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Study of Trauma and Dissociation*

**Recovered Memories of Child
Sexual Abuse: Forgetting to
Remember and Remembering to
Forget, Part 3: The Role of
Dissociation in Extraordinary
Forgetting**

Sylvia Solinski, Consultant Psychiatrist

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ARTICLE

RECOVERED MEMORIES OF CHILD SEXUAL ABUSE: FORGETTING TO REMEMBER AND REMEMBERING TO FORGET, PART 3: THE ROLE OF DISSOCIATION IN EXTRAORDINARY FORGETTING

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This is the third of three articles on recovered memories of child sexual abuse. The results of laboratory studies on memory cannot be generalized to individuals with a history of childhood sexual abuse in whom memory disturbances are prevalent. Trauma is defined and identified as the driver of dissociation. The nature of dissociation and dissociative processes are explored, and the relationship to memory impairment is examined with an emphasis on the mechanisms of compartmentalization and detachment. Memory and the self are inextricably linked, and dissociation results in the fragmentation of autobiographical narrative. Contrary to what is often assumed, memory content is not the appropriate focus of trauma therapy and it is imperative that therapists working with survivors of child sexual abuse are adequately trained.

KEYWORDS *trauma; dissociation; amnesia; compartmentalization; detachment; self; therapy*

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INTRODUCTION

Can laboratory studies be generalized to recovered memories of child sexual abuse (CSA)? In the early 20th century, Sears (1936) cautioned that the results of a laboratory study do not always line up with the experiences of a child who is the victim of nightly rape by a parent, or of an adult recalling such childhood experiences. Failure to document forgetting on laboratory tasks that involve, for example, reaction times, imaging data or a checklist of remembered words does not, as some have argued (McNally, Ristuccia, & Perlman, 2005) mean that phenomena in the real world do not exist (Freyd, DePrince, & Gleaves, 2007; DePrince et al., 2012). Van der Kolk (2014) identifies the fundamental issue: “Events that take place in the laboratory cannot be considered equivalent to the conditions under which traumatic memories are created” (p. 192). Traumatic memories can be studied but not under conditions in which “the memories studied are for events that take place in the laboratory. . . for *ethical* reasons, not scientific ones, the extreme terror and helplessness that precede the development of PTSD simply cannot be replicated in such a setting” (Van der Kolk, Hopper, & Osterman, 2001, p. 12). An important corollary is that there is a distinction between an orienting response of *increased interest* to emotionally arousing materials used in the laboratory and the *motivation* to avoid an actual stressor in the real world (Brewin, 2011).

Medical analogies have been used to study traumatic memories in children on the basis that “a visit to the doctor for a check-up provides a reasonable, although admittedly not perfect, analogue for sexual abuse, which obviously cannot be studied in an experimental fashion” (Ornstein, 1995, p. 582). As Putnam (1997) notes: “a pelvic examination is not equivalent to a rape by any reasonable clinical measure” (p. 114). The incidence of 50-80% PTSD for rape compared to *no* case reports of PTSD attributed to a pelvic examination or to a voiding cystourethrogram (although medical examinations have a much higher base rate than rape) speaks for itself (Putnam, 1997). “What is missing from both the clinical and experimental literature is an understanding of the effects of repetitive, invasive physical and sexual acts inflicted by a primary caregiver in a family environment in which the child is threatened if he or she reveals any details. Many authorities on trauma believe that this cumulative experience is qualitatively different from single-event stressful experiences and leads to differences in memory processes. This is not proven, but the well-replicated finding on non-normality of cognition and memory in trauma victims—both adults and children—strongly suggests that trauma alters basic cognitive systems in profound ways” (Putnam, 1997, p. 115).

CSA AND THE LIMITS OF MEMORY: BEYOND THE BOUNDS OF THE ORDINARY

It may be difficult to appreciate the profound ways in which cognitive systems are altered by trauma. Invalidation of the child is inherent in abuse creating doubt, confusion and chaotic experience. In the absence of attuned emotional communication and collaborative reflective dialogue (Siegel, 2001), children may be unable to integrate these traumatic experiences with their developing self-concept and display “a general lack of verbal memories of personally experienced events” (Fivush, 1998, p. 712). The nature of such gaps in episodic memory test the limits of memory and the credibility of child abuse survivors.

“The cases that most demand the postulation of a special mechanism of forgetting, if they are to be accepted as accurate, are those in which individuals report new memories of a horrific history of years of violent abuse of which they were previously utterly unaware. . . . Although the limitations of “ordinary” mechanisms of forgetting are not known, it seems unlikely that they would account for such cases. Our opinion is that such cases are best understood in terms of illusory memories and false beliefs, rather than in term of mechanisms of forgetting” (Lindsay & Read, p. 78).

Trauma and Dissociation

Trauma may be defined as an inescapably stressful event or set of circumstances that overwhelms a person’s existing coping mechanisms in the context of an environment that fails to provide a buffer or facilitate recovery. (Van der Hart, Nijenhuis, & Steele, 2006; Van der Kolk, 1996). In childhood, traumas comprise not only acts of commission (such as sexual abuse), but also acts of omission (such as neglect or abandonment) whereby the absence or (periodic) withdrawal of certain resources may create a threat to the child’s well-being and survival. At the moment of trauma, the victim is rendered helpless by overwhelming force. When it is a force of nature we speak of disasters. When the force is perpetrated by other people we speak of crimes and atrocities. Traumatic events overwhelm the ordinary systems of self-care that give people a sense of control, connection and meaning.

In the face of trauma, dissociation entails an involuntary shift from modes of self-regulation that facilitate biopsychosocial development to threat-related defensive modes (Ford, 2013). *Neuroception* describes a process of appraisal that occurs in sub-cortical parts of the brain without conscious awareness (Porges, 2011). The appraisal as to whether a person or situation is safe or dangerous, triggers neurobiologically determined prosocial or defensive behaviors *in the absence of cognitive awareness of danger*, and a sequence of neurophysiological processes ensue that results in defensive behaviors such as fight, flight, or freeze. Whether this is an adaptive

response depends on the accuracy of the appraisal which is often compromised in those who have been chronically traumatized. For some, traumatic experience is tantamount to an encounter with the radically unimaginable which alters the attitudinal and belief framework of the individual. For others (particularly survivors of child abuse), trauma results in entrenched self-beliefs and dire expectations that have been internalized. Hence, for many individuals, a particularly destructive effect of trauma is that it confirms what is expected rather than presenting them with a devastating incongruity (Bromberg, 1998; Herman, 1997).

Dissociation has long been understood as a response to traumatic experiences (Janet, 1889, as cited in Dalenberg et al., 2012). A phylogenetically early, passive defense (Porges, 2001), it enables an individual to mitigate excessive or overwhelming stimuli by failing to integrate trauma-related sensations, emotions, thoughts, memories and behaviors (Nijenhuis, 2015; O'Neil, 2009). Children who suffer developmental trauma (abuse, neglect, misattunement) in the context of attachment relationships, may manifest disoriented/disorganized, "Type D", attachment style (Main & Solomon, 1986), that arises from concurrent or successive activation of the motivational or action systems of attachment and defense (Van der Hart, Nijenhuis, & Steele, 2005). Children's capacities for self-regulation and cognitive processing of affective states are limited, and their attempts to attach to caregivers from whom they must also defend themselves, results in contradictory *internal working models (IWMs)* of self and other (Liotti, 1992; Liotti, 2006) and in unintegrated mental states (Bromberg, 2006; Chefetz, 2004; Schimmenti & Caretti, 2010).

In order to preserve the attachment bond, trauma-related IWMs are excluded from other developing self-representations (Davies & Frawley, 1994; Liotti, 2009) and such efforts to cope with psychobiological dysregulation come at a cost. Developmental trauma may compromise development across all domains since the maintenance of attachment-based affective safety constitutes an implicit, concrete interactive mode that is devoid of cognitive (symbolic) representation (Bromberg, 2011), and is enacted and embodied rather than expressed in words; conditioned, reflexive state-dependent responses to affective cues continue to reflect past experience "at a sensory and bodily level or, on the contrary, it replicates (i.e., it dissociatively reenacts) the same self-regulation strategy originally used to face the perceived threat" (Schimmenti & Caretti, 2016, p. 113). This often includes extreme disengagement and immobility, a primary regulatory process that involves a metabolic shutdown that serves to conserve energy (Schimmenti, 2017). The intersubjective continuum in the capacity for relatedness ranges from right-brain to right-brain "*state-sharing*" (Schoore, 2003, p. 94–97) through *implicit relational knowing* (Lyons-Ruth, 2006) to *mental-*

ization (Fonagy, Gergely, Jurist, & Target, 2002). When functioning on this continuum is largely absent, “the fundamental motive to assimilate representations of affectively significant experiences into a unified, coherent conceptual system” (Bromberg, 2011, p. 135) is not realized. Hence, dissociation may become the primary response to stress and the driver of psychopathology.

Research

A description of the pervasive biological correlates of childhood trauma are beyond the scope of this paper and have been well documented elsewhere (Dalenberg, 2006; Dalenberg et al., 2012; McKinnon et al., 2016; Lanius, Paulsen, & Corrigan, 2014; Schauer & Elbert, 2010; Schore, 2003; Schore, 2009). A summary of key points includes: disruptions in the right prefrontal cortex which is essential for the regulation of the hyperarousal and hypoarousal states that accompany trauma; dominance of the (particularly right) amygdala which activates the fear system; functional sensory deafferentiation mediated by reduced integration of sensory information via the thalamus resulting in impaired cohesion of perceptual and sensory experiences and decreased levels of arousal and awareness; hypothalamic-pituitary-adrenal axis dysfunction with increased cortisol secretion; hippocampal damage which impairs the formation of new memories and inhibits memory retrieval; and emerging evidence of a link between dissociative symptoms and alterations in intrinsic connectivity networks that are associated with cognitive processes such as working memory, initiating and maintaining goals, extracting salience or meaning from experience, and self-referential thinking.

The *Dissociative Experiences Scale* (DES) (Bernstein & Putnam, 1986) is a 28-item self-report that appears to capture factors assessing absorption, depersonalization/derealization and identity fragmentation/amnesia and has been used in over 2000 studies. The latter four are phenomena with lower base rates and are targeted by the DES-T, a subgroup of 8 items that constitute a dissociative taxon (Waller, Putnam & Carlson, 1996) that is often described as *pathological dissociation*. The relationship between trauma and dissociation “is consistent and moderate in size” for a range of non-trauma-related clinical and non-clinical populations, and consistently robust and much “higher than the rates within psychiatric controls” when dissociative disorders were studied (Dalenberg et al., 2012, p. 559–60). Moreover, the relationship withstands the comparison between studies using self-report measures of trauma and those using “objective” measures (e.g. child protection services; researchers conducting longitudinal studies). Dissociation may be conceptualized in different ways.

Dissociation

Characterization

Cardeña and Carlson (2011) specified that dissociative symptoms are “characterized by (a) a loss of continuity in subjective experience with accompanying involuntary and unwanted intrusions into awareness and behavior (so-called positive dissociation); and/or (b) an inability to access information or control mental functions, manifested as symptoms such as gaps in awareness, memory, or self-identification, that are normally amenable to such access/control (so-called negative dissociation); and/or (c) a sense of experiential disconnectedness that may include perceptual distortions about the self or the environment” (p. 251–52). Nijenhuis and Van der Hart (2011) distinguish *structural dissociation* (divisions or fragmentations within personality into subsystems) from *altered states of consciousness* although noting that the two may often co-occur in dissociative disorders. Neurobiological models of dissociation have been linked to animal defense responses (Nijenhuis, Vanderlinden, & Spinhoven, 1998; Schauer & Elbert, 2010) whereby various stages of a defense cascade may be co-opted as part of a dissociative survival strategy in response to threat. Dissociative responses are readily subject to classical conditioning and are reinforced by operant and evaluative conditioning (Van der Hart et al., 2006); the consolidation of state-dependent dissociative responses leads to hypervigilance and avoidance “as a proactive defensive response to the potential repetition of early trauma” (Bromberg, 1998, p. 182).

The *Trauma Model* (TM) of dissociation (Dalenberg et al., 2012) posits that dissociative defenses may involve unconscious and conscious disavowal of the importance, implications and/or accuracy or reality of trauma memory, buttressed by avoidance; the inhibition of associative processing results in non-integrated and fragmented memories that are data driven/perceptual rather than autobiographical/conceptual. This leads to “omissions and poor agreement in detail across narrative recounting. . . and over time such memories may be more easily forgotten” (p. 553). Generally, the TM suggests that dissociation is a psychobiological response to threat or danger that enables removal of the individual from traumatic experiences with the aim of enhancing survival during and after the event.

Holmes et al. (2005) separate dissociative symptoms into two categories: *compartmentalization* (a deficit in the ability to deliberately control processes such as memory that, however, continue to influence cognition, emotion, and action) and *detachment* (altered states of consciousness that are characterized by estrangement from self and/or others). These categories are prefigured respectively by the early regulation strategies of segregating IWMs and of disengaging. Unlike forgetting, which may involve encoding failure or decay of memory traces, dissociative compartmentalization stipulates that memories are encapsulated within state-dependent mental

states that are able to be accessed via cues that are, usually, stringently and automatically avoided (Dalenberg, 2006). Dissociative detachment (including derealization and some forms of depersonalization) disrupts episodic and autobiographical memory in people with high levels of pathological dissociation (i.e., indicative of identity fragmentation). This demonstrates the necessity during encoding of sensory integration from an embodied perspective or the experiencing of events from within one's own body (rather than from an observer perspective as may occur in depersonalization) (McKinnon et al., 2016); in the absence of emotion, the enhancement of memory by the amygdala is impaired and, whereas factual knowledge may be fully or partially retained, episodic memory loss is a common outcome.

Dissociation and Cognitive Functioning

In the general population dissociative symptoms have been linked to reduced performance on measures that capture a range of cognitive functions including attention, executive function and memory (Amrhein, Hengmith, Maragos, & Hennig-Fast, 2008; Brewin, Ma, & Colson, 2013; Bruce, Ray, Bruce, Arnett, & Carlson, 2007; Giesbrecht, Merckelbach, Geraerts, & Smeets, 2004; Olsen & Gayle Beck, 2012). Individuals higher in everyday dissociative experiences perform worse on tasks assessing executive functioning (Amrhein et al., 2008; Giesbrecht et al., 2004), verbal memory (Devilly et al., 2007), episodic memory (Olsen & Gayle Beck, 2012) and working memory (Amrhein et al., 2008).

Fragmentation, the "inability to voluntarily retrieve and describe trauma memory in an organized, coherent fashion" (Huntjens, Dorahy, & Van Wees-Cieraad, 2013, p. 92) is associated with greater dissociation (mostly peritraumatic dissociation) in traumatized individuals. In patients with depersonalization disorder, dissociation induced by watching an aversive film was associated with memory fragmentation in that subjects performed poorly when required to order clips from the film (Giesbrecht, Merckelbach, Van Oorsouw, & Simeon, 2010). Laboratory-induced dissociation by script-driven imagery (Krause-Utz et al., 2018), mirror-gazing (Brewin et al., 2013) and by eliciting an out-of-body experience (Bergouignan, Nyberg, & Ehrsson, 2014) resulted in, respectively, impaired working memory in patients with borderline personality disorder, short-term impairment in explicit memory in undergraduate university students, and longer-term impairment in explicit memory in healthy participants.

Dissociation has been linked with neurocognitive impairments across various trauma-related disorders. Among individuals with borderline personality disorder, pathological dissociation was associated with impaired functioning on measures of verbal memory, working memory and executive functioning (Haaland & Landrø, 2009) and higher levels of dissociative symptoms in individuals with depersonalization disorder were associated with slowed processing speed and heightened distractibility (Guralnik,

Giesbrecht, Knutelska, Sirroff, & Simeon, 2007). Adults with PTSD with a history of CSA showed impaired performance on indices of verbal and visual memory that was strongly correlated with higher levels of dissociation (Rivera-Vélez, González-Viruet, Martínez-Taboas, & Pérez-Mojica, 2014) and in children with PTSD as a result of abuse or neglect, higher levels of dissociation were associated with worse performance on measures of attention (De Bellis, Woolley, & Hooper, 2013).

Among war veterans with PTSD, those with a co-morbid dissociative disorder demonstrated greater deficits on measures of verbal memory and autobiographical memory than those with PTSD alone (Roca, Hart, Kimbrell, & Freeman, 2006). Autobiographical and episodic memory is severely impaired in individuals with dissociative identity disorder whose scores on dissociation are higher than for any other disorder; it is postulated that trauma-related identity states are privy to trauma-related memories that are not available to other identity states (Bryant, 1995; Elzinga, Hans Phaf, Ardon, & Van Dyck, 2003; Reinders, Willemsen, Vos, Den Boer, & Nijenhuis, 2012; Schlumpf et al., 2014). Interestingly, Dorahy and Huntjens (2007) review information processing in dissociative identity disorder and speculate that *appraisal* of retrieved compartmentalized information which is not recognized as autobiographical but, rather, belongs to other identity states results in subjective amnesia. This is consistent with Braude's (1995) distinction between indexical and autobiographical knowledge; an event is indexical when a person *believes* it to be his own (that is, assignable to himself) despite it feeling alien, but an event is *autobiographical* when a person *experiences* it as his own. Indexical dissociative intrusions are involuntary, often fragmentary, lack context are extremely distressing and confusing, and engender self-doubt.

Different Types of Dissociation

The distinction between compartmentalization and detachment is clinically demonstrated by the fact that they may occur separately. For example, patients with dissociative amnesia and somatization disorder rarely reported depersonalization/derealization (Brown, Schrag, & Trimble, 2005), patients with depersonalization disorder did not report reversible amnesia or other compartmentalization phenomena such as somatoform symptoms (Baker et al., 2003), and patients with depersonalization disorder fell within the normal range on a measure of dissociative symptoms relating to amnesia (Simeon, Knutelska, Nelson, Guralnik, & Schmeidler, 2003).

The DES (Bernstein & Putnam, 1986) is the most frequently used and cited measurement instrument for dissociation. Although factor analytic studies of this questionnaire yield a complex picture, there is overall support for the statistical separation of items on the DES that relate to amnesia and items that relate to depersonalization/derealization. Holmes et al.

(2005) regard this to be consistent with the view that compartmentalization and detachment “are conceptually distinct from one another” (p. 10). The reasons for complexity include the following: a) the absence of DES items relating to somatoform phenomena that exemplify compartmentalization. (The *Somatoform Dissociation Questionnaire*, SDQ-20, was developed by Nijenhuis, Spinhoven, Van Dyck, Van der Hart, & Vanderlinden (1996) in order to address this omission); b) the DES assessment may yield a low score if there are few items relating to a debilitating syndrome such as chronic depersonalization; c) since the DES captures both pathological dissociation *and* absorption, one could speculate whether “absorption might have some important hidden effect on DES scores” (Dell, 2009a); d) factor analysis yields information about phenomenological manifestations but not about their underlying mechanisms (Dell, 2009a; Holmes et al., 2005). Although the DES is one of many valid and reliable measures of dissociative symptoms that may *generally* differentiate between detachment and compartmentalization, Butler, Dorahy, & Middleton (2019) have developed the first instrument (the DCI) that is *specifically* designed to do so. The DCI detachment and compartmentalization subscales each comprise 10 items and are highly correlated with both the DES and the SDQ-20.

Sierra and Berrios (1998) have postulated that detached states evolved as a biological offset to anxiety (and debilitating affect more generally) in the face of threat. However, detachment as a perceived harbinger of imminent psychological dissolution may itself come to pose a threat, perpetuating anxiety and emotional inhibition (Hunter, Phillips, Chalder, Sierra, & David, 2003). Patients with depersonalization disorder show reduced magnitude and increased latency of skin conductance to unpleasant stimuli but not to neutral stimuli (Sierra et al., 2002). Such decrease in emotional reactivity is consistent with neuroimaging studies which suggest that emotional detachment is mediated by prefrontal (particularly right-sided) activation and limbic inhibition (Phillips et al., 2001; Sierra & Berrios, 1998; Simeon, 2009). Moreover, a recent study both replicated these findings and provided novel evidence that, in contradistinction to detachment, compartmentalization was associated with decreased prefrontal activation (Lebois et al., 2018).

In a particularly interesting illustration of compartmentalization, Kuyk, Spinhoven, & Van Dyck (1999) compared two groups of patients with postictal amnesia. One group had generalized epileptic seizures (ES) and the other had non-epileptic seizures (NES). All participants from both groups were hypnotized and given suggestions designed to facilitate the recovery of material encoded during the seizure. Using a free-recall paradigm, 85% of the NES patients recalled events during the seizure that were independently corroborated whereas *none* of the ES patients recalled anything. Thus, NES patients were able to retrieve material that had been encoded during the seizure but dissociated from conscious awareness, whereas the

ES patients who had failed to encode information during the seizure, had no information to retrieve.

Other examples of compartmentalization are provided in studies of implicit perception in which patients with functional sensory deficits exhibit below-chance performance on perceptual discrimination tasks (Bryant & McConkey, 1989; Kihlstrom, 1992). For example, people who report blindness for which there is no apparent cause demonstrate normal visual perception in that they are able to avoid obstacles. Furthermore, individuals with unexplained deafness raise their voices when white noise masks their speech and in apparently blind subjects, nystagmus is elicited by a vertically striped rotating drum (Pincus & Tucker, 1985). Similarly, implicit processing is evident during hypnosis when subjects display intact processing of information that is otherwise unavailable to unawareness as a result of suggestion (Kihlstrom, 1992). Based on a range of similarities, including neurophysiological and brain imaging studies, common psychological mechanisms have been proposed for the phenomena of conversion symptoms and of hypnosis (Oakley, 1999b).

Mechanisms: Compartmentalization

a) *General.* To reiterate, dissociative compartmentalization involves a deficit in the ability to deliberately control processes/actions that would normally be amenable to such control. The compartmentalized process is able to exert ongoing influence in diverse ways, and is reversible in principle but cannot be overcome by a simple act of will (Cardena, 1994). Drawing on his findings from hypnosis, Hilgard (1977) ushered in a variation on a Janetian theme when he postulated the simultaneous and separate activity of cognitive structures that encode potentially reversible information and that manage the majority of processing outside awareness; attention, awareness and volition are subsumed by an “executive ego” that is left free to engage in more strategic and demanding operations without interference from routine activity. Hilgard’s theory has been elaborated by a number of workers including Brown (2006) whose *integrative cognitive model* incorporates the work of others (e.g. Norman & Shallice, 1980, as cited in Conway & Pleydell-Pearce, 2000; Oakley, 1999a) in providing an account of compartmentalization.

b) *The Integrative cognitive model.* The activation of associative memory by incoming sensory information generates a number of perceptual hypotheses about the current state of affairs based on past experience. A *primary attentional system* (PAS) selects the most appropriate account and integrates it with relevant sensory information into multimodal units or *primary representations* that serve as a working model of the world and a guide for action (Brown, 2004). Primary representations provide input to a hierarchical network of behavioral programs (*schemata*) that automatically start to run when a threshold level of activation is reached. Processing at

this level of (pre-reflective) primary awareness is experienced as voluntary but *unwilled*, effortless and intuitive.

A *secondary attentional system* (SAS) may supervene when habitual/routine behavior does not suffice. This may occur in novel situations, when planning and decision making are required, when engaging in dangerous or difficult actions and when resisting temptation (Oakley, 1999b). The SAS controls action indirectly by biasing the activation levels of relevant programs via "general-purpose problem-solving algorithms, the construction of goals (or *secondary representations*) and the analysis and manipulation of primary representations" (Brown, 2006, p. 18). Such self-regulatory processing by the SAS is experienced as volitional and is accompanied by *self-awareness* (secondary awareness).

c) *Implications of the integrative cognitive model.* Given that many behaviors are avolitional (i.e. governed by the PAS), it is possible to have functional dissociation between the experience of volition and the control of thought and action. Additionally, significant discrepancies between explicit goals and automatically controlled behaviors may arise (Brown, 2006). Furthermore, there may be discrepancies between sensory data and the contents of experience since the latter may be overdetermined by prior information such as memories in the PAS cognitive system: "Indeed, there are numerous examples of how experience is often more consistent with what people know, believe, and want to believe about the world than with sensory data itself (e.g., hallucinations, certain illusions, misperceptions, "perceptual set" phenomena, placebo effects, hypnotic phenomena, defense mechanisms. . .). . ." (Brown, 2004, p. 801). Discrepancies will not be experiential, as such, because the process of generating the contents of experience are unavailable to introspection.

Compartmentalization phenomena arise from disturbances in memory retrieval associated with the PAS generation of primary presentations and/or automatic activation of action; inappropriate information (*rogue representations*) automatically selected by the PAS results in misinterpretation and determines the nature of specific compartmentalization phenomena. Thus, amnesia would result when the PAS withdraws attention from certain types of memorial information or inhibits the operation of certain memory retrieval routines. This is consistent with the dissociative processing style (DPS) (Dorahy, 2006) which may result in a failure to integrate *encoded* information from multiple sensory input streams: "... an individual could be aware of both non-traumatic and traumatic details of an event during encoding ... but could have recall failure for the traumatic information at a later point if retrieval processes become focused on other stored aspects of the event (which due to the failure to integrate the separate streams of information representing all encoded details of the event are disassociated from the threat material") (p. 37-38). Facilitated by a deficit in executive functioning, misinterpretation is driven by the activation of rogue representations

in memory which may be influenced by various factors including context, an individual's hypervigilance, mood and motivation to avoid alternative memory content (Brown, 2016).

Many aspects of the integrative cognitive model are consistent with the developmental model of the self-memory system (Conway & Pleydell-Pearce, 2000) mentioned in Part 1 of this paper. Thus, the goal hierarchy of the *working self* would be an important aspect of the control structures that make up the SAS, whereas the autobiographical knowledge base would be one part of associative memory: "By this view, autobiographical memories will be retrieved when their activation patterns in associative memory are sufficient for them to be selected by the PAS during the creation of primary associations. This may occur via the creation of new retrieval programs by the SAS, the activation of old retrieval programs by primary representations, or the direct activation of associative memory by environmental cues" (Brown, 2006, p. 22). Importantly, autobiographical memory retrieval is strongly constrained by the goals of the working self and retrieval of autobiographical memories that are potentially destabilizing (e.g., those that highlight discrepancies between goals and knowledge; those that are associated with strong affect) is limited; retrieval programs are created by the working self that specify inhibition of such memories which remain compartmentalized.

Mechanisms: Detachment

Phenomenological descriptions of detachment include a paucity or alteration of emotional experience, feeling spacey, unreal, robotic and as if in a dream or behind a pane of glass. Individuals experience themselves as floating, or as an outside observer of themselves and/or their body, and they experience changes in the size, shape and relational configuration of their body and of the world both of which may appear/feel flat, lifeless or non-specifically strange. Individuals may describe seeing/feeling a transposition of body parts and report views of the world as though it were splintered or fragmented in pixel-like fashion (Baker et al., 2003; Butler, Duran, Jasiukaitis, Koopman, & Spiegel, 1996; Sierra & Berrios, 2001). Some patients describe profound states of detachment whereby they are blank or in a void for a period of hours. Observers may report that the person appears to be in a comatose or catatonic state. According to Allen, Console, & Lewis (1999), these phenomena, traditionally subsumed by depersonalization and derealization, are encompassed by the concept of dissociative detachment.

There are three aspects that are entailed by this concept. First, severe and *content-less* absorption is salient; when people are in "a void" (Allen et al., 1999, p. 163) they are absorbed in *nothing*. Second, habitual use of severe absorption is fear-driven, may come to be passively experienced (automatic) and may engender distress and loss of control. Third,

irreversible memory gaps result: "...memory gaps are not necessarily reversible by various memory retrieval techniques" (Allen et al., 1999, p. 160). It is claimed that, in contrast to dissociation of *content* in compartmentalization, there is a dissociation of *context* in dissociative detachment whereby contexts are, effectively, distorted. There is evidence that, in the face of threatening stimuli, attention is narrowed and focused on the threat (Spiegel, 1997) to the exclusion of contextual stimuli. For example, when an assault victim focusses intently on the weapon, there is a shift of attention from the surrounds resulting in *decreased encoding of the context*.

Thus, the victim may have little memory for the perpetrator's characteristics but a clear memory of the weapon (Allen et al., 1999): "In dissociatively detached states, patients are not only narrowing their attentional focus but also coping by disengaging attention more pervasively, from both the outer and the inner worlds" (p. 164). Hence, individuals are both "detached" from the context and, conversely, in a state of terrified hypervigilance highly absorbed in the threat. "In effect, to be absorbed in one domain of awareness is to be detached from all others. Thus focused attention entails a balance between absorption-engagement and detachment-disengagement" (Allen, Fultz, Huntoon, & Brethour, 2002, p. 92).

This is entirely consistent with Beere (1995a; 1995b; 2009) whose perceptual theory of dissociation borrows from phenomenology and Gestalt psychology in postulating that, during dissociation, there is a restricted perceptual focus on the locus of threat whereas the background, which does not contain threat, is lost or loses constancy. Beere invokes figure and ground, the most elemental Gestalt organization of perception (Köhler, 1969); everyday experience involves a constant flow of different figure/ground perceptions whose background framework comprises time, world, body, mind and identity: "*I, having this mind, in this body, in this world, all of which are in time, perceive this figure in this ground*" (Beere, 2009, p. 210). For example, derealization occurs when perception focuses away from the world to another stimulus such as physical pain, and depersonalization is driven by perceptual focus away from oneself toward another percept, such as a threat in the world. In Laddis, Dell, & Korzekwa (2016), one of the authors (Laddis) maintains that, irrespective of diagnosis, *all* depersonalization and derealization "is brought about by Beere's disruptions of the perceptual background of self/mind/body/world" (p. 165).

Dissociation of context impairs the *elaborative* encoding that is inherent in declarative memory (Schacter, 1996). Hence, it is reasonable to postulate that fluctuation in level of detachment during traumatic events is a contributory factor to the fragmented nature of traumatic memories. A state of dissociative detachment during a traumatic event, decreases the likelihood of elaborative encoding reducing its integrative potential and its ability to support autobiographical memory: "...in order for ongoing experience, thought, and action to become conscious, a link must be made between

its mental representation and some mental representation of the self as agent or experiencer. . . Without such linkages certain aspects of mental life are dissociated from awareness, and are not accompanied by the experience of consciousness" (Kihlstrom, 1987, p. 1451). This is echoed by Howe and Courage (1993) who claim that autobiographical memory is organized around a sense of self. Moreover, in addition to interfering with encoding of experience, detachment is likely to stymie reflection *about* that experience that is required for memory storage: "Mental rehearsal or reactivation of unique, one-time autobiographical events may be the single most important determinant of which personal memories survive to become part of our autobiographical narrative" (Johnson & Chalfonte, 1994, p. 334).

ASPECTS OF THE SELF IN CSA

William James's (1890/1950) belief that memory is salient to the self has long been supported by observations that, in the service of *coherence*, memories may be variously modified in order to support current aspects of the self (Bartlett, 1932; Ross, 1989). As Greenwald (1980) noted, coherence is achieved by ensuring that memories are consistent with an individual's current self-images, self-beliefs and goals. These involve conceptual self-structures subsuming knowledge that include personal scripts (Nathanson, 1992; Thorne, 1995), possible selves (Markus & Nurius, 1986), internal working models (Bowlby, 2005) and relational schema (Lyons-Ruth, 1999).

To reiterate, Conway's *Self-Memory System* (SMS) (Conway & Pleydell-Pearce, 2000; Conway, 2005) postulates that memory is the result of an interaction between its two main components, the *working self* and the *autobiographical memory knowledge base*. The conjunction of autobiographical knowledge with episodic memories constitutes "specific autobiographical memory" (Conway, 2005, p. 608); episodic memories are retained in a durable form if they become linked to conceptual autobiographical knowledge. The working self maintains coherence between goals by facilitating or inhibiting access to the knowledge base. Goal change has consequences for other goals and renders the self vulnerable to destabilizing influences and less capable of efficacy. Hence, the working self may act to lower the accessibility of memories of emotional events which challenge the goal structure.

When the current goals and plans or possible selves of the working self are inconsistent with autobiographical knowledge, then the normal functioning of the SMS is impaired. Failure to resolve conflicts in the SMS, that is, incompatibilities or contradictions between knowledge and goals may lead to independent functioning and pathology. For example, a past "possible self" of a happy childhood could not be realistically maintained (although it might be pathologically maintained) when a series of memories of CSA can be recalled.

Over a hundred years ago Pierre Janet (1889, as cited in Van der Kolk, 2014) postulated that when people experience “vehement emotions” that are unable to be incorporated into existing cognitive schemas, the memories of the experience cannot be integrated into personal awareness (p. 178). Unprocessed affective experience, variously called sub-symbolic (Bucci, 1997), unformulated (Stern, 2009), dissociated (Bromberg, 2011), and situationally accessible memories (Brewin, Dalgleish, & Joseph, 1996), is devoid of cognitive symbolization and threatens the coherence of selfhood. It has been proposed that, to varying degrees, traumatization involves structural changes to the personality (Myers, 1940; Nijenhuis, 2015; Van der Hart et al., 2005) and that childhood abuse is associated with dissociation and a fragmented personality from a very young age.

This is consistent with the *Adverse Childhood Events (ACE)* study (Edwards, Fivush, Anda, Felitti, & Nordenberg, 2001) in which reported childhood abuse was associated with extensive memory gaps for childhood and with the finding that women with recovered memories of childhood abuse had impaired personal semantic memory (Hunter & Andrews, 2002). It is also consistent with studies which find that dissociation may hinder the acquisition of self-relevant information during therapy (Ebner-Priemer et al., 2009), increase the risk of dropping out of treatment (Arntz, Stupar-Rutenfrans, Bloo, Van Dyck, & Spinhoven, 2015) and predicts poor treatment outcome (Hagenaars, Van Minnen, & Hoogduin, 2010; Kleindienst et al., 2011; Rufer et al., 2006).

DISCUSSION

It has been claimed that the term “amnesia” has become so diluted that its utility in describing pathological forgetting is compromised, and is akin to using the word “assassination” in order to “describe the squashing of a bug” (Loftus, Garry, & Feldman, 1994, p. 1178). Read and Lindsay (2000) claim that: “The term “amnesia” connotes a pathological condition, created via special mechanisms distinct from those of ordinary forgetting... if nonremembering of childhood trauma is attributed to ordinary forgetting (perhaps accelerated by normal coping mechanisms), then the rationale for fostering memory recovery becomes less clear. Thus questions regarding the mechanisms underlying reports of prior periods of less or no memory for currently remembered childhood traumas are close to the heart of the controversy regarding memory-recovery work and recovered-memory experiences, and their answers have important implications for therapeutic practice” (p. 144–145).

The phenomenon of recovered memory has been well documented and cannot be reconciled with psychological accounts of “ordinary” mechanisms of forgetting (Lindsay & Read, 2001). These include trace decay

(simple forgetting with the passage of time), interference (learning of new material interferes with the ability to recall older material), cue-dependency (failure to recall information in the absence of cues) and motivated forgetting (intentionally suppressing unwanted information) (see Part 1). The failure to reconcile recovered memories with ordinary mechanisms of forgetting has led to the rejection of the phenomenon: "Forgetting something is so utterly common that trying to puff it up with a scientific name to make it appear exotic is unnecessary and may, in fact, be an example of psychological 'spin-doctoring,' the merging of science and politics" (Loftus et al., 1994, p. 1178–1179).

Furthermore, these authors ask: "[H]ow would we describe what happens to the person who goes into the supermarket specifically to get aspirin and leaves 10 minutes later with a Snickers bar, a magazine, a box of Pop-Tarts, and no aspirin? Is this amnesia, or is it simply a case of forgetting?" (p. 1178). The implied equivalence between forgetting to buy aspirin and forgetting childhood sexual abuse in order to highlight the ordinary nature of forgetting is extraordinary. Moreover, traditional accounts of forgetting mainly based on laboratory group studies of word list learning are not adequate. For example, such studies that focus largely on passive forgetting "were not designed to account for stimuli or experiences a person actively wanted to forget" (Brewin, 2012, p. 151). Put differently, such studies may elucidate how people forget to buy aspirin but they cannot tell us how children withstand trauma, nor, relatedly, how it shapes their ability to cope in its aftermath.

Childhood sexual abuse is a trauma that disrupts the normal developmental trajectory by means of a process of dissociation that is domain general (Dell, 2009b); integrative capacity is impaired "within or across one or more aspects of psychological functioning, including but not limited to identity, memory, perception, emotion, and motoric behavior" (Frewen & Lanius, 2015, p. 6). Early perceptual experiences that are characterized by abuse, result in implicit representations of threat-related attachment experiences. These challenge the phylogenetically fundamental drive to attach to caregivers (Bowlby, 2005) and must be kept at bay from non/lesser threat-related schema of self-with-others (Liotti, 2009).

The failure to integrate memories of sexual abuse with other memories includes a failure to integrate associated sensations, emotions, thoughts and behaviors (Nijenhuis, 2015) and results in gaps in experience: "[W]hat is most responsible for wiping out here-and-now experience that is 'immediately proximal' to the occurrence of trauma is the *automatic* triggering of dissociation as a defense. . . dissociation controls potentially traumatic experience by turning each domain of self into a discontinuous constellation of reality now kept apart from the others by the autohypnotic process that supports dissociation" (Bromberg, 2011, p. 50).

Defensive dissociation is consistent with the cognitive mechanisms of the Self-Memory System (Conway & Pleydell-Pearce, 2000) and of the Integrative Cognitive Model (Brown, 2006) in which memory retrieval associated with working selves and primary representations respectively, may be inhibited resulting in a compartmentalization of memories that are antithetical to the goals of the individual, or otherwise threaten the coherence of self-experience.

The coherence of experience is disrupted when dissociative detachment is activated as a defense against CSA; disruption of elaborative encoding impairs the ability to organize perceptual experience, to experience a self and to locate the relationship between them. "Elaborative encoding is a critical and perhaps necessary ingredient of our ability to remember in rich and vivid detail what has happened to us in the past. But the dependence of explicit memory on elaboration has a downside, too: if we do not carry out elaborative encoding, we will be left with impoverished recollections" (Schacter, 1996, p. 46). When there is a history of CSA impoverished recollections and an impoverished sense of self, are two sides of the same coin. Chronic reliance on dissociation relegates memories to somatosensory levels of experiencing (Van der Kolk & Van der Hart, 1989), compromises the ability to symbolize, and stymies affect regulation, reflectivity, meta-cognition and mentalization (Fonagy et al., 2002). As Bromberg (2011) observes: "The essence of dissociation is that it alters perceptual experience" (p. 70).

CSA occurs in environments that inculcate the salience of secrecy and denial (DePrince et al., 2012) and which stifle processes that counter forgetting and facilitate remembering. These include rehearsal of information (e.g., by co-constructing narratives with caregivers), minimization of avoidance (including avoidance of information, thoughts, feelings, behaviors and contexts associated with sexual abuse) and acquisition of schema that foster meta-awareness and facilitate assimilation of meaning. The drive to forget CSA is powerful as evidenced by stringent automatic efforts to avoid trauma related and trauma reminiscent internal and external stimuli (Dalenberg, 2006; Van der Hart et al., 2006) and by the forgetting of prior remembering (Schooler, 2001) as discussed in Part 1 of this paper. The goal of forgetting is well served by dissociation, a developmentally early defense (O'Neil, 2009) that continues to be enlisted when the trauma is over: "For the brain, it is *never* over...it leaves a residue of unprocessed, dissociated affect that the brain was unable to regulate. . . *What the brain cannot regulate it tries to control*" (Bromberg, 2011, p. 49).

Implications for Therapy

It has been observed that "there are no known schools of recovered memory, no conferences on how to practice recovered memory therapy nor are there any textbooks on the topic" (Schefflin, 1999, p. 2). Far from being the

mainstay of therapy, the uncovering of traumatic memory is a small part of treating survivors of CSA. Early work on comprehensive psychotherapy for survivors stipulated that, although it is not unusual for abuse memories to spontaneously emerge during the course of therapy, the recounting of details of abuse is *not* necessary for effective treatment (Courtois, 2010). In fact, patients are often reluctant to talk about their experiences of abuse and encouraging, let alone insisting, that they do so is likely to be destabilizing, retraumatizing and to reinforce dissociative defenses. In any case, information regarding past abuse is useful insofar as it enables the therapist to understand the patient's conflicts, cognitive errors, maladaptive defenses and re-enactments. Fonagy and Target (1997) note that therapeutic shifts occur when there is "a change of procedures of ways of living with oneself and others, not of autobiographical memory. . . . Change is a change of form more than of content: therapy modifies mental procedures, ways of thinking, not thoughts" (p. 213–216).

People who experience flashbacks as part of PTSD following a single incident trauma are helped by exposure-based intervention approaches; it is unnecessary to elicit more traumatic material than is already remembered in order for the conditioned fear response and frequency of intrusions to diminish (Brewin, 2011; Foa & Rothbaum, 1998). However, for people who have been repeatedly sexually abused in childhood and adolescence, the "processing of traumatic memories either through exposure or other means, should neither be the initial nor the most central focus of treatment" (DePrince et al., 2012, p. 224). Those who have suffered developmental trauma use dissociation to protect themselves by "unlinking the incompatible states of consciousness and allowing access to them only as discontinuous and cognitively unrelated mental experience" (Bromberg, 1998, p. 260).

Therapy is a triphasic phase-oriented process, in which the focus of the first stage is on safety, therapeutic alliance, affect regulation, and symptom stabilization (Courtois, 2010; Courtois, Ford, & Cloitre, 2009; Herman, 1992). In the second stage memories of trauma are addressed working within a "window of tolerance" in order to obviate the possibility of inadvertently overwhelming the patient and triggering refuge in further dissociation. The third stage includes integration, consolidation of skills acquired throughout therapy and mourning the childhood that never was. There is considerable overlap between phases as the perceived threat of the prospect of change is fiercely resisted and inevitable crises result in regression and reenactment. As Peterson (1993) observes: "many steps are necessary in order to move someone from a dissociative state to an integrated one. . . . The focus is not on abreaction but on the change points or moments in therapy where cognitive insights, reconstruction or blending and integration occur" (p. 74–5).

Despite research findings relating to mechanisms of memory distortion, there is evidence that the beliefs and practices of a significant proportion of surveyed therapists are risky and inappropriate. About a quarter

of respondents to a Canadian survey consisting of psychiatrists, psychologists and social workers endorsed “memory recovery techniques” such as age-regression, imagination work, guided imagery and hypnosis (Legault & Laurence, 2007) and more than half indicated that at least one of their clients had recovered memories of child abuse. Alarming, and more recently, some therapists still endorse misguided ideas as to the accuracy of hypnotically retrieved memories and the ability to consciously recall memories from birth (Brewin & Andrews, 2014). The situations most likely to produce false memories are those in which the following practices are persistently fostered: a) plausible information is supplied by the trusted figure of the therapist thereby strengthening autobiographical belief; b) encouragement and guided imagery enhance recollective experience particularly when imbued with encouragement and personally relevant detail; and c) uncritical acceptance of experiences boosts confidence in their veracity (Brewin & Andrews, 2016).

Memory systems that record both external perceptual sources and self-generated events such as thoughts and fantasies, raise fundamental epistemological, legal, social policy and therapeutic issues (Johnson, 2006). There are guidelines that stipulate responsible treatment of CSA and explicitly discourage suggestive or leading therapeutic practices (Courtois, 2001; Gold & Brown, 1997). De Prince et al. (2012) argue, however, that “it is not therapists who are knowledgeable about and skilled in treatments in trauma psychology who engage in these practices” (p. 225). Crucially, this highlights the fact that empirically grounded, mainstream trauma training is an essential core requirement for therapists who treat survivors of CSA (Courtois & Gold, 2009): “Taken as a whole the body of evidence suggests that it is clinicians who have *not* been adequately educated in trauma psychology that are at risk for employing suggestive approaches to therapy. What is called for, therefore, is not the suppression of trauma therapy, but just the opposite” (DePrince et al., 2012, p. 225).

CONCLUSION

The complexity of memory is highlighted by the vagaries of forgetting. Although within the range of ordinary life, emotionally arousing events are more memorable than mundane events, contemporary studies have corroborated Janet’s observations that the persistence of traumatic memories is primarily implicit as evidenced by affective, behavioral and somatic manifestations (Van der Kolk et al., 2001). It seems likely that a range of cognitive mechanisms encompassing both conscious and unconscious strategies is involved (Brown, Schefflin, & Whitfield, 1999; Dalenberg et al., 2012; Sivers, Schooler, & Freyd, 2002). Events can re-emerge when reminders are encountered and are less likely to be remembered if their elaborative encoding is

impaired and to the extent that they remain unintegrated with conceptual knowledge regarding the self; CSA that is associated with fragmentation of the self, results in dissociated self-representations with sequestration of traumatic memories and concomitant impoverished levels of semantic knowledge concerning the self (Brewin, 2012). Impediments to integration include family environments that enforce secrecy and invalidate the child's experience, conditioned avoidance of aversive (internal and external) trauma-reminiscent stimuli, the propensity of communities to turn a blind eye when perpetrators hold positions of power and the obliviousness of therapists to the nature of trauma (DePrince et al., 2012; Goldsmith, Rose Barlow, & Freyd, 2004).

When memories of trauma are triggered, they often take the form of vague, incomplete, overgeneralized, fragmented, and disorganized narratives (Van der Kolk et al., 2001). Although a memory remains inaccessible, it is not subject to change. However, memory is, at least partially, a reconstructive process and the act of repeatedly remembering and telling changes the memory and the tale that is told. Inevitably, current emotions, knowledge and understanding are invoked to recreate the past and to make meaning of the present (Van der Kolk, 2014). It is imperative that therapists who treat survivors of CSA are educated about the nature of trauma and its effects on memory, and that therapy is informed by well-established guidelines (Courtois, 2010). Research into recovered memory has shown that there are compelling mental events in which reality and fantasy may be confused, and that there is a danger of ignoring frequently encountered clinical phenomena that are not well elucidated in the laboratory.

REFERENCES

- Allen, J. G., Console, D. A., & Lewis, L. (1999). Dissociative detachment and memory impairment: reversible amnesia or encoding failure? *Comprehensive Psychiatry*, 40(2), 160–171. [https://doi.org/10.1016/s0010-440x\(99\)90121-9](https://doi.org/10.1016/s0010-440x(99)90121-9)
- Allen, J. G., Fultz, J., Huntoon, J., & Brethour, J. R. (2002). Pathological dissociative taxon membership, absorption, and reported childhood trauma in women with trauma-related disorders. *Journal of Trauma & Dissociation*, 3(1), 89–110. https://doi.org/10.1300/j229v03n01_07
- Amrhein, C., Hengmith, S., Maragos, M., & Hennig-Fast, K. (2008). Neuropsychological characteristics of highly dissociative healthy individuals. *Journal of Trauma & Dissociation*, 9(4), 525–542. <https://doi.org/10.1080/15299730802226332>
- Arntz, A., Stupar-Rutenfrans, S., Bloo, J., Van Dyck, R., & Spinhoven, P. (2015). Prediction of treatment discontinuation and recovery from borderline personality disorder: Results from an RCT comparing schema therapy and transference focused psychotherapy. *Behaviour Research and Therapy*, 74, 60–71. <https://doi.org/10.1016/j.brat.2015.09.002>

- Baker, D., Hunter, E., Lawrence, E., Medford, N., Patel, M., Senior, C., Sierra, M., Lambert, M. V., Phillips, M. L., & David, A. S. (2003). Depersonalisation disorder: Clinical features of 204 cases. *The British Journal of Psychiatry*, 182(5), 428–433. <https://doi.org/10.1192/bjp182.5.428>
- Bartlett, F. C. (1932). *Remembering: A study in experimental and social psychology*. Cambridge, MA: Cambridge University Press.
- Beere, D. (1995a). Dissociative reactions and characteristics of the trauma: Preliminary tests of a perceptual theory of dissociation. *Dissociation*, 8(3), 175–202. <http://hdl.handle.net/1794/1619>
- Beere, D. (1995b). Loss of “background”: A perceptual theory of dissociation. *Dissociation*, 8(3), 165–174. <http://hdl.handle.net/1794/1617>
- Beere, D. (2009). Dissociative perceptual reactions: The perceptual theory of dissociation. In P. F. Dell & J. A. O’Neil (Eds.), *Dissociation and the dissociative disorders: DSM-V and beyond* (pp. 209–222). New York, NY: Routledge.
- Bergouignan, L., Nyberg, L., & Ehrsson, H. H. (2014). Out-of-body-induced hippocampal amnesia. *Proceedings of the National Academy of Sciences of the United States of America*, 111(12), 4421–4426. <https://doi.org/10.1073/pnas.1318801111>
- Bernstein, E. M., & Putnam, F. W. (1986). Development, reliability, and validity of a dissociation scale. *The Journal of Nervous and Mental Disease*, 174(12), 727–735. <https://doi.org/10.1097/00005053-198612000-00004>
- Bowlby, J. (2005). *The making and breaking of affectional bonds*. New York, NY: Routledge.
- Braude, S. E. (1995). *First person plural: Multiple personality and the philosophy of mind*. Lanham, Maryland: Rowman & Littlefield Publishers, Inc.
- Brewin, C. R. (2011). The Nature and significance of memory disturbance in post-traumatic stress disorder. *Annual Review of Clinical Psychology*, 7(1), 203–227. <https://doi.org/10.1146/annurev-clinpsy-032210-104544>
- Brewin, C. R. (2012). A theoretical framework for understanding recovered memory experiences. In R. F. Belli (Ed.), *True and false recovered memories: Toward a reconciliation of the debate* (pp. 149–173). New York, NY: Springer.
- Brewin, C. R., & Andrews, B. (2014). Why it is scientifically respectable to believe in repression: A response to Patihis, Ho, Tingen, Lilienfeld, and Loftus (2014). *Psychological Science*, 25(10), 1964–1966. <https://doi.org/10.1177/0956797614541856>
- Brewin, C. R., & Andrews, B. (2016). Creating memories for false autobiographical events in childhood: A systematic review. *Applied Cognitive Psychology*, 31(1), 2–23. <https://doi.org/10.1002/acp.3220>
- Brewin, C. R., Dalgleish, T., & Joseph, S. (1996). A dual representation theory of posttraumatic stress disorder. *Psychological Review*, 103(4), 670–686. <https://doi.org/10.1037//0033-295x.103.4.670>
- Brewin, C. R., Ma, B. Y. T., & Colson, J. (2013). Effects of experimentally induced dissociation on attention and memory. *Consciousness and Cognition*, 22(1), 315–323. <https://doi.org/10.1016/j.concog.2012.08.005>
- Bromberg, P. M. (1998). *Standing in the spaces: Essays on clinical process, trauma, and dissociation*. Hillsdale, NJ: The Analytic Press.
- Bromberg, P. M. (2006). *Awakening the dreamer: Clinical journeys*. Mahwah, NJ: The Analytic Press.

- Bromberg, P. M. (2011). *The shadow of the tsunami and the growth of the relational mind*. New York, NY: Routledge.
- Brown, D., Schefflin, A. W., & Whitfield, C. L. (1999). Recovered memories: The current weight of the evidence in science and in the courts. *The Journal of Psychiatry & Law*, 27(1), 5–156. <https://doi.org/10.1177/009318539902700102>
- Brown, R. J. (2004). Psychological mechanisms of medically unexplained symptoms: An integrative conceptual model. *Psychological Bulletin*, 130(5), 793–812. <https://doi.org/10.1037/0033-2909.130.5.793>
- Brown, R. J. (2006). Different types of “dissociation” have different psychological mechanisms. *Journal of Trauma & Dissociation*, 7(4), 7–28. https://doi.org/10.1300/j229v07n04_02
- Brown, R. J. (2016). Dissociation and functional neurologic disorders. In M. Hallett, J. Stone & A. Carson (Eds.), *Handbook of clinical neurology, volume 139: Functional neurologic disorders* (pp. 85–94). Cambridge, MA: Elsevier.
- Brown, R. J., Schrag, A., & Trimble, M. R. (2005). Dissociation, childhood interpersonal trauma, and family functioning in patients with somatization disorder. *American Journal of Psychiatry*, 162(5), 899–905. <https://doi.org/10.1176/appi.ajp.162.5.899>
- Bruce, A. S., Ray, W. J., Bruce, J. M., Arnett, P. A., & Carlson, R. A. (2007). The relationship between executive functioning and dissociation. *Journal of Clinical and Experimental Neuropsychology*, 29(6), 626–633. <https://doi.org/10.1080/13803390600878901>
- Bryant, R. A. (1995). Autobiographical memory across personalities in dissociative identity disorder: A case report. *Journal of Abnormal Psychology*, 104(4), 625–631. <https://doi.org/10.1037/0021-843x.104.4.625>
- Bryant, R. A., & McConkey, K. M. (1989). Visual conversion disorder: A case analysis of the influence of visual information. *Journal of Abnormal Psychology*, 98(3), 326–329. <https://doi.org/10.1037/0021-843x.98.3.326>
- Bucci, W. (1997). *Psychoanalysis and cognitive science: A multiple code theory*. New York, NY: Guilford Press.
- Butler, C., Dorahy, M. J., & Middleton, W. (2019). The detachment and compartmentalization inventory (DCI): An assessment tool for two potentially distinct forms of dissociation. *Journal of Trauma and Dissociation*, 20(5), 526–547. <https://doi.org/10.1080/15299732.2019.1597809>
- Butler, L. D., Duran, R. E. F., Jasiukaitis, P., Koopman, C., & Spiegel, D. (1996). Hypnotizability and traumatic experience: A diathesis-stress model of dissociative symptomatology. *American Journal of Psychiatry*, 153(7 Suppl), 42–63. <https://doi.org/10.1176/ajp.153.7.42>
- Cardena, E. (1994). The domain of dissociation. In S. J. Lynn & J. W. Rhue (Eds.), *Dissociation: Clinical and theoretical perspectives* (pp. 15–31). New York, NY: Guilford Press.
- Cardena, E., & Carlson, E. (2011). Acute stress disorder revisited. *Annual Review of Clinical Psychology*, 7(1), 245–267. <https://doi.org/10.1146/annurev-clinpsy-032210-104502>
- Chefetz, R. A. (2004). Re-associating psychoanalysis and dissociation. *Contemporary Psychoanalysis*, 40(1), 123–133. <https://doi.org/10.1080/00107530.2004.10747240>

- Conway, M. A. & Pleydell-Pearce, C. W. (2000). The construction of autobiographical memories in the self-memory system. *Psychological Review*, 107(2), 261–288. <https://doi.org/10.1037//0033-295x.107.2.261>
- Conway, M. A. (2005). Memory and the self. *Journal of Memory and Language*, 53(4), 594–628. <https://doi.org/10.1016/j.jml.2005.08.005>
- Courtois, C. A. (2001). Implications of the memory controversy for clinical practice: An overview of treatment recommendations and guidelines. *Journal of Child Sexual Abuse*, 9(3–4), 183–210. https://doi.org/10.1300/j070v09n03_09
- Courtois, C. A. (2010). *Healing the incest wound: Adult survivors in therapy*. New York, NY: W. W. Norton & Company.
- Courtois, C. A. & Gold, S. N. (2009). The need for inclusion of psychological trauma in the professional curriculum: A call to action. *Psychological Trauma: Theory, Research, Practice, and Policy*, 1(1), 3–23. <https://doi.org/10.1037/a0015224>
- Courtois, C. A., Ford, J. D., & Cloitre, M. (2009). Best practices in psychotherapy for adults. In C. A. Courtois & J. D. Ford (Eds.), *Treating complex traumatic stress disorders: An evidence-based guide* (pp. 82–103). New York, NY: Guilford Press.
- Dalenberg, C. (2006). Recovered memory and the Daubert criteria: recovered memory as professionally tested, peer reviewed, and accepted in the relevant scientific community. *Trauma, violence, and Abuse*, 7(4), 274–310. <https://doi.org/10.1177/1524838006294572>
- Dalenberg, C. J., Brand, B. L., Gleaves, D. H., Dorahy, M. J., Loewenstein, R. J., Cardena, E., Frewen, P. A., Carlson, E. B., & Spiegel, D. (2012). Evaluation of the evidence for the trauma and fantasy models of dissociation. *Psychological Bulletin*, 138(3), 550–588. <https://doi.org/10.1037/a0027447>
- Davies, J. M., & Frawley, M. G. (1994). *Treating the adult survivor of childhood sexual abuse: A psychoanalytic perspective*. New York, NY: Basic Books.
- De Bellis, M. D., Woolley, D. P., & Hooper, S. R. (2013). Neuropsychological findings in pediatric maltreatment: Relationship of PTSD, dissociative symptoms, and abuse/neglect indices to neurocognitive outcomes. *Childhood Maltreatment*, 18(3), 171–183. <https://doi.org/10.1177/1077559513497420>
- Dell, P. F. (2009a). Understanding dissociation. In P. F. Dell & J. A. O'Neil (Eds.), *Dissociation and the dissociative disorders: DSM-V and beyond* (pp. 709–825). New York, NY: Routledge.
- Dell, P. F. (2009b). The phenomena of pathological dissociation. In P. F. Dell & J. A. O'Neil (Eds.), *Dissociation and the dissociative disorders: DSM-V and beyond* (pp. 225–237). New York, NY: Routledge.
- DePrince, A. P., Brown, L. S., Cheit, R. E., Freyd, J. J., Gold, S. N., Pezdek, K., & Quina, K. (2012). Motivated forgetting and misremembering: Perspectives from betrayal trauma theory. In R. F. Belli (Ed.), *True and false recovered memories: Toward a reconciliation of the debate* (pp. 193–242). New York, NY: Springer.
- Deville, G. J., Ciorciari, J., Piesse, A., Sherwell, S., Zammit, S., Cook, F., & Turton, C. (2007). Dissociative tendencies and memory performance on directed-forgetting tasks. *Psychological Science*, 18(3), 212–217. <https://doi.org/10.1111/j.1467-9280.2007.01875.x>
- Dorahy, M. J. (2006). The dissociative processing style: A cognitive organization activated by perceived or actual threat in clinical dissociators. *Journal of Trauma & Dissociation*, 7(4), 29–53. https://doi.org/10.1300/j229v07n04_03

- Dorahy, M. J., & Huntjens, R. J. C. (2007). Memory and attentional processes in dissociative identity disorder: A review of the empirical literature. In E. Vermetten, M. Dorahy & D. Spiegel (Eds.), *Traumatic dissociation: Neurobiology and treatment* (pp. 55–75). Arlington, VA: American Psychiatric Publishing, Inc.
- Ebner-Priemer, U. W., Mauchnik, J., Kleindienst, N., Schmahl, C., Peper, M., Rosenthal, Z., . . . Bohus, M. (2009). Emotional learning during dissociative states in borderline personality disorder. *Journal of Psychiatry & Neuroscience*, 34(3), 214–222. <https://www.ncbi.nlm.nih.gov/pmc/>
- Edwards, V. J., Fivush, R., Anda, R. F., Felitti, V. J., & Nordenberg, D. F. (2001). Autobiographical memory disturbances in childhood abuse survivors. *Journal of Aggression, Maltreatment & Trauma*, 4(2), 247–263. https://doi.org/10.1300/j146v04n02_11
- Elzinga, B. M., Hans Phaf, R., Ardon, A. M., & Van Dyck, R. (2003). Directed forgetting between, but not within, dissociative personality states. *Journal of Abnormal Psychology*, 112(2), 237–243. <https://doi.org/10.1037/0021-843x.112.2.237>
- Fivush, R. (1998). Children's recollections of traumatic and nontraumatic events. *Development and Psychopathology*, 10(4), 699–716. <https://doi.org/10.1017/s0954579498001825>
- Foa, E. B., & Rothbaum, B. O. (1998). *Treatment manuals for practitioners. Treating the trauma of rape: Cognitive-behavioral therapy for PTSD*. New York, NY: Guilford Press.
- Fonagy, P., & Target, M. (1997). Perspectives on the recovered memories debate. In J. Sandler & P. Fonagy (Eds.), *Monograph series of the Psychoanalysis Unit of University College, London and the Anna Freud Centre*, No. 2. *Recovered memories of abuse: True or false?* (pp. 183–216). Madison, CT: International Universities Press, Inc.
- Fonagy, P., Gergely, G., Jurist, E. L., & Target, M. (2002). *Affect regulation, mentalization, and the development of the self*. New York, NY: Other Press.
- Ford, J. D. (2013). How can self-regulation enhance our understanding of trauma and dissociation? *Journal of Trauma & Dissociation*, 14(3), 237–250. <https://doi.org/10.1080/15299732.2013.769398>
- Frewen, P. A., Brown, M. F. D., Steuwe, C., & Lanius, R. A. (2015). Latent profile analysis and principal axis factoring of the DSM-5 dissociative subtype. *European Journal of Psychotraumatology*, 6(1), 26406. <https://doi.org/10.3402/ejpt.v6.26406>
- Frewen, P., & Lanius, R. (2015). *Healing the traumatized self: Consciousness, neuroscience, treatment*. New York, NY: W. W. Norton & Company.
- Freyd, J. J., DePrince, A. P. & Gleaves, D. H. (2007). The state of betrayal trauma theory: Reply to McNally – conceptual issues, and future directions. *Memory*, 15(3), 295–311. <https://doi.org/10.1080/09658210701256514>
- Giesbrecht, T., Merckelbach, H., Geraerts, E., & Smeets, E. (2004). Dissociation in undergraduate students: Disruptions in executive functioning. *The Journal of Nervous and Mental Disease*, 192(8), 567–569. <https://doi.org/10.1097/01.nmd.0000135572.45899.f2>
- Giesbrecht, T., Merckelbach, H., Van Oorsouw, K., & Simeon, D. (2010). Skin conductance and memory fragmentation after exposure to an emotional film clip in depersonalization disorder. *Psychiatry Research*, 177(3), 342–349. <https://doi.org/10.1016/j.psychres.2010.03.010>

- Gold, S. N., & Brown, L. S. (1997). Therapeutic responses to delayed recall: beyond recovered memory. *Psychotherapy: Theory, Research, Practice, Training*, 34(2), 182–191. <https://doi.org/10.1037/h0087814>
- Goldsmith, R. E., Rose Barlow, M., & Freyd, J. J. (2004). Knowing and not knowing about trauma: Implications for therapy. *Psychotherapy: Theory, Research, Practice, Training*, 41(4), 448–463. <https://doi.org/10.1037/0033-3204.41.4.448>
- Greenwald, A. G. (1980). The totalitarian ego: Fabrication and revision of personal history. *American Psychologist*, 35(7), 603–618. <https://doi.org/10.1037//0003-066x.35.7.603>
- Guralnik, O., Giesbrecht, T., Knutelska, M., Sirroff, B., & Simeon, D. (2007). Cognitive functioning in depersonalization disorder. *The Journal of Nervous and Mental Disease*, 195(12), 983–988. <https://doi.org/10.1097/nmd.0b013e31815c19cd>
- Haaland, V. Ø., & Landrø, N. I. (2009). Pathological dissociation and neuropsychological functioning in borderline personality disorder. *Acta Psychiatrica Scandinavica*, 119(5), 383–392. <https://doi.org/10.1111/j.1600-0447.2008.01323.x>
- Hagenaars, M. A., Van Minnen, A., & Hoogduin, K. A. L. (2010). The impact of dissociation and depression on the efficacy of prolonged exposure treatment for PTSD. *Behaviour Research and Therapy*, 48(1), 19–27. <https://doi.org/10.1016/j.brat.2009.09.001>
- Herman, J. L. (1992). *Trauma and recovery: The aftermath of violence – from domestic abuse to political terror*. New York, NY: Basic Books.
- Hilgard, E. R. (1977) *Divided consciousness: Multiple controls in human thought and action*. New York, NY: Wiley.
- Holmes, E. A., Brown, R. J., Mansell, W., Pasco Fearon, R., Hunter, E. C. M., Frasquilho, F., & Oakley, D. A. (2005). Are there two qualitatively distinct forms of dissociation? A review and some clinical implications. *Clinical Psychology Review*, 25(1), 1–23. <https://doi.org/10.1016/j.cpr.2004.08.006>
- Howe, M. L., & Courage, M. L. (1993). On resolving the enigma of infantile amnesia. *Psychological Bulletin*, 113(2), 305–326. <https://doi.org/10.1037//0033-2909.113.2.305>
- Hunter, E. C. M., & Andrews, B. (2002). Memory for autobiographical facts and events: A comparison of women reporting childhood sexual abuse and non-abused controls. *Applied Cognitive Psychology*, 16(5), 575–588. <https://doi.org/10.1002/acp.815>
- Hunter, E. C. M., Phillips, M. L., Chalder, T., Sierra, M., & David, A. S. (2003). Depersonalisation disorder: A cognitive-behavioural conceptualisation. *Behaviour Research and Therapy*, 41(12), 1451–1467. [https://doi.org/10.1016/s0005-7967\(03\)00066-4](https://doi.org/10.1016/s0005-7967(03)00066-4)
- Huntjens, R. J. C., Dorahy, M. J., & Van Wees-Cieraad, R. (2013). Dissociation and memory fragmentation. In F. Kennedy, H. Kennerley & D. Pearson (Eds.), *Cognitive behavioural approaches to the understanding and treatment of dissociation* (pp. 92–103). New York, NY: Routledge.
- James, W. (1890/1950). *The principles of psychology*, (Vols 1 & 2). Mineola, NY: Dover Publications.
- Johnson, M. K. (2006). Memory and reality. *American Psychologist*, 61(8), 760–771. <https://doi.org/10.1037/0003-066X.61.8.760>

- Johnson, M. K., & Chalfonte, B. L. (1994). Binding complex memories: The role of reactivation and the hippocampus. In D. L. Schacter & E. Tulving (Eds.), *Memory systems* (pp. 311–350). Cambridge, MA: MIT Press.
- Kihlstrom, J. F. (1987). The cognitive unconscious. *Science*, 237(4821), 1445–1452. <https://doi.org/10.1126/science.3629249>
- Kihlstrom, J. F. (1992). Dissociative and conversion disorders. In D. J. Stein & J. E. Young (Eds.), *Cognitive science and clinical disorders* (pp. 247–270). San Diego, CA: Academic Press.
- Kleindienst, N., Limberger, M., Ebner-Priemer, U. W., Keibel-Mauchnik, J., Dyer, A., Berger, M., . . . Bohus, M. (2011). Dissociation predicts poor response to dialectical behavioral therapy in female patients with borderline personality disorder. *Journal of Personality Disorders*, 25(4), 432–447. <https://doi.org/10.1521/pedi.2011.25.4.432>
- Köhler, W. (1969). *The task of Gestalt psychology*. Princeton, NJ: Princeton University Press.
- Krause-Utz, A., Winter, D., Schriener, F., Chiu, C-D., Lis, S., Spinhoven, P., . . . Elzinga, B. M. (2018). Reduced amygdala reactivity and impaired working memory during dissociation in borderline personality disorder. *European Archives of Psychiatry and Clinical Neuroscience*, 268(4), 401–415. <https://doi.org/10.1007/s00406-017-0806-x>
- Kuyk, J., Spinhoven, P., & Van Dyck, R. (1999). Hypnotic recall: A positive criterion in the differential diagnosis between epileptic and pseudoepileptic seizures. *Epilepsia*, 40(4), 485–491. <https://doi.org/10.1111/j.1528-1157.1999.tb00745.x>
- Laddis, A., Dell, P. F., & Korzekwa, M. (2016). Comparing the symptoms and mechanisms of “dissociation” in dissociative identity disorder and borderline personality disorder. *Journal of Trauma & Dissociation*, 18(2), 139–173. <https://doi.org/10.1080/15299732.2016.1194358>
- Lanius, R. A., Brand, B., Vermetten, E., Frewen, P. A., & Spiegel, D. (2012). The dissociative subtype of posttraumatic stress disorder: Rationale, clinical and neurobiological evidence, and implications. *Depression and Anxiety*, 29(8), 701–708. <https://doi.org/10.1002/da.21889>
- Lanius, U. F., Paulsen, S. L., & Corrigan, F. M. (Eds.). (2014). *Neurobiology and treatment of traumatic dissociation: Toward an embodied self*. New York, NY: Springer.
- Lebois, L., Wolff, J., Lambros, A., Cabrera, K., Winternitz, S., Gonenc, A., Gruber, S., Ressler, K., & Kaufman, M. (2018). Dissociative subtypes of detachment and compartmentalization are associated with different neural activity in a masked fearful face paradigm. *Biological Psychiatry*, 83(9 Suppl), S155–156. <https://doi.org/10.1016/j.biopsych.2018.02.405>
- Legault, E., & Laurence, J.-R. (2007). Recovered memories of childhood sexual abuse: Social worker, psychologist, and psychiatrist reports of beliefs, practices, and cases. *Australian Journal of Clinical and Experimental Hypnosis*, 35(2), 111–133. <http://www.hypnosisaustralia.org.au/>
- Lindsay, D. S., & Read, J. D. (2001). The recovered memories controversy: Where do we go from here? In G. M. Davies & T. Dalgleish (Eds.), *Recovered memories: Seeking the middle ground* (pp. 71–93). Chichester, U.K.: Wiley.
- Liotti, G. (1992). Disorganized/disoriented attachment in the etiology of the dissociative disorders. *Dissociation: Progress in the Dissociative Disorders*, 5(4), 196–204. <http://hdl.handle.net/1794/1722>

- Liotti, G. (2006). A model of dissociation based on attachment theory and research. *Journal of Trauma & Dissociation*, 7(4), 55–73. https://doi.org/10.1300/j229v07n04_04
- Liotti, G. (2009). Attachment and dissociation. In P. F. Dell & J. A. O'Neil (Eds.), *Dissociation and the dissociative disorders: DSM-V and beyond* (pp. 53–65). New York, NY: Routledge.
- Loftus, E. F., Garry, M., & Feldman, J. (1994). forgetting sexual trauma: what does It Mean When 38% Forget? *Journal of Consulting and Clinical Psychology*, 62(6), 1177–1181. <https://doi.org/10.1037//0022-006x.62.6.1177>
- Lyons-Ruth, K. (1999). Two-person unconscious: Intersubjective dialogue, enactive relational representation, and the emergence of new forms of relational organization. *Psychoanalytic Inquiry*, 19(4), 576–617. <https://doi.org/10.1080/07351699909534267>
- Lyons-Ruth, K. (2006). The interface between attachment and intersubjectivity: Perspective from the longitudinal study of disorganized attachment. *Psychoanalytic Inquiry*, 26(4), 595–616. <https://doi.org/10.1080/07351690701310656>
- Main, M., & Solomon, J. (1986). Discovery of an insecure-disorganized/disoriented attachment pattern. In T. B. Brazelton & M. W. Yogman (Eds.), *Affective development in infancy* (pp. 95–124). Westport, CT: Ablex Publishing.
- Markus, H., & Nurius, P. (1986). Possible selves. *American Psychologist*, 41(9), 954–969. <https://doi.org/10.1037//0003-066x.41.9.954>
- McKinnon, M. C., Boyd, J. E., Frewen, P. A., Lanius, U. F., Jetly, R., Donald Richardson, J., & Lanius, R. A. (2016). A review of the relation between dissociation, memory, executive functioning and social cognition in military members and civilians with neuropsychiatric conditions. *Neuropsychologia*, 90, 210–234. <https://doi.org/10.1016/j.neuropsychologia.2016.07.017>
- McNally, R. J., Ristuccia, C. S., & Perlman, C. A. (2005). Forgetting of trauma cues in adults reporting continuous or recovered memories of childhood sexual abuse. *Psychological Science*, 16(4), 336–340. <https://doi.org/10.1111/j.0956-7976.2005.01536.x>
- Myers, C. S. (1940). *Shell shock in France, 1914–1918*. Oxford, U.K.: University Press; Macmillan.
- Nathanson, D. L. (1992). *Shame and pride: Affect, sex, and the birth of the self*. New York, NY: W. W. Norton & Company.
- Nijenhuis, E. R. S. (2015). *The trinity of trauma: Ignorance, fragility, and control*. Göttingen, Germany: Vandenhoeck & Ruprecht.
- Nijenhuis, E. R. S., & Van der Hart, O. (2011). Dissociation in trauma: A new definition and comparison with previous formulations. *Journal of Trauma & Dissociation*, 12(4), 416–445. <https://doi.org/10.1080/15299732.2011.570592>
- Nijenhuis, E. R. S., Spinhoven, P., Van Dyck, R., Van der Hart, O., & Vanderlinden, J. (1996). The development and psychometric characteristics of the somatoform dissociation questionnaire (SDQ-20). *The Journal of Nervous and Mental Disease*, 184(11), 688–694. <https://doi.org/10.1097/00005053-199611000-00006>
- Nijenhuis, E. R. S., Vanderlinden, J., & Spinhoven, P. (1998). Animal defensive reactions as a model for trauma-induced dissociative reactions. *Journal of Traumatic Stress*, 11(2), 243–260. <https://doi.org/10.1023/a:1024447003022>

- O'Neil, J. A. (2009). Dissociative multiplicity and psychoanalysis. In P. F. Dell & J. A. O'Neil (Eds.), *Dissociation and the dissociative disorders: DSM-V and beyond* (pp. 287–325). New York, NY: Routledge.
- Oakley, D. A. (1999a). Hypnosis and consciousness: A structural model. *Contemporary Hypnosis*, 16(4), 215–223. <https://doi.org/10.1002/ch.178>
- Oakley, D. A. (1999b). Hypnosis and conversion hysteria: A unifying model. *Cognitive Neuropsychiatry*, 4(3), 243–265. <https://doi.org/10.1080/135468099395954>
- Olsen, S. A., & Gayle Beck, J. (2012). The effects of dissociation on information processing for analogue trauma and neutral stimuli: A laboratory study. *Journal of Anxiety Disorders*, 26(1), 225–232. <https://doi.org/10.1016/j.janxdis.2011.11.003>
- Ornstein, P. A. (1995). Children's long-term retention of salient personal experiences. *Journal of Traumatic Stress*, 8(4), 581–605. <https://doi.org/10.1002/jts.2490080405>
- Peterson, J. (1993). Reply to Van der Hart/Brown article. *Dissociation*, 6, 74–75.
- Phillips, M. L., Medford, N., Senior, C., Bullmore, E. T., Suckling, J., Brammer, M. J., Andrew, C., Sierra, M., Williams, S. C. R., & David, A. S. (2001). Depersonalization disorder: Thinking without feeling. *Psychiatry Research: Neuroimaging*, 108(3), 145–160. [https://doi.org/10.1016/s0925-4927\(01\)00119-6](https://doi.org/10.1016/s0925-4927(01)00119-6)
- Pincus, J. H., & Tucker, G. J. (1985). *Behavioral neurology*. New York, NY: Oxford University Press.
- Porges, S. W. (2001). The polyvagal theory: Phylogenetic substrates of a social nervous system. *International Journal of Psychophysiology*, 42(2), 123–146. [https://doi.org/10.1016/s0167-8760\(01\)00162-3](https://doi.org/10.1016/s0167-8760(01)00162-3)
- Porges, S. W. (2011). *The polyvagal theory: Neurophysiological foundations of emotions, attachment, communication, and self-regulation*. New York, NY: W. W. Norton & Company.
- Putnam, F. W. (1997). *Dissociation in children and adolescents: A developmental perspective*. New York, NY: Guilford Press.
- Read, J. D., & Lindsay, D. S. (2000). "Amnesia" for summer camps and high school graduation: Memory work increases reports of prior periods of remembering less. *Journal of Traumatic Stress*, 13(1), 129–147. <https://doi.org/10.1023/a:1007781100204>
- Reinders, A. A. T. S., Willemsen, A. T. M., Vos, H. P. J., Den Boer, J. A., & Nijenhuis, E. R. S. (2012). Fact or factitious? A psychobiological study of authentic and simulated dissociative identity states. *PLoS ONE*, 7(6), e39279. <http://doi.org/10.1371/journal.pone.0039279>
- Rivera-Vélez, G. M., González-Viruet, M., Martínez-Taboas, A., & Pérez-Mojica, D. (2014). Post-traumatic stress disorder, dissociation, and neuropsychological performance in latina victims of childhood sexual abuse. *Journal of Child Sexual Abuse*, 23(1), 55–73. <https://doi.org/10.1080/10538712.2014.864746>
- Roca, V., Hart, J., Kimbrell, T., & Freeman, T. (2006). Cognitive function and dissociative disorder status among veteran subjects with chronic posttraumatic stress disorder: A preliminary study. *Journal of Neuropsychiatry and Clinical Neurosciences*, 18(2), 226–230. <https://doi.org/10.1176/appi.neuropsych.18.2.226>
- Ross, M. (1989). Relation of implicit theories to the construction of personal histories. *Psychological Review*, 96(2), 341–357. <https://doi.org/10.1037//0033-295x.96.2.341>

- Rufer, M., Held, D., Cremer, J., Fricke, S., Moritz, S., Peter, H., & Hand, I. (2006). Dissociation as a predictor of cognitive behavior therapy outcome in patients with obsessive-compulsive disorder. *Psychotherapy and Psychosomatics*, 75(1), 40–46. <https://doi.org/10.1159/000089225>
- Schacter, D. L. (1996). *Searching for memory: The brain, the mind, and the past*. New York, NY: Basic Books.
- Schauer, M., & Elbert, T. (2010). Dissociation following traumatic stress: Etiology and treatment. *Journal of Psychology*, 218(2), 109–127. <https://doi.org/10.1027/0044-3409/a000018>
- Schefflin, A. W. (1999). Ground lost: The false memory/recovered memory therapy debate. *Psychiatric Times*, 16(11), 1–6. Retrieved from <http://www.psychiatristtimes.com/dissociative-identity-disorder/ground-lost-false-memoryrecovered-memory-therapy-debate>
- Schimmenti, A. (2017). The developmental roots of dissociation: A multiple mediation analysis. *Psychoanalytic Psychology*, 34(1), 96–105. <https://doi.org/10.1037/pap0000084>
- Schimmenti, A., & Caretti, V. (2010). Psychic retreats or psychic pits?: Unbearable states of mind and technological addiction. *Psychoanalytic Psychology*, 27(2), 115–132. <https://doi.org/10.1037/a0019414>
- Schimmenti, A., & Caretti, V. (2016). Linking the overwhelming with the unbearable: Developmental trauma, dissociation, and the disconnected self. *Psychoanalytic Psychology*, 33(1), 106–128. <https://doi.org/10.1037/a0038019>
- Schlumpf, Y. R., Reinders, A. A. T. S., Nijenhuis, E. R. S., Luechinger, R., Van Osch, M. J. P., & Jäncke, L. (2014). Dissociative part-dependent resting-state activity in dissociative identity disorder: A controlled fMRI perfusion study. *PLoS ONE*, 9(6), e98795. <https://doi.org/10.1371/journal.pone.0098795>
- Schooler, J. W. (2001). Discovering memories of abuse in the light of meta-awareness. *Journal of Aggression, Maltreatment & Trauma*, 4(2), 105–136. https://doi.org/10.1300/j146v04n02_06
- Schore, A. N. (2003). *Affect dysregulation & disorders of the self*. New York, NY: W. W. Norton & Company.
- Schore, A. N. (2009). Attachment trauma and the developing right brain: Origins of pathological dissociation. In P. F. Dell & J. A. O'Neil (Eds.), *Dissociation and the dissociative disorders: DSM-V and beyond* (pp. 107–141). New York, NY: Routledge.
- Sears, R. R. (1936). Functional abnormalities of memory with special reference to amnesia. *Psychological Bulletin*, 33(4), 229–274. <https://doi.org/10.1037/h0059369>
- Shobe, K. K., & Schooler, J. W. (2001). Discovering fact and fiction: Case-based analyses of authentic and fabricated discovered memories of abuse. In G. M. Davies & T. Dalgleish (Eds.), *Recovered memories: Seeking the middle ground* (pp. 95–151). Chichester, U.K.: Wiley.
- Siegel, D. J. (2001). Toward an interpersonal neurobiology of the developing mind: attachment relationships, “mindsight,” and neural integration. *Infant Mental Health Journal*, 22(1–2), 67–94. [https://doi.org/10.1002/1097-0355\(200101/04\)22:1%3C67::aid-imhj3%3E3.0.co;2-g](https://doi.org/10.1002/1097-0355(200101/04)22:1%3C67::aid-imhj3%3E3.0.co;2-g)

- Sierra, M., & Berrios, G. E. (1998). Depersonalization: neurobiological perspectives. *Biological Psychiatry*, 44(9), 898–908. [https://doi.org/10.1016/s0006-3223\(98\)00015-8](https://doi.org/10.1016/s0006-3223(98)00015-8)
- Sierra, M., & Berrios, G. E. (2001). The phenomenological stability of depersonalization: Comparing the old with the new. *The Journal of Nervous and Mental Disease*, 189(9), 629–636. <https://doi.org/10.1097/00005053-200109000-00010>
- Sierra, M., Senior, C., Dalton, J., McDonough, M., Bond, A., Phillips, M. L., O'Dwyer, A. M., & David, A. S. (2002). Autonomic response in depersonalization disorder. *Archives of General Psychiatry*, 59(9), 833–838. <https://doi.org/10.1001/archpsyc.59.9.833>
- Simeon, D. (2009). Neurobiology of depersonalization disorder. In P. F. Dell & J. A. O'Neil (Eds.), *Dissociation and the dissociative disorders: DSM-V and beyond* (pp. 367–372). New York, NY: Routledge.
- Simeon, D., Knutelska, M., Nelson, D., Guralnik, O., & Schmeidler, J. (2003). Examination of the pathological dissociation taxon in depersonalization disorder. *The Journal of Nervous and Mental Disease*, 191(11), 738–744. <https://doi.org/10.1097/01.nmd.0000095126.21206.3e>
- Sivers, H., Schooler, J. W., & Freyd, J. J. (2002). Recovered memories. In V. S. Ramachandran (Ed.), *Encyclopedia of the human brain* (pp. 169–184). San Diego, CA: Academic Press.
- Spiegel, D. (1997). Trauma, dissociation, and memory. *Annals of the New York Academy of Sciences*, 821(1), 225–237. <https://doi.org/10.1111/j.1749-6632.1997.tb48282.x>
- Spiegel, D., Lewis-Fernández, R., Lanius, R., Vermetten, E., Simeon, D., & Friedman, M. (2013). Dissociative disorders in DSM-5. *Annual Review of Clinical Psychology*, 9(1), 299–326. <https://doi.org/10.1146/annurev-clinpsy-050212-185531>
- Stern, D. B. (2009). *Partners in thought: Working with unformulated experience, dissociation, and enactment*. New York, NY: Routledge.
- Thorne, A. (1995). Developmental truths in memories of childhood and adolescence. *Journal of Personality*, 63(2), 139–163. <https://doi.org/10.1111/j.1467-6494.1995.tb00805.x>
- Van der Hart, O., Nijenhuis, E. R. S., & Steele, K. (2005). Dissociation: An insufficiently recognized major feature of complex posttraumatic stress disorder. *Journal of Traumatic Stress*, 18(5), 413–423. <https://doi.org/10.1002/jts.20049>
- Van der Hart, O., Nijenhuis, E. R. S., & Steele, K. (2006). *The haunted self: Structural dissociation and the treatment of chronic traumatization*. New York, NY: W. W. Norton & Company.
- Van der Kolk, B. (2014). *The body keeps the score: Mind, brain and body in the healing of trauma*. New York, NY: Viking.
- Van der Kolk, B. A. (1996). Trauma and memory. In B. A. Van der Kolk, A. C. McFarlane & L. Weisaeth (Eds.), *Traumatic stress: The effects of overwhelming experience on mind, body, and society* (pp. 279–302). New York, NY: Guilford Press.
- Van der Kolk, B. A., & Van der Hart, O. (1989). Pierre Janet and the breakdown of adaptation in psychological trauma. *American Journal of Psychiatry*, 146(12), 1530–1540. <https://doi.org/10.1176/ajp.146.12.1530>

- Van der Kolk, B. A., Hopper, J. W., & Osterman, J. E. (2001). Exploring the nature of traumatic memory: Combining clinical knowledge with laboratory methods. *Journal of Aggression, Maltreatment & Trauma*, 4(2), 9–31. https://doi.org/10.1300/j146v04n02_02
- Waller, N. G., Putnam, F. W., & Carlson, E. B. (1996). Types of dissociation and dissociative types: A taxometric analysis of dissociative experiences. *Psychological Methods*, 1(3), 300–321. <https://doi.org/10.1037//1082-989x.1.3.300>