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Dissociation and Dissociative Disorders Reconsidered: Beyond Sociocognitive and Trauma Models Toward a Transtheoretical Framework

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Abstract

For more than 30 years, the posttraumatic model (PTM) and the sociocognitive model (SCM) of dissociation have vied for attention and empirical support. We contend that neither perspective provides a satisfactory account and that dissociation and dissociative disorders (e.g., depersonalization/derealization disorder, dissociative identity disorder) can be understood as failures of normally adaptive systems and functions. We argue for a more encompassing transdiagnostic and transtheoretical perspective that considers potentially interactive variables including sleep disturbances; impaired self-regulation and inhibition of negative cognitions and affects; hyperassociation and set shifts; and deficits in reality testing, source attributions, and metacognition. We present an overview of the field of dissociation, delineate uncontested and converging claims across perspectives, summarize key multivariable studies in support of our framework, and identify

empirical pathways for future research to advance our understanding of dissociation, including studies of highly adverse events and dissociation.

Contents

INTRODUCTION

From Janet's [1973 (1889)] seminal writings to the present, researchers, theorists, and the public have been captivated, perplexed, and highly skeptical of dissociation and dissociative disorders. Dissociative symptoms and experiences range from common lapses in attention and other cognitive failures, such as minor memory problems, daydreaming, and nonpathological absorption, to the more debilitating symptoms of dissociative disorders, including dissociative identity disorder (DID), depersonalization/derealization disorder (DDD), and dissociative amnesia. Dissociative disorders are diagnosed when evidence exists of marked disruptions in the integration of consciousness, memory, motor control and perception, body representation, and emotion and identity (APA 2013).

Historically, Janet's view of dissociation as an unconscious, automatic, defensive coping response to highly aversive events was soon overshadowed by psychoanalytic theory and its preoccupation and fascination with repression. Later, in the twentieth century, interest in dissociation was marginalized by failures to find laboratory evidence for dissociated ("divided") consciousness (Rosenberg 1959, White & Shevach 1942), only to be reinvigorated by skyrocketing reports of multiple personality disorder (now called dissociative identity disorder/DID) in the 1980s. In the 1990s and early twenty-first century, these reports, alongside dramatizations of DID in movies and other media (Byrne 2001), propelled skepticism and fueled controversy about dissociation and recovered memories.

These acrimonious debates—mostly played out on academic turf—came to be known popularly as the memory wars and are arguably still very much alive in disagreements regarding dissociative amnesia (Otgaar et al. 2019, Patihis et al. 2014), a controversial disorder marked by an inability to recall important autobiographical information inconsistent with ordinary forgetting (APA 2013, p. 298). At the front line of contemporary academic skirmishes is the question of the genesis of dissociative disorders—that is, whether dissociation is a posttraumatic response to psychological trauma [i.e., the posttraumatic model (PTM)] or is, instead, a response to social, cognitive, and cultural influences [i.e., the sociocognitive model (SCM)]. Much of the firepower in this debate has been expended on DID, which is marked by extreme discontinuities in thoughts, emotions, and behaviors in which an individual's ordinary sense of unity and continuity of self appears fractured and fragmented into two or more distinct personality states and is accompanied by dissociative amnesia (APA 2013).

Less controversial, yet still not well understood, is DDD. In DDD, symptoms of (*a*) persistent depersonalization (e.g., unreal sense of self; detachment; being an outside observer of thoughts, feelings, and actions; emotional numbing), (*b*) derealization (unreal sense of surroundings, individuals, and objects; dreamlike state; foggy and visually distorted perception), or both depersonalization and derealization are persistent (APA 2013).

Prevalence of Dissociative Disorders

The diagnosis of DDD might be as common as schizophrenia or bipolar disorder, with lifetime prevalence in the United States falling in the range of 1% to 3% (Aderibigbe et al. 2001, Ross 1991). In about two-thirds of cases, the symptoms are present most of the time or continually and may last from hours to years or decades in extreme cases (Simeon 2009). Estimates of the prevalence of DID vary widely (see Lynn et al. 2019a), from extremely rare to 1–2% in the general population, with notably higher rates in inpatient settings (1–9.6%). Dissociative amnesia reports are highly variable in prevalence (0% overall; <1% in China; 7.3% in Turkey; see Chiu et al. 2017b, Lynn et al. 2019a).

Approximately a fifth of psychiatry outpatients report clinically significant dissociative symptoms (Yanartas et al. 2015). By one estimate (Ellason et al. 1996), DID patients met criteria for 8 Axis I disorders and 4.5 Axis II disorders; other studies have shown that one-half to more than two-thirds of patients with DID meet diagnostic criteria for borderline personality disorder (BPD; Coons et al. 1988, Horevitz & Braun 1984) and that 72.5% of BPD patients were diagnosed with a dissociative disorder (Sar 2006).

Dissociation is thus a "transdiagnostic symptom of psychopathology and may even be a risk factor across all forms of psychopathology" (Ellickson-Larew et al. 2020, p. 126; see also Lyssenko et al. 2018). The transdiagnostic nature of dissociative symptoms is evident in high rates of symptoms and disorders that occur with DID or DDD and range the gamut of psychopathology (e.g., schizophrenia spectrum disorders, BPD, anxiety, depression, avoidant and obsessive–compulsive personality, posttraumatic stress symptoms, conversion disorder, hallucinations, sleep problems, eating disorders, cognitive disorganization, alexithymia, substance abuse, suicidal and aggressive actions) (Černis et al. 2020, Lynn et al. 2019a).

Comorbidity of Dissociative Disorders

The high comorbidity of dissociative disorders with other disorders and symptoms poses interpretive challenges: Comorbidity often precludes the possibility or option to (*a*) exclude distress and negative emotionality (e.g., neuroticism/trait anxiety/depression/shame or general psychopathology) (Chiu et al. 2015) in accounting for dissociation or a particular research outcome and (*b*) isolate the specific effects of trauma, for example, on dissociation apart from the confounding effects of other disorders. Not surprisingly, some researchers contend that the DID diagnosis may be a severity marker for extreme variants of many other disorders (North et al. 1993).

The fact that dissociative symptoms degrade quality of life (Polizzi et al. 2022) and permeate diverse and severe manifestations of psychopathology—recurrent hospitalizations, suicide, and high rates of disability (Langeland et al. 2020)—underscores the warrant for greater acknowledgment and attention on the part of researchers, theorists, and clinicians. To this end, we present an overview of dissociative disorders and the broader field of dissociation from the vantage point of major models of dissociation. We highlight areas where scholars agree and disagree, and in doing so, we correct several misconceptions that detract from needed focus on significant issues. We contend that neither the dominant PTM nor the competing SCM provides satisfactory accounts of dissociation (see also Lynn et al. 2019b). We then suggest that dissociation is best understood as emerging from a matrix of potentially interactive causal variables and is therefore multidetermined and amenable to exploration via different levels of analysis ranging from biological to social and cultural levels. We elaborate and extend an evolving transdiagnostic and transtheoretical perspective on dissociation that features multiple potential moderators and mediators and pathways to dissociative conditions. In conclusion, we present unresolved issues and chart a research agenda to advance our understanding of dissociation.

Because of space constraints, this article cannot do justice to the controversial topic of dissociative amnesia and the complex issues surrounding it (Brand et al. 2017, Merckelbach & Patihis 2018). Moreover, as we noted elsewhere (Lynn et al. 2019b), we believe that an adequate account of dissociative amnesia must await more convincing corroboration of the phenomenon (Mangiulli et al. 2021). We therefore focus our discussion on DDD and DID; we recognize that although DDD and DID are both considered dissociative disorders, they may be very different in their etiologies, which have yet to be fully elaborated. We also are not positioned (again, because of space constraints) to discuss the controversial issue of dissociation in posttraumatic stress disorder (PTSD) and controversial and complex questions regarding the overlap between conversion

disorders and dissociation (Spiegel et al. 2013). Finally, in an earlier review, we discussed how etiological variables influential in dissociative conditions are also relevant in disorders comorbid with them, such as BPD and schizophrenia spectrum disorders (see Lynn et al. 2019b), so we do not here amplify how our framework applies to different psychological conditions.

COMPETING MODELS OF DISSOCIATION

The Posttraumatic Model

The PTM is epitomized both in Janet's [1973 (1889)] early depiction of dissociation as an internal coping mechanism in response to inescapable psychic pain and in Dalenberg et al.'s (2012, p. 551) contemporary description of dissociation as a "phylogenetically important aspect of the psychobiological response to threat and danger that allows for automatization of behavior, analgesia, depersonalization, and isolation of catastrophic experiences to enhance survival during and in the aftermath of these events." Using dissociation as a defensive strategy to cope with trauma can allegedly compartmentalize experiences and memories in discrete personalities or personality states (sometimes called alter personalities) in DID, each imbued with its own unique pattern of personality traits, attitudes, interests, and life experiences. More recently, emphasis has shifted to describing the phenomenology of DID in terms of personality states rather than full-blown evolved personalities (APA 2013; DSM-5). Alternatively, the experience of the self and the environment as "unreal" in depersonalization/derealization can be a means of distancing from here and now adverse events or stressors and reminders of trauma.

Support for the PTM derives mostly from consistent yet moderate trauma–dissociation correlations (Dalenberg et al. 2012). However, recent research and theory inspired by the trauma model have included studies of distress and disruptions/disorganization in attachment as etiological explanations (Marcusson-Clavertz et al. 2017), thus opening the PTM to consider more complex and interactive determinants of dissociative symptoms (Buchnik-Daniely et al. 2021, Schimmenti & Caretti 2016). Reflecting greater precision in theorizing regarding trauma and distress in recent years, there is recognition that early and severe trauma is probably more influential in DID, whereas distress and negative affect might be more specific and pivotal to DDD and less debilitating manifestations of dissociation (Buchnik-Daniely et al. 2021). Additionally, there is (*a*) awareness that internal (psychiatric symptoms) versus external sources (stressful events) of distress might have different implications for dissociative symptoms (Soffer-Dudek & Shahar 2014); (*b*) an appreciation among trauma/attachment theorists for understanding how dissociative and other symptoms interact in potentially higher-order models (Schimmenti 2016); and (*c*) acknowledgment that the trauma–dissociation link may vary in terms of healthy versus clinical samples (Buchnik-Daniely et al. 2021, Dalenberg et al. 2012). Recently, researchers have explored the value of nesting trauma-related constructs in a broader biopsychosocial model that encompasses metacognitive and sociocultural factors (Şar et al. 2017) and have eschewed the polarization of the PTM and the SCM (Sar et al. 2013).

Criticisms of the PTM have been leveled elsewhere (Lynn et al. 2019b) and can be summarized as pivoting on concerns regarding (*a*) highly variable correlations of measure of trauma with measures of dissociation [nonclinical samples: $r = -0.013$ (not significant) to $r = 0.44$; clinical samples: $r = -0.14$ (not significant) to $r = 0.63$] (see Dalenberg et al. 2012, Patihis & Lynn 2017); (*b*) the failure to report any history of trauma or even neglect in some cases of serious dissociative disorders, including DID (Briere & Runtz 2015); (*c*) the fact that the great majority of studies of the dissociation–trauma link are based on cross-sectional (rather than longitudinal) designs with retrospective, uncorroborated self-reports of trauma as one of the principal measures; (*d*) concerns about inflated trauma–dissociation correlations due to demand characteristics, measurement of

dissociation and trauma in the same experimental context (i.e., context effects; Patihis & Lynn 2017), and overendorsement of atypical or eccentric symptoms (Merckelbach et al. 2017); and (*e*) challenges in falsifying the PTM and discerning what evidence would count against it, as the line between what is and what is not a traumatic event mostly remains unspecified.

Another concern is that the PTM does not specify whether trauma is a necessary or sufficient precursor to dissociative responses under different circumstances or whether there are meaningful nontrauma pathways to dissociation (e.g., affect dysregulation; Briere & Runtz 2015). Nor do proponents of the PTM typically specify whether the effects of trauma are direct or indirect and operate via other mediators or moderators such as sleeping patterns, emotion regulation, and increased stress levels or consider potential recursive relations between trauma and moderators of dissociative responses. Dissociation as expressed in DID, in DDD, and in dissociation measured as a trait in normative samples may well differ in their correlates and antecedents, trauma-based or otherwise—a concern that pertains to sociocognitive models as well. Finally, the PTM offers little insight regarding how or why some people but not others adopt dissociation as a coping strategy when other coping strategies are potentially effective (e.g., emotion-focused coping).

The Sociocognitive Model

The SCM is explicitly an open, fluid, multifactorial perspective that can accommodate a wide range of social, cultural, and cognitive explanatory variables (Lilienfeld et al. 1999, Lynn et al. 2014, Spanos 1994). The SCM questions whether trauma is an exclusive or necessarily potent catalyst of dissociation. The SCM contends that the manifestations of dissociative disorders, especially DID, are at least partially shaped by media influences (e.g., film, television, books, Internet) and psychotherapies that foster attributions of disturbing thoughts and shifting mood states to multiple indwelling selves, often against a backdrop of serious psychopathology such as BPD or schizotypy.

Whether cued by psychotherapy (e.g., guided imagery, hypnosis, naming and interacting with alter personalities and mapping personality systems), the media, or their combination, a narrative of multiple selves, which split off to cope with trauma, both contextualizes and explains puzzling and disturbing behaviors or symptoms. High levels of suggestibility and fantasy proneness (i.e., habitual and long-standing tendency to become immersed in vivid imagery, daydreaming, fantasies), cognitive failures such as memory lapses, and the propensity to overreport symptoms and unusual experiences are thought to increase credibility and identification with the narrative of a fragmented self. Given the potential of false memories in response to suggestive psychotherapies and via media (e.g., depictions of DID associated with abuse), the SCM asserts a cautious stance regarding the credibility of recovered memories, especially uncorroborated recollections of childhood trauma, in cases where none were reported prior to intervention.

Gleaves et al. (2001) referred to the SCM as the "iatrogenic" theory of DID. Yet this characterization is not accurate. The SCM does not assume that just because a presentation of DID first arises in psychotherapy, the symptoms are exclusively iatrogenic. Rather, widespread sociocultural influences and expectations, including but not limited to media influences (Byrne 2001), may play a role in DID, and personality traits such as fantasy proneness could increase susceptibility to sociocultural influences. Importantly, the narrative of multiple selves can also arise from people's own constructions of why they behave, think, and feel so markedly different on different occasions.

The SCM does not, however, rule out the possibility that some self-construals of dissociative narratives arise from suggestive therapies. Proponents of the PTM (Brand et al. 2016, p. 258)

contend that "DID can be overlooked due to the polysymptomatic profile and patients' tendency to be ashamed and avoidant about revealing their dissociative symptoms." They also argue that, on average, DID patients spend years in the mental health system before being correctly diagnosed. However, another possibility is that DID is easily overlooked because cardinal symptoms (e.g., personality states, alters) are often absent prior to treatment or suggestive questioning. In this etiological scenario, the complex polysymptomatic profile does not "become" DID until iatrogenic and sociocultural influences shape its expression into the features of the disorder.

Lynn et al. (2019b) summarized critiques of the SCM and defenses of the PTM, including contentions that (*a*) sociocognitive influences neither are particularly impressive nor preclude a role for trauma in dissociation; (*b*) weak correlations between dissociation and trauma may be explained by low levels of clinical trauma and/or dissociation in nonclinical samples; (*c*) evidence for the correlation between suggestibility/false memory and dissociation is often weak or modest in size; (*d*) via a common link through trauma history, the association of dissociation and fantasy proneness may be spurious; (*e*) even in cultures with minimum exposure to dissociation in popular media, dissociative disorders can still be diagnosed (e.g., Turkey, China, Taiwan) (Chiu et al. 2017a,b); (*f*) the idea that DID is induced by iatrogenic influences in psychotherapy has been subject to criticism (see Brand et al. 2014, Elzinga et al. 1998); and, we would add, (*g*) the SCM is a broad perspective rather than an articulated theory, and so it lacks limits and is difficult to falsify.

Even if criticisms of both theoretical camps can be countered to varying extents, the lion's share of variance remains to be explained in dissociative experiences and symptoms beyond the PTM and the SCM. We argue that the variables we present leave conceptual space for trauma as well as sociocognitive and non-trauma-based pathways to dissociation in a more integrative, inclusive, yet still to be refined and open perspective. Accordingly, after we turn to mostly uncontested and converging claims across theoretical perspectives and briefly review several current flashpoints of controversy, we discuss variables that merit further attention and integration in a more complete transtheoretical and transdiagnostic account of dissociation and dissociative disorders.

UNCONTESTED AND CONVERGING CLAIMS

Dissociative Experiences Can Be Evaluated

Dissociative experiences, symptoms, and disorders can be evaluated with reliable self-report and interview methodologies. Extant measures are equipped to assess trait aspects of dissociation, such as the widely used Dissociative Experiences Scale (DES; Bernstein & Putnam 1986), as well as more acute, transitory, or statelike dissociative experiences. The question of whether the DES and other scales adequately capture potentially different manifestations of dissociation (Cardeña 1994) across DID, DDD, and normative or everyday dissociative experiences (e.g., cognitive failures) remains open.

Another caveat is that high scorers on measures of dissociation are prone to nonintentional overreporting of symptoms, including endorsement of nonexistent pseudosymptoms (e.g., "Sometimes my headaches are so severe that my feet hurt"; Merckelbach et al. 2017). This tendency can introduce noise into assessment, which can be evaluated with dissociation scales that include validity indexes that correct for overreporting (Abu-Rus et al. 2020). Researchers have attributed overendorsement to alexithymia (e.g., difficulties identifying symptoms and inner states) or poor interoceptive monitoring (Brady et al. 2017) and fantasy proneness, which correlates 0.41 ($N = 837$) with endorsement of eccentric items (Merckelbach et al. 2022).

Signs and Symptoms of Dissociative Identity Disorder Exist

Disagreements between perspectives generally do not center on the existence of DID [as some such as Loewenstein (2018) have implied]; it is not disputed that some individuals exhibit a fragmented identity. Rather, disagreements focus on the genesis of DID. Views concerning the origins of DID are orthogonal to the enormous personal and societal costs exacted by trauma, which the SCM is neither oblivious to nor dismissive of.

Nor, as we described elsewhere (Lilienfeld et al. 1999, Lilienfeld & Lynn 2015), do we claim that DID is necessarily overdiagnosed in terms of whether individuals come to display behaviors consistent with the extant diagnosis of DID. Additionally, overdiagnosis implies that DID and other dissociative disorders are categorical or taxonic and not latently dimensional, an assertion that remains to be substantiated (Haslam et al. 2020). Thus, both the SCM and PTM agree that DID is real in this sense: It is a true disorder of self-perception in which individuals come to believe in and act based on narratives of distinct indwelling selves.

Most People Typically Do Not Fake or Deliberately Role-Play Dissociative Identity Disorder

Neither the PTM nor the SCM contends that most individuals with DID typically produce symptoms deliberately, intentionally carry out a role, or are bent on deception, although some proponents of the PTM have suggested that the SCM claims this to be the essence of DID (Gleaves 1996). The notion that some people truly believe they embody multiple selves is not to be conflated with conscious role-playing or malingering of DID or dissociative amnesia, which is probably largely confined to forensic settings and evaluations where the intention is to evade culpability and mitigate responsibility for a crime (Cima et al. 2001).

Across many studies, comparisons of individuals diagnosed with DID with healthy participants instructed to simulate or role-play the disorder have not revealed many significant differences on measures of memory, event potentials, or self-reported dissociative experiences (Boysen & VanBergen 2013, but see Vissia et al. 2016). Additionally, college students can successfully role-play DID symptoms and experiences (e.g., Spanos et al. 1986, Stafford & Lynn 2002).

Some adherents of the PTM have criticized role-playing studies by stating that the (role-playing) "students did not actually begin to believe that they had DID, and they did not develop the wide range of severe, chronic, and disabling symptoms displayed by DID patients" (Brand et al. 2016, p. 264). This statement reflects a misunderstanding of such studies. Their point is to show not that one can induce DID or similar disorders in nonclinical participants but rather that given minimal cueing and prompting, participants often and readily fill in the gaps and are capable of enacting superficial features of multiple identity. The key objective of such studies is not to provide evidence that actual patients with DID routinely simulate or fake the disorder but to illustrate that DID narratives are present in the broad social milieu and are easily discerned by individuals, even those without psychopathology. Thus, while simulation studies do not provide a direct explanation for DID, they do provide evidence for a sociocultural narrative regarding DID, which could form the crux of personal identification with such a narrative.

Studies that do reveal differences between patients with DID and simulators can pose interpretive challenges as such differences could be attributed to different instructional sets rather than to unique characteristics of DID. That is, simulators are instructed to role-play DID based on their knowledge of the disorder with pressure/demand characteristics to succeed in their deception. In contrast, patients with DID are not instructed to do so and are motivated, instead, to uniquely experience events such as a traumatic memory (and associated affect) in the laboratory

context. Not surprisingly, disparate instructional sets may evoke very different cognitive–affective and physiological responses across role-players and patients (e.g., Reinders et al. 2016).

Dissociative Identity Disorder Is a Disorder of Belief Regarding the Self

The proposition that DID is an impairment in belief and metacognition is a linchpin of the SCM and has been recently acknowledged as such by advocates of the PTM. Dalenberg et al. (2012, p. 568), for example, conceded that DID is "a disorder of self-understanding" and that "those with DID have the inaccurate idea that they are more than one person." Spiegel (1993, p. 15) remarked that "[t]he problem is not having more than one personality; it is having less than one personality." Earlier, Ross (1989, p. 81) commented, "Much of the skepticism about MPD is based on the erroneous assumption that such patients have more than one personality, which is, in fact, impossible." In conformance with these observations, researchers have consistently failed to secure objective evidence (e.g., behavioral tasks, event-related potentials) for amnesic barriers that segregate discrete personalities in individuals with DID, underscoring the illusory nature of the belief in multiple selves (e.g., Huntjens et al. 2012, Kong et al. 2008).

Dissociative Experiences and Symptoms Are Multidetermined

A key challenge then is for theorists to further elucidate vulnerabilities or risk factors for the belief in a divided self. Researchers across theoretical camps are increasingly expressing openness and flexibility in considering multiple influences on dissociative disorders to meet this challenge. For example, advocates of the SCM have argued that "[m]odern-day theoreticians, researchers, and clinicians are remiss in ignoring. . .the potential repercussions of trauma, in their quest to achieve a comprehensive account of dissociation and dissociative disorders" (Lynn et al. 2014, p. 906) and have claimed that "early trauma might predispose individuals to develop high levels of fantasy proneness, absorption. . .or related traits" (Lynn et al. 2012, p. 50), leaving open the possibility that the effects of trauma are indirect rather than direct, while not excluding the possibility of a direct relation in some instances.

Dalenberg et al. (2014, p. 917), in turn, maintained that "in the future all of us who study and treat trauma and dissociation can agree to the examination of more complex models of trauma and trauma response" that would potentially include a pathogenic family environment, biological vulnerabilities, developmental factors, and social support (Dalenberg et al. 2012; see also Şar et al. 2017). We heartily endorse this suggestion.

Dissociation Has Neurophysiological and Genetic Correlates Worthy of Study

Researchers across different theoretical perspectives are sympathetic to efforts to pinpoint the neurophysiological correlates and underpinnings of dissociation. Roydeva & Reinders's (2021) review of 185 studies of pathological dissociation identified neurofunctional biomarkers that included the basal ganglia, bilateral superior frontal regions, (anterior) cingulate, dorsomedial and dorsolateral prefrontal cortex, and posterior brain areas, whereas volume reductions in the basal ganglia, hippocampus, and thalamus were considered neurostructural biomarkers. Although the researchers identified greater oxytocin and prolactin as well as less tumor necrosis factor alpha as psychobiological biomarkers, they ascertained the evidence for psychophysiological (e.g., skin conductance, blood pressure, heart rate) and genetic (e.g., polymorphisms, genes) biomarkers to be insufficient.

In terms of genetic vulnerabilities, the recent literature provides some interesting cues. For example, subanesthetic doses of the N-methyl-D-aspartate receptor antagonist ketamine are known

to produce dissociative symptoms such as derealization. There are good reasons to believe that glutamate release due to ketamine drives transient dissociative symptoms, and thus glutamate abnormalities may constitute a genetic vulnerability to dissociative symptoms (Luckenbaugh et al. 2014).

Nevertheless, the literature on biomarkers is limited in notable respects. Many studies are constrained by small samples (Blihar et al. 2020), and researchers are inconsistent in defining a biomarker across studies; some identify a biomarker in causal terms, whereas others conceptualize it as a correlate of dissociation. In many cases, biomarker-related studies are correlational (e.g., trauma, hippocampal volume), as one cannot manipulate trauma in the laboratory, and there are few extant longitudinal studies. Accordingly, the causal direction of variables studied cannot be determined. Many biomarker studies use functional magnetic resonance imaging (fMRI), which is plagued by low intraclass correlations and poor test–retest reliability of fMRI tasks (Elliott et al. 2020). Moreover, the specificity and therefore the origin of proposed biomarkers are questionable insofar as researchers generally do not compare biomarkers of pathological dissociation with other diagnoses and symptoms (e.g., BPD, PTSD, anxiety, depression, psychosis), nor do researchers distinguish these markers from biological processes underlying general distress, the repercussions of traumatic events, negative affect and arousal, emotional dysregulation, or neuroticism.

Fantasy Proneness Is One of Many Risk Factors for Dissociation

Dalenberg et al. (2012, p. 551) aligned with the SCM in offering that "fantasy proneness—among other factors—may lead to inaccurate trauma reports." However, fantasy proneness still is a bone of contention for adherents of the PTM. Advocates of the SCM and the PTM have referred to a fantasy model, yet fantasy is only one aspect of the more far-reaching multifactorial perspective regarding variables that increase risk for DID. To be clear, the SCM, and we herein, do not argue that all trauma is fantasized, or that fantasy proneness and high levels of dissociation cannot coexist, or that high levels of fantasy proneness and dissociation cannot be evidenced in genuinely traumatized individuals as well as in nontraumatized individuals. Accordingly, high levels of fantasy proneness should not be taken to indicate that trauma is "real or false." Nevertheless, the association between dissociation and fantasy proneness is appreciable and well documented: A meta-analysis of 72 studies, which aggregated close to 11,000 research participants, documented a large effect size ($r = 0.52$) of the relation between dissociative symptoms and fantasy proneness, implicating the need to consider the link between dissociation and fantasy proneness in a comprehensive theory of dissociation (Merckelbach et al. 2022).

Effective Treatments Are a High Priority

Of all the major psychological disorders, DID has arguably garnered among the least attention in terms of empirically supported treatments (Maxwell et al. 2018). To date, no pharmacological treatments have provided clinically meaningful symptom relief, and large, well-conducted randomized psychotherapy trials with placebo comparisons and controls for other potential artifacts unrelated to the treatment are lacking (for a list of such artifacts, see Lilienfeld et al. 2014). In their recent Cochrane meta-analysis, Ganslev et al. (2020) concluded that most treatment studies suffer from methodological flaws and taken together provide no evidence for therapeutic efficacy. Accordingly, expert consensus exists that developing empirically supported treatments for dissociative conditions should be a high priority.

We suggest that psychotherapies directly address transdiagnostic and transtheoretical variables and mechanisms (e.g., emotion regulation) found to moderate dissociative symptoms. Researchers (Mohajerin et al. 2020) found that one such treatment, based on the Unified Protocol for the

Transdiagnostic Treatment of Emotional Disorders (see Barlow et al. 2020), was effective in treating five individuals diagnosed with DID and co-occurring disorders and symptoms who were tracked over multiple time points for 6 months. Accordingly, targeting transdiagnostic mechanisms we describe (e.g., self-regulation, emotion recognition) can be useful in treating not only dissociative disorders but also other conditions comorbid with them (BPD, depression, anxiety). Additionally, Van Minnen & Tibben (2021) presented a detailed case study of a successful treatment of DID with brief cognitive behavioral treatment that focused on dysfunctional ideas about personal identities (see also schematherapy for DID; Huntjens et al. 2019).

A TRANSTHEORETICAL FRAMEWORK

In what follows, we update and extend our transtheoretical perspective on dissociation and dissociative disorders (Lynn et al. 2019a,b) to move the state of knowledge and inquiry beyond the PTM and SCM. We neither dismiss nor depreciate the negative sequelae of trauma. Yet we suggest that the origins of dissociation extend well beyond trauma. Even if trauma were a reliable precursor of dissociative symptoms, which it is not, it would still be necessary to explain (*a*) why only some individuals who experience highly adverse events experience dissociative disorders, whereas others are resilient, and (*b*) how such events bring about dissociative phenomena beyond the idea that dissociation occurs solely for defensive purposes. We suggest that the origins of dissociation are multidetermined, differ across individuals, and relate to failures in adaptive mechanisms operative in nontraumatic as well as traumatic circumstances.

Spontaneous Modes of Consciousness, Models of the Self, and the World

Dissociation often originates in spontaneous modes of consciousness. More specifically, dissociation emerges from spontaneous mental activities related to internal models of the self, the world, and the experience of reality. Spontaneous thoughts that emerge as the mind wanders can occupy as much as half of waking life (Killingsworth & Gilbert 2010). Spontaneous thoughts encompass daydreaming, fantasy, involuntary autobiographical memories, and ruminations about the present and future. Everyday cognitive activities vary from fluid, meandering, and fantasy-laden to laser-focused and task-constrained; from deep absorption in imaginings and daydreams, in which a sense of self is temporarily submerged, to high levels of self-awareness; and from automatic, effortless, errant, and mindless to linear, deliberate, and planful (Lynn et al. 2020). Spontaneous imagery and reality-based, task-oriented thoughts range on a continuum during the daytime and during sleep and dreaming as well.

Dissociation often falls close to the end of the continuum that marks fluid, dreamlike, primary-process, fantasy-based cognition in contrast to reality-oriented, deliberate, task-directed cognition at the opposite end. Yet, as we discuss below, sleep/dreamlike and reality-based waking experiences can overlap significantly in the flow of consciousness, and the boundary between sleep and waking can be remarkably permeable. Milliere & Metzinger (2020, para. 10) contended that during episodes of spontaneous thought, "the phenomenal qualities of 'mental ownership' and 'mental agency' can be dissociated even in the healthy population: when lost in discursive thought or immersed in a manifest daydream we experience ownership of our thoughts, but without a sense of cognitive control over them."

Response Sets and Reality Testing

Spontaneous thoughts in both sleep and waking states reflect and contribute to internally generated personal and predictive models of the self and the world (Hong et al. 2018, Kirsch & Lynn

1999, Llewellyn 2016b). These models are constructed and reinforced based on their ability to generate, test, and refine expectancies, predictions, and actions that facilitate achievement of valued goals (Friston 2005, Miskovic et al. 2019). Individuals constantly generate the building blocks of these models—the thoughts, feelings, and attributions that compose them—while they typically lack awareness they are doing so. Thus, the constituents of models and how they interact are often dissociated from conscious introspection, and the models themselves are rarely interrogated or revised under ordinary circumstances (Metzinger 2003).

Spontaneous thoughts enable access to associative networks that recruit and bind sensations, emotions, memories, thoughts about the past and future, and actions essential to the representation of a healthy self that endures continuously in time. Spontaneous thoughts and mind wandering coalesce in response sets: networks of associated mood states, action schemata, cognitions, and self-representations (Chiu et al. 2012a, Kennedy et al. 2004, Lynn et al. 2019b). These sets often include conscious intentions and expectations as well as more implicit unconscious goal strivings (see Lynn & Green 2011) with respect to desired outcomes (approach behaviors) and to avoidance of undesired outcomes (avoidance behaviors).

Kirsch & Lynn (1999) contended that response sets prepare a "fast route" of actions, emotions, and cognitions for automatic activation, promoting readiness to react to particular stimuli under particular conditions and in particular ways. Response sets have a self-fulfilling, recursively confirming nature, thereby perpetuating extant models of the self and the world; that is, they shape our sense of reality. Kirsch & Lynn (1999) have argued that response sets and much (if not all) human behavior are executed automatically with minimal or absent deliberate control at the time of activation. Accordingly, the experience of psychological numbness—feeling like an automaton or robot (especially prominent in DDD)—can represent an attribution based on awareness of the inherent spontaneity of thoughts and the effortless, "agentless" experience of many everyday behaviors. To the extent that thoughts, feelings, and actions are automatized and unconscious and their genesis is not well understood or modulated, they could be attributed to so-called alter personalities in DID or facilitate the decoupling of the sense of self and actions as occurs in DDD.

Kunzendorf & Karpen (1997, p. 227) observed that "dissociative tendencies. . .have reality testing deficiencies at their core." More recently, Černis et al. (2020) interviewed individuals with nonaffective psychosis to assess their experience of dissociation and determined that feelings of unreality or "anomaly" were a prominent theme in their descriptions (see also Acunzo et al. 2020). A generalized reality orientation provides scaffolding for a viable sense of self (Shor 1959). When functioning adaptively, response sets ground us in a constantly evolving yet reasonably stable, predictable, and reliable sense of "reality," wherein the present is twined with the past and future. Previously acquired responses, knowledge, and action tendencies hence can be accessible and activated adaptively in the present moment. Such response sets synthesize and assimilate spontaneous thoughts, autobiographical memories, and new experiences into an overarching self-schema, in which mental activities can be regulated flexibly yet perceived as owned by a self that endures over vastly changing circumstances (Chiu et al. 2020, 2022).

The sense of reality and constancy of self depends on the ability to control and make reasonably reliable predictions regarding thoughts and feelings in relation to anticipated outcomes consistent with the constructed model of the world. Not surprisingly, episodes of depersonalization/derealization (i.e., peritraumatic dissociation) not uncommonly follow unexpected highly adverse events that shake if not overturn schemata regarding the world and the self (e.g., "This can't happen to me; it can't be real"). The sense of self is embedded within a broader construct of personal identity that, according to DSM-5, is related to the ability to regulate a range of emotional experiences, experience oneself as unique, and self-reflect productively (APA 2013, p. 782).

Meta-Cognition and Alexithymia

Self-reflection, also called meta-cognition, is a broad construct that encompasses alexithymia, a failure to identify, label, and elaborate emotional experiences that is linked with dissociative experiences (see Lynn et al. 2019b, Merckelbach et al. 2017). After all, if recognition of the situational and/or internal triggers (i.e., interoception) of emotions is compromised, and thoughts and actions proceed automatically, then this process will preclude self-regulation of relatively subtle emotional states prior to their more blatant and potentially difficult-to-control manifestations. When the threshold for emotion detection or labeling is high, emotions may prove challenging to monitor, appear to arise unpredictably and spontaneously, feel "imposed," and interfere with the continuity of experience and the ability to form clear and abiding self-representations as a thinking–feeling–doing person. Because emotional experiences are prerequisite to guiding actions purposefully and skillfully, we suggest that lacking connection with emotions and allied behaviors and cognitions (Chiu et al. 2016a) predisposes dissociation-prone individuals to experience lack of agency, psychological numbness, and feelings of unreality associated with DID and many cases of DDD.

In the terrifying condition of Cotard delusion, there is a mismatch between the sight of one's own face and feelings—particularly feelings of familiarity—leading to the conclusion that one is a walking corpse or nonexistent. Individuals with this condition, not surprisingly, experience disturbing feelings of depersonalization/derealization (Billon 2016). Similarly, in Capgras syndrome, in which a person believes imposters have replaced familiar individuals, an apparent dissociation exists between the sight of someone and an attendant emotional response, leading to the conclusion that the other person is not truly the one they seem to look like. As alluded to above, a tenable hypothesis is that the lack of felt emotions and/or impairment in the ability to label or resonate with them, decoupled from a sense of personal agency, can produce feelings of depersonalization/derealization and potentially the inference that actions are controlled by an alter personality in DID.

Failure of Adaptive Systems

Rather than focusing solely on dissociation as the product of trauma (which it may be in some cases), our more expansive transtheoretical account focuses on construing dissociation as a failure to support or maintain normally adaptive functions and systems that include the following: (*a*) a boundary between sleep-related and waking experiences; (*b*) cognitive and affective self-regulation, which facilitates a stable and predictable sense of reality and the self; (*c*) the flexible control of associative processes, cognitions, response sets, and behaviors; and (*d*) as above, deficits in normally adaptive metacognitive functions. If such systems are not operative and capable of returning a person to a familiar state of psychological equilibrium following temporary disturbances in reality orientation, we suggest that dissociative symptoms become more enduring and triggered by an expanding array of internal and external cues via stimulus and response generalization.

Dissociation, Sleep, and Dreaming

Dissociative symptoms, particularly depersonalization/derealization, arise when sleep and waking states of consciousness overlap and the boundary between them becomes excessively permeable (Arora et al. 2020). When this occurs, dreamlike mentation infiltrates waking life and engenders disturbing experiences of unreality and dream–reality confusion. As Llewellyn (2016a) observed, dissociation reflects an interrupted sense of reality and a continuity between waking and dreaming cognition.

The link between spontaneous thought and dreamlike cognition during the day and sleep is supported by a sizable corpus of studies among healthy and clinical samples that typically find

moderate-to-high correlations of dissociative experiences with sleep disturbances and unusual sleep experiences such as narcolepsy and sleep paralysis (see Van der Kloet et al. 2012b, Watson 2001). Tellingly, Mahowald et al. (2011, p. 2394) characterized narcolepsy as a "disorder of state boundary control." Arora et al. (2020) reported that poor sleep efficiency and daytime napping were associated with an almost three times greater risk of DDD, compared to nocturnal sleepers only, among female university students. Research further reveals reductions in dissociative symptoms after sleep improvement and increases in dissociation following sleep deprivation (van Heugten-van der Kloet et al. 2015b), which imply a causal relation between sleep and dissociation. Hébert et al. (2017) extended findings of an association between sleep and dissociation to preschool victims of sexual abuse in determining that sleep problems were significantly associated with dissociative symptoms beyond other variables examined (e.g., age, polytrauma, parental distress).

A labile sleep–wake cycle and sleep loss degrade the boundary between reality-based and dreamlike or fantasy experiences that intrude on waking consciousness (Mahowald et al. 2011). Sleep disruptions and parasomnias increase the risk of dissociative symptoms and memory and identity fragmentation (Ashton et al. 2020, van Heugten-van der Kloet & Lynn 2020) and impair suppression of unwanted thoughts, memories (Harrington et al. 2021), and self-regulation (Marcusson-Clavertz et al. 2020, Pilcher et al. 2015). Selvi et al. (2015) reported that one night of sleep deprivation increased dissociative tendencies and lowered the tendency to suppress unwanted thoughts consciously.

Dissociative experiences during waking are reflected in disruptive dissociative experiences during rapid eye movement sleep (e.g., sleep paralysis, exploding head syndrome/loud brief bursts of unreal noises when falling asleep or waking up), highlighting the continuity of consciousness and potential recursive relations across sleep and waking states (Denis et al. 2019, Kucukgoncu et al. 2010). Relatedly, Soffer-Dudek (2017a) contended that psychological arousal in the daytime carries over to unusual sleep experiences (e.g., sleep paralysis). These latter experiences, in turn, can be expressed in waking intrusions of fantasy-based cognition, difficulties focusing in response to distracting stimuli (Soffer-Dudek & Shahar 2014), and impairments in attentional control, memory problems, and cognitive failures (see Lynn et al. 2019b).

Antelmi and colleagues (2016) contended that state dissociation disorders arise when intrusions of features of a typical state impinge on ongoing states, such as when individuals perform seemingly automatic or inappropriate actions when dream mentation briefly infiltrates waking consciousness. As Lynn et al. (2019b) stated, "The jarring, disruptive, and dysregulated disjuncture between waking dreamlike experiences and the reality-based demands of everyday life likely are fundamental to DDD and other dissociative disorders" (para. 46).

Hyperassociativity

The spillover of fluid cognitive–affective processing and fantasy-based cognition from sleep to waking is reflected in what Lynn et al. (2019a,b) labeled hyperassociativity (or hyperassociation), a mode of cognition prominent during dreaming and often accompanying dissociative conditions, particularly under conditions of negative arousal. The authors defined hyperassociativity as an increased activation and fluency of semantically and emotionally related concepts and networks following the activation of a specific concept, emotion, or memory (see Horton 2017, Horton & Malinowski 2015).

Using a college student sample, Huntjens et al. (2021) found a positive association between dissociative experiences and hyperassociativity for associative fluency and associative flexibility tasks involving neutral and valenced material, but not for a remote association task. Other studies indicate that in hyperassociation, an increased likelihood exists that representations of the self and circumstances will be engaged via spreading activation of associative links (Howe et al. 2009,

Otgaar et al. 2017) in chaotic ways that are unpredictable, destabilizing self-relevant associations, and potentially disrupting a sense of "me-ness." For example, nonclinical high dissociators exhibit more affectively incongruent self-defining memories (Sutin & Stockdale 2011) and a more fragile, fragmented, and unstable sense of self and identity (Chiu et al. 2017a).

Malinowski & Horton (2015) have argued that fragments of memory that get activated during sleep can be the basis for metaphors and hyperassociativity in dreams that, we suggest, can be expressed as dissociative experiences when carried over to daily life. We further hypothesize that impairments in sleep regulation, daytime drowsiness, and hyperassociativity compromise meta-cognition, the integration and assimilation of emotions, self-referential information, and autobiographical memory, which are requisite to a unified sense of self, reality, and continuity of experiences across mood states (Lynn et al. 2019b, van Heugten-van der Kloet & Lynn 2020).

Set Shifts, Intrusive Thoughts, and Self-Regulation

During waking hours, highly dissociative individuals are prone to breakdowns in adaptive cognitive–affective and behavioral self-regulation and inhibition characterized by rapidly shifting response sets called set shifts (also called set switches): hyperassociative cognitions in response to internal (e.g., sensations, thoughts, emotions) and external (e.g., therapist comments, ambient noise) stimuli. In six individuals whom Lynn treated in psychotherapy with the diagnosis of DID, such sudden shifts in spontaneous affects, thoughts, and behaviors, including intrusions of poorly associated mental content, marked episodes of cognitive and affective dyscontrol that were unmistakable and common (Lynn et al. 2019b).

Relatedly, based on review of 220 individuals from studies of individuals diagnosed with DID, Dell (2006, p. 1) argued that DID is characterized by "recurrent dissociative intrusions into every aspect of executive functioning and sense of self" that are experienced as confusing, often frightening, and "startling invasions of one's mind, functioning and experience." Dell (2006, p. 8) also observed that in DID these intrusions were "not given a delusional explanation (e.g., 'I know this sounds crazy, but sudden strong thoughts come into my mind, and they feel like they are not mine')." Pilton et al.'s (2015) meta-analysis similarly disclosed a large and significant relation ($r = 0.52$) between dissociative experiences and intrusions of voices (i.e., auditory verbal hallucinations) into the stream of awareness. Şar (2017) has theorized that dissociative individuals may experience a vicious cycle of intrusive experiences and avoidance. We suggest that a chronic failure to regulate and suppress poorly associated and potentially disturbing mental contents could lead predisposed individuals to attribute such unwelcome phenomena to alter personality states in DID and could impair reality testing in DDD.

Lynn et al. (2019a,b) summarized studies that documented deficits in self-regulation and executive control in dissociation and dissociative disorders on the Stroop test and various tests of attention and cognitive inhibition (e.g., random number generation, continuous performance tasks). Chiu et al. (2016c) found that among acute psychiatric patients, pathological dissociation was associated with swift attention switching. Tseng et al. (2021) found that schizophrenia patients' dissociation was linked with relatively intact neural substrates pertinent to cognitive control, and in another study DID patients were superior at working memory updating (Elzinga et al. 2007).

Nevertheless, consistent with clinical observations, cognitive inhibition and self-regulation are particularly impaired in emotional contexts in DID and severe dissociation (Gušić et al. 2018), and high dissociators shift (*a*) from threat-related affective stimuli to nonaffective stimuli (e.g., Dorahy et al. 2005, 2006) and (*b*) from hypoaroused states of overmodulated emotion regulation to hyperaroused identity states or what we refer to as sets (Reinders et al. 2014, Şar 2017). In an experiment combining a working memory task and a subsequent memory test, Chiu (2018a)

reported a link between cognitive disengagement and disinhibition. While highly dissociative individuals dismissed unwanted information by shifting attention to and holding other things in working memory, in alignment with the findings of superior attention shifting (Chiu et al. 2009, 2016c), accessibility for the dismissed neutral and negative items was enhanced, consistent with findings of cognitive disinhibition (Chiu et al. 2010, 2012a). Researchers have also found evidence for an automatic and uncontrolled flow of mental associations on the Rorschach test in dissociation (Scroppo et al. 1998).

We argue that failures in self-regulation, disinhibition, and disengagement disrupt the constructive process of memory encoding, rehearsal, and deep processing of the meaning and self-relevance of experiences and thereby contribute to feelings of unreality. Such disengagement engenders ambiguous and fragmented self-representations (Chiu et al. 2016b, 2017a) that limit the elaboration of new learning referenced to the self (Chiu et al. 2019) and hinder systematic integration of autobiographical experiences (Chiu et al. 2012b, 2018b). Dissociative individuals also exhibit self-representations that differ from those of their less dissociative counterparts based on their self-associations. For example, Chiu et al. (2022) reported an association between dissociation and self-rejection based on an implicit association test.

The inability to model a coherent or positive representation of the self can also occur when the associational bonds of self-relevant information and memories are compromised, particularly if the boundary between what feels real and unreal is fuzzy, rendering it difficult to disentangle contents of consciousness, including accurate memories from imagined events (McNally 2005). Otgaar et al. (2017) conducted a literature review of false memory effects in individuals with a history of trauma, PTSD, and depression and concluded that false memories were particularly increased when emotional associative stimuli were presented (Sajjadi et al. 2021).

Combined, these findings suggest a role for hyperassociation, set shifting, failures in self-regulation, adaptive memory, and self-representation in dissociation. Negative reinforcement, provided by repeated escape/avoidance from anxiety-evoking stimuli, could automatize and increasingly crystallize and compartmentalize emotionally triggered responses in dissociative individuals (Lynn et al. 2019b). Relatedly, Chiu and colleagues (2017a) reported that high dissociators exhibit a more compartmentalized, polarized, and less integrated sense of self. With repetition, response sets, including associated memories (potentially genuine or imagined), could coalesce to approximate the appearance and subjective experience of a separate personality state. The extent to which cognitive–affective shifts serve an anxiety-reducing avoidance-related function related to traumatic events or triggers of traumatic memories remains a fertile yet largely unexplored area for investigation. Consistent with this possibility, Briere et al. (2010) reported that dissociation loads onto a dysfunctional avoidance factor among trauma-exposed individuals in the general population and correlates with experiential avoidance among trauma survivors (Marx & Sloan 2005). Briere and colleagues' (2010) study further indicated that diminished affect regulation capacity mediated the relation between trauma and dysfunctional avoidance.

The Fundamental (Mis-)Attribution Error

The possibility that avoidance and emotion dysregulation decouple self-schemata and affective states is not inconsistent with a perspective Şar et al. (2017) advanced (see also Beck et al. 2021, Huntjens et al. 2019, Kennedy & Kennerley 2013, Kennedy et al. 2004). Şar et al. (2017, p. 140) argued that psychological modes, which contain "cognitive, affective, behavioral and physiological representations or schema for encoding experience and responding to internal and environmental demands," are disrupted in DID, where they get disconnected from other modes. We contend that this disruption is likely to occur in hyperassociative states. However, according to the Şar et al. model, and contrary to our view, modes develop entirely independent control systems with

separate senses of self. We suggest that there is no need to posit that another entity—a truly independent control system—is at play. Rather, it seems more parsimonious to contend that different response sets are not truly independent but only come to be viewed as such from a meta-cognitive perspective based on the attributions of puzzling aspects of the self or mental intrusions, including dreamlike cognitions, to alter identities.

We argue (see also Lynn et al. 2019a,b) that the belief in personal "multiplicity" and alter personalities arises from a fundamental (mis-)attribution error. A person who attempts yet fails to control or suppress spontaneously arising disturbing contents of consciousness and whose emotional responses defy labeling and explanation can attribute puzzling and/or ego-alien experiences as arising from a fragmented self (i.e., alter personality). Compatible with this hypothesis, dissociative individuals, among acute psychiatric inpatients with various disorders, tend to erroneously attribute participant-generated items during experiments to the experimenter; such errors imply impairments in source-monitoring mechanisms (Chiu et al. 2016b). Alternatively, response sets (e.g., coordinated thoughts and actions) that are automatized, yet not subject to flexible control, and that are discrepant with personal or societal standards, may likewise be attributed to an alter personality.

As subjective belief in multiple selves is not supported by objective evidence, we suggest that the origin of this (mis-)attribution often resides in situational cues, culturally transmitted beliefs, and poorly understood or misunderstood experiences. This view accords closely with the SCM. Individuals strongly invested in this belief may be immune to information or explanations that contradict this narrative due to cognitive dissonance, confirmation bias, and the fact that an individual with DID truly feels as if they were a multiple. When reified in psychotherapy, or in everyday life, this attribution gets embedded in an evolved new identity as "I am a multiple personality" (or person with DID) without recognition that the model of the self is only a model (Metzinger 2003) yet biases cognitions to conform with beliefs and expectations and, in this case, a narrative of a divided self. The identity of multiplicity thus frames an understanding of dysregulated yet poorly comprehended experiences and actions.

This is not to say that sociocognitive variables alone "create" DID, as this disorder is constructed from failures in multiple adaptive systems and functions. Rather, sociocultural narratives are important in how individuals construe themselves and dissociative experiences. The fact that sociocognitive variables play a role in locating one's subjective experience of the self on a continuum of fragmented versus coherent does not rule out an indirect role (if not a direct one) for trauma in dissociative conditions.

EVALUATING THEORETICAL PERSPECTIVES WITH MULTIVARIABLE ANALYSES

Researchers have explored the etiology of dissociative experiences by evaluating the interrelations among dissociation and potential correlates and antecedents, thereby moving beyond limited bivariate analyses. More complex studies have tested the robustness of the relation of dissociation with variables pertinent to the current framework, as well as the PTM and SCM, while controlling statistically for other explanatory psychological processes and constructs. Multivariate investigations have yielded important findings that highlight the need for a multifaceted theory of dissociation accounting for its links with other constructs.

Emotion Dysregulation Research

An accumulating body of findings is consistent with our transtheoretical model. For example, studies that controlled statistically for other explanatory constructs, such as PTSD, trauma exposure,

sleep experiences, and negative affect, in both clinical and nonclinical samples, have shown that emotional dysregulation exhibited a unique relation with dissociation (Aksen et al. 2021, Powers et al. 2015). Furthermore, emotional dysregulation partially mediated the relation of dissociation with PTSD symptoms, sleep, and impulsivity (Aksen et al. 2021, Powers et al. 2015). Researchers have suggested that impulsivity and alexithymia are two aspects of emotional dysregulation that may be particularly important correlates of dissociation because they constrain access to more adaptive self-regulation strategies (Aksen et al. 2021, Powers et al. 2015, Terock et al. 2016). Schimmenti (2016, p. 338) reported that participants who scored high on alexithymia and low on a measure of theory of mind and empathy scored high on a measure of dissociation and concluded that his research supported "the view that people who suffer from severe dissociative experiences may also have difficulties mentalizing and regulating affects" (p. 338). Serrano-Sevillano and colleagues (2017) reported that highly dissociative university students scored higher on measures on alexithymia, suggestibility, neuroticism, openness to experience, and sleep-related experience and lower on conscientiousness than less dissociative students. Additionally, researchers have found that impulsivity, arguably a proxy for emotion dysregulation, partially mediated the link between childhood trauma and dissociation in clinical samples (Evren et al. 2013, Somer et al. 2012).

Sleep and Dissociation Research

Aksen et al. (2021) determined that sleep experiences explained the most variance in dissociation scores compared with other explanatory variables (e.g., impulsivity, emotion dysregulation, negative affect) and that sleep experiences partially mediated the relation of dissociation with emotion dysregulation and impulsivity. Recently, a meta-analysis conducted by Guarana et al. (2021) concluded that sleep quality and duration were linked with self-control, and Selvi et al. (2017) indicated that poor sleep quality and sleepiness increased the odds of having dissociative experiences, as determined by logistic regressions controlling for other variables (e.g., age, sex, psychopathology, substance use). Van der Kloet et al.'s (2012a) longitudinal inpatient study, which controlled for childhood trauma and global psychopathology, found that narcoleptic sleep experiences predicted dissociative symptoms. Other longitudinal research found that unusual dreaming and sleepiness were linked temporally to dissociative experiences in statistical models that accounted for such variables as distress and negative thinking (Buchnik-Daniely et al. 2021, Vannikov-Lugassi & Soffer-Dudek 2018a). Additionally, poor sleep quality partially mediated the association between rumination and dissociation in path models (Vannikov-Lugassi & Soffer-Dudek 2018b). Huntjens et al. (2021) found that hyperassociativity was related to depersonalization; however, cognitive failures and alexithymia mediated the link between hyperassociativity and daytime dissociation and nighttime unusual sleep experiences.

Sociocognitive Research and the Proposed Framework

Researchers have also evaluated variables pertinent to the SCM as well as the current framework (e.g., fantasy proneness, attentional control, cognitive failures, suggestibility; Eisen & Lynn 2001). Lynn et al.'s (2014) meta-analytic evaluation supported the importance of fantasy proneness in relation to dissociation by demonstrating that fantasy proneness partially mediated the association between trauma and dissociation. Additionally, Weiss & Low (2017), controlling for other variables (e.g., sleep disturbances, mood), reported that selective and divided attention were related to dissociative experiences. Selvi et al. (2012) documented that greater pathological metacognitive activity and a tendency to attempt to suppress unwanted thoughts were uniquely related to dissociation in a study that controlled for childhood trauma, thought–action fusion, and depression in OCD patients. In another study (Vannikov-Lugassi & Soffer-Dudek 2018b),

which used a structural equation model controlling for mental control, negative emotion, sleep quality, and repetitiveness in a large undergraduate sample, rumination was related to dissociation. Vannikov-Lugassi & Soffer-Dudek's (2018a) longitudinal study found that thinking about the past and negative thoughts were associated with depersonalization/derealization and absorption over 4 days. Finally, Wieder & Terhune (2019) determined that among individuals exposed to trauma who displayed an anxious attachment style, high suggestibility conferred vulnerability to dissociative states, supporting the role of suggestibility in dissociation advanced by the SCM.

Psychological Distress, Trauma, and Dissociation

Research has also supported a link between psychological distress and dissociation, consistent with the idea that general distress, potentially apart from discrete traumatic events, can play a role in dissociative experiences. Indicators of psychological distress (e.g., state anxiety, depression symptoms/negative affect) have explained unique variance in measures of dissociation in addition to or beyond other constructs (Aksen et al. 2021, Condon & Lynn 2014, Soffer-Dudek 2017b, Weiss & Low 2017). Psychological distress indices (e.g., trait anxiety, aggression, hostility) also predicted dissociation in male substance-dependent inpatients in a study that controlled for other explanatory variables (e.g., childhood trauma, age, substance use) (Evren et al. 2013). Buchnik-Daniely et al. (2021), advancing a distress model of dissociation, determined that sleep quality and sleep-related experiences were longitudinally linked to dissociation and observed that psychological distress (anxiety and depression symptoms) was associated with fluctuations in dissociation over a 6-month period while accounting for sleep variables. More specifically, moments of stress were found to be related to dissociative experiences (i.e., depersonalization/derealization, absorption). Alfasi & Soffer-Dudek (2018) further determined that students' tendency to react to daily stress with unusual sleep–wake transition phenomena (e.g., hypnagogic hallucinations, recurrent dreams, confusion on awakening) was mediated by alexithymia, whereas in another study, anxiety and depression moderated the relation between stress and depersonalization/derealization (Vannikov-Lugassi & Soffer-Dudek 2018a). Soffer-Dudek & Shahar (2014) differentiated external distress (i.e., stressful events) from internal distress (i.e., psychiatric symptoms) and found that internal distress was related to greater dissociation when external distress was low rather than high; however, results for the moderating effect of internal distress on external distress were inconclusive. Finally, Soffer-Dudek & Shahar (2009) reported that unusual sleep-related experiences were predicted by increases in life stress over a 3-month period and that transliminality, a construct related to the permeability of the boundary between sleep and waking consciousness, was a longitudinal predictor of unusual sleep experiences.

The link between psychological distress and dissociation can be interpreted as broadly consistent with the trauma model and with studies that indicate an association between trauma and dissociative experiences while controlling for sociocognitive variables, such as fantasy proneness (e.g., Dalenberg et al. 2012). Further evidence for the trauma–dissociation relation derives from clinical research indicating that childhood trauma and PTSD symptoms remain related to dissociative experiences while other variables (e.g., emotional dysregulation, alexithymia, impulsivity, global psychological symptoms) are controlled for in statistical models (Powers et al. 2015, Somer et al. 2012, Terock et al. 2016). Similarly, Dimitrova and colleagues (2020) reported that childhood trauma was associated with dissociative experiences when fantasy proneness and sleep disturbances were included in regression models, whereas fantasy proneness and sleep disturbances were not related to dissociation while accounting statistically for childhood trauma. In another study, DID patients exhibited the highest scores on trauma measures relative to individuals simulating DID and healthy controls. However, the DID patients were no more fantasy prone, suggestible, or likely to generate false memory than were participants in the simulating and in the control comparison

conditions (Vissia et al. 2016). Nevertheless, multivariate studies that rely on patient samples and that find a direct link between trauma and dissociation are limited in several ways. In such studies, psychotherapy is probably based on the trauma model. Thus, individuals are likely biased toward reporting links between trauma and dissociation while minimizing the role of fantasy proneness or false memories, sleep, and other variables that would invalidate trauma as a determinative factor. Moreover, whereas most studies cited included at least one of the variables we identified, they did not consider other potential mediators or moderators of this link. For example, to their credit, Dimitrova et al. (2020) included sleep disturbances and fantasy proneness in their design, but they omitted other variables robustly related to dissociation, such as emotional dysregulation. Additionally, the sample sizes of the studies by Dimitrova et al. (2020; DID: $n = 17$; healthy controls: $n = 16$) and the Vissia et al. (2016; DID: $n = 17$; healthy controls: $n = 16$) are small and may be underpowered for statistical models including multiple predictor variables, which could yield spurious associations among constructs. Finally, few studies on the relation between trauma and dissociation, as well as variables highlighted in the proposed framework and SCM, employ longitudinal designs, and thus their resolving power to ascertain temporal precedence and interactions among constructs is restricted (e.g., Chiu et al. 2015).

FUTURE ISSUES AND DIRECTIONS

The relation of dissociation to other variables appears to be nuanced, complex, and, not unexpectedly, marked by both trauma and non-trauma-related pathways. We underline the need for open, data-driven etiological models that account for variability in the multifaceted construct of dissociation across different manifestations and disorders. Multivariate research can aid in refining extant theories by testing variables relevant to perspectives assessed with competing statistical models in the same experimental context. Longitudinal studies are a high priority to examine (*a*) causal antecedents of dissociation across diverse samples (e.g., clinical, nonclinical, different ethnic/racial composition) and situational contexts and (*b*) how dissociation arises in response to varying levels of social support, personal coping resources and strategies, and attachment to significant individuals. Finally, examination of differences in etiological models across DID and DDD should be accorded high priority, as these conditions appear to have both similar and different antecedents, and it is unclear whether and to what extent (*a*) depersonalization/disorder experiences precede or accompany DID and (*b*) severe and early trauma is a stronger predictor of DID than DDD where sleep disruptions may well be more influential. Seven areas and issues that researchers and theorists can mine in the future are discussed in greater detail below.

The Role of Trauma

Trauma may well be a more salient antecedent to dissociation in clinical compared with nonclinical samples in which sociocognitive and other variables (e.g., cognitive failures, sleep disruptions) may be more prepotent. Research is needed to delineate whether trauma, more general negative affectivity, and/or daily stresses mediate or moderate the various failures in adaptive systems or processes we have identified. We also suggest that researchers define clearly what they mean by a traumatic event and specify whether this designation refers to the nature of the event itself, the person's adverse response to the event, or both.

Trauma may be one of multiple pathways to dissociation. Trauma might engender or exacerbate adaptive failures and impair emotion regulation and sleep, for example, which prove to be more direct causal antecedents of dissociation. Conversely, trauma might mediate the relation between dissociation and sleep disturbances, emotion dysregulation, and other variables in our framework, and dissociative symptoms similarly could influence sleep, emotion regulation, and other indices of

psychopathology that recursively amplify dissociative tendencies (Granieri et al. 2018). Network analyses of symptoms as well as the variables we identified could be very helpful in illuminating these relations (Borsboom & Cramer 2013). Moreover, we suggest that sleep researchers carefully specify hypotheses in advance regarding which aspects of sleep and dreaming would be stress-related (e.g., repeated nightmares) or antecedents of dissociation and which aspects affect which types of dissociative experiences and under which nighttime and daytime conditions. Finally, it would be worthwhile to discover the extent to which DID and DDD and relatively mild manifestations of dissociation, such as dissociative absorption, vary as a function of different types and levels of exposure to trauma.

Comorbid Conditions

Not only is dissociation highly comorbid with schizophrenia spectrum disorders, including schizotypy, as well as BPD, but the disorders share similar impairments in adaptive functioning (e.g., deficits in emotion dysregulation, sleep, meta-cognition; see Lynn et al. 2019b). Still, it is an open question whether antecedents of these coexisting disorders differ and to what extent. For example, emotional dysregulation may be the strongest predictor of dissociation in individuals with BPD versus individuals with schizotypy, and sleep disturbances are likely more prominent in DDD than in DID, which may co-occur.

Interactive and Recursive Relations

The variables we have reviewed likely interact recursively (Aksen et al. 2021) and in complex ways, reinforcing the need for longitudinal research to establish lagging variables and temporal precedence and potentially complex interactions among variables. A key question is whether trauma or stressful circumstances operate indirectly through the variables we identify in our proposed framework (e.g., emotion dysregulation, sleep experiences such as nightmares and sleep paralysis) and whether there are bidirectional relations between stressful and highly adverse experiences and failures in emotion and sleep regulation, hyperassociativity, and meta-cognition. For example, DDD might be the product of a breakdown in reality-testing mechanisms and alexithymia linked with feelings of psychological detachment and numbness, intrusions of unusual dreamlike cognitions in the daytime, and stressful events in daily life such that DDD symptoms serve a defensive adaptive function and become negatively reinforced. Moreover, it will be worth examining whether variables such as intrafamilial relationships, conflict, and attachment to significant figures (which we cannot review here because of space limitations) mediate or moderate dissociation more so in DID than in DDD (see Schimmenti 2017). Responses to highly adverse events in familial contexts may reveal different antecedents than responses to non-family-centered events, and reactions to repeated adverse versus single high-impact events may differ as well. Capitalizing on powerful statistical techniques, future studies promise to map networks of interacting variables and symptoms of dissociation (McNally 2021, Schimmenti 2016) onto a more comprehensive and refined theoretical scheme. In doing so, it will be important to identify which constructs precede or engender dissociative experiences as a function of the samples and contexts in which dissociation is measured. This effort can ultimately inform not only theory but also treatments for dissociative conditions.

Qualitative and Idiographic Studies

Qualitative studies can contribute to understanding dissociative experiences and the formation of narratives of a dissociated identity (Černis et al. 2020). Ideally, such studies would include a rigorous historical analysis of perdurable and changing views of the self in relation to developmental milestones, family influences and relationships with significant others (e.g., attachment; Liotti

2006, Schimmenti & Caretti 2016), exposure to sociocultural influences (e.g., movies, television, Internet), fantasy involvements, suggestive elements in previous or current therapies, coping resources, and responses to highly adverse events. Phenomenological inquiry can be usefully combined with structural and functional neurophysiological data and genetic analyses (Millière et al. 2018). Idiographic accounts can be important in therapeutic (and other) contexts where the determinants of dissociative conditions vary on a highly individualistic basis with unique blends of interactive variables and symptoms that explain the experience of dissociation.

Complex, Nuanced, Fine-Grained Analyses

We suggest that researchers and theoreticians not settle for simplistic explanations of complex psychological phenomena such as dissociation. As DID is a disturbance in beliefs and the experience of the self, exactly how such dysfunction comes about could be examined in more fine-grained ways (Şar 2017) including research that distinguishes among disturbances in the embodied self, the social self, the self as agent, and the self that filters, contextualizes, and shapes a coherent sense of identity and reality. Likewise, studying experiences of ego dissolution, such as those achieved after ingesting psychedelics or meditation or in the presence of serious psychopathology, can provide a window into how consciousness fluctuates or progresses from states of minimal phenomenal experience or prereflective awareness to the sense of a divided self, and to goal-directed thought and action bound to awareness of the self as a doer (Milliere 2019, Sebastian 2020). Moreover, scant attention has been devoted to disruptive cognitive and affective intrusions and whether they are related to sleep experiences, trauma-related memories and experiences, hyperassociation, memory distortions, and emotional dysregulation.

Creativity, Mystical Experiences, and Psychedelics: Biomarkers and Psychophysiological Studies

We further suggest that researchers explore (*a*) the subjective and psychophysiological similarities and differences between creativity (van Heugten-van der Kloet et al. 2015a) and highly positive dissociative experiences (e.g., mystical experiences or experiences of unity/oneness with everything while dissociated from the environment) versus aversive dissociative states, (*b*) dissociative states produced by psychedelic compounds that activate serotonin 2A receptors and states associated with depersonalization/derealization (Kraehenmann et al. 2017), and (*c*) the latter states compared with spontaneous and deliberate creative dissociative states after exposure to psychedelics (Mason et al. 2021). Psychophysiological studies that carefully define what is meant by dissociation (as it can be conceptualized in different ways; Cardeña 1994), specify predictions in advance, define the meaning of a biomarker and control for arousal level, sample a range of dissociative experiences (e.g., feelings of unreality and anomaly, loss of agency; Černis et al. 2020), and control for general psychopathology are imperative.

Dissociation in the Laboratory

Laboratory studies that create dissociative experiences via mirror gazing, dot staring, pulsed photo and audio stimulation, and stimulus deprivation (Caputo et al. 2021, Leonard et al. 1999) can ascertain how individual differences in emotion regulation, hyperassociativity and set switching, interoception, reality orientation/awareness, and cognitive intrusions relate to dissociative experiences across diverse states of arousal and stimulus valence. As context effects can potentially inflate intercorrelations among self-report measures, future studies would benefit from counterbalancing scales and administering them in different experimental contexts (Lemons & Lynn 2016) while also controlling for tendencies to overreport symptoms (Merckelbach et al. 2017).

Our framework is provisional and open to revision: So much has yet to be explored. The focus on trauma as the driving force of dissociation has produced tunnel vision among many researchers and theorists, blinding them to the array of candidate transtheoretical and transdiagnostic constructs and mechanisms that potentially account for failures of adaptive functioning and systems associated with dissociative conditions. Research along the lines we delineate promises to enhance our understanding of not only dissociation but also mechanisms associated with variations in consciousness more broadly and the formation of beliefs about the self and the formation of identity. Finally, greater appreciation of failures to control and modulate conscious states and of how to bring them into equilibrium will hopefully spur more effective transdiagnostic therapeutic approaches that treat patients suffering from serious dissociative and comorbid conditions.

SUMMARY POINTS

1. Dissociation and dissociative disorders have garnered much attention and controversy from the time of Janet's [1973 (1889)] seminal writings to the present. The prevalence of dissociative disorders varies highly and ranges from about 1% to 20%. The high comorbidity of dissociative conditions and symptoms with many disorders (e.g., mood-related conditions, borderline personality disorder, schizophrenia spectrum disorders, conversion disorder, posttraumatic symptoms) attests to the transdiagnostic nature of dissociative symptoms.
2. The posttraumatic model (PTM) and the sociocognitive model (SCM) of dissociation and dissociative disorders [e.g., dissociative identity disorder (DID) and depersonalization/derealization disorder (DDD)] have dominated theoretical accounts and continue to compete for empirical support. The PTM views dissociation as an internal defensive coping mechanism in response to inescapable psychic pain, threat, or danger, including abuse in childhood. In contrast, the SCM views dissociation as the by-product of sociocultural (e.g., media, therapist suggestive influences) and cognitive variables (suggestibility, fantasy proneness, cognitive failures).
3. In recent years there have been moves toward a rapprochement across perspectives in terms of uncontested and converging claims including the following: (*a*) dissociative experiences can be evaluated, (*b*) signs and symptoms of DID exist, (*c*) people typically do not fake or deliberately role-play DID, (*d*) DID is a disorder of belief regarding the self, (*e*) dissociative experiences and symptoms are multidetermined, (*f*) dissociation has neurophysiological and genetic correlates worthy of study, (*g*) fantasy proneness is one of many risk factors for dissociation, and (*h*) effective treatments are a high priority.
4. Despite convergence of claims across perspectives, neither the PTM nor the SCM provides a complete or fully satisfactory account. In response, we propose a fluid, open, multifactorial, transdiagnostic, and transtheoretical framework. Our framework suggests that the origins of dissociative symptoms extend well beyond trauma and views dissociative experiences and symptoms in terms of failures of multiple adaptive systems and processes that steer cognitions, emotions, and behaviors in everyday life.
5. The framework holds that dissociation often originates in spontaneous modes of consciousness related to models of the self, the world, and the experience of reality. The framework also considers the potential influence of poorly modulated set shifts, intrusive thoughts, poor or unstable reality testing, and hyperassociativity; failures in

meta-cognition, alexithymia, and self-regulation; boundary failures or overlap between states of waking life, sleep, and dreaming; and attribution errors associated especially with DID.

6. We review multivariable studies that have tested the robustness of the relation of dissociation with variables pertinent to the proposed framework (e.g., emotion regulation, alexithymia, sleep disturbances, stress and potential trauma) as well as the trauma and sociocognitive models, and we identify multiple potential pathways to dissociation that highlight the need for a multifaceted theory.
7. We identify issues and directions for future multivariate research that features open, data-driven etiological models across different manifestations of dissociation (DID, DDD) and encompasses (*a*) longitudinal research, network analyses, studies of interactive and recursive relations among candidate variables, and qualitative and idiographic studies; (*b*) research on how dissociation arises in response to varying levels of social support, coping resources and strategies, and situational contexts; (*c*) studies of stress and trauma that clearly define a traumatic event and whether the designation refers to the event itself, the response to the event, or both; (*d*) studies on proposed mechanisms in comorbid conditions; (*e*) research on DID as a disturbance in beliefs regarding the self in more fine-grained ways, including disturbances in the embodied self, the social self, the self as agent, and the sense of identity; (*f*) studies of the relation between dissociation and mystical and psychedelic experiences in the context of psychophysiological studies; and (*g*) research that capitalizes on the study of dissociation in the laboratory.
8. We suggest that greater appreciation of failures to control and modulate conscious states and of how to bring them into equilibrium will spur more effective transdiagnostic therapeutic approaches for patients suffering from serious dissociative disorders.

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