical memory, not a specific traumatic incident or traumatic period of time (e.g. during a series of combat missions). Generally, memory for public events is accessible, whereas memory for private events is not.^[51,141,144,145,158]

EPIDEMIOLOGY OF DISSOCIATIVE AMNESIA AND DISSOCIATIVE FUGUE

In epidemiological studies,^[109,159,160] DA had a prevalence of 1.8–7.3%. Sar's study of Turkish women reported the highest prevalence (7.3%). Ross' Canadian Ross study found DA to be the most prevalent DD (6.0%). DA was the second most prevalent in the other studies (after DDNOS). Xiao et al.^[161] studied a Chinese psychiatric patient and factory worker sample with a Chinese version of the DDIS. Factory workers showed a prevalence of DA of 0.2% compared with 0.2% of inpatients and 1.3% of outpatients (*Note:* patients were selected in part based on a childhood history of physical or sexual abuse). Foote et al.^[162] found that 10% of 82 inner city patients at an outpatient clinic met diagnostic criteria for DA; none met diagnostic criteria for DF.

Prevalence of DF was 0% in Canada, 0% in the United States, 0.2% among women in Turkey, and

1.3% among outpatients in China (no cases of DF were diagnosed in Chinese inpatients or factory workers).

NEUROBIOLOGICAL DATA

As noted above, neurobiological data (from studies of individuals with generalized DA, DF with subsequent generalized DA, and normal highly hypnotizable subjects with posthypnotic amnesia) show neuro-circuitry patterns similar to those found in studies of dissociation in PTSD. In general, these studies show frontal cortex inhibition of temporal/hippocampal areas, as well as occipital cortex, an area also thought to be associated with retrieval of episodic autobiographical memory.^[51,53,153] These data are similar to those of Anderson et al.'s memory suppression studies^[163]—frontal inhibition of the hippocampus. Anderson et al. hypothesized that the neural networks they describe could serve as a basis for understanding the suppression of unwanted memories.

DIMENSIONAL AND SUBJECTIVE PHENOMENOLOGY OF DA

In DA, the “forgotten” autobiographical information is understood to be present “within,” but unavailable to the conscious mind. Although subject to the vagaries of avoidance, resistance, and psychological “readiness,” genuine DA can always, in principle, be reversed. *Memory is available, but it is not accessible.* Dissociated information may still influence the person's emotional reactions and behavior, even without access to conscious recall: out of sight is not out of mind.^[164–166] Similarly, dissociated information may temporarily be available to conscious recall and then re-dissociated, often with amnesia for the period that the memory appeared to be consciously available. This may occur during psychotherapy, as well as in everyday interactions.

These phenomena have led some researchers and clinicians to conclude that the person's reported amnesia is feigned or malingered. On the contrary, indirect dissociative influences on emotion and behavior are a routine accompaniment of DA.^[166] Moreover, this same phenomenon characterizes some forms of amnesia in cognitive disorders. For example, studies have shown the presence of implicit learning in amnesic individuals with hippocampal lesions,^[167,168] and in “blindsight,” a phenomenon where individuals with cortical blindness discriminate among visual stimuli at levels greater than chance.^[169]

Thus, explicit memory retrieval failures in dissociation likely over represent the unavailability of the information in question. For example, traumatic experiences that are not fully available to explicit recall may nonetheless exert an influence on the person: a woman raped in an elevator may still avoid elevators, despite difficulty retrieving recollections of the assault. In cases where the DA involves distress over current life conflicts or indiscretions, there may be a mixture of dissociative and factitious/malingered elements that

make, making for a difficult differential diagnosis.^[154] Finally, since DDs involve profound strategies for avoidance of dissociated information, it is not uncommon for a person with amnesia to hide the existence of the amnesia even from him- or herself.

COMORBIDITY

Coons and Milstein^[170] reported on 25 patients meeting DSM-III-R diagnostic criteria for Psychogenic (Dissociative) Amnesia. Patients presented at a tertiary care center for DDs. Subjects had acute, recent, and remote DA, similar to the conceptualization of Loewenstein that DA presents in both an acute, florid form—usually as generalized DA or dense selective amnesia for life history/identity—and in a covert form with retrospective memory loss for discrete episodes of the person's life.^[132] Subjects had many associated symptoms including depersonalization, mood disorders, substance abuse, somatoform symptoms, and personality disorders, although these comorbidities may have been associated with the severity of the patients' overall clinical course, requiring referral to a tertiary center.

Study subjects reported high rates of childhood sexual and physical abuse. However, patients differed from DID patients in a variety of clinical dimensions, including lower rates of childhood trauma, lower DES scores, and lower rates of associated symptoms such as auditory hallucinations, self-mutilation, and fugue episodes. However, this study did not use structured diagnostic interviews for diagnosis of DDs, and did not report rates of comorbid PTSD.

Ross et al. assessed 201 consecutively admitted psychiatric inpatients to a private psychiatric hospital^[171] with the DDIS,^[66] the Structured Clinical Interview for DSM-IV DDs (SCID-D),^[68] and a clinical interview. Depending on the instrument, 7.3% (SCID-D) or 13.4% (DDIS) of the patients met diagnostic criteria for DA. Reliability data for DA (and for DPD) were problematic, however, between the two interviews, and the clinician interview (prevalence: 11.5%). A subset of patients met diagnostic criteria for both DPD and DA, and had to be classified as DDNOS or with both disorders. Ross et al. suggest that these patients may fit more readily into a broader dissociative diagnostic construct, rather than being forced into a residual category.

SUMMARY

In short, taking the data above as a whole, we recommend that DA be retained as a diagnosis in the DSM-5, and not subsumed under another diagnostic category. DA has been shown to be a more complex and multifaceted phenomenon than lack of recall for parts of specific trauma memories, as in PTSD and ASD. In addition, epidemiological, phenomenological, psychometric, and neurobiological data support continuing DA as a diagnostic category.

Further research can help to clarify the relationship of various presentations of DA to DID, and to elucidate the boundaries between DA and DDNOS. We may find that a subgroup of DA patients have associated dissociative symptoms such as depersonalization, spontaneous trance, and dissociative age-regression. Finally, further research can help to evaluate when a person with PTSD or ASD should receive a comorbid diagnosis of DA. Alternately, inclusion of a dissociative sub-type of PTSD in DSM-5 might provide a more parsimonious way of addressing these diagnostic quandaries.^[50] However, because dissociative symptoms and (most other) PTSD symptoms appear to represent distinct dimensions of psychopathology (albeit both related to trauma), we recommend that all localized amnesias should be accorded a diagnosis of DA.

NEW DEFINITION OF DISSOCIATIVE AMNESIA FOR DSM-5

Based on the forgoing discussion, a conservative reformulation of the definition of DA is the following: DA is an inability to recall important personal information, often trauma-related, which is inconsistent with ordinary forgetting. The essential characteristic of DA is an inability to consciously retrieve autobiographical information that (1) should be successfully stored in memory and (2) would ordinarily be readily accessible to recall.

Question 2: Does the totality of the data support DF as a separate diagnostic category in the DSM? Or should this diagnosis be eliminated? Or is DF better conceptualized under the rubric of another DD such as Dissociative Identity Disorder (DID), or DA (if DA is retained as a DD), or as an example of DDNOS?

The current DSM-IVTR diagnostic criteria and ICD-10 diagnostic “guidelines” for DA and DF, respectively, are found in Table 6.

According to ICD-10, DA is a major component of DF (DF guideline A). As noted above, ICD-10 emphasizes that DA and DF are acute responses to recent stressors. According to DSM-IVTR, DA and DF are linked, but hold that amnesia in DF is like generalized DA or dense forms of localized DA, with identity alteration as a diagnostic criterion.

There are limited systematic data about DF in the literature. Data primarily come from small case series, or individual case reports. The largest case series remain those of Fisher from the 1940s.^[172,173] Coons described five male cases of DF in a recent publication.^[174] Hacking has written a social-historical study of an “epidemic” of DF in men in late 19th century France, around the same time as there was intense interest in women with hysteria and multiple personalities.^[175] However, the relationship of these *fugueurs* to modern conceptualization of the DDs is unclear.

Because DF as a symptom has been reported in systematic studies of DID patients,^[176] given how rare DF is, clinical ascertainment of a fugue (current or past) is

TABLE 6. Definition of DA in DSM-IVTR and ICD-10

DSM-IVTR
<i>PTSD:</i> An inability to recall an important aspect of the trauma (p 468)
<i>ASD:</i> [I]nability to recall an important aspect of the trauma (p 471)
<i>Somatization disorder:</i> No definition, in Criterion B4:
Pseudoneurological symptoms: ...dissociative symptoms such as amnesia (p 490)
<i>DA:</i> The essential feature of DA is an inability to recall important personal information, usually of a traumatic or stressful nature, that is too extensive to be explained by normal forgetting. (p 520)
<i>DF:</i> The essential feature of DF is sudden, unexpected travel away from home or one's customary place of daily activities, with inability to recall some or all of one's past (p 523)
<i>DID:</i> Inability to recall important personal information that is too extensive to be explained by ordinary forgetfulness (p 529)
ICD-10
<i>DA:</i> The main feature is loss of memory, usually for important recent events, which is not due to organic mental disorder and is too extensive to be explained by ordinary forgetfulness or fatigue. The amnesia is usually centered on traumatic events, such as accidents or unexpected bereavements, and is usually partial and selective... the most extreme instances usually occurring in men subject to battle fatigue (p 153–154)
<i>DF:</i> DF has all the features of dissociative amnesia, plus purposeful travel from home or place of work (p 155)

DA, dissociative amnesia; DF, dissociative fugue; DID, dissociative identity disorder; PTSD, posttraumatic stress disorder; ASD, acute stress disorder.

more likely to indicate the presence of DID than a pure case of DF. In keeping with this statistical likelihood, experienced clinicians have observed that many patients diagnosed with DF appear to have a complex DD, usually DID (wherein an amnesic personality state was created who flees the person's current circumstances, as well as fleeing his/her identity).^[43,177]

Although previous conceptions of DF have described the assumption of a new identity, there are no systematic data to support this. Even the classic fugue case of Ansel Bourne—who left home and was found months later, living under a new name without recall of his past—was originally described as a case of “dual consciousness,” not of DF.^[178]

Hennig-Fast et al.^[145] report on a patient who presented with a dense retrograde amnesia for personal history after a 2-week fugue. Despite the case study originating in a fugue episode, psychometric and neurobiological data were comparable in many respects to other cases of dense, retrograde DA (see above).

In summary, there is little systematic data on most aspects of patients with DF. Existing data suggest that many DF patients will prove to meet the diagnostic criteria for DID, and, that most others do not differ from patients with DA characterized by severe retrograde localized or generalized DA, at least once the episode of fugue ends.^[132,177,179]

Accordingly, we recommend that DSM-IVTR DF be removed as a separate diagnostic category among the DDs, and that it be included as a subtype of DA.

TABLE 7. Proposed DSM-5 diagnostic criteria for DA (300.12)

-
- A. Inability to recall important personal information, usually of a traumatic or stressful nature, that is inconsistent with ordinary forgetting. The amnesia may be localized, selective, systematized, continuous, thematic, or generalized. *Note:* There are two primary forms of Dissociative Amnesia: (1) localized amnesia for a specific event or events, and (2) generalized amnesia for identity and life history. DF occurs when Generalized Dissociative Amnesia is accompanied by purposeful travel
- B. The disturbance does not occur exclusively during the course of DID, PTSD, ASD, or Somatization disorder and is not due to the direct physiological effects of a substance (e.g. a drug of abuse, a medication) or a neurological or other general medical condition (e.g. Amnestic disorder or other cognitive disorders)
- C. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning
-

DA, dissociative amnesia; DF, dissociative fugue; DID, dissociative identity disorder; PTSD, posttraumatic stress disorder; ASD, acute stress disorder.

Further research will be helpful in clarifying questions about the relationships between DA, DID, and certain patients currently conceptualized as DDNOS. Further, we recommend that the text of DSM-5 discuss the different sub-types of DA in depth, including DF, as listed in Table 7.

REVIEW AND REVISION OF DISSOCIATIVE IDENTITY DISORDER DIAGNOSTIC CRITERIA

Should the diagnostic criteria for DID be changed? If so, should the diagnostic criteria follow a polythetic form, a mixed polythetic/monothetic form, or remain a monothetic criteria set with modifications?

The DSM-IV-TR Diagnostic Criteria for DID are the following:

DISSOCIATIVE IDENTITY DISORDER (300.14)

- A. The presence of two or more distinct identities or personality states (each with its own relatively enduring pattern of perceiving, relating to, and thinking about the environment and self).
- B. At least two of these identities or personality states recurrently take control of the person's behavior.
- C. Inability to recall important personal information that is too extensive to be explained by ordinary forgetfulness.
- D. The disturbance is not due to the direct physiological effects of a substance (e.g. black-outs or chaotic behavior during Alcohol

intoxication) or a general medical condition (e.g. complex partial seizures). *NOTE:* In children, the symptoms are not attributable to imaginary playmates or other fantasy play. ICD-10 does not specify diagnostic criteria for DID, but states: "The essential feature is the apparent existence of two or more distinct personalities within an individual, with only one of them being evident at a time. Each personality is complete, with its own memories, behavior, and preferences; these may be in marked contrast to the single premorbid personality" (p 160). The ICD-10 description of DID is not based on an understanding of DID as a childhood-onset, complex, posttraumatic developmental disorder. Rather, this description is based on the literature that pre-dates the body of research on DDs since the publication of the DSM-III. Accordingly, we will focus on the DSM-IVTR diagnostic construct.

REVIEW OF THE DSM-IV-TR DIAGNOSTIC CRITERIA FOR DISSOCIATIVE IDENTITY DISORDERS

Researchers have raised five concerns about the DSM-IV-TR criteria for DID. (1) They do not adequately describe the complex clinical phenomena of DID. (2) The criteria are not sufficiently specific for clinical utility. (3) Readily observable switching behavior from one alternate identity to another is relatively uncommon in the clinical presentation of most DID patients. (4) The result is relatively high rates of false-negative diagnosis of DID, with an unacceptably high rate of DDNOS diagnoses. (5) The exclusion from the criteria of experiences of pathological possession, a very common cross-cultural form of DID.

A number of clinicians and researchers have opined that the DSM-IV-TR diagnostic criteria do not adequately describe the domain of dissociative symptoms most characteristic of DID.^[7,180] Research has repeatedly documented the presence of eight dissociative symptoms in DID (Table 8), only two of which are addressed by the DSM-IV-TR diagnostic criteria. Several researchers have urged that these additional dissociative symptoms be used to revise or augment the DSM-IV-TR diagnostic criteria for DID in DSM-5. Dell has suggested that these well-documented symptoms of DID comprise a pathognomonic pattern of dissociative symptoms that is unique to DID.^[181]

Some researchers have voiced concern that the DSM-IV-TR criteria for DID lack sufficient clinical utility for diagnosing the disorder. For example, following the publication of DSM-IV, Latz et al. said: "We are still uncertain as to what *specific clinical criteria* should be used to make the diagnosis"^[182] (p 1,348, italics added). In a similar vein, Coons and Chu have argued that the diagnosis of DID would be considerably helped by diagnostic criteria that adequately

TABLE 8. Frequencies of eight common dissociative symptoms in DTD

Study	N	Instrument ^{b,c}	Amnesia	Self-alteration	FRS ^d	Voices	Trance	Somatof	Deperson	Derealiz
Bliss ^[255]	14	Clinician	91	55	91	64	82	91	82	55
Kluft ^{[256]a}	5	Clinician	100	100	100	100	100			
Kluft ^[257]	30	Clinician	100		100					
Putnam et al. ^[258]	100	Clinician	98		20		45	60	57	
Bliss ^[259]	70	Clinician	75						53	53
Coons et al. ^[260]	50	Clinician	100		58	72		40	38	
Ross et al. ^[261]	236	Clinician	95		72	72		92		
Ross et al. ^[262]	102	DDIS	100			87	92			57
Dell et al. ^{[263]a}	11	Clinician	82	100			91			
Hornstein et al. ^{[264]a}	44	Clinician	100		60	97	97			
Boon et al. ^[265]	71	SCID-D	100		94	90		83	100	74
Sar et al. ^[266]	35	DDIS	100			94				60
Middleton et al. ^[267]	62	DDIS	100		95		98	71	71	66
Dell ^[268]	179	MID	91	98	98	95	88	83	95	93
Total/range	41	MID	93	94	98	95	87	83	95	92
Median percentage	1,020		75–100	94–100	20–100	64–100	45–100	40–92	38–100	53–93
			100	98	94	92	91	83	77	63

^aChild/adolescent sample.

^bInstrument used to assess the eight symptoms: DDIS, Dissociative Disorders Interview Schedule; SCID-D, Structural Clinical Interview for DSM-III (or = IV) Dissociative Disorders; MID, Multidimensional Inventory of Dissociation.

^cInstrument used to diagnose DID, except for Dell^[268] (sample of 179 was diagnosed by a clinician; sample of 41 was diagnosed with the SCID-D).

^dSFR = first-ranks symptoms.

reflect DID's typical polysymptomatic presentation.^[183] The most recent overview of diagnosing DID emphasizes its polysymptomatic presentation and the very subtle phenomena of "the dissociative surface" (p 637) that experts use to detect the presence of alter identities.^[184] Finally, both Kluft^[185] and Dell^[75] have noted that the DSM diagnostic criteria make the diagnosis of DID entirely dependent on clinical phenomena that occur infrequently and are often difficult to discern when they do occur. Specifically, the diagnosis of DID requires that the clinician determine the "presence" of "two or more distinct identities or personality states" that "recurrently take control" (DSM-IV-TR criteria A and B). However, it is believed that most persons with DID infrequently "switch" in a highly visible fashion and, as Latz et al. noted, the DSM-IV-TR diagnostic criteria provide few guidelines for determining when "two or more distinct identities" that "recurrently take control" are actually present.^[182]

Both clinical research and epidemiological studies have routinely reported that DDNOS is either the most common or among the most common dissociative diagnoses.^[9,160,162,186] Spiegel and Cardena^[164] identified the disproportionate number of DDNOS diagnoses as a major problem to be solved by DSM-5. A review and analysis of DDNOS concluded that the majority of DDNOS cases are actually undiagnosed (or misdiagnosed) DID cases.^[7,181] In this regard, Dutch researchers, commenting on a large study of DDs in the Netherlands^[187] stated:

Finally we would like to comment on the patients in this study with the diagnosis DDNOS. In a majority of these cases the diagnosis MPD was

strongly suspected during the research interview [but could not be confirmed]. In those cases we assigned the diagnosis DDNOS, although it might be better to speak of "covert MPD" to differentiate these cases from true atypical cases. From a follow-up one year later, we obtained information on 20 of the 24 patients with DDNOS; 19 of the 20 patients were given the diagnosis MPD, instead of DDNOS, by the treating clinician and a description of distinct alter personalities could be given (pp. 120–121).

In addition, experiences of pathological possession are very common expressions of DID in cultures around the world, but are not included in the DSM-IV-TR diagnostic criteria. The section on Dissociative Trance Disorders below addresses this issue in detail.

Thus, the DSM-IV-TR diagnostic criteria refer to clinical manifestations of DID that may be difficult to discern, especially for the average clinician who may not know the characteristic symptoms of DID. It is believed that this leads to many false-negative diagnoses of DID and a large proportion of false-positive diagnoses of DDNOS, or failure to diagnose a DD at all.

SHOULD THE DIAGNOSTIC CRITERIA FOR DID BE REVISED?

The diagnostic criteria for DID have evolved from the original DSM-III diagnostic criteria, but the basic tri-partite monothetic structure has remained. The evolution from DSM-III to DSM-III-R and DSM-IV-TR specifically involved three major changes. First, the description of identities as "complex and

integrated” with unique behaviors and “social relationships” was shifted to a description that portrays the identities as centers of information processing. Second, the transition from DSM-III-R to DSM-IV-TR was marked by a subtle shift in the portrayal of control; instead of identities being “dominant” or in “full control,” (DSM-III-R), the “word “full” (in “full control”) was deleted.” This deletion, implicitly allowed for control through passive-influence. Third, DSM-IV-TR introduced an amnesia criterion, partly to minimize misdiagnosis, but also because DID without amnesia is thought to be very rare.

At this time, due to a much larger body of data on the phenomenology of DID, the work group has to decide to either (1) retain—perhaps with minor alterations—the DSM-IV-TR criteria (see above) or (2) revise the criteria by developing monothetic/polythetic symptom clusters based on the research literature, primarily from structured interview data (DDIS, SCID-D), or data from comprehensive diagnostic self-report inventories (MID).

Arguments in favor of major alteration of the DSM-IV-TR diagnostic criteria. Two lines of argument have been employed in support of a major alteration of the DSM-IV-TR criteria for DID: (1) a polythetic argument, and (2) a clinical utility argument.

The polythetic argument. In most of the common mental disorders, DSM-III-R and DSM-IV-TR stopped using monothetic diagnostic criteria. For most disorders, polythetic diagnostic criteria or mixed monothetic-polythetic criteria set (e.g. PTSD) have been developed. Monothetic criteria (usually 2–4 in number) require that *all* criteria be present in order to make a diagnosis. In contrast, polythetic, or mixed mono-polythetic criteria require that only some of criteria be present in order to make a diagnosis—typically five or more symptoms, often in several subcategories, e.g. 3 of A, 2 of B, etc. Dell^[180] believes that monothetic criteria have many disadvantages. He states that these are more difficult to use, and, accordingly, are more likely to be ignored by clinicians.^[188] Due to this, he argues that monothetic criteria sets tend to create an artificially low base-rate for the disorder, i.e. they will tend to generate a larger number of false negative diagnoses than the alternative typologies.^[189] Accordingly, Dell has urged that DSM-5 use a mixed monothetic/polythetic criteria set for diagnosis of DID.

The clinical utility argument for major alteration of the DSM-IV-TR criteria for DID. The essence of this argument is that DSM-IV-TR Criteria A and B for DID have limited clinical utility. They provide only a *definition* of DID, the presence of two or more distinct identities, rather than a description of how alternate identities manifest in a clinical encounter. In addition, the exclusive focus on two or more “distinct” identities is thought to be problematic since, in many clinical presentations of DID, distinct identities are not present in the interview, and, if they are, in many cases the “distinctness” may be hard to assess.^[181,190]

According to Kluft and Dell,^[181,188] only 15% of DID cases regularly manifest easily observable alternate identities during diagnostic interviews. The remaining cases rarely manifest clearly detectable identities, except when these patients are in crisis.^[89] Kluft used the term “window of diagnosability” to capture the latent nature of clear-cut switching phenomena in DID patients.^[191] The clinical utility argument proposes that the diagnostic criteria for DID should reflect two fundamental sets of phenomena: (1) the pathognomonic symptom of DID (i.e. alters that switch) and (2) the typical clinical presentation of DID. What is the typical clinical presentation of DID? Two data sets answer this question. A re-analysis of Dell’s MID data on 220 persons with DID provides one view of the typical clinical presentation of DID—DID patients’ seven most common symptoms: (1) recurrent incidents of amnesia; (2) subjective experiences of self-alteration; (3) incidents of uncontrolled, dissociated behavior or speech; (4) experiences of internal struggle between two self states; (5) depersonalization; (6) thought insertion/thought withdrawal; and (7) spontaneous trance. Of these symptoms, the DSM-IV-TR criteria for DID include one: DA.

The typical clinical presentation of DID can also be gleaned from a review of the modern empirical literature on DID. A systematic review of that literature produced findings similar to Dell’s MID-based characterization of DID. Table 8 presents the median percentage of eight dissociative symptoms in DID patients as reported by post-DSM-III studies of DID: amnesia (100%), self-alteration (98%), first-ranked symptoms (94%), hearing voices (92%), trance states (91%), somatoform symptoms (83%), depersonalization (77%), and derealization (63%).

Both sets of DID phenomena (i.e. the pathognomonic switching phenomena and the typical clinical presentation of DID) should be able to diagnose DID. According to the clinical utility argument, however, the typical clinical presentation of DID are preferable as diagnostic criteria. Why? Because the overt switching phenomena are so infrequent. The only study that has assessed the frequency of switching found that self-reported switching was surprisingly frequent.^[192] Unfortunately, both clinical experience and expert commentary have shown that overt, easily discernable switching is uncommon in about 85% of cases. Thus, discernable switching occurs too infrequently to allow it to serve as an adequate diagnostic criterion for DID. Conversely, Dell correctly predicted that DID could be accurately diagnosed solely on the basis of DID’s typical clinical presentation (i.e. without observing a switch from one personality to another).^[7,9,180]

Dell tested this hypothesis by developing the MID, a self-administered, paper-and-pencil instrument that assesses the subjective experiences of dissociation. Using the MID, Dell^[7,9,180] and others^[193] have shown that DID can be reliably diagnosed without observing switching behaviors.

Arguments for minor alteration of the DSM-IV-TR diagnostic criteria in DSM-5. Two previous DDs work groups (DSM-III-R and DSM-IV) considered whether to develop new diagnostic criteria based on research findings from the 1980s and early 1990s. Each time, however, the work groups chose to retain (with minor adjustments) the simple diagnostic criteria that DSM-III established for DID.

As shown in Table 8, most DID patients share a common set of dissociative symptoms. Since the presence of most of these symptoms is high, the symptoms of the DID population are relatively uniform. This means that the simultaneous presence of two symptoms (viz. subjective divisions of identity and DA) would likely to identify most persons with DID. When a population is more heterogeneous, polythetic diagnostic criteria are needed because many members of the population possess only a subset of the diagnostic symptoms, thereby necessitating a polythetic format.

The avoidance symptoms of PTSD provide a good example of when polythetic criteria are needed. These avoidance symptoms are not highly correlated with one another; hence, different persons with PTSD can have very different subsets of avoidance symptoms.

It would appear that the population of persons with DID is sufficiently homogeneous that polythetic diagnostic criteria would not improve the reliability or validity of diagnoses of DID, which can be made with simpler monothetic criteria. Such monothetic criteria are inherently simpler than a longer list of polythetic criteria, facilitating diagnosis for those who make the diagnosis rarely. Thus, from this perspective, only minor adjustments of the DSM-IV diagnostic criteria are necessary. However, based on the research data of Dell and others, these should also include language to indicate that identity disturbance and related switching behaviors need *not* be directly observed, but may be reliably reported by the patient or others.

In addition, the text of the DSM-5 should discuss in depth the complex phenomenology of the DID patient population, and ways to avoid unnecessary placement of typical DID patients in the DDNOS category. Further research may help clarify how to make the simple monothetic criteria more user-friendly for clinicians. In this regard, additional research may also help to clarify the question of the frequency of switching behaviors in DID. Dell's MID, a self-report designed to mostly assess specific dissociative symptoms other than DID switching, not surprisingly does not show much evidence for frequent switching. Neither the DDIS nor the SCID-D specifically code for switching in the sections on dissociative symptoms, although the interviewer observer section of the SCID-D allows for coding of observed alternations in identity (i.e. switching) in one item. Research studies specifically designed to reliably detect switching behaviors may provide additional data on these questions.

SUMMARY

In conclusion, the work group recommends only minor alterations of the diagnostic criteria for DID in DSM-5. We include language that encompasses possession disorders, to assist diagnosis in cultures where the "diagnostic niche" of DDs related to identity alteration is filled by possession-related symptoms. The latter point will be discussed in depth in the next section.

Proposed diagnostic criteria for DSM-5 dissociative identity disorder (300.14)

- A. Disruption of identity characterized by two or more distinct personality states or an experience of possession, as evidenced by discontinuities in sense of self, cognition, behavior, affect, perceptions, and/or memories. This disruption may be observed by others, or reported by the patient.
- B. Inability to recall important personal information, for everyday events or traumatic events, that is inconsistent with ordinary forgetfulness.
- C. Causes clinically significant distress and impairment in social, occupational, or other important areas of functioning.
- D. The disturbance is not a normal part of a broadly accepted cultural or religious practice and is not due to the direct physiological effects of a substance (e.g. blackouts or chaotic behavior during Alcohol intoxication) or a general medical condition (e.g. complex partial seizures). *Note:* In children, the symptoms are not attributable to imaginary playmates or other fantasy play. Specify if:
 - (a) With nonepileptic seizures or other conversion symptoms
 - (b) With somatic symptoms that vary across identities (excluding those in specifier a)
 *These specifiers are under consideration.

DISSOCIATIVE DISORDERS NOT OTHERWISE SPECIFIED IN DSM-5

The work group identified several problematic aspects of the DSM-IVTR diagnostic category of DDNOS, as well as in the examples of clinical presentations of DDNOS. The DSM-IVTR description of DDNOS and associated examples are shown in Table 9.

The major problematic issues with the DDNOS category are listed below:

- A. The disproportionately high prevalence of DDNOS.
- B. The question of whether patients with only derealization (i.e. DDNOS Example 2) differ from those diagnosed with DSM-IV DPD.

TABLE 9. DSM-IVTR dissociative disorders DDNOS examples

1. Clinical presentations similar to DID that do not meet full criteria for this disorder. Examples include presentations in which (a) there are not two or more distinct personality states, or (b) amnesia for important personal information does not occur
2. Derealization unaccompanied by depersonalization in adults
3. States of dissociation that occur in individuals who have been subjected to periods of prolonged and intense coercive persuasion (e.g. brainwashing, thought reform, or indoctrination while captive)
4. Dissociative trance disorder: single or episodic disturbances in the state of consciousness, identity, or memory that are indigenous to particular locations and cultures. Dissociative trance involves narrowing of awareness of immediate surroundings or stereotyped behaviors or movements that are experienced as being beyond one's control. Possession trance involves replacement of the customary sense of personal identity by a new identity, attributed to the influence of a spirit, power, deity, or other person, and associated with stereotyped "involuntary" movements or amnesia and is perhaps the most common Dissociative Disorder in Asia. Examples include *amok* (Indonesia), *bebainan* (Indonesia), *latab* (Malaysia), *pibloktoq* (Arctic), *ataque de nervios* (Latin America), and possession (India). The dissociative or trance disorder is not a normal part of a broadly accepted collective cultural or religious practice. (See Research criteria for dissociative trance disorder for suggested research criteria.)
5. Loss of consciousness, stupor, or coma not attributable to a general medical condition
6. Ganser syndrome: the giving of approximate answers to questions (e.g. "2 plus 2 equals 5") when not associated with DA or DF

DA, dissociative amnesia; DF, dissociative fugue; DDNOS, DD not otherwise specified; DID, dissociative identity disorder.

C. The question of whether to include DDNOS examples of acute and somatoform DD presentations. Acute and somatoform dissociative presentations are as emphasized by the ICD-10. Psychiatrists who use ICD-10's are more familiar with conceptualizing DDs as acute and/or somatoform.

WHAT IS THE RELATIONSHIP BETWEEN DDNOS-1 (ESPECIALLY DDNOS-1A) AND DISSOCIATIVE IDENTITY DISORDER?

The major difficulty with the DDNOS category is its high prevalence—over 40%—in all kinds of epidemiological studies. Several authors have discussed this nosological/diagnostic problem^[164,181,194–198] and concluded that the problem lies at the interface between DDNOS Example 1 (DDNOS-1) and DID. Because DDNOS is a more heterogeneous category, choice of treatment may be more difficult than for DID, so clarification of the criteria would be helpful.

As noted above, it is difficult to make a diagnosis of DID because switching is infrequent and because most clinicians are unsure how to confirm "the presence of two or more distinct identities. Accordingly, patients with a complex dissociative presentation, but no apparent alter identities, routinely receive a diagnosis of DDNOS. Such diagnoses are in keeping with DSM-IV's description of DDNOS-1: "Clinical presentations similar to Dissociative Identity Disorder... in which... there are not two or more distinct personality states" (p 490).

If the diagnostic criteria for DID were changed to reflect the typical clinical presentation of DID (i.e. a complex dissociative presentation with no confirmed alter identities), these complex DDNOS patients would meet diagnostic criteria for DID. To be clear, these complex DDNOS-1 patients commonly report or demonstrate recurrent

chronic complex DA symptoms, fugue behaviors, somatoform and conversion symptoms, depersonalization/derealization, spontaneous trances, and intrusion symptoms such as "made" feelings, impulses, and/or acts, thought insertion or withdrawal, and a sense of subjective self-division. Nevertheless, they fail to meet the DSM-IVTR diagnostic DID criteria for DID because the clinician has been unable to confirm the presence of "two or more distinct identities."^[187,193,199–202]

If correct, this analysis indicates that the overly high prevalence of DDNOS is not due to the diagnostic criteria for DDNOS-1. Instead, the high prevalence of DDNOS is due to the diagnostic criteria for DID—specifically, the difficulty of confirming the presence of two or more distinct identities in complex dissociative patients.

As delineated in the section on DID above, the Work Group has *not* endorsed any sweeping changes in the diagnostic criteria for DID. Rather, in both the DID and DDNOS categories, (1) the new criteria explicitly state that direct observation of alternate identities is not necessary for diagnosis (i.e. inferential, historical, and/or collateral information is sufficient); and (2) language has been suggested that will help the clinician to understand the spectrum of dissociative phenomena, including the "distinctness" of DID identities. In addition, the DSM-5 text will discuss at length the issue of differential diagnosis of DID and DDNOS1. Field trials may help to refine the diagnostic criteria and associated features of DID, DDNOS1, as well as those of the other DDs.

SHOULD PATIENTS WITH ONLY DEREALIZATION (i.e. DDNOS EXAMPLE 2) RECEIVE A DSM-5 DIAGNOSIS OF DPD?

As described above, current data sets find no salient differences between DPD patients and patients with

chronic derealization only. Accordingly, the proposed DSM-5 diagnostic criteria for DPD include depersonalization, derealization, or both.

WHAT DDNOS EXAMPLES SHOULD BE PROPOSED FOR DSM-5?

Dissociative conditions have traditionally been considered as solely acute and transient reactions in many countries outside North America and the awareness of chronic DDs lagged behind these observations. Accordingly, European psychiatry and the ICD-10 emphasize acute and reactive dissociative syndromes including somatosensory (conversion) symptoms. Contrastingly, while North American psychiatry and the DSM emphasize chronic DDs, they failed in recognition of worldwide presentations of partial, acute, and transient dissociative manifestations, which are crucial in evoking awareness about the entire spectrum of DDs among clinicians globally. Thus, in order to cover the whole spectrum of dissociation accurately and also to fit the culturally diverse expectations, DSM-5 too should adequately address acute dissociative presentations. We propose two new DDNOS examples (# 6 and 7).

While seemingly acute dissociative conditions may be superposed on undetected chronic DDs such as dissociative identity disorder or DDNOS-1, for a sizable proportion of patients, acute presentations are limited to short periods indeed constituting single or multiple episodes over time (97). Acute dissociative conditions fall along a broad spectrum of severity ranging from the level of an adjustment disorder at the mildest pole to quasi-psychotic phenomena at the most severe end. While any combination of dissociative symptoms, such as hallucinations, amnesia, depersonalization, or stupor, may constitute an acute DD, the presence of alternate identities are usually not part of the condition. Hence, these presentations cannot be covered by DDNOS-1.

We propose two new DDNOS examples (# 6 and 7). Both conditions are transient states, less than 1 month in duration, and characterized by mixed dissociative symptoms. While the DDNOS-6 addresses relatively mild and moderate parts of this spectrum, the DDNOS-7 covers the most severe end.

Example #6 is an acute reaction to a stressful event that causes marked distress or impairment. These transient presentations are common in epidemiological studies;^[110] they often show strong cultural patterning. For example, many cases of *ataque de nervios* (attack of nerves) in Caribbean Latinos present with mixed dissociative symptoms.^[203] *Ataques* are acute paroxysms with loss of emotional and behavioral control, lasting minutes to hours, that typically occur in response to acute adversity.^[204] The proposed DDNOS example would provide a diagnostic home for this type of presentation.^[205]

Example #7 is an acute state, characterized by psychotic and dissociative symptoms, that lasts less than 1 month and causes marked distress or

impairment. In the past, this condition has been called “reactive dissociative psychosis” or “hysterical psychosis.”^[78,80,206,207] Although it may mimic an acute schizophrenic, manic, or delirious condition, the disorder ceases abruptly without any sequellae (i.e. no schizotypal or negative symptoms remain).

Helpful clues to diagnosis include dissociative symptoms, preservation of affect, good premorbid psychosocial functioning, and unexpected/sudden onset. Predominant symptoms include visual and auditory hallucinations and disorganized or grossly unusual behavior. Thought form may appear discontinuous and reality testing may be temporarily impaired. Child-like behavior, attempts to escape, catatonia, disorganized, or animal-like behavior may be observed. Other symptoms include: flashbacks, conversion symptoms, and lability in behavior and in level of cooperation.^[78,208–210] Occasionally, amnesia may remain for the period of acute disorder, a finding that supports the dissociative nature of the episode.^[78,208,211]

Proposed DDNOS examples 6 and 7.

- A. Acute reactions to stressful events, lasting less than 1 month, that are characterized by mixed dissociative symptoms (e.g. depersonalization, derealization, amnesia, disruptions of consciousness, and/or stupor) that cause marked distress or impairment and are not restricted to the symptoms of another mental disorder, e.g. ASD, Delirium, a Psychotic Disorder, or another DD.
- B. Acute states, lasting less than 1 month, characterized by mixed dissociative symptoms (e.g. amnesia, dissociative flashbacks, disruptions of consciousness) and psychotic symptoms (e.g. catatonia, auditory, visual, and/or multi-modal hallucinations, delusions, grossly disturbed behavior) that cause marked distress or impairment and do not meet criteria for ASD, a Psychotic Disorder, Delirium or other Cognitive Disorder, or another DD. The proposed DSM-5 DDNOS examples are found in Table 10.

SHOULD DISSOCIATIVE TRANCE DISORDER CURRENTLY IN THE APPENDIX OF DSM-IV, BE INCLUDED IN THE DDs?

The DSM-IV-TR DTD criteria describe two related dissociative conditions, pathological trance and pathological possession trance (PPD). DTD is highly prevalent around the world, but is only listed in DSM-IV-TR as a form of DDNOS. The DTD criteria in the Appendix of DSM-IV-TR are based on ICD-10's TPD

It is very important to note that the PPT component of DTD has marked phenomenological similarities to DID. It is a disorder of identity alteration that occurs

TABLE 10. Proposed DSM-5 DDNOS examples

1. Clinical presentations similar to DID that fail to meet full criteria for this disorder. Examples include presentations in which (a) there are not two or more distinct personality states, or (b) amnesia for important personal information does not occur
2. States of dissociation that occur in individuals who have been subjected to periods of prolonged and intense coercive persuasion (e.g. brainwashing, thought reform, or indoctrination while captive)
3. Dissociative trance, characterized by narrowing of awareness of immediate surroundings or stereotyped behaviors or movements that are experienced as being beyond one's control. The dissociative trance is not a normal part of a broadly accepted collective cultural or religious practice
4. Loss of consciousness, stupor, or coma not attributable to a general medical condition
5. Ganser syndrome: the giving of approximate answers to questions (e.g. 2 plus 2 equals 5) when not associated with DA
6. Acute reactions to stressful events, lasting less than one month, that are characterized by mixed dissociative symptoms, such as depersonalization, derealization, amnesia, disruptions of consciousness, and/or stupor that cause marked distress or impairment and are not restricted to the symptoms of another mental disorder, e.g. ASD, Delirium, or another dissociative disorder.
7. Acute states, lasting less than one month, characterized by mixed dissociative symptoms (e.g. amnesia, dissociative flashbacks, disruptions of consciousness) and psychotic symptoms (e.g. catatonia, auditory or visual hallucinations, delusions, grossly disturbed behavior) that cause marked distress or impairment and do not meet criteria for ASD, a Psychotic Disorder, Delirium, or another dissociative disorder

DA, dissociative amnesia; DF, dissociative fugue; ASD, acute stress disorder.

during an altered state of consciousness. Of course, unlike DID, the alternate identity or identities in PPT are attributed to possession (by an external spirit, power, deity, or other person) rather than to internal personality states. Associated symptoms of PPT include stereotyped or culturally determined behaviors or movements that are experienced as being controlled by the possessing agent and/or full or partial amnesia for the event. Importantly, the possession trance state is not accepted as a normal part of a collective cultural or religious practice.

Some have asked: "If PPT is a cultural variant of DID and is included within DSM-5 DID, would that inclusion artificially inflate the worldwide prevalence of DID?" Alternately, others have asked a different question: "whether the DSM-IV-TR criteria for DID reflect a cultural blindness that describes only non-possession variants of DID?"

Inclusion of possession variants of DID (i.e. PTP) within DSM-5 DID would necessitate only a minor change in the criteria—addition of the words "or an experience of possession." Such a decision would sever the two components of DTD." It would also entail separating the two components of DTD, relegating pathological trance without possession to DDNOS. Alternatively, DSM-5 could (a) retain all of DTD in DDNOS (and an appendix), or (b) incorporate DTD (or only PPT) as a new disorder.

"Possession" is a broader construct than PPT because it may be used as a nonspecific attribution for explaining events (e.g. illness, misfortune) that go beyond pathological identity alteration^[212] By contrast, in PPT we focus only on the subset of possession experiences—(1) an alteration of consciousness wherein the person experiences his/her the identity as being replaced by an ancestor, spirit, or other entity (i.e. possession trance), and (2) these alterations are involuntary, distressing, uncontrollable, often chronic, and involve conflict between the individual and his/her surrounding social or work milieu (i.e. the possession trance is a pathological one).^[213]

PPT explicitly excludes non-PPT ones that are culturally sanctioned and nondistressing (e.g. occurring

only during a religious ritual and does not lead to impairment). The distinction between normal and PPT—in Lewis's terms,^[214] between "central" and "peripheral" possession—has been well characterized. Compared with persons with DID, DDs, and other psychiatric disorders, most participants in normal or culturally sanctioned possession trance are significantly less likely to evidence psychopathology, subjective distress, poor social support, past psychiatric history, and traumatic exposure.^[213,215–217]

DISTRIBUTION AND PREVALENCE OF PATHOLOGICAL POSSESSION TRANCE

PPT has been reported in very diverse cultural settings all over the world.^[212,218–223] As cultural factors in each setting influence the prevalence and local specific characteristics of PPT (e.g. one possessing agent rather than another), the widespread distribution of PPT makes it a global disorder that is not "bound" to any one cultural setting. Some DID patients in the United States, for example, describe their illness as one of recurrent unwanted possession states.^[224,225] Typically, these are individuals whose DID phenomenology is influenced by their participation in religious groups that emphasize normative possession (e.g. Pentecostals or Charismatics). The bottom line here is that, in keeping with the "cultural pathoplasticity" of psychiatric disorders,^[226] the specific phenomenology of DID and PPT may be shaped by local cultural attributions.

With the exception of Turkey and India, there are no data on the community prevalence of PPT in most countries. An epidemiological study of a representative sample from a town in central Turkey using the DDIS,^[227] found much higher rates of DSM-IV DID (1.1%) and DDNOS-1 (4.1%) than DTD (.6%).^[228] On the other hand, the period prevalence of PPT in rural Indian communities has been estimated at .97% (over 6 months) to 3.5% (over 1 year), depending on the region, the sample, and the method of assessment.^[229,230] The reported prevalence of voluntary

(normal) possession trance contributed an additional 0.2–1.8% over 6–12 months in the same studies.

PPT is also common among dissociative outpatients in India. Saxena et al. reviewed data on more than 4,000 Indian outpatients; 104 were diagnosed with a DD.^[231] Only 5–10% of these received a specified DD diagnosis according to DSM-III or DSM-III-R (there were no diagnoses of DID). By contrast, 85.5% of DD cases were covered by the specified dissociative diagnoses in ICD-10.^[231] Seventy-four percent of patients had dissociative convulsions, 9.5% TPD, and 2% dissociative movement disorder. Indian clinicians have reported case series of DID,^[232] but much more rarely than PPT. The three cases in one series were of dual personality, rather than more complex presentations. All had strong cultural features that were attributed to particularities of the Indian setting (e.g. use of English and a preference for Western clothes by the alter, to indicate higher social standing).

These findings indicate the regional diversity of prevalence and cultural characteristics in complex dissociative conditions that involve pathological identity alteration. This corresponds to the secondary structuring of the DID identities in the Western DID literature (i.e. names, genders, and other descriptive characteristics). This secondary structuring of alter identities reflects a variety of factors (e.g. intrapsychic, developmental, posttraumatic, intrafamilial, socio-cultural, auto-hypnotic, artistic, etc.).^[233]

RELATIONSHIP OF PPT TO DISSOCIATION

Empirical support for the dissociative origin of PPT has been provided in a number of case reports and case series of persons with PPT.^[213] Gaw et al.^[222] studied a Chinese sample of possession inpatients, observing loss of control of actions, loss of awareness of surroundings, and loss of personal identity, insensitivity to pain, changes in tone of voice, and problems with distinguishing reality from fantasy. In a sample of Singaporean inpatients, Ng^[234] encountered similar manifestations: unusual vocalizations and movements including shaking, insensitivity to pain, unfocused or fixed gaze, and assumption of another identity. Kianpoor and Rhoades^[221] described *Djinnati*, a possession state indigenous to Iran, that involves unresponsiveness to external stimuli, glossolalia, identity alteration, and subsequent amnesia. Martinez-Taboas^[235,236] reported two cases of identity alteration in cases of possession in Puerto Rico, that were strongly influenced by local *espiritista* (spiritist) beliefs of ongoing contact with the spirits of the dead. The two patients variously experienced glossolalia, hallucinations, nonepileptic seizures, trance, verbalizations against the host identity, and/or amnesia.

Case descriptions from India and other settings are very similar.^[237,238] Among 119 possessed patients who had visited traditional healers in Uganda, Van Duijl et al.^[239] observed involuntary shaking of the head or

parts of the body (attributed to spirits), talking in a different voice—which others recognized as the voice of a specific spirit—and feeling influenced by unidentified forces that cause unusual behavior. Nearly, half of the possessed patients mentioned something holding the body so they were unable to move or speak. Among traditional healers and local health workers in these villages, case vignettes of DID were always attributed to spirit possession.^[219]

Systematic evidence supports these case reports. Van Duijl et al. obtained DES and Somatoform Dissociation Questionnaire (SDQ-20)^[240] scores on 119 PPT cases in Uganda and compared these to the scores of 71 randomly selected mentally healthy inhabitants of the same villages.^[239] PPT patients scored significantly higher than controls on the DES (35.3 versus 21.2, $P < .0001$) and the SDQ-20 (39.4 versus 29.9, $P < .0001$). Moreover, strong correlations were found between culturally defined features of PPT and both scales, confirming the dissociative character of PPT.

RELATIONSHIP WITH TRAUMA

Case reports of PPT describe a range of stressful precipitants, not all of them traumatic. At the nontraumatic pole were romantic disappointments, work, and/or religious conflicts. At the traumatic pole were obvious traumatic stressors such as rape, the deaths of children, and the murder of one's husband.^[124,223,241] However, the absence of systematic assessment of childhood trauma in these studies makes it impossible to exclude childhood trauma from the genesis of DDs in these populations. For example, in an Indian sample, Castillo^[124] noted that PPT occurs against a backdrop of remarkable violence against women, including selective abortion and infanticide, murder due to discovered premarital relations, rape, sale into prostitution, “dowry death” (new bride is killed if dowry is considered insufficient), marital abuse, witch killings, and *sati* (widow burning).

In the most comprehensive study to date, Van Duijl et al. systematically addressed this issue^[239] and found a significant association between PPT and earlier life trauma. These Ugandan villagers with PPT obtained significantly higher scores than did matched healthy controls on the Harvard Trauma Questionnaire^[242] and the Traumatic Experiences Checklist.^[243] Scores on both scales were strongly correlated with dissociation and symptoms of with PPT. Mass psychogenic illness among Bhutanese refugees was attributed to spirit possession (without identity alteration). Systematic assessment of these refugees found higher rates of recent and early trauma than in a comparison group.^[244]

RELATIONSHIP OF PPT TO DSM-IV-TR DID

The proposed relationship between DID and PPT is based on their phenomenological similarity, shared dissociative origin, and association with associated trauma and other stressors. Both DID and PPT

manifest incompatible identities that are separated by an amnesic barrier; these identities occur during an altered state of consciousness and display distinct cognitions, affects, and behaviors.

Perhaps the primary distinction between DID and PPT involves the attributed origin and features of the alternate identities.^[211] DID is hypothesized to evolve during a traumatic, neglectful, and/or abusive early childhood. These developmental disturbances prevent the dissociative child from developing a unified sense of self; instead, the child develops multiple senses of self that continue to evolve over developmental time. These alter identities, as already noted, are shaped by posttraumatic, developmental, intrafamilial, psychosocial, interpersonal, and cultural substrates.^[22,233]

Alternate identities in PPT tend to represent supernatural agents, typically the spirit of a dead person, or a culturally accepted spirit, demon, god, animal, or mythical figure. Unlike DID alters, possessing entities display a collective existence. For example, the same spirit may possess different family members down the generations (or different villagers in the same generation).^[218] The different origin of the alternate identities may correspond more to cultural factors—such as how individual or porous (“dividual”) the social conception of the self is^[124,245]—that pattern a common dissociative diathesis rather than to the influence of distinct pathological processes.

Both DID alternate identities and/or PPT possessing entities share stereotypical features (“child alters,” “protectors,” “introjects,” “vengeful ghosts,” “angry gods”) that pattern their behaviors, affects, and cognitions into stable alternate roles with whom the sufferer’s social network can interact. In addition, multigenerational DID has been described in families where similar identities occur across generations, or identities that are reciprocal occur, i.e. an angry, violent parent identity who only corresponds to a cowering, frightened child identity, with mutual amnesia after a violent interaction.^[246,247] It is of interest that in the more sociocentric Eastern cultures, dissociative identities take the form of a member of the community, while in the more individually focused Western cultures, the dissociation involves a variety of internal individual identities.

PPT tends to be described in case series as more transient and episodic than DID, which is typically chronic. It is possible that the emergence of PPT is facilitated by the same porosity of the self that patterns the external attribution of alternate identities, leading to more transient states after a wider range of stressors.^[238] However, it is also possible that PPT cases only seem transient and episodic, but that this is just the overt presentation of phenomena that persist in more subtle form over time. Support for this possibility comes from data on relapse of PPT. In India, for example, relapse within 15 years was not infrequent, and was also recorded after two to three decades.^[223] Four of 15 subjects in one study were found to have

suffered previous episodes,^[248] and one subject in another series reported three consecutive postpartum attacks.^[249] In China, individuals with chronic PPT may be hospitalized after a history of recurrent episodes.^[222] As in the case of the traumatic precipitants of PPT, systematic research with larger samples of PPT over time is required to clarify this issue.

Therapists of DID and PPT patients usually negotiate directly with these alternate identities—whatever their form—in order to “give voice” to their complaints, clarify the circumstances of the distress, and possibly redress them. The evolution of the identities over time, and their eventual change to a more adaptive configuration or unification into a single self-state constitutes one major basis of improvement.

Finally, some early neuroimaging data link the two conditions, although there is no data specifically on PPT.^[213] A SPECT perfusion study of persons experiencing normal possession trance—Christian glossolalists, who report involuntariness when “speaking in tongues,” attributed to possession by the Holy Spirit—found decreased blood flow in the dorsolateral prefrontal cortices after glossolalia as compared to regular singing.^[250] This finding is consistent with hypoperfusion of orbitofrontal regions in DID.^[251,252] This finding does not suggest that PPT is associated with frontal lobe dysfunction. Rather, these experiences may be related to enhanced connections between frontal structures implicated in the experience of involuntariness, as has been found with highly hypnotizable individuals.^[253,254] Research on the experience of not feeling in control suggests that attenuation of activity in the inferior parietal cortex, modulated by the anterior cingulate and the dorsolateral prefrontal cortex, may also be relevant to the experience of possession.^[213]

RECOMMENDATIONS FOR DSM-5

In light of the above, we recommend that DSM-IV DID and PPT be considered as exemplars of a revised umbrella category of DID in DSM-5. This umbrella category would include the experience of possession as an expression of identity alteration in the general definition of the disorder. This change would be reflected in the following:

- (a) Addition of the phrase “an experience of possession” to Criterion A of DID, as shown in the revised DID criteria.
- (b) Description of Western and non-Western symptomatology of PPT in the textual clarification of the prevalence and worldwide phenomenological variation in PPT (e.g. possession versus non-possession) The full proposed DSM-5 diagnostic criteria for DID, incorporating these suggestions, are found in a prior section. The literature reviewed suggests modest changes for the

DSM-5 description of DDs, including adding derealization to DPD, making DF a subtype of DA, and adding pathological possession to dissociative identity disorder. There is a growing body of evidence linking DDs to a history of trauma, and greater understanding of specific neural mechanisms underlying dissociation.

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