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Dissociation: An Insufficiently Recognized Major Feature of Complex PTSD

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Abstract

The role of dissociation in (complex) PTSD has been insufficiently recognized for at least two reasons: the view that dissociation is a peripheral, not a central feature of PTSD, and existing confusion regarding the nature of dissociation. This conceptual paper addresses both issues by postulating that traumatization essentially involves some degree of division or dissociation of psychobiological systems that constitute personality. One or more dissociative parts of the personality avoid traumatic memories and perform functions in daily life, while one or more other parts remain fixated in traumatic experiences and defensive actions. Dissociative parts manifest in negative and positive dissociative symptoms that should be distinguished from alterations of consciousness. Complex PTSD involves a more complex structural dissociation than simple PTSD.

KEY WORDS: Complex PTSD; DESNOS; Dissociative Symptoms; Structural Dissociation; Personality

Dissociation: An Insufficiently Recognized Major Feature of Complex PTSD

The alternation between and coexistence of reexperiencing traumatizing events and avoidance of reminders of the trauma are hallmarks of posttraumatic stress disorder (PTSD; APA, 1994). In accord with original 19th century understandings (e.g., Janet, 1889; cf. Van der Hart & Dorahy, in press), some authors regard this bi-phasic pattern as a manifestation of a trauma-related structural dissociation or division of the personality. In this paper we will present what some believe to be the most parsimonious theoretical perspective: All trauma-related disorders (i.e., Acute Stress Disorder [ASD], PTSD, complex PTSD, and Dissociative Disorders) share a common central psychobiological pathology that is dissociative (e.g., Brewin, 2003; Chu, 1998; Nijenhuis & Van der Hart, 1999a; Spiegel, Hunt, & Dondershine, 1988; Van der Kolk & Van der Hart, 1989). However, others believe that dissociation is only one of many PTSD symptom clusters, one that plays a small role in PTSD and related disorders, with the exception of Dissociative Identity Disorder (DID, APA, 1994) (e.g., Brett, 1996).

Based on research and clinical experience, a number of authors proposed a specific diagnostic category called *complex PTSD* (Herman, 1992) or *disorders of extreme stress not otherwise specified* (DESNOS; Pelcovitz et al., 1997; Roth et al., 1997) for patients suffering from a range of persistent symptom clusters more complicated than those of PTSD. In DSM-IV, some of these clusters are included under the descriptive features and mental disorders associated with PTSD (APA, 1994), and are commonly associated with prolonged interpersonal stressors. These symptoms constellations involve enduring personality changes characterized by a wide range of alterations in regulation of affect and impulses, attention or consciousness, self-perception, perception of the perpetrator, relationships, systems of meaning, and somatization (Herman, 1992; Pelcovitz et al., 1997; Roth et al., 1997; Van der Kolk et al., 1996; Van der Kolk et al., this issue).

It is difficult to determine whether "dissociation" is a central feature in complex PTSD and other trauma-related disorders because there is not uniform agreement on what constitutes the construct. The current use of the term is highly confusing (cf., Marshall, Spitzer, & Liebowitz, 1999). For example, some PTSD intrusive symptoms are referred to as "*dissociative* flashback episodes" (APA, 1994, p. 428), while the same flashbacks are not described as dissociative in ASD. The PTSD diagnosis does not consider avoidant or numbing symptoms to be dissociative, but in ASD these very symptoms are labeled dissociative (APA, 1994, p. 432). In the trauma literature at large, there are debates about whether or not dissociation is dimensional or a taxon, and which symptoms should be included under the rubric of dissociation. In relation to dissociation and trauma-related disorders in general, and complex PTSD specifically, we thus briefly introduce a theory regarding the processes and manifestations of dissociation that recommends a way to clarify this conceptual problem.

As part of this theory, we will define the term "personality;" describe the induction of structural dissociation of the personality during traumatizing events; illustrate the characteristics of parts of the personality that are dissociated to some extent from each other, and are fixed in enduring maladaptive behaviors and ways of perceiving, and in avoidance or reexperiencing; describe levels of complexity of this structural dissociation; and discuss the scope of dissociative symptoms stemming from structural dissociation, and distinguish them from what we consider to be related but non-dissociative phenomena. Finally, we analyze a number of symptom clusters of the proposed diagnostic category of complex PTSD/DESNOS in terms of structural dissociation of the personality, proposing that they all potentially involve dissociation.

Trauma-Related Structural Dissociation of the Personality

Along with many others in the field of trauma, we regard "trauma" as a subjective response of an individual, not the quality of an event. Thus, we consider *only* those who have developed at least substantial symptoms of trauma-related disorders over the course of their lives to be traumatized. Traumatization involves a loss of the pretraumatic personality structure in adults, and interferes with the development of a cohesive and coherent personality structure in children. In other words, traumatization

consists of some degree of division of the personality. Allport (1961) defines personality as: "The dynamic organization within the individual of those *psychophysiological systems* [italics added] that determine his characteristic behavior and thought" (p. 28). Based on evolutionary psychology, ethology, attachment theory, and affective and cognitive neuroscience, we propose that these psychophysiological systems of the personality constitute the foundation for trauma-related structural dissociation of the personality.

Action Systems and Personality

Human behavior is governed to a substantial degree by evolutionary prepared, psychobiological systems (e.g., Panksepp, 1998; Toates, 1986). These innate psychophysiological systems structure the personality to a large degree, and organize and regulate major functions in terms of attention, emotion, (neuro)physiology, and, above all, behavior (Davis, Panksepp, & Normansell, 2003; Panksepp, 1998). Their purpose is to direct adaptive mental and behavioral action across a wide range of life situations, thus we call them *action systems*.

Action systems become available over the course of development, and require maturation and good-enough experience for maximal functioning. In early traumatization, action systems may evolve with a dysfunctional organization that persists even when life improves (e.g., Marvin & Britner, 1999). Such maladaptive organizations are exemplified by various insecure attachments within the attachment action system (e.g., Ainsworth, Velar, Waters, & Wall, 1978). Maladaptive action patterns inhibit coordination and integration among different action systems, leaving them without equilibrated organization (cf, Marvin & Britner, 1999), and thus vulnerable to dissociation.

Some action systems mediate mental and behavioral actions concerning daily life, and include *exploration* of the environment (including work and study), *play*, *energy management* (sleeping and eating), *attachment*, *sociability*, *reproduction*, and *care taking* (especially rearing children) (e.g., Cassidy, 1999; Panksepp, 1998). Other actions systems are dedicated to defensive actions in response to threat (by another person) to the integrity of the body, social rejection, and attachment loss. This *defensive action system*, which human beings share with many animals, involves several subsystems: *Hypervigilance*, *freeze*, *flight*, *fight*, *total submission* (Fanselow & Lester, 1988; Misslin, 2003), and some forms of *social submission* (Gilbert, 2000). *Recuperation* follows survival of attack, and is characterized by rest and isolation, wound care, and gradual return to daily activities. Ideally, both integration and differentiation evolve among action systems, and among action tendencies within each action system. But in the case of trauma-related structural dissociation of the personality, the coordination and cohesion of actions systems appears to be disrupted, so that survivors' actions are not well adapted to prevailing circumstances.

Action Systems and Traumatization

The activities of normal life are generally incompatible with those of immediate defense, and visa versa. Thus, action systems of daily life tend to be inhibited during threat (e.g., Cassidy, 1999). However, there must also be some integration between defense and other action systems to create a cohesive personality, including a continuous sense of self. An individual's capacity to integrate these systems, and subsequently to regulate affects and impulses, strongly depends on good–enough parenting and secure attachment (Schore, 2003).

Our hypothesis is that integration between defensive and daily life action systems will fail first and most readily in a context of extreme stress that reduces integrative capacity. This integrative failure basically manifests in the prototypical alternations between functioning in daily life with avoidance/numbing (daily life action systems), and reexperiencing (defense action systems). We also hypothesize that survivors may develop a phobia of reexperiencing if they do not integrate these

intrusive and intense trauma-related memories. This phobia sustains ongoing dissociation of daily life and defensive action systems.

Chronic childhood abuse and neglect compromise integrative capacity and the development of secure attachment. When primary attachment figures are the source of threat in daily life, action systems are not only unregulated in the child, but may compete with and disrupt one another. The insoluble dilemma of a threatening caretaker often leads to the development of disorganized/disoriented attachment in children (Main & Morgan, 1996), which is strongly linked to dissociation (e.g., Carlson, 1998; Ogawa, Sroufe, Weinfeld, Carlson, & Egeland, 1997). In our view, disorganized attachment may be not actually disorganized, nor disoriented, but rather appears to involve concurrent or successive activation of the attachment action system and the defense action system (Marvin & Britner, 1999).

Structural Dissociation

Based on theoretical analysis, clinical observations, and some research findings (e.g., Kluft & Fine, 1993; Nijenhuis, Van der Hart, & Steele, 2002; Putnam, 1997; Reinders et al., 2003, submitted; Steinberg, 1995), as well as on 19th and early 20th century literature on dissociation (cf., Van der Hart & Dorahy, in press), we propose that traumatization essentially involves a degree of dissociative division of the personality that likely occurs along the lines of innate action systems of daily life and defense—what has been called *structural dissociation of the personality* (e.g., Nijenhuis et al., 2002; Van der Hart, Nijenhuis, Steele, & Brown, 2004). Dissociation of the personality develops when children or adults are exposed to potentially traumatizing events, and when their integrative capacity is insufficient to (fully) integrate these experiences within the confines of a relatively coherent personality.

Dissociation as a division of the personality is reflected in Janet's (1907) original definition of hysteria as "a form of mental depression [i.e., lowered integrative capacity] characterized by the retraction of the field of consciousness and a tendency to the dissociation and emancipation of the systems of ideas and functions that constitute personality" (p. 332). Janet (1889) observed that these dissociative "systems of ideas and functions" involved particular behaviors, cognitions, affects, sensorimotor aspects, and memories, *and* they experienced their own sense of self, however rudimentary. We suggest that these "systems of ideas and functions" typically involve dissociated action systems or subsystems that constitute parts of the personality.

Action (sub)systems shape personality to a large extent, and thus also sense of self. Each action system "change[s] sensory, perceptual and cognitive processing, and initiate[s] a host of physiological changes that are naturally synchronized with the aroused behavioral tendencies characteristic of [that system]" (Panksepp, 1998, p. 49). Over time, if (components of) action systems are not adequately cohesive and coordinated, they may each develop into more or less separate and habituated ways of perceiving and functioning, i.e., dissociative parts of the personality. These dissociative parts involve at the least a very rudimentary sense of self: "*I* feel; *I* think; *I* see; *I* run" even though clinically they may present more like symptom complexes than as clear cut "dissociative identities." Structural dissociation of the personality implies that two or more dissociative parts are dissociated *from each other* to a relative extent, as the original definition of dissociation intended. The degree of dissociation may be in flux from time to time, and may involve much less developed divisions in some patients than in others, but it is illogical to conclude that one part can be dissociated from the other without the reverse also being true. However, the fact that patients do not incessantly re-experience traumatizing events and some are not symptomatic for a period of time following a traumatizing event, e.g., delayed PTSD (APA, 1994) indicates that dissociative parts may remain latent, as clinical observations confirm.

Levels of Structural Dissociation

For purposes of heuristic and diagnostic clarity, we distinguish three prototypical levels of structural dissociation, although in clinical reality it seems to occur more along a continuum. The first

level begins with the most basic division between the two categories of daily life and defense action systems. Subsequent prototypes involve increasing dissociation within each of these categories, first among defense subsystems, and finally, the most severe dissociation additionally involves divisions among daily life systems.

When we speak of parts of the personality that are fixed in defense and reexperiencing the trauma, we are implying that these parts contain *traumatic memories*. Such memories are to be distinguished from autobiographical narrative memory in that they are primarily somatosensory, intensely emotional, hallucinatory, fragmentary, and involuntary experiences (e.g., Brewin, 2003; Van der Kolk & Van der Hart, 1991). Brewin has termed these *situationally accessible memories* (SAM), which cannot be accessed intentionally, but instead are triggered by reactivating stimuli. Traumatic memories or SAM are far different from mere mood states or affect laden memories, and they involve a different sense of self than does autobiographical narrative memory. As with all memory, SAM exist within an individual's personality, but may be sequestered in a dissociative part of the personality prior to integration.

Primary structural dissociation.

The basic pattern of posttraumatic stress response can be described as an alternation between a single dissociative part of the personality mediated by action systems of daily life and a second (rather limited and rudimentary) part mediated by defense. When the major dissociative part of traumatized individuals is detached from the trauma and mediated by action systems of daily life, the individual can seem rather undisturbed and able to lead a (relatively) normal life. However, this normality is only apparent, because this part of the personality physically and mentally avoids trauma-related cues, including his or her intrapsychic world, resulting in life "lived on the surface of consciousness" (Appelfeld, 1994, p. 18). Parts fixated in action systems of defense tend to intrude or become dominant when the individual is confronted with major threat cues.

Paraphrasing a metaphor developed by Myers (1940) that described trauma-induced alternations in World War I combat soldiers, we speak of the *Apparently Normal Part of the Personality* (ANP) to denote a traumatized person's functioning largely mediated by actions systems of daily life. Likewise, the *Emotional Part of the Personality* (EP) is adopted from Myers' description of how vehement emotions become dominant when trauma is reexperienced. EP is largely mediated by action systems of defense and by particular modes of attachment that reduce a sense of threat. ANP and EP alternate with each other, or are activated in parallel fashion. They generally share a range of features, and they may interact. Uncomplicated forms of trauma-related disorders such as ASD, simple PTSD, simple dissociative amnesia, and simple somatoform dissociative disorders are likely characterized by primary structural dissociation.

Secondary structural dissociation.

Dissociation of the personality beyond a single ANP and EP may extend to additional dividedness among two or more *defensive* subsystems. We conceptualize this additional division of EP as s*econdary structural dissociation*. Patients with complex PTSD often have several EPs fixed in attachment cry (the sad, bereft part, sometimes experienced as a "child"), avoidance of social rejection (the socially submissive "happy" part), and physical and relational defense (angry, fearful, submissive, frozen parts, etc.), with a single complex ANP influenced by the action systems of daily living. However, the action systems of daily living may also be organized maladaptively, as noted previously, contributing to persistent charaterological problems and problems in daily living. Secondary structural dissociation may characterize more complex and chronic trauma-related disorders, such as complex PTSD/DESNOS, trauma-related personality disorder (Golynkina & Ryle, 1999), and many cases of dissociative disorder NOS.

Tertiary structural dissociation.

Additional division of the ANP and elaboration of EPs is called *tertiary structural dissociation*, which characterizes DID. This occurs when the integrative capacity of individual is too low to develop or maintain a single ANP. Thus, there can be, for example, a dissociative part that is sexual (reproduction), a part that is a mother (caretaking), a part that goes to work (exploration). EPs assimilate new experiences and become more elaborated when inescapable aspects of daily life become conditioned stimuli that reactivate traumatic memories (Janet, 1889; Nijenhuis & Van der Hart, 1999a). Although some—but not all--dissociative parts in DID possess a stronger sense of separateness, we propose that conceptually they are no different than the parts found in less complex trauma-related disorders that present as symptom complexes.

In conclusion, it is reasonable to hypothesize that trauma-related dissociation essentially involves the existence of two divided, yet certainly not totally separated or unrelated parts of the personality--each with its own sense of self, each based on action systems, and having dynamic relationships with other parts. In simple trauma disorders, EPs are typically quite rudimentary, not active in daily life, and limited to traumatic reexperiences, while ANPs are quite complex, with multifaceted functioning. In more complex trauma disorders, EPs may be increasingly elaborated and autonomous, while ANPs can be more numerous and restricted to functions within certain daily life action systems.

Structural Dissociation and Alterations of Consciousness

In order to examine the dissociative nature of any disorder—in this case, complex PTSD, the concept of dissociation must have sufficient clarity. Trauma-related structural dissociation should be distinguished from more ubiquitous phenomena that are often termed dissociation, but likely have a different underlying process. Over the past several decades the original meaning of dissociation has been quite extended by the addition of other phenomena not typically considered to be dissociative. These include alterations in consciousness such as absorption, daydreaming, imaginative involvement, altered time sense, trance-like behavior, and “highway hypnosis” (e.g., Bernstein & Putnam, 1986). Although narrowing and lowering of consciousness often accompany structural dissociation (Nijenhuis et al., 1996; Vanderlinden et al., 1993), these alterations include a wide range of experiences and symptoms that are ubiquitous among normal and clinical populations (e.g., Carlson, 1994), and do not always indicate the existence of dissociative parts of the personality. However, structural dissociation—the existence of two or more insufficiently integrated parts of the personality--seems to be highly specific for traumatized populations. Thus, structural dissociation and alterations in consciousness appear to be conceptually different but related phenomena, a position supported by some research findings (e.g., Waller, Putnam, & Carlson, 1996).

It may be difficult to distinguish the different underlying processes of the same phenomena, e.g., amnesia. However, it is essential to do so, as treatment approaches will differ (Allen, Console, & Lewis, 1999; Butler et al., 1996). For example, it is unproductive to help a patient recall lost time in childhood if s/he never memorized events, but it is essential to resolve amnesia related to dissociative parts of the personality via integration.

Symptoms of Structural Dissociation

In order to develop an understanding of the dissociative nature of complex PTSD, it is important to consider the relationship between dissociative symptoms and the underlying structural dissociation of the personality. The existence of both positive and negative dissociative symptoms has been recognized in the past, but this fact seems to have become lost recently (cf., Nijenhuis & Van der Hart, 1999b; Van der Hart, Van Dijke, Van Son, & Steele, 2000). However, research shows that many more phenomena can be considered dissociative than is indicated in DSM-IV (e.g., Dell, 1998).

Negative dissociative symptoms of PTSD and complex PTSD generally relate to the ANP: They constitute losses of function or phenomena. *Positive* symptoms generally relate to the EP: They constitute intrusion phenomena. However, EPs that submit under threat also have negative symptoms such as bodily anesthesia. Many (negative) dissociative symptoms mentioned as such in the literature (e.g., highway hypnosis), are actually alterations in consciousness. A few contemporary authors have noted the existence of positive dissociative symptoms (e.g., Butler et al., 1996; Nijenhuis & Van der Hart, 1999a,b; Van der Hart et al., 2000), but most have not (e.g., Harvey & Bryant, 1999; Marshall et al., 1999).

Dissociative symptoms manifest as psychological phenomena, i.e., *psychoform dissociative symptoms*, or as bodily phenomena, i.e., *somatoform dissociative symptoms* (Nijenhuis et al., 1996). During the last decade there has been growing acknowledgement of somatoform dissociation, which is corroborated by empirical and clinical evidence (Bowman, 1998; Butler et al., 1996; Kihlstrom, 1992; Nijenhuis, 1999; Van der Hart et al., 2000).

Negative psychoform dissociative symptoms include loss of memory (amnesia); loss of affect (numbing); loss of critical function (a cognitive action) resulting in suggestibility and difficulty thinking things through; loss of needs, wishes, and fantasies; and loss of previously existing skills. These losses potentially should be available in another part of the personality.

Negative somatoform dissociative symptoms involve apparent losses of sensory, perceptual or motor functions, e.g., dissociative anaesthesia and sensory loss, and dissociative paralysis.

Positive psychoform dissociative symptoms include traumatic memories and nightmares that have affective, cognitive, and somatosensory components. Many authors do not seem to acknowledge dissociation as a core feature of traumatic memories (e.g., Harvey & Bryant, 1999), but some do (e.g., Van der Kolk & Van der Hart, 1991). Some Schneiderian first rank symptoms of schizophrenia--hallucinations, especially hearing voices commenting or arguing internally, and thought insertion and withdrawal—are common in patients with dissociative disorders (e.g., Dell, 2002) and are commonly considered to be phenomena related to activity of dissociative parts. Clinical experience indicates they are also frequently present in other trauma-related disorders, including complex PTSD.

Positive somatoform dissociative symptoms include intrusions of sensorimotor aspects of traumatic re-experiences, including pain, uncontrolled behaviors such as tics, sensory distortions (Janet, 1907; Butler et al., 1996; Nijenhuis & Van der Hart, 1999b; Van der Hart et al., 2000), and pseudoseizures (Bowman, 1998). Some Schneiderian criteria for schizophrenia are somatoform dissociation symptoms, such as somatic passivity, and “made” bodily feelings, impulses, and actions, e.g., feeling the physical urge to drive the car into a bridge; cutting and not being able to stop.

Dissociation and the Proposed Dimensions of Complex PTSD

Longitudinal studies provide evidence linking childhood abuse and peritraumatic, as well as current dissociative symptoms (Lyons-Ruth & Jacobovitz, 1999; Macfie, Cichetti, & Toth, 2001; Ogawa et al., 1997). Many severely abused individuals in these studies were characterized by symptom patterns consistent with complex PTSD. Retrospective studies suggest that complex PTSD is associated with early interpersonal traumatization and dissociative symptoms (Ford, 1999; Ford & Kid, 1998; McLean & Gallop, 2003; Pelcovitz et al., 1997; Roth et al., 1997; Van der Kolk et al., 1996), and that earlier age of onset of trauma predicts the severity of dissociative symptoms and posttraumatic stress symptoms (e.g., Chu, Frey, Ganzel, & Matthews, 1999; Boon & Draijer, 1993; Nijenhuis, 1999). Different degrees of “dissociative” symptoms and PTSD in complex PTSD have been reported (e.g., Ford, 1999; Van der Kolk et al., 1996). However, the full range of dissociative symptoms has not been evaluated in these studies, and alterations of consciousness may have been confused to an extent with symptoms of structural dissociation.

We hypothesize that many features of complex PTSD are manifestations of structural dissociation, or are intimately related to it. As noted previously, structural dissociation may be manifested in enduring alternations between action systems of daily life (avoidance/numbing) and systems of defense (reexperiencing). The symptoms in complex PTSD are generally noticeably more complicated than in simple PTSD. If it is accurate that structural dissociation involves lack of integration among action systems that have also developed in maladaptive patterns, then it could be hypothesized that the symptom clusters of complex PTSD/DESNOS are each related to maladaptive and dissociated action systems rather than being separate symptom clusters.

Alterations in Attention and Consciousness

As can be seen in Table 2 (Van der Kolk et al., this issue), this cluster includes a negative psychoform dissociative symptom, i.e. *amnesia*, as well as a second category, *transient dissociative episodes*. The rather unclear category of *transient dissociative episodes* seem to denote partial or full reactivation of one or more EPs. Only one item from this symptom cluster directly assesses structural dissociation, i.e., "feeling like there are two people living inside that control behavior at different times." Although this item addresses the possibility of dissociative parts of the personality, it implies a subjective experience of parts that have a strongly developed, elaborate sense of self, which may not apply to complex PTSD. Some of the other items (alterations in attention) seem to pertain to alterations in the level and field of consciousness, which we have distinguished from dissociation. However, recurrent lapses in and alterations of attention and consciousness are dissociative when they involve alter*n*ations between dissociative parts.

Somatization

Most items of this cluster, listed in Table 2 (Van der Kolk, this issue) pertain to somatoform dissociation (Nijenhuis, 1999). Thus some dissociative parts may be in good contact with the body, or may experience a positive somatoform dissociative symptom, e.g., pain. For example, a patient with complex PTSD complained of chronic, intermittent, sharp vaginal pain. Organic causes were eliminated. During therapy an EP containing these sensations emerged, related to painful molestation of the patient as a child. Once this traumatic memory was integrated among the various dissociative parts, the pain immediately and permanently ceased. These and related clinical findings suggest the importance of identifying and working with dissociative parts.

Somatoform dissociation is more characteristic of traumatization than the general category of somatization (Nijenhuis, 1999), and is thus likely to be found in complex PTSD. Scores for *somatization* in complex PTSD patients are strongly correlated with *alterations in attention and consciousness* (Van der Kolk et al., 1996), indicating a possible common denominator of dissociation in both symptom sets.

Alterations in Regulation of Affect and Impulses

Structural dissociation involves insufficient modulation of emotion and behavior because lack of integration among action systems impedes adaptive regulatory functions that stabilize affects and actions. In addition, many parts have limited windows of psychophysiological stress tolerance (Nijenhuis et al., 2002). Both factors may account for the clinical phenomena of affect and impulse dysregulation so characteristic of complex PTSD (Van der Kolk et al., 1996). The dissociated “vehement emotions” (Janet, 1889; Van der Kolk & Van der Hart, 1989) and actions of EPs are not integrated with the ANP. This precludes potential regulatory actions by the ANP. Alter*n*ations of unmodulated affects, such as panic or rage, and related impulsive actions, often may be due to intrusions or switching among dissociative parts that each have dysregulated affects. Mood swings and affect

dysregulation are extremely common in dissociative disorders (cf., Cardeña & Spiegel, 1996; Chu, 1998), as they are in complex PTSD, and are often considered to be "soft signs" of dissociation. Several forms of affect or impulse dysregulation represent positive dissociative symptoms of intrusion in that these symptoms pertain to reactions of EPs, e.g, crying "fits," rage reactions, self-harm behaviors, impulsive sexual behavior (cf., Ford, 1999). Affect dysregulation can also involve negative dissociative symptoms of EPs, e.g., sudden loss of emotions that may occur in conjunction with total submission to real or perceived threat cues, or depression. Thus, alternations among dissociative parts and profound intrusions can include sudden, uncontrolled changes of affect.

Alterations in Self-perception

Dissociative parts develop their own sense of self, no matter how rudimentary or elaborated. Alternations among these parts are therefore usually accompanied by rather distinct changes in self-perception. Some dissociative parts have an unduly negative estimation of themselves, viewing themselves as despicable, dirty, worthless, and to blame, whereas other parts may evaluate themselves quite differently (e.g., as powerful seducers, able to influence anyone). One woman with complex PTSD had a part that felt she was exempt from social rules, while another part was extremely judgmental of herself and ashamed for breaking even the smallest of rules, leading to increasing self hatred, internal conflict, and impulsive actions.

Alterations in Relations with Others

Relational problems may be a result of alternations between maladaptive (insecure) attachment systems and an inflexible defense system. As noted earlier, this apparent D-attachment can be understood as organized alternation between attachment and defense action systems, i.e. between ANP and EP. The patient may be phobic of *and* have a desperate desire for attachment. Because of early attachment betrayal, any form of attachment may serve as a reactivating stimulus for EPs, resulting in a traumatic reenactment in which the patient reexperiences relational trauma, evoking EPs.

Alterations in Systems of Meaning

Dissociative parts of the personality may have quite different worldviews and systems of beliefs. Often, but not always, the ANP has a relatively balanced worldview, which alternates with other belief systems fixated in trauma. Thus, some EPs may be despairing, believing the world to be a completely negative, dangerous place, while other parts maintain an unrealistically optimistic outlook on life (e.g., "When I'm not feeling bad, I don't need to come to therapy"), or a more realistic one. Thus, a patient, as a functional ANP, was able to perform quite effectively in her role as a mediator at work, with a very balanced perspective of human relations. Yet in personal relationships, the patient was dominated by EPs that were angry, vengeful, and paranoid. She was aware of the two different perspectives, but could not change the negative one, or the behaviors that accompanied it. Once an EP that felt betrayed by familial abuse was engaged in therapy, the negative worldview and behaviors gradually diminished, and once that EP became one with the ANP, a much more balanced and consistent belief system developed.

Research of Structural Dissociation

The theory of structural dissociation is a parsimonious conceptualization that offers testable and refutable hypotheses related to why psychobiological measures of traumatized individuals alternate or seem contradictory in various studies. The dual representation theory of Brewin (2003) is closely related to our view, as is the polyvagal theory of Porges (2001). However, to the best of our knowledge, neither

has yet linked his view to the full range of trauma-related disorders. It is reasonable to postulate a common feature that is open to empirical testing for a broad range of trauma-related disorders. Some testable hypotheses include: (1) traumatized individuals respond to trauma reminders with different psychobiological reactions, particularly different patterns of positive and negative dissociative symptoms; (2) they have alternating psychobiological reaction patterns across time; and (3) survivors' reactions to trauma-related cues depend on the type of dissociative part (ANP/EP) that is dominant during measurement. Some recent research findings are consistent with or support these hypotheses.

Hypothesis #1. Our theory proposes that neurophysiologic and subjective reactivity vary according to the dissociative part that dominates the functioning of traumatized patients during measurement. Consistent with this, neural and physiologic reactivity correlate with degree of trauma reexperiencing in reaction to trauma reminders (e.g., Lanius et al., 2002; Mason et al., 2001; Osuch et al., 2001). For example, survivors with "dissociative" reactions—i.e., negative dissociative symptoms--to trauma-reminders had very different neural reactivity than survivors who were emotionally engaged—i.e., had positive dissociative symptoms (Lanius et al., 2002). Negative dissociative symptoms largely characterize ANP, and EP in total submission, while positive dissociative symptoms typify emotionally overwhelmed EPs.

Some but not all survivors have elevated heart rate to trauma reminders (e.g., Griffin, Resick, & Mechanic, 1997; Osuch et al., 2001). This finding is consistent with the hypothesis that some survivors were functioning as ANP or submissive EP during measurement, and others as hyperaroused EP.

Hypothesis #2. Consistent with clinical observations of other severely traumatized patients, Vietnam veterans with PTSD have been described as having "stages" of decompensation (Wang, Wilson, & Mason, 1996) that can be understood as alternations among ANPs and EPs. These stages describe a wide range of functioning, from adaptive to totally dysfunctional PTSD core symptoms, as well as several other dimensions of clinical functioning, such as affect regulation, defenses, ego states [i.e., involving ANPs and EPs], interactions with the environment, capacity for self-destruction/suicide and capacity for attachment and insight." (p. 237)

Furthermore, PTSD patients have elevated cortisol levels when emotionally engaged in traumatic memories, but suppressed cortisol levels when they are emotionally disengaged (Mason et al., 2002). In our terms, emotional engagement characterizes EPs that become hyperaroused when exposed to reminders of trauma, whereas disengagement characterizes ANPs and those EPs fixed in total submission.

Hypothesis #3. Traumatized children can alternate between heart rate elevations with positive dissociative symptoms and heart rate drops with negative dissociative symptoms when they feel threatened (Perry, 1999). Similarly, preliminary findings indicate that patients with DID and complex PTSD can have different subjective, behavioral, and physiologic reactivity to perceived threat cues as ANP and different types of EPs (flight, freeze vs. total submission) (Nijenhuis, 2003).

ANP and EP in DID patients each engage different neural networks when listening to trauma memory scripts (Reinders et al., 2003, submitted). EPs with flight or freeze reactions to trauma-related cues had more amygdala, insula, caudate and somatosensory cortical activation than ANPs, which had more prefrontal, parietal and occipital activation. EPs demonstrated higher heart rate and blood pressure, and lower heart rate variability, and had far stronger emotional and sensorimotor subjective reactivity than ANP. Findings suggest that EPs engage in sensorimotor and emotional reactions, and that ANP inhibits the "emotional brain" and is depersonalized. Furthermore, differences in right medial prefrontal activation suggest that EP and ANP engage a different sense of self. However, participants did not have different psychobiological reactivity when they listened to emotionally *neutral* personal memory scripts, indicating that separateness among parts is not absolute. Finally, ANP and EP dissociative parts in DID patients had different degrees of EEG coherence (Ciorciari, 2003).

To date, direct tests of the theory of structural dissociation have been limited to DID. Future tests must include other trauma-related disorders, notably complex PTSD.

Discussion

We have proposed that traumatized individuals are characterized by a structural dissociation of the personality, involving alternating dominance of and limited interaction between dissociative parts dedicated to daily life and avoidant of traumatic memories (ANP) and parts dedicated to defense in response to threat and fixated in traumatic experiences (EP). We have described three prototypical levels of this structural dissociation that more naturally range along a continuum. Structural dissociation implies that disorders such as complex PTSD/DESNOS, trauma-related BPD, DDNOS, and DID constitute more complex forms of PTSD (e.g., Spiegel, 1984), although patients with these disorders may not meet all diagnostic criteria of PTSD during some periods of time (Ford, 1999).

The idea of a common base of structural dissociation for the spectrum of trauma-related disorders may be met with some resistance by those concerned that the theory proposes unduly reified parts of the personality. This unease could be relieved with the understanding that there are levels of complexity of structural dissociation; that dissociative parts of the personality can vary widely in complexity and autonomy and are not completely separate reified entities, but rather they are based on psychobiological action (sub)systems; and that structural dissocation is open to empirical study. Some may argue that trauma-related disorders are more parsimoniously understood in terms of symptoms. However, this descriptive approach cannot explain what *organizes* the patient's alternating and chronically maladaptive psychobiological features, how different trauma-related disorders are related, and how these disorders can be treated.

Our analysis of the various symptoms clusters of complex PTSD suggests that structural dissociation of the personality manifests pervasively in this disorder. Understanding structural dissociation is a heuristic for research, assessment and treatment of complex PTSD. Future research should include study of the sensitivity, specificity, and predictive values of negative and positive dissociative symptoms in complex PTSD. In addition to the Structured Interview for DESNOS (SIDES, Pelcovitz et al., 1996), the Dissociative Experiences Scale-Taxon (DES-T; Waller et al., 1996), the Multidimensional Inventory of Dissociation (MID; Dell, 2002), and the Somatoform Dissociation Questionnaire (SDDQ-20; Nijenhuis, 1999; Nijenhuis et al., 1996) may help assess more completely and specifically dissociative symptoms in complex PTSD. Furthermore, measurement definitions of dissociation and instruments must be adapted to assess the extent to which the major features of complex PTSD involve structural dissociation. Ultimately, to test the hypothesis that complex PTSD involves secondary structural dissociation, and to test the theory of structural dissociation more generally, the development of an instrument that assesses levels of structural dissociation is required. Systematic observation of switches between ANPs and EPs would demonstrate how alterations in affect, impulse control, sense of self, interpersonal relationships, and systems of meaning may relate to dissociative parts of the personality.

Treatment of complex PTSD and other trauma-related disorders should focus on the gradual integration of dissociative parts, including their mental contents (e.g., traumatic memories) and associated actions systems within the confines of a coherent and cohesive personality. This work should begin with strengthening the ANP's ability to function in daily life, and commonly implies overcoming reciprocal fear and avoidance of different dissociative parts, and the related phobias of attachment, separation, loss, traumatic memories, and change (Nijenhuis et al., 2002; Nijenhuis & Van der Hart, 1999a; Steele, Van der Hart, & Nijenhuis, 2001, in press; Van der Hart et al., 1993).

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