

Dissociation and Dissociative Identity Disorder (DID)

RAFAËLE J. C. HUNTJENS and MARTIN J. DORAHY

Abstract

Dissociative experiences are thought to occur acutely (e.g., during or immediately following trauma) or chronically and are considered to reduce the subjective distress accompanying stressful events. Growing evidence is consistent with a model that distinguishes between two qualitatively different types of phenomena—“compartmentalization” and “detachment.” *Compartmentalization* involves a deficit in the ability to deliberately control processes or actions that would normally be amendable to such control (e.g., amnesia and dissociative identities). *Detachment* refers to an experienced state of disconnection from the self or the environment (e.g., depersonalization, derealization, and numbing).

In the present contribution, we discuss both detachment and compartmentalization phenomena. In addition, we discuss both dissociation as an acute response to trauma and persistent dissociation in the form of the most severe and chronic of the dissociative disorders, dissociative identity disorder (DID). We attend to the burgeoning empirical literature on memory processing and dissociation given the central role of these cognitive operations in the development and maintenance of the dissociative disorders, and more broadly, posttraumatic symptomatology.

We end with a more general appeal for more transdiagnostic studies of dissociative phenomena, both in the areas of detachment and compartmentalization, emphasizing that dissociative disorders are not a category of mysterious diagnoses that need to be understood outside of well-known cognitive operations.

INTRODUCTION

Often controversial, rarely well understood, and at times in the history of mainstream psychological science blatantly ignored, dissociation and the dissociative disorders are now taking their place within the established psychological and psychiatric literatures. As society and science understands more fully the psychological cost of war, child abuse and interpersonal violence, dissociation and the dissociative disorders are being more clearly identified. Ever increasing sophistication in assessment and diagnostic tools are helping clinicians more accurately detect dissociative symptoms, which are the

hallmark of dissociative disorders such as dissociative identity disorder (DID). Research is showing that dissociative disorders should no longer be considered rare (Şar, 2011) and that dissociative symptoms are present in a wide range of clinical conditions including borderline personality disorder, panic disorder, eating disorders, and psychotic disorders. In addition, the most recent version of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013) has formulated a dissociative subtype of posttraumatic stress disorder (PTSD). Consequently, the study of dissociation and dissociative disorders is becoming an increasingly important scientific endeavor.

The *DSM-5* (American Psychiatric Association, 2013) broadly refers to pathological dissociation as “a disruption of and/or discontinuity in the normal integration of consciousness, memory, identity, emotion, perception, body representation, motor control, and behavior” (p. 291). While there is some contention, the available evidence can be interpreted to distinguish both conceptually and empirically between two qualitatively different types of dissociative phenomena—“compartmentalization” and “detachment” (for an overview see Holmes *et al.*, 2005). *Compartmentalization* involves a deficit in the ability to deliberately control processes or actions that would normally be amendable to such control. It encompasses amnesia (i.e., the inability to remember seemingly unforgettable events), fugues (i.e., unexpected travel accompanied with forgetting one’s identity or assuming a new self), bodily or somatoform symptoms (e.g., sensory loss and loss of motor control), and dissociative identities (i.e., aspects of self that seem to have their own memories and sense of identity). *Detachment* refers to an experienced state of disconnection from the self or the environment. People experiencing detachment often report feeling “spaced out,” “unreal,” or that they are “in a dream.”

In more acute dissociative presentations, the dissociation is related to traumatic or other overwhelming experiences, where dissociative symptoms are considered to reduce the subjective distress accompanying these events (Cardena & Carlson, 2011). The dissociation response may also persist outside the immediate trauma context, reducing full awareness of the traumatic event. In addition, it may generalize to milder aversive events, developing into the more chronic and recurrent conditions of dissociative disorders (Spiegel *et al.*, 2011).

The concept of dissociation and particularly DID has often courted controversy that has gone beyond existing data. We stay focused in the current paper on empirical data, believing it offers the most judicious way forward. Specifically, we will attend to the burgeoning empirical literature on memory processing and dissociation. Investigations into these processes have generated sophisticated and exciting studies, with findings

showing the central role of cognitive operations in the development and maintenance of the dissociative disorders, and more broadly, posttraumatic symptomatology (Brewin & Holmes, 2003; Dorahy, 2001; Ehlers & Clark, 2000; Huntjens, Dorahy, & Van Wees-Cieraad, 2013). For example, the lack of temporal continuity caused by the gaps in memory reported by dissociative patients lies at the heart of the disturbed sense of personal identity in DID. We start off discussing encoding processes associated with acute, temporary dissociative reactions to trauma in the first section and then go on to discuss amnesia between identities in the DID section.

ACUTE TRAUMA-RELATED DISSOCIATION

Dissociation, in the form of detachment, is commonly experienced during or immediately after a traumatic or other highly stressful event, such as a motor vehicle accident, assault, or rape (Marmar *et al.*, 1994). These experiences of disconnection from the self or the environment relate to the person's sense of self (depersonalization), the external world (derealization), and emotional experience (e.g., emotional numbing). The antecedent and timing of these experiences have them referred to as *peritraumatic dissociation* (i.e., dissociation occurring at or around the time of trauma) and they are a strong predictor of PTSD development (Ozer, Best, Lipsey, & Weiss, 2003).

Several trauma theories posit that experiences of dissociation during or in the immediate aftermath of trauma result in inadequate encoding of the trauma memory. More specifically, trauma memories are considered to be encoded more perceptually (i.e., processing the sensory impressions and perceptual details) while they lack conceptual processing (i.e., processing the meaning of the situation in an organized way and placing it into context with other memories) (e.g., Brewin, 2014; Brewin, Gregory, Lipton, & Burgess, 2010; Ehlers & Clark, 2000). As an example, consider a victim of a shooting who remembers vividly and involuntarily the smell of blood and the sight of the murder weapon, but does not have a complete picture of the event nor can make meaningful sense of what happened. The perceptual encoding of the traumatic event is considered to be a causal factor in the later development of intrusive memories (Lyttle, Dorahy, Hanna, & Huntjens, 2010; Michael, Ehlers, & Halligan, 2005), which are vivid memories of the event involuntarily triggered by cues that are similar to those present during the trauma.

Recent empirical data on perceptual encoding of trauma memories comes from priming studies. *Priming* refers to the advantage in ease of processing and processing speed obtained by familiar stimuli. Priming was studied both in patients with PTSD and analog samples (i.e., samples exposed to laboratory-controlled stimuli designed to mimic trauma at a lower level).

Results indicate enhanced perceptual priming and decreased conceptual priming specifically for trauma-related words in the PTSD patients compared to control groups with comparable aversive experiences. Similar findings are evident in analog studies. In addition, enhanced perceptual priming has been found to predict the later development of intrusive memories. Moreover, state dissociation (i.e., dissociation experienced during the stimulus encoding in the laboratory) has been found to predict perceptual priming (e.g., Kleim, Ehring, & Ehlers, 2012; Lyttle, Dorahy, Hanna & Huntjens, 2010; Sündermann, Hauschildt, & Ehlers, 2013). This suggests that those who experience dissociation while they are experiencing a distressing event are more likely to limit processing of that experience to perceptual representations (e.g., visual, auditory, bodily sensations, and olfactory), rather than more complex conceptual representations, which leaves them vulnerable to develop later intrusive memories.

In addition to perceptual encoding, peritraumatic dissociation has also been related to a form of inadequate encoding of trauma-related information, which leads to *memory fragmentation*. This term refers to an inability to voluntarily retrieve and describe in an organized, coherent manner a trauma memory. While several studies have provided evidence for an association between experiences of acute dissociation and trauma memory fragmentation, this relation seems restricted to contexts in which participants who experience dissociation rate the fragmentation of their own narrative of a distressing event (rather than using objective measures of fragmentation). Those with higher levels of dissociation tend to rate their narrative as more fragmented and less coherent than those who have lower dissociation. However, interestingly, when the narratives are examined, no objective evidence is found for heightened fragmentation in the high dissociators (Kindt, Van den Hout & Buck, 2005). Thus, dissociation appears to impact on the perception (or subjective experience) of having a fragmented memory of an event, rather than the memory of that event actually being fragmented [for reviews see Huntjens, Dorahy, and Van Wees-Cieraad (2013) and Bedard-Gilligan and Zoellner (2012)].

DISSOCIATIVE IDENTITY DISORDER (DID)

DID, previously known as *multiple personality disorder*, is the most severe dissociative disorder. International prevalence data using structured clinical interviews shows the prevalence of DID between 0.4% and 7.5% (studies averaged to approximately 5%) of inpatients and outpatients, depending on the country assessed, the methodology adopted and the structured clinical interview used (Şar, 2011). DID is associated with among other variables, chronic, attachment-related abuse commencing before middle childhood

(e.g., Lewis, Yeager, Swica, Pincus, & Lewis, 1997; Ross & Ness, 2010; see Dorahy *et al.*, 2014).

The disorder is characterized by different dissociative identities, which report differences in autobiographical experiences and memories, and which also report having their own sense of self and agency (i.e., they perceive themselves as different and unique from other dissociative identities and have a subjective awareness of willing and initiating their own behavior). When patients move (switch) between identities, they report related alterations in affect, behavior, memory, perception, bodily experience and cognition. Moreover, DID patients report recurrent gaps in their memory as a result of knowledge and events experienced in the past being “compartmentalized” in the different identities. The compartmentalization of information learned in one identity state may render it unavailable for retrieval in other identity states. This may pertain to the inability to retrieve autobiographical information, but also learned behavior (i.e., skills such as playing the piano). In the previous version of the DSM (DSM-IV) amnesia in DID was limited to the inability to recall important personal information. However, in the DSM-5, the amnesia criterion for DID also includes not being able to recall everyday events, that may account for amnesia experienced when different identities are moved between (APA, 2013).

In experimental research, interidentity amnesia (i.e., amnesia one identity reports for material contained in another identity) is assessed by one identity learning a set of stimuli and another identity, self-reporting amnesia for the learning trial, being tested on retrieval ability for the learned information. Earlier studies supported the existence of interidentity amnesia in DID, especially for more complex information, such as stories that contained a lot of contextual (rich, detailed) information. These studies, however, relied on the single case method or assessed only a small number of DID patients (e.g., Eich, Macauley, Loewenstein, & Dihle, 1997; Nissen, Ross, Willingham, MacKenzie & Schacter, 1988). Some also exclusively used self-report measures of amnesia (e.g., Bryant, 1995; Schacter, Kihlstrom, Kihlstrom, & Berren, 1989; for a review see Dorahy, 2001; Dorahy & Huntjens, 2007). More recent studies, employing more sophisticated methodological designs, adequate control groups, and larger patient samples, have revealed different results. For example, Huntjens, Postma, Peters, Woertman, and Van der Hart (2003) had DID patients learn a set of neutral words in identity A and were tested on word recall. The patients then switched to another identity (identity B). Identity B subjectively reported amnesia for what was learned in identity A. Subsequently, identity B learned and recalled a list of related words. When healthy control subjects perform this task, the learning of the first word list interferes with the retention of the second word list. However, in the case of dissociative amnesia between identities, no detrimental effect of list

A learning on the retrieval of list B is expected, resulting in an improved performance in DID for list B words in comparison to healthy controls. In other words, no interference in learning and retrieval is expected if the amnesic barrier between identities is as strong as subjectively experienced by the patients. The results, however, did not follow expectations. DID patients experienced as much interference in list B as the healthy controls, resulting in a comparable decreased performance on the recall of list B compared to list A. Moreover, they even reported list A words during list B recall. These results thus indicated transfer of information between identities that are experienced as compartmentalized and amnesic (i.e., not able to be remembered). Importantly, this test constitutes an assessment of whether patients were able to consciously retrieve information learned in another identity, and this contrasts with their self-reported dissociative amnesia (see also Kong, Allen, & Glisky, 2008).

It may be that dissociative barriers are more operative for negatively valenced or autobiographical material. Several studies have investigated some of these issues (Huntjens, Peters, Woertman, Van der Hart, & Postma, 2007; Huntjens, Verschuere, & McNally, 2012; for a review see Dorahy & Huntjens, 2007). An example of this is a study in which an evaluative conditioning procedure was administered to DID participants in a particular identity state (Huntjens *et al.*, 2005). This procedure results in previously neutral words acquiring an emotional connotation by repeatedly pairing them with positive and negative words. In a subsequent affective priming procedure in a second amnesic identity, participants displayed transfer of this newly acquired emotional valence in amnesic identities, which was not to be expected in cases of total interidentity amnesia. Although acknowledging important, and possibly meaningful, differences between laboratory-based tasks and real-life autobiographical events, the most striking finding in recent experimental studies of compartmentalization is an absence of objective evidence for interidentity amnesia. This absence of objective amnesia has been present when DID participants subjectively reported complete amnesia in the “test” identity for material and instructions given to the “learn” identity. Importantly, these empirical studies suggest a revision in definition of compartmentalization emphasizing the meta-cognitive beliefs that patients hold. While the patient subjectively may experience an inability to deliberately control the retrieval process, this inability resides in the subjective arena. Just as the experience of being “fat” in someone with anorexia nervosa resides in the subjective arena. The results offer potential avenues for therapeutic focus, as the subjectively experienced deficits in recall may be overcome as these beliefs become more centrally examined in therapy.

KEY ISSUES FOR FUTURE RESEARCH

Experimental studies aimed at establishing the causal role of dissociative experiences on information processing are hampered by the lack of valid and reliable methods to induce dissociation in the lab. Previous attempts to induce state dissociation (e.g., sleep deprivation, use of drugs, and mirror staring) have been nonspecific in their effects (e.g., inducing confounds) and the effect sizes of these previous manipulations have generally been small (e.g., Holmes, Brewin, & Hennessy, 2004; Krystal *et al.*, 1994). Moreover, previous attempts were nonspecific in the type of dissociation (i.e., detachment, compartmentalization) induced (e.g., Brewin, Ma, & Colson, 2013; Leonard, Telch, & Harrington, 1999; Miller, Brown, DiNardo, & Barlow, 1994; Zoellner, Sacks, & Foa, 2007). New methods to specifically induce different types of dissociation are thus essential for progress in the field.

In the section on acute, trauma-related dissociation, we described perceptual memory encoding as a possible mechanism underlying the relationship between acute dissociation and later posttraumatic complaints. Future studies may reveal other mechanisms. One of these possible mechanisms could be a lack of self-referential encoding, or not fully relating the event to the self (Halligan, Michael, Clark, & Ehlers, 2003). Clinically, a lack of self-referential encoding is evident in statements such as “I know this happened to me, but it does not seem real” (Huntjens, Dorahy, & Van Wees-Cieraad, 2013).

Controlled experimental studies as well as longitudinal studies should incorporate measures of peritraumatic and persistent dissociation, along with related emotional and cognitive factors to shed more light on the causal and maintaining factors of posttraumatic symptomatology (Panasetis & Bryant, 2003). Longitudinal studies could extend the timeline of dissociative response measurement to explore how dissociation at different points following trauma impacts on information processing. Such studies could examine correlates and predictors of acute dissociation including prior low control of emotions, dissociative trait tendencies, and lower education (Engelhard, Van den Hout, Kindt, Arntz, & Schouten, 2003).

Regarding interidentity amnesia, we have suggested a change in definition emphasizing the meta-cognitive beliefs that patients may hold. Future research will have to further elucidate the content and scope of these meta-cognitive beliefs. However, meta-cognitive beliefs that are inconsistent with objective reality are not specific to dissociative disorders, but are also seen in many other psychiatric conditions, including PTSD (e.g., “I’m having intrusive memories so I must be going crazy”). We thus argue that memory anomalies evident in DID are consistent with memory mechanisms and processing issues evident in other psychiatric problems.

Relatedly, we would like to conclude with a more general appeal for more transdiagnostic (i.e., across different disorders) studies of dissociative phenomena. Meta-cognitive beliefs associated with the central symptomatology are seen in many psychiatric conditions (e.g., the meta-belief that one is going crazy when their mind starts racing during panic), including for compartmentalization in DID. Moreover, experiences of temporary or persistent detachment are evident in the context of other conditions. A review indicated that symptoms of depersonalization and derealization have been described in many clinical conditions including agoraphobia, panic disorder, obsessive-compulsive disorder, eating disorders, depression, psychosis, and personality disorders (Hunter, Sierra, & David, 2004). Transdiagnostic studies assessing the subjective nature of amnesia, along with the prevalence of detachment, its (differing) content in separate disorders, its association with trauma, and its role in information processing are thus needed to emphasize that dissociative disorders are not a category of mysterious disorders that need to be understood outside of well-known cognitive operations.

REFERENCES

- American Psychiatric Association (APA) (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: Author.
- Bedard-Gilligan, M., & Zoellner, L. A. (2012). Dissociation and memory fragmentation in post-traumatic stress disorder: An evaluation of the dissociative encoding hypothesis. *Memory, 20*, 277–299.
- Brewin, C. R. (2014). Episodic memory, perceptual memory, and their interaction: Foundations for a theory of posttraumatic stress disorder. *Psychological Bulletin, 140*, 69–97.
- Brewin, C. R., Gregory, J. D., Lipton, M., & Burgess, N. (2010). Intrusive images in psychological disorders: Characteristics, neural mechanisms, and treatment implications. *Psychological Review, 117*, 210–232.
- Brewin, C., & Holmes, E. (2003). Psychological theories of posttraumatic stress disorder. *Clinical Psychology Review, 23*, 339–376.
- Brewin, C. R., Ma, B. Y. T., & Colson, J. (2013). Effects of experimentally induced dissociation on attention and memory. *Consciousness and Cognition, 22*, 315–323.
- Bryant, R. A. (1995). Autobiographical memory across personalities in dissociative identity disorder: A case report. *Journal of Abnormal Psychology, 104*, 625–631.
- Cardena, E., & Carlson, E. B. (2011). Acute stress disorder revisited. *Annual Review of Clinical Psychology, 7*, 245–267.
- Dorahy, M. J. (2001). Dissociative identity disorder and memory dysfunction: The current state of experimental research, and its future directions. *Clinical Psychology Review, 21*, 771–795.
- 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.
- Ehlers, A., & Clark, D. M. (2000). A cognitive model of posttraumatic stress disorder. *Behaviour Research and Therapy*, *38*, 319–345.
- Eich, E., Macauley, D., Loewenstein, R. J., & Dohle, P. H. (1997). Memory, amnesia, and dissociative identity disorder. *Psychological Science*, *8*, 417–422.
- Engelhard, I. M., Van den Hout, M., Kindt, M., Arntz, A., & Schouten, E. (2003). Peritraumatic dissociation and posttraumatic stress after pregnancy loss: A prospective study. *Behaviour Research and Therapy*, *41*, 67–78.
- Halligan, S. L., Michael, T., Clark, D. M., & Ehlers, A. (2003). Posttraumatic stress disorder following assault: The role of cognitive processing, trauma memory, and appraisals. *Journal of Consulting and Clinical Psychology*, *71*, 419–431.
- Holmes, E. A., Brewin, C. R., & Hennessy, R. G. (2004). Trauma films, information processing, and intrusive memory development. *Journal of Experimental Psychology: General*, *133*, 3.
- Holmes, E. A., Brown, R. J., Mansell, W., Fearon, R. P., 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*, 1–23.
- Hunter, E. C. M., Sierra, M., & David, A. S. (2004). The epidemiology of depersonalisation and derealisation: A systematic review. *Social Psychiatry and Psychiatric Epidemiology*, *39*, 9–18.
- Huntjens, R. J. C., Dorahy, M. J., & Van Wees-Cieraad, R. (2013). Dissociation and memory fragmentation. In F. Kennedy, H. Kennerley & D. Pearson (Eds.), *Dissociation and cognitive therapy* (pp. 92–103). London, England: Routledge.
- Huntjens, R. J. C., Peters, M. L., Postma, A., Woertman, L., Effting, M., & Van der Hart, O. (2005). Transfer of newly acquired stimulus valence between identities in dissociative identity disorder (DID). *Behaviour Research and Therapy*, *43*, 243–255.
- Huntjens, R. J. C., Peters, M. L., Woertman, L., Van der Hart, O., & Postma, A. (2007). Memory transfer for emotionally valenced words between identities in dissociative identity disorder. *Behaviour Research and Therapy*, *45*, 775–789.
- Huntjens, R. J. C., Postma, A., Peters, M. L., Woertman, L., & Van der Hart, O. (2003). Interidentity amnesia for neutral, episodic information in dissociative identity disorder. *Journal of Abnormal Psychology*, *112*, 290–297.
- Huntjens, R. J. C., Verschuere, B., & McNally, R. J. (2012). Autobiographical amnesia in patients with dissociative identity disorder. *Plos One*, *7*. doi:e40580
- Kindt, M., Van den Hout, M., & Buck, N. (2005). Dissociation related to subjective memory fragmentation and intrusions but not to objective memory disturbances. *Journal of Behavior Therapy and Experimental Psychiatry*, *36*, 43–59.
- Kleim, B., Ehring, T., & Ehlers, A. (2012). Perceptual processing advantages for trauma-related visual cues in post-traumatic stress disorder. *Psychological Medicine*, *42*, 173–181.
- Kong, L. L., Allen, J. J. B., & Glisky, E. L. (2008). Interidentity memory transfer in dissociative identity disorder. *Journal of Abnormal Psychology*, *117*, 686–692.

- Krystal, J. H., Karper, L. P., Seibyl, J. P., Freeman, G. K., Delaney, R., Bremner, J. D., ... , Charney, D. S. (1994). Subanesthetic effects of the noncompetitive NMDA antagonist, ketamine, in humans. Psychotomimetic, perceptual, cognitive, and neuroendocrine responses. *Archives of General Psychiatry*, *51*, 199–214.
- Leonard, K. N., Telch, M. J., & Harrington, P. J. (1999). Dissociation in the laboratory: A comparison of strategies. *Behaviour Research and Therapy*, *37*, 49–61.
- Lewis, D. O., Yeager, C. A., Swica, Y., Pincus, J. H., & Lewis, M. (1997). Objective documentation of child abuse and dissociation in 12 murderers with dissociative identity disorder. *The American Journal of Psychiatry*, *154*, 1703–1710.
- Lyttle, N., Dorahy, M. J., Hanna, D., & Huntjens, R. J. C. (2010). Conceptual and perceptual priming and dissociation in chronic posttraumatic stress disorder. *Journal of Abnormal Psychology*, *119*, 777–790.
- Marmar, C. R., Weiss, D. S., Schlenger, W. F., Fairbank, J. A., Jordon, K., Kulka, R. A., & Hough, R. L. (1994). Peritraumatic dissociation and posttraumatic stress in male Vietnam theater veterans. *American Journal of Psychiatry*, *151*, 902–907.
- Michael, T., Ehlers, A., & Halligan, S. L. (2005). Enhanced priming for trauma-related material in posttraumatic stress disorder. *Emotion*, *5*, 103–112.
- Miller, P. P., Brown, T. A., DiNardo, P. A., & Barlow, D. H. (1994). The experimental induction of depersonalization and derealization in panic disorder and nonanxious subjects. *Behaviour Research and Therapy*, *32*, 511–519.
- Nissen, M. J., Ross, J. L., Willingham, D. B., MacKenzie, T. B., & Schacter, D. L. (1988). Memory and awareness in a patient with multiple personality disorder. *Brain and Cognition*, *8*, 117–134.
- Ozer, E. J., Best, S. R., Lipsey, T. L., & Weiss, D. S. (2003). Predictors of posttraumatic stress disorder and symptoms in adults: A meta-analysis. *Psychological Bulletin*, *129*, 52–73.
- Panasetis, P., & Bryant, R. A. (2003). Peritraumatic versus persistent dissociation in acute stress disorder. *Journal of Traumatic Stress*, *16*, 563–566.
- Ross, C. A., & Ness, L. (2010). Symptom patterns in dissociative identity disorder patients and the general population. *Journal of Trauma & Dissociation*, *11*, 458–468.
- Şar, V. (2011). Epidemiology of dissociative disorders: An overview. *Epidemiology Research International*, *01/2011*, 1–8. doi:10.1155/2011/404538
- Schacter, D. L., Kihlstrom, J. F., Kihlstrom, L. C., & Berren, M. B. (1989). Autobiographical memory in a case of multiple personality disorder. *Journal of Abnormal Psychology*, *98*, 508–514.
- Spiegel, D., Loewenstein, R. J., Lewis-Fernández, R., Sar, V., Simeon, D., Vermetten, E., ... Dell, P. F. (2011). Dissociative disorders in DSM-5. *Depression and Anxiety*, *28*, 824–852.
- Sündermann, O., Hauschildt, M., & Ehlers, A. (2013). Perceptual processing during trauma, priming and the development of intrusive memories. *Journal of Behavior Therapy and Experimental Psychiatry*, *44*, 213–220.
- Zoellner, L. A., Sacks, M. B., & Foa, E. B. (2007). Dissociation and serenity induction. *Journal of Behavior Therapy and Experimental Psychiatry*, *38*, 252–262.

FURTHER READING

- Dorahy, M. J., Brand, B. L., Şar, V., Krüger, C., Stavropoulos, P., Martínez-Taboas, A., ... Middleton, W. (2014). Dissociative identity disorder: An Empirical overview. *Australian & New Zealand Journal of Psychiatry*, *48*, 402–417.
- 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.
- Dalenberg, C. J., Brand, B. L., Gleaves, D. H., Dorahy, M. J., Loewenstein, R. J., Cardeña, E., ... Spiegel, D. (2012). Evaluation of the evidence for the trauma and fantasy models of dissociation. *Psychological Bulletin*, *138*, 550–588.
- Giesbrecht, T., Lynn, S. J., Lilienfeld, S. O., & Merckelbach, H. (2008). Cognitive processes in dissociation: An analysis of core theoretical assumptions. *Psychological Bulletin*, *134*, 617–647. doi:10.1037/0033-2909.134.5.617
- Huntjens, R. J. C., Dorahy, M. J., & Van Wees-Cieraad, R. (2013). Dissociation and memory fragmentation. In F. Kennedy, H. Kennerley & D. Pearson (Eds.), *Dissociation and cognitive therapy* (pp. 92–103). London, England: Routledge.

RAFAËLE J. C. HUNTJENS SHORT BIOGRAPHY

Rafaële J. C. Huntjens is Assistant Professor in the Department of Clinical Psychology, University of Groningen, the Netherlands. She has published on memory processes in trauma-related disorders. More information and a list of publications can be found on her university webpage <http://www.rug.nl/staff/r.j.c.huntjens/>.

MARTIN J. DORAHY SHORT BIOGRAPHY

Martin J. Dorahy is Associate Professor in the Department of Psychology, University of Canterbury, Christchurch, New Zealand. He also maintains a private practice focused primarily on complex trauma disorders. More information and a list of publications can be found on his university webpage <http://www.psyc.canterbury.ac.nz/people/dorahy.shtml>.

RELATED ESSAYS

What Is Neuroticism, and Can We Treat It? (*Psychology*), Amantia Ametaj *et al.*

Genetics and the Life Course (*Sociology*), Evan Charney

Peers and Adolescent Risk Taking (*Psychology*), Jason Chein

Delusions (*Psychology*), Max Coltheart

- Misinformation and How to Correct It (*Psychology*), John Cook *et al.*
- Problems Attract Problems: A Network Perspective on Mental Disorders (*Psychology*), Angélique Cramer and Denny Borsboom
- Expertise (*Sociology*), Gil Eyal
- Controlling the Influence of Stereotypes on One's Thoughts (*Psychology*), Patrick S. Forscher and Patricia G. Devine
- Emerging Evidence of Addiction in Problematic Eating Behavior (*Psychology*), Ashley Gearhardt *et al.*
- Depression (*Psychology*), Ian H. Gotlib and Daniella J. Furman
- Positive Emotion Disturbance (*Psychology*), June Gruber and John Purcell
- Family Relationships and Development (*Psychology*), Joan E. Grusec
- Insomnia and Sleep Disorders (*Psychology*), Elizabeth C. Mason and Allison G. Harvey
- Mental Imagery in Psychological Disorders (*Psychology*), Emily A. Holmes *et al.*
- Normal Negative Emotions and Mental Disorders (*Sociology*), Allan V. Horwitz
- Computer Technology and Children's Mental Health (*Psychology*), Philip C. Kendall *et al.*
- Cultural Neuroscience: Connecting Culture, Brain, and Genes (*Psychology*), Shinobu Kitayama and Sarah Huff
- Mechanisms of Fear Reducation (*Psychology*), Cynthia L. Lancaster and Marie-H. Monfils
- Understanding Risk-Taking Behavior: Insights from Evolutionary Psychology (*Psychology*), Karin Machluf and David F. Bjorklund
- Evolutionary Perspectives on Animal and Human Personality (*Anthropology*), Joseph H. Manson and Lynn A. Fairbanks
- Disorders of Consciousness (*Psychology*), Martin M. Monti
- Social Classification (*Sociology*), Elizabeth G. Pontikes
- Cognitive Remediation in Schizophrenia (*Psychology*), Clare Reeder and Til Wykes
- Cognitive Bias Modification in Mental (*Psychology*), Meg M. Reuland *et al.*
- Born This Way: Thinking Sociologically about Essentialism (*Sociology*), Kristen Schilt
- Clarifying the Nature and Structure of Personality Disorder (*Psychology*), Takakuni Suzuki and Douglas B. Samuel
- Taking Personality to the Next Level: What Does It Mean to Know a Person? (*Psychology*), Simine Vazire and Robert Wilson
- A Gene-Environment Approach to Understanding Youth Antisocial Behavior (*Psychology*), Rebecca Waller *et al.*
- Crime and the Life Course (*Sociology*), Mark Warr and Carmen Gutierrez

Rumination (*Psychology*), Edward R. Watkins

Emotion Regulation (*Psychology*), Preee Zarolia *et al.*