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# Dissociative Experience and Cultural Neuroscience: Narrative, Metaphor and Mechanism

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## Abstract

Approaches to trance and possession in anthropology have tended to use outmoded models drawn from psychodynamic theory or treated such dissociative phenomena as purely discursive processes of attributing action and experience to agencies other than the self. Within psychology and psychiatry, understanding of dissociative disorders has been hindered by polemical “either/or” arguments: either dissociative disorders are real, spontaneous alterations in brain states that reflect basic neurobiological phenomena, or they are imaginary, socially constructed role performances dictated by interpersonal expectations, power dynamics and cultural scripts. In this paper, we outline an approach to dissociative phenomena, including trance, possession and spiritual and healing practices, that integrates the neuropsychological notions of underlying mechanism with sociocultural processes of the narrative construction and social presentation of the self. This integrative model, grounded in a cultural neuroscience, can advance ethnographic studies of dissociation and inform clinical approaches to dissociation through careful consideration of the impact of social context.

### Keywords

Dissociation; Dissociative disorders; Trance; Possession; Healing; Cultural psychiatry

## Introduction

Dissociation is a term used to describe both a set of behaviors and experiences involving functional alterations of memory, perception and identity as well as the psychophysiological processes presumed to underlie these phenomena (Spiegel and Cardeña 1991). Dissociative experiences have typically been thought to exist on a continuum, ranging from everyday experiences of absorption like “highway hypnosis” through more intense and prolonged forms of dissociative experience such as depersonalization and derealization, to more profound dissociative phenomena that include various forms of dissociative amnesia and alterations in identity (e.g., Dissociative Identity Disorder (DID, formerly Multiple

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Personality Disorder or MPD) (Kihlstrom 2005). Current emphasis on the relationship between dissociation and trauma-related pathology has given renewed momentum to the study of dissociative responses within the psychiatric literature.

Around the world, dissociative experiences take place in three main contexts: (1) in response to acute stress or trauma; (2) in socially sanctioned rituals and healing practices that are associated with religious meaning systems, or in artistic performances; and (3) as spontaneous fluctuations in ordinary conscious experience that often go unrecognized or unmarked unless they resonate with local systems of meaning (Kirmayer and Santhanam 2001). It is often assumed that dissociation across these different settings involves the same underlying psychophysiological mechanisms. However, this remains uncertain given the state of current knowledge about both the mechanisms and functions of dissociation. For the most part, the anthropological discussions of dissociative phenomena in cultural context (e.g., trance and healing, possession states) have remained separate from the clinical and experimental literature on dissociation. In this paper, we bring these two literatures together to consider what they have to contribute to each other. Anthropological studies of trance, possession and healing can benefit from the models available in current research on dissociation and hypnosis. In turn, understanding dissociation in social and cultural context offers clues to its underlying cognitive and social mechanisms and challenges the tendency to see dissociation as evidence of psychopathology.

Theoretical approaches to dissociation fall under two main paradigms that we will call the “psychiatric-adaptive” and the “anthropological-discursive.” From the psychiatric perspective, dissociation is thought of mainly in terms of psychological function and neurobiological mechanism. The experience of dissociation is assumed to be a direct product of an underlying neurological mechanism that is triggered functionally. The anthropological paradigm, on the other hand, treats dissociation as primarily a social and rhetorical phenomenon: dissociation is a way of creating social space or positioning for the performance and articulation of certain types of self-experiences in particular cultural contexts.

For the most part, these two paradigms are non-overlapping. Most psychiatric approaches to dissociation do not explore the social meaning of dissociative experience and how meaning influences its adaptive or maladaptive consequences in the context of trauma or other life circumstances. Most anthropological approaches to dissociation focus on the discursive functions of dissociation and do not consider the emotional context and biological mechanisms of dissociative experiences.

The contrast between the discursive and psychopathological accounts of dissociation parallels the long debate in the field of hypnosis between state and role theories (Hilgard 1969, 1973; Bowers 1991; Kirmayer 1992).[1] Briefly, state theories have argued that there is a discrete psychophysiological or cognitive state of ‘trance’ that characterizes hypnosis (Gruzelier and Brow 1985). Hypnotic trance has both a distinctive experiential quality and,

[1]For a thorough discussion of the relationship between hypnosis and dissociation see: Hilgard 1986; Kirsch and Lynn 1998; Spiegel 1988; Spiegel and Cardena 1991; Butler 1996 among others.

presumably, unique cognitive, attentional or information processing features that mark it off from other states of consciousness and modes of functioning. In contrast, role theorists have argued that the phenomenon of hypnosis (including behavior viewed as evidence of trance) reflects socially scripted performances with no discrete or unique mode of information processing or alteration in consciousness (Chaves 1997). To a large extent, this controversy hinges on definitions of 'role' and 'state'—on how large a shift in functioning must be to warrant recognition as a different 'state' and whether this shift resides in some discontinuous psychological or physiological process or is (merely) socially marked.

These dichotomous paradigms assume, in accordance with the long tradition of mind-body dualism, that there is some great division between brain state and social role—that they reflect separate, unrelated processes. On the contrary, we argue that state and role—our metaphorical understandings and experiences of shifts in consciousness—are continuous and mutually reinforcing (Kirmayer 2006). Our model of dissociation, discussed at length below, treats it as the product of normal processes that regulate the flow of attention and information related to things such as social role performance and discursive practices related to self. In this view, dissociation is a type of cognitive resource-management strategy that is sometimes socially marked and sometimes not. Thus, dissociative experiences may be *highly* socially scripted, yet have a neurobiological substrate that is not "merely" socially scripted, and can occur in forms that are independent of, contradict, or subvert social scripts.

In the following sections, we briefly review what is known about non-pathological dissociation. Then we describe the two paradigmatic approaches to understanding dissociation in depth, identifying the strengths and weaknesses of each and evaluating what they have to offer one another. Next we review the current literature on neurobiological mechanisms and elaborate our own model for conceptualizing the interaction of psycho-bodily and socio-cultural factors in dissociation. Our goal is to lay the groundwork for a comprehensive, culturally informed understanding of both dissociative processes and experiences that addresses the shortcomings of both the anthropological and psychiatric paradigms.

## Normative Dissociation

The psychiatric and anthropological approaches to dissociation share a tendency to focus almost exclusively on its most intense or dramatic forms (Lynn 2005). Psychiatrists have concentrated mainly on clinically significant dissociative disorders involving identity disturbances, fugue states and amnesia, while anthropologists have focused on ritualized trance and possession behavior. However, non-pathological or normative dissociative experiences are ubiquitous and reflect normal variations in consciousness due to functional shifts in attention and information processing. A closer examination of the processes involved in normal dissociative experiences can help illuminate the interactions of mechanism and meaning in the production of socially and culturally significant dissociative experiences. Here, we briefly review some recent literature on the qualities and distribution of normative dissociative experiences.

Normative dissociative phenomena typically involve experiences of absorption, defined as the profound narrowing or concentration of attention and focused deployment of cognitive resources; the absorbed individual becomes unaware of the external environment, self-awareness and critical thought are suspended and time perception may become distorted (Butler 2006; Klinger 1978). Absorption often involves engagement with external objects or events, such as films, television, books, music and the like. Such absorption can be pleasurable, and many forms of recreational pursuits may involve voluntary or purposive entry into dissociative states (Butler and Palesh 2004).

Absorption may also involve engagement with internally generated thoughts, images, or imaginative content; examples include daydreaming, reverie, deliberation and fantasy. Research on daydreaming finds that as many as 90% of individuals report engaging in some form of daydreaming on a daily basis, and some studies suggest that as much as half of our mental activity is spent in daydreaming of some kind, although frequency and intensity appear to decrease with age (Butler 2006; Giambra 1999; Klinger 1990). Like externally oriented absorption, such internally oriented forms are also frequently associated with pleasure and may be deliberately sought, but are more often spontaneous.

Several researchers have also noted an association between satisfying or significant personal experiences—such as engagement in hobbies, prayer, sex or communing with nature—and positive dissociative experiences (Pica and Beere 1995; Butler and Palesh 2004). Such experiences have been likened to the concept of “flow” in which an optimal fit between challenges and skills creates a seamless integration of action and awareness that is deeply absorbing and can result in a dissociative-like suspension of self-reflexive consciousness (Csikszentmihalyi 1978, 1996).

Other common experiences of dissociation may involve feelings of depersonalization (the sense that one is not real) and derealization (the sense that the world around one is not real), in the context of positive affect (Pica and Beere 1995). Dissociative symptoms like amnesia and identity disruption are less common in non-pathological form, though some have argued that ordinary absent-mindedness may be related to dissociative processes that underlie more severe forms of amnesia (Ray 1996).

A few studies have measured dissociative experiences in non-clinical populations. Ross and colleagues used the Dissociative Experiences Scale (DES) to measure dissociation in a sample of 1,055 Canadians from the general population (Ross et al. 1990). The DES has three main factors in “normal” samples: absorption-imaginative involvement; activities of dissociative states (amnesia); and depersonalization–derealization. The absorption factor was widely endorsed by individuals in the general population, with 83% of subjects endorsing at least one of the items (Ross et al. 1990, 1991). A negative correlation was found between age and dissociative experiences; younger people (e.g., college students) reported more dissociative experiences than older individuals, particularly absorption and depersonalization experiences (Ross et al. 1990; Ray 1996).

Though many of the college students who scored high on the DES came close to meeting the criteria for DSM-IV dissociative disorders, it is notable that they failed to meet the distress

criterion (Ross et al. 1990). This criterion states that individuals must experience "clinically significant distress" or impairment as a result of symptoms (DSM-IV). These results suggest that many individuals, particularly adolescents and young adults, function with high levels of dissociative experiences in their daily lives without perceiving these experiences as distressing or disruptive.

Examination of dissociative experiences in non-clinical populations suggests that not only are such experiences not inherently distressing, but that they may often be associated with pleasurable or playful recreational or creative activities. Individuals who spend much time engaged in reverie or other forms of absorption may have good adaptation in everyday life (Lynn and Rhue 1986; Rhue and Lynn 1987; Rauschenberger and Lynn 1995; Merckelbach et al. 1999). Indeed, the capacity to experience absorption may contribute to better functioning or performance in certain types of activity. In other words, a shift in consciousness such that active self-awareness is temporarily suspended may itself be a satisfying and desirable state, in the right context. This idea forms an important back-drop for our discussion of the psychiatric approach to dissociation.

## The Psychiatric-Adaptive Paradigm

Current psychiatric approaches to understanding dissociation favor functional explanations. What dissociation *is*, and what it is *for* are often conflated in such accounts. This conflation of function and phenomenon is part of the reification of the concept of dissociation as a discrete state or process rather than as a complex performance that is the outcome of interacting attentional, cognitive and social processes. Conceptualizing dissociation as a single entity, in this case a specific type of neurobiological response, encourages a search for a relationship to a specific causal factor or stimulus and a specific purpose or function. Currently, the dominant functional explanation for dissociation in psychiatry hinges on a link to psychological trauma.

The linking of trauma and dissociation dates back to the works of Freud, Breuer and Janet on hysteria, as well as that of Morton Prince on multiple personality and dissociation—all of whom put forward the notion that dissociative symptoms frequently develop in response to "subjectively perceived traumatic events" (Spiegel and Cardeña 1991; Griffin et al. 1997). In the 1970s, increasing recognition of the prevalence of childhood physical and sexual abuse lent credibility to the idea that dissociative disorders among adults often reflected the delayed effects of such trauma (Hacking 1995; Acocella 1999). Although the claim that childhood abuse can be forgotten (through a process of dissociative amnesia or repression) only to re-emerge at a much later date remains contentious (McNally 2004), more recent research has cemented the association between extreme psychological stress (e.g. sexual and physical abuse, rape, war experiences, natural disasters, assault and motor vehicle accidents) and dissociative symptomatology (van der Kolk and Van der Hart 1989; Coons et al. 1989; Ogata et al. 1990; Terr 1991; Kirby et al. 1993; Spiegel 1991). Still more recently, a growing body of research on the connection between dissociative experience at the time of a traumatic event (known as "peritraumatic dissociation") and later post-traumatic symptoms has supported the centrality of the trauma-dissociation relationship (van der Kolk and Van der Hart 1989; Marmar et al. 1994; Griffin et al. 1997; Koopman et al. 1994, 2004).

The current emphasis on trauma in dissociation research may be due in part to the same array of social and political factors that have garnered so much attention for trauma more generally in the last 25 years; these include the plight of the U.S. veterans of the Vietnam War and subsequent conflicts as well as the effects of natural catastrophes (Breslau 2004; Young 1995). In the dominant paradigm, trauma and acute stress are viewed as both proximate triggers and distant causes for the evolution of dissociation as an adaptive mechanism. Many researchers and clinicians believe that dissociation acts as a sort of built-in defense mechanism (probably evolved, though this is often left implicit), employed by some trauma survivors in order to block their own awareness of traumatic experiences with which they are unable to cope, or to psychologically escape intolerable situations when physical escape is impossible (Kihlstrom 2005). Dissociation, therefore, allows individuals to protect themselves from the extreme emotion and arousal triggered by a traumatic event. In some cases individuals are protected even from memories of the event, when psychogenic amnesia is produced (Williams et al. 2003; Kihlstrom 2005). In such cases, researchers argue that traumatic stress "interferes with the consolidation of consciously accessible narrative memory" (Kihlstrom 2005; van der Kolk 1994).

In one explicitly evolutionary version of this adaptive explanation, it is argued that depersonalization (a key dissociative symptom characterized by the feeling of being detached from one's physical and/or psychological being) is actually hardwired as an adaptive mechanism (Sierra and Berrios 1998). The argument is that in the face of certain types of acute stress—specifically, situations in which the individual lacks control over the environment and cannot localize the source of threat (e.g., natural disasters)—the inhibition of "non-functional emotional responses" would serve an adaptive purpose. Such emotional numbing might protect individuals from inappropriate emotion-related behavioral responses, like fight or flight, while at the same time heightening their alertness and allowing for the "simultaneous multisensory scanning of relevant information" from the environment (Sierra and Berrios 1998:904). Inhibition of emotional responses and suppression of autonomic arousal in turn creates the feeling of unreality and distancing from self and world that characterize depersonalization: one feels numb, as though everything is perceived at a distance or through a fog; things seem to lack reality, taking on a dream-like quality.

While the adaptive paradigm traces its roots all the way back to Freud and Janet, it was during the 1980s, when dissociative disorders enjoyed a major resurgence of interest, that this paradigm was most explicitly stated (Bliss 1980, 1984; Putnam 1989; Kluft 1984). In such accounts, the whole range of dissociative symptoms is characterized as adaptive, as the following example illustrates:

> "[Dissociation is] an emergency defense system in humans and other animals… The animal is protected by trance from overwhelming anxiety and its somatic consequences… If the animal subsequently survives, posttrance amnesias and distortions protect against crippling residual phobias. The absorption and suggestibility of the trance state allow intense concentration on the problem of survival and automatic obedience, which is often adaptive in the presence of the attacker…. The "hidden observer" phenomenon allows the traumatized individual

> objectivity and emotional distance despite the… threat (Goodwin and Sachs 1996)."

While the paradigm was explicitly articulated by some researchers in the 80s, more recent publications tend to refer to the adaptive paradigm more obliquely, without articulating its details. Authors routinely refer to the "dissociative defense," and to "dissociative coping" responses, or begin their articles with phrases like "it is widely accepted that" or "most theorists agree that" dissociative states are "ways of coping with exceptional situations," or serve "a defensive function against situations of stress" (Collins and French 1998; Terr 1991; Silon 1992; Foa and Hearst-Ikeda 1996; Nijenhuis et al. 1998; Ogawa et al. 1997; Briere 2006; Briere et al. 2005; Simoneti et al. 2000; Goodwin and Sachs 1996; Martinez-Taboas and Bernal 2000). Thus, in more recent work, the paradigm is widespread and structures researchers' approaches to dissociation without itself being the topic of empirical research.

However, despite the pervasiveness of this adaptive paradigm, dissociation generally is considered pathological from the psychiatric perspective for several reasons: (1) it may interfere with ordinary perceptual, cognitive and attentional processes; (2) it may compartmentalize, disrupt and disorganize memory; (3) individuals who dissociate may experience a feeling of unreality and detachment from self and world; (4) any of these effects may be experienced as distressing because the non-normative character of dissociative experience affects the way individuals evaluate their own internal state, comparing experience to available expectations and explanatory models; (5) these non-normative states of mind may lead to dysfunction, as individuals are unable to fit their behavior to the needs and expectations of the society around them. In more extreme cases people may experience disruptions of identity, often articulated as the experience of multiple selves with separate memories and largely non-overlapping awareness (Kluft 1996). The characteristics of dissociation that affect attention, cognition, memory and identity violate normative (in the dominant, Euro-American ethnic context) expectations for a unitary, coherent, autonomous self and can also lead to distress as a result of social processes of labeling and stigmatization.

How do we reconcile the adaptive paradigm with the potentially pathological implications of dissociation? There are several ways of understanding the relationship between adaptive and pathological. First, there may be a continuum of intensity or type of dissociative experiences. While some degree of dissociation may be viewed as adaptive in the short-term, in the immediate face of highly stressful and traumatic events, extreme and/or prolonged dissociative responses, like DID, dissociative fugue, or amnesia, in which an individual's memories or coherent sense of identity are lost or undermined, are thought to be maladaptive.

Second, dissociative experiences may be seen as maladaptive when experienced outside the context of severe stress, in response to minor stressors, spontaneously, or continuously. In this way, even less severe forms of dissociation, such as depersonalization, derealization and the sporadic phenomenoma categorized by DSM-IV as 'dissociative disorders not otherwise specified,' are considered pathological. The experience of emotional numbing, for instance, argued to be a hardwired adaptation to acute, uncontrollable stress, may be merely

distressing, not adaptive, when triggered in every day life. When persistent, such numbing may impair cognitive and social functioning and be brought to clinical attention. Thus, dissociative symptoms become pathological when experienced out of context.

Third, while dissociation may protect the individual from conscious awareness of the traumatic event and its sequelae, some clinicians and researchers argue that trauma nevertheless leaves its mark on the brain and is recorded in non-narrative (or 'non-declarative') forms of memory (van der Kolk and Kadish 1987;van der Kolk and Van der Hart 1991; van der Kolk 1994). Hence, in their view, the dissociative defense-mechanism is imperfect in that it cannot protect the individual completely from the effects of trauma, the harmful residue of which must be dealt with eventually (van der Kolk and Van der Hart 1989). Indeed, the process of dissociation itself may involve cognitive effort that adds a toll to the stressful effects of traumatic experience.

Dissociation that takes place during a traumatic experience (e.g., the surreal quality of action and the slowing of time during a car accident, or the feeling of detachment from self and surroundings during a rape) has been termed "peritraumatic dissociation" (Ozer 2003; Birmes et al. 2003). Although this acute reaction to trauma has been viewed as an adaptive strategy, reflecting sped-up information processing or shielding of the self from terror, some researchers have come to question the adaptive or protective function of dissociation because of evidence linking peritraumatic dissociation to the later development of PTSD symptoms (Griffin et al. 1997; Delahanty et al. 2003; Koopman et al. 2004). Individuals reporting high levels of peritraumatic dissociation have consistently been found to report higher levels of PTSD symptoms, particularly symptoms related to avoidance, when measured at follow-up (Ozer et al. 2003; Griffin et al. 1997). These findings suggest that dissociative responses to acute stress may be a risk factor for the onset of other forms of trauma-related pathology. This may reflect the fact that the propensity to respond with dissociative symptoms during stressful events indexes a personality trait or coping style that is associated with increased risk of psychopathology. While dissociation may protect individuals from suffering debilitating fear, anxiety and arousal during a traumatic event, it may also interfere with later cognitive and emotional processing of the event, ultimately hampering healing (Griffin et al. 1997; van der Kolk and Fisler 1994, 1995).

There are several problems with the psychiatric-adaptive paradigm, and with the trauma-dissociation link, more generally. First, as mentioned above, the notion that dissociation is an adaptive response to acute stress is treated as a priori knowledge and rarely examined in terms of how dissociation might actually contribute to positive adaptive outcomes over the short or medium term. Second, the notion that dissociation has long-term maladaptive consequences is based on correlational evidence—no causal connection has been established. Thus, dissociation *per se* may not be maladaptive in the long-term, but rather some other factor that causes the same individuals who dissociate in response to trauma to develop symptoms of PTSD. For example, the amount of negative emotion generated by a trauma for a given individual may be responsible for both an increased tendency to dissociate during the trauma and for the later development of PTSD, with no real connection between the two apart from their common cause (Briere et al. 2005; Candel and Merckelbach 2004). Another factor that could account for the apparent connection is

suggested by research on suppressed emotion, which indicates that the effort involved in active suppression of distressing memories may itself exact a psychological and physical toll (Wegner 1992; Pennebaker 1989, 1995), as psychoanalysis long ago discerned. Finally, the propensity to dissociate in response to acute trauma may mark a personality characteristic that contributes to other psychological difficulties later on. We will return to these ideas in our discussion of dissociative mechanisms.

Third, and even more fundamental, is the failure of this adaptive-maladaptive perspective to recognize the importance of context in determining the functionality, dysfunctionality and semantics of dissociation. Whether or not dissociation functions adaptively has to do with both the context in which it is produced (e.g., in response to trauma or not) and the context in which it is experienced and expressed (e.g., whether it is perceived by self and others as abnormal, distressing, and or dysfunctional). The psychiatric paradigm assumes the dominant Euro-American ethnic context, in particular, in which culturally salient dissociative experiences are those that take place in response to trauma. Such a context may mean dissociation that has short-term adaptive value in the face of extreme stress, and long-term maladaptive consequences in the face of dominant Euro-American notions of psychosocial trauma, the value placed on autonomous and coherent personhood, and the emphasis on facing, owning, and integrating traumatic memory (Hacking 1995; McKinney 2007; Georges 2002).

Just as culture influences the construction of pathology, so it also influences the forms of healing (Kirmayer 2004). In the dominant Euro-American culture, there is an emphasis in psychotherapy on confession and the dominant perception is that one cannot heal without telling and integrating traumatic experience (Georges 2002; Kirmayer 2007). In this context, avoidance, denial, and repression have negative psychological and sociomoral implications, so it is understandable how trauma-related dissociation could leave individuals vulnerable to other trauma-related pathologies. However, the discursive meaning of dissociation, in terms of what it communicates about selfhood and the meaning of posttraumatic pathology in terms of its moral, legal and political implications, are not issues addressed by most psychiatric researchers. For example, the connection between the development of PTSD as a diagnosis and the need to both morally and politically legitimize the suffering of Vietnam veterans has been carefully drawn by Allan Young and others, yet an awareness of the role such contextual factors play in motivating expression and diagnosis of mental disorders and, ultimately, in determining the meaning of suffering from a particular disorder, does not seem to have penetrated the world of PTSD research (Young 1995; Summerfield 2001; Scott 1990). Systematic consideration of the role of social context in shaping the trauma-dissociation link is all the more important given the ever-expanding scope of traumatic victimhood covered by contemporary PTSD research—a trend exemplified by the development of the categories of ‘intergenerational’ and ‘vicarious’ traumatization that include as victims those indirectly exposed to trauma, such as therapists, bystanders and multiple generations within families (Arnold 2005; Baldwin et al. 2004; Baranowsky 1998; Canfield 2005; Hovens and van der Ploeg 2002; Kidron 2004; Yehuda 1998).

Dissociation in other cultural contexts may or may not be related to trauma. Even when trauma does act as a trigger, the meaning of dissociative experience depends on how health,

pathology and healing are defined in the particular setting. In many settings, dissociation is unlikely to have the same, apparently maladaptive, connection to the development of later trauma-related pathologies. This is because the failure to "face" trauma by acknowledging it verbally may not be a barrier to healing in all contexts. In fact, the insistence upon talking about and focusing on trauma might be considered more pathological than its avoidance in certain contexts, as Pupavac argues in the case of Kosovo Albanians (Pupavac 2002).

Of course, dissociation should be distinguished from simply not talking about things, since it entails a partitioning of awareness and memory at non-cognitive or pre-cognitive levels of activity and not merely a failure to socially narrate consciously accessible material. However, contexts in which potentially traumatic experiences are not talked about, but dealt with in other ways, may overlap with or share similarities with contexts in which dissociation is not associated with subsequent risk for trauma-related pathologies. For example, Wikan (1990; also see Geertz 1983) has described how Balinese work to manage difficult emotions arising from loss and trauma to maintain a 'smooth' facade and social self-presentation. This is essential to avoid personal illness, harm to others and even to the spirits of lost loved ones. At the same time, Balinese have been noted to make frequent use of dissociation not only in coping with stress but particularly in religious and performance contexts (Bateson 1975; Belo 1960). Similarly, Wellenkamp (2002) has demonstrated that among the Toraja in Indonesia emphasis is placed on avoidance of strong emotions because they are associated with bad health. Ways of dealing with strong emotions include repression, distraction, ritual practices and, in the case of death of a loved one, expression of the emotions through crying and wailing (Wellencamp 1988, 2002). However, narrating one's emotional state and talking explicitly about traumatic events do not seem to be among the usual ways of coping.

The claim that by narrativizing trauma we can gain mastery over it, and thereby reduce vulnerability to trauma-related distress, is well established in Western contexts (Pennebaker 1995). To date, these findings have been replicated in only a few cross-cultural studies, so we do not know whether the process of narrating stress and trauma functions similarly for individuals in cultures that have different notions of self and personhood, different ways of handling strong emotion, as well as different ways of explaining suffering and managing the moral economy of blame, restitution, and reconciliation (Pennebaker and Keough 1999; Georges 2002).

While narrative is likely to be related in some way to dissociation in multiple cultural contexts, the relationship is complex and bears close examination. Narrative appears to be important to self-processes in general, as a way of making meaning of experience and incorporating new material into self-understanding (Bruner 1996; Kirmayer 2000; Seligman 2005a). What seems to differ across contexts is the *type* of narrative called for in the face of dissociative experience: the narrative of trauma is one such culturally shaped template for explaining dissociation, but there are other models, which may confer specific psychological or social benefits in specific cultural contexts.

To the extent that individuals recognize dissociation in themselves or others, it appears as a named alteration in perception or identity or an inability to recall some period of time or

experience. Under ordinary conditions, dissociative gaps in experience may be smoothed over by narratives that create continuity of self, memory and experience. However, modes of narration of the self may not only represent dissociation but may actually contribute to it by scripting dissociative behavior or by failing to bridge a normative gap (Kirmayer 1994).

For instance, among participants in certain religions, like Candomblé in Brazil, dissociative experiences, along with other anomalous or distressing self experiences, are narrated as parts of a spiritual life history (Seligman 2005a, b). In these narratives, relevant experiences are made sense of in terms of unresolved spiritual disturbance and ultimate spiritual transformation. Narrative appears to be very important in this context for facilitating healing self-transformations, but it is a very specific, culturally patterned form of narrative that is demanded.

Differences in culturally available attributions and the narrative templates they structure mean that in some contexts, avoiding or detaching from some aspects of experience and memory does not violate expectations for personhood in the same way it does in the dominant Euro-American culture (Kirmayer 1994, 1996) which is, however, that of a minority of Euro-Americans but is enshrined in the DSMs (Gaines 1992). In such settings, dissociation may function as a non-pathological, cultural idiom of distress that brings about all sorts of social responses that contribute to healing much more effectively than talking about the trauma would in the same contexts. As the above example demonstrates, dissociation may also function adaptively in certain contexts where it has distinct non-pathological meanings, often spiritual in nature (see Seligman 2005a, b). In still other contexts, dissociation is not related to trauma at all, and is therefore likely to have entirely different functional implications. For instance, as our discussion of normative dissociation suggested, in the context of pleasurable and deeply engaging activities, dissociation may function to allow individuals to become fully absorbed in what they are doing, rather than reserving a portion of attention for self-conscious awareness. In many sociocultural contexts, dissociative experiences seem to be associated with the expression of alternative selves or identities that were not created in the context of trauma in order to separate traumatic memory from conscious awareness (as is the theory for multiple personality or dissociative identity disorder), but rather selves that exist but simply lacked the social space in which to emerge (Lambek 1981). These alternate selves reflect discursive possibilities in cultural models of the person that may be exploited when social circumstances evoke and sanction expression of these modes of experience. Such social and discursive functions have been the focus of most anthropological approaches to dissociation.

## The Anthropological-Discursive Paradigm

The social meaning and function of dissociation are given limited consideration in the psychiatric-adaptive paradigm. Because dissociation is considered a psychological adaptation, it is thought to have a direct connection to some underlying psychological or neuropsychological mechanism. The ways in which social contexts and meanings affect psychological processes, and even neuropsychological ones, remains under-theorized. Anthropological interpretations of dissociative phenomena, on the other hand, have focused

primarily on the social meaning and discursive function of dissociation, and tend to under-theorize its mechanism.

Contemporary anthropological analyses of dissociation concentrate on its function as a way of articulating certain self states in a manner that resonates with local cultural notions of personhood, rather than violating them (Hollan 2000a, b). In contrast to the dominant Northern European-American culture, other cultural notions of personhood do not place such a premium on the unitary, coherent and autonomous self, so that the experience of discontinuities in self is not considered a violation of norms and is therefore less distressing (Ewing 1990; Littlewood 1996; Shweder and Bourne 1984). Though it should be noted that drugs and music are means by which the dominant culture increasingly accesses dissociative states, anthropological inquiries into dissociation almost uniformly deal with dissociation in the context of religious and spiritual practices or healing rituals. Such religious belief systems make room for certain kinds of self-experiences by providing culturally relevant systems of attribution to spirits or other agencies distinct from the individual self (Seligman n.d.). Within such systems, the idiom of dissociation creates new discursive and rhetorical opportunities for talking about experience and identity. These social-communicative analyses also emphasize the related function dissociation serves in carving out new social space or positions for individuals, allowing them to establish different kinds of social roles and relationships not otherwise available to them (Lambek 1981; Boddy 1993). Dissociation allows individuals to suspend their normal self with its accompanying social constraints and enables them, therefore, to express novel, even normally forbidden, desires, feelings, and behaviors that they experience as—and that others attribute to—some agency other than the self.

Most anthropologists working within this paradigm are not interested in constructing a comprehensive explanation of dissociation, but rather aim to describe the meaning and function of dissociative experiences in particular cultural settings. Boddy, for example, argues that Zar spirit possession in Northern Sudan cannot be understood apart from the local gender dynamics and kinship system within which it is found (Boddy 1988, 1993). Women in Northern Sudan are surrounded by symbols and metaphors of idealized femininity that structure their subjective realities and leave little room for the development of an individual with individual self-awareness. According to Boddy, Zar possession, by widening the context in which a possessed woman operates, opens up pathways for self-renewal and allows women to move beyond the externally imposed female ideal (Boddy 1988). Furthermore, she argues that “unlike western psychotherapy which encourages the patient to accept and integrate previously dissociated feelings as part of herself, Zar therapy works by convincing her to recognize them as separated from herself in the first place” (1988:20).

In a Malaysian context, on the other hand, examining episodes of dissociative behavior among female factory workers, Ong demonstrates the role that spirit possession plays as an expression, “both of fear and of resistance against the multiple violations of moral boundaries in the modern factory. They are acts of rebellion symbolizing what cannot be spoken directly, calling for a renegotiation of obligations between the management and workers” (Ong 1988:38). Ong argues that the medicalized view of possession as pathology

imposed by the factory management serves the needs of management to control the workers. In such a context, the reduction of the dissociative episodes to a biological mechanism, even one acknowledged to be triggered by emotional distress, obscures the crucial political and social discursive meaning and value of the episodes.

In general, anthropological approaches tend to resist the medicalization of dissociative phenomena, and instead emphasize the complex web of meaning in which dissociation takes place; this includes the cultural construction of self and personhood, local cosmology and its implications for the social world, and how the personal, social and moral order is articulated, affirmed or contested within dissociative experience. Anthropological explanations are more concerned with the meaning of possession or other forms of dissociation, than with their mechanisms. Furthermore, while such explanations may consider the personal and social functions of dissociation in terms of how it is used to create and negotiate meaning, they are less likely to address how dissociative experiences per se facilitate this process. In other words, anthropological studies do not ask how and why dissociation comes to be employed in the service of specific social structural negotiations. What is distinctive about how dissociative processes lend themselves to meaning making, and what sorts of meanings do they demand?

In contrast to psychiatric accounts of dissociation that are primarily concerned with its biological basis and psychological triggers, anthropological accounts are mainly concerned with its social construction. The focus is typically on socially meaningful dissociation. Dissociation is viewed as agentic, pragmatic and sometimes even playful, but not an involuntary product of hardwired adaptive mechanisms. It is not surprising, therefore, that despite a large body of work documenting a great variety of dissociative phenomena across cultures, ethnographic approaches to dissociation have tended to ignore the issue of trauma and trauma-related pathology altogether. Thus, there are few data to address the possibility that participants in religious rites or other popular practices involving dissociation have experienced trauma or have pre-existing personality traits that make them prone to experience dissociation (or attracted to situations that allow them to experience dissociation (Castillo 1994a, b).

What is more problematic, however, is the failure to investigate or acknowledge the contexts of lived experience—that is, the psychological and emotional dimensions of dissociation—in general, except for that which is evident in its social-communicative functions. For instance, many social-functional analyses of dissociation describe the conditions of oppression and marginalization under which certain individuals are motivated to employ the idiom of dissociation in order to express themselves and expand their social ground. However, these analyses fail to address the psychological and emotional effects of marginalization to clarify how specific affective and cognitive experiences and processes might contribute to dissociation.

In general, the anthropological paradigm lacks a sense of how the social actions and events that trigger dissociation, and the social functions that dissociation serves, might interact dynamically with psychophysiological mechanisms in the production of dissociative behavior and experience. While some anthropological approaches to dissociation mention

notions of embodiment, the body itself tends to remain a metaphorical black box (with a few notable exceptions, cf. (Bateson 2000 (1973)). The few anthropological analyses that have tried to link cultural practices to physiological processes, for example, those of Raymond Prince and Barbara Lex (Lex 1979; Prince 1982), have been hampered by using out-dated neurophysiological theories and by methodological constraints on the ability to collect relevant data. However, insight into the ways that dissociative experiences are psychophysiologically instantiated can help us to better understand how bodily, cognitive and emotional processes interact with discursive practices to produce individually and culturally diverse experiences of dissociation.

## Mechanisms of Dissociation

In the past decade, interest in brain mechanisms and the availability of new imaging technologies has led to a small but provocative literature on the neurophysiological correlates of dissociation (Bremner et al. 1996; Krystal et al. 1998; Simeon et al. 2004).

Given the emphasis on trauma in the psychiatric-adaptive paradigm, it is not surprising that many of the studies investigating the biological mechanisms of dissociation involve subjects who have suffered traumatic experiences. These study designs have attempted to capture the relationship between dissociation, acute stress and trauma-related pathology. As a result, certain assumptions about biology are built into such research (i.e. complex experience can be linked to simple neurobiological correlates) along with certain assumptions about dissociation (i.e., dissociation is a response to trauma). Research shaped by these assumptions runs the risk of reducing the complexity of the social, cultural, cognitive, and biological dimensions of dissociation to a neurobiological event triggered by acute stress. Nevertheless, data on the psychophysiological and neurobiological concomitants of trauma-related dissociation can inform our understanding of dissociative processes more generally, if taken as part of a more integrated perspective.

## The Psychophysiology of Dissociation

Physiological activation or arousal usually accompanies experiences of intense emotion and distress. Recent studies have found a consistent association between trauma-related dissociation and the suppression of physiological arousal—in contrast to the previously established association between post-traumatic distress and *hyper*arousal (DSM-IV). For example, a study among recent victims of rape found that individuals who reported high levels of peritraumatic dissociation during their rape showed markedly different patterns of physiological response from rape victims who did not report high levels of dissociation (Griffin et al. 1997). High dissociators showed suppression of both skin conductance response and heart rate (HR) levels while talking about their rape (Griffin et al. 1997). In another study, researchers found similar suppression of physiological arousal among a high dissociating sub-group of adolescent victims of child abuse and neglect (Koopman et al. 2004). In addition, victims of motor vehicle accidents who reported high levels of peritraumatic dissociation were found to have lower levels of urinary catecholamines in the immediate aftermath of the accident.[2]

Suppression of autonomic arousal was also found in a study involving a severely distressed patient diagnosed with DID (Williams et al. 2003). While reliving traumatic incidents through script-guided imagery—an intervention that causes high levels of arousal among many individuals with PTSD—the patient's HR was significantly lowered. The patient also experienced reductions in psychological distress at the peak of her dissociative experience, including reduced anxiety and fear and an increase in feelings of control. Very few studies have examined the biological correlates of DID, the dynamic nature of the disorder making study design difficult (Tsai et al. 1999). While this is only a single case study, and therefore needs to be interpreted cautiously, it is of interest that the findings of suppressed arousal are consistent with findings of suppressed arousal in other forms of dissociation.

## The Neurobiology of Dissociation

Studying the neurobiology of dissociation is complicated by the fact that dissociative symptoms are so varied, both in terms of the type of experience involved (absorption, amnesia, feelings of unreality) and the degree of severity. Tests of theoretical models of the inter-relationships of different forms of dissociative experience are hampered by our rudimentary understanding of brain function in normal processes of memory and attention. Studies that attempt to locate characteristic patterns of brain activity depend on models of normal processing—which have made significant strides in the areas of attentional mechanisms and other processes relevant to dissociation, but which require further refinement (Raz 2005; Raz and Shapiro 2002). Given the spatial and temporal resolution of current functional neuroimaging, the correlates of psychological functioning are limited to relatively broad regions and gross levels of brain activation rather than the fine-grained analysis of distributed networks and rapid temporal dynamics that presumably subserve complex behavioral and experiential phenomena.

Depersonalization, a dimension of dissociation characterized by the feeling that one is detached from one's self, an outside observer of one's behaviors, mental processes, or body, is one of the more common forms of dissociative experience, and may often involve little distress (Aderibigbe et al. 2001; Hunter et al. 2004). However, depersonalization has been found to be among the top three most common psychiatric symptoms in clinical populations and Depersonalization Disorder has become an increasingly common diagnosis in recent years. Depersonalization has also been the focus of a number of neurobiological studies (Baker et al. 2003; Medford et al. 2005; Simeon et al. 2000, 2004). These studies have lent support to a 'cortico-limbic' model (Sierra and Berrios 1998) in which inhibitory activity in the prefrontal cortex disrupts the "emotional tagging" of perceptual and cognitive material by the amygdala and related structures. The disruption results in suppressed autonomic arousal and a sense of disconnection from reality. For example, in a functional magnetic resonance imaging (fMRI) study, researchers found that depersonalization patients showed less activation in regions of the brain associated with emotion sensitivity (i.e., occipito-temporal cortex) and more activity in regions associated with emotion regulation (Phillips et

[2]Differences in cardiovascular arousal were not found. However, unlike other studies that measured cardiovascular arousal during induced recall of traumatic events, this study took place immediately following the initial trauma, and did not ask participants to relive the event. Since cardiovascular responses to stress are generally acute, they may no longer have been present by the time measurements were taken (Delahanty et al. 2003).

al. 2001). In another study, researchers found that, compared to controls, subjects diagnosed with depersonalization disorder responded earlier to a startling noise, but showed suppressed autonomic response, suggesting an inhibitory mechanism affecting emotional processing (Sierra et al. 2005). Researchers have also found that severity of dissociative symptoms is negatively correlated with basal norepinephrine levels, also supporting an autonomic arousal blunting model (Simeon et al. 2003).

While the cortico-limbic model refers specifically to depersonalization, neuroimaging studies dealing with a broader range of dissociative symptoms have found evidence in support of a similar model. A recent study examining brain activation among PTSD patients in response to script-driven, trauma-related imagery found that individuals who reported high levels of dissociative symptoms in response to the traumatic script showed more activation in prefrontal and limbic structures compared to individuals who reported 'reliving' the trauma and who responded with hyperarousal (Lamius et al. 2002). Individuals who dissociated also showed no increase in HR while other PTSD patients displayed a significant increase in cardiovascular arousal. This pattern of brain activation and lack of autonomic arousal are consistent with a model of dissociation involving limbic inhibition by the prefrontal cortex.[3]

Interestingly, several recent studies of hysterical conversion have found similar patterns of brain activation.[4] These studies have demonstrated patterns of brain activity suggesting that hysterical conversion involves a cortical inhibitory mechanism that disrupts conscious awareness (Sierra and Berrios 2000). Neuroimaging conducted while patients suffering from hysterical paralysis attempted to move their affected limbs showed a pattern of activity different from that which took place when they moved their unaffected limbs (Oakley 2001). A neuroimaging study involving hypnotically induced paralysis also found a similar pattern of activation (Halligan et al. 2000). The brain imaging evidence has been interpreted to mean that somatosensory information continues to be processed at lower levels in such cases, but that inhibition by parietal and prefrontal structures disrupts the link between mechanisms that generate the intent for movement, and those responsible for its execution (Athwal et al. 2000).

Thus, in both trauma-related dissociation and hysterical conversion, neurobiological studies appear to implicate higher-order inhibitory mechanisms that create functional disconnections between various aspects of affective and somatosensory information processing by the brain. The experience of distancing or disconnection from self and world that characterizes depersonalization and derealization appears to be related to cortical inhibition of emotional processing. The experience of subjective loss of voluntary control over parts of the body appears tied to cortical inhibition of attention and awareness as well as disruption of the link between volition and execution.

[3]It should be noted that some evidence suggests script-driven arousal may be less closely related to actual trauma exposure than to other personality characteristics of the individual or the intensity of their "believed-in imaginings" (e.g., McNalley and Clancy 2005).
[4]Conversion symptoms, involving loss of sensory or motor functions due to psychological processes, have been viewed as examples of 'somatoform dissociation' (Nijenhuis 2004).

This work is consistent with studies of hypnosis which show that, in highly hypnotizable individuals, specific suggestions can reduce conflict between ordinarily competing attentional processes (Raz 2005). Functional brain imaging in this situation shows an effective disconnection between anterior cingulate cortex, thought to be involved in monitoring cognitive conflicts and other cortical regions involved in the cognitive or perceptual task (Egner et al. 2005; Raz et al. 2005). Through these mechanisms, hypnotic suggestion can create a functional dissociation that reduces conflict between otherwise incompatible cognitive processes, allowing potentially contradictory streams of information processing to peacefully co-exist.

Severe dissociative pathology, like DID, represents a particular challenge for neurobiological research because it involves the most behaviorally and experientially complex forms of dissociation—those affecting autobiographical memory and identity. The few neurobiological studies of severe dissociative pathology tend to focus on the substrates of memory-related symptoms and dissociative amnesia. Such studies have investigated the relationship of DID to hippocampal volume, which has previously been correlated with stress-related memory impairment in disorders like PTSD (Bremner et al. 1997; Sapolsky 1996). For example, a study comparing patients with DID to healthy subjects found significantly smaller volumes of the hippocampus and amygdala among those with DID (Vermetten et al. 2006). Similarly, an fMRI study of a woman diagnosed with co-morbid DID and PTSD found her hippocampal volume to be significantly smaller than those reported for normal female adults (Tsai et al. 1999). This study also measured functional changes in brain activity while the woman was switching from one personality to another. During the switch between personalities, there were changes in activation of the hippocampal and mediotemporal regions, both associated with explicit memory, as well as inhibition of the nigrostriatal system, involved in associational learning and implicit memory. Despite this study's many limitations, not least of which is its sample of one, its findings are provocative in terms of the relationship of dissociation to memory function. The findings suggest that what takes place in DID and dissociative amnesia may not be the disruption of memory encoding seen with acute stress, but some form of compartmentalization of memory that occurs during the encoding process.

Severe identity disruptions of the sort that characterize DID appear to involve the partitioning of autobiographical memory among different part-selves, or self-narrative strands. One common argument for how such patterns of encoding might come about has to do with state-dependent recall—the idea that recall is affected by differences between the emotional or physiological state occupied by the individual when trying to recall compared to when the memories were originally encoded (Becker-Blease et al. 2004; Kihlstrom 2005; van der Hart 2005; Yates and Nasby 1993). In the case of dissociation, this state-dependent effect could be linked to the impairment of the emotional tagging of experience, associated with the cortico-limbic model of dissociation. Experiences associated with impaired emotional tagging may not be recorded in the usual way in explicit memory, or may be partitioned off from other memories and only accessible to recall under certain emotional conditions or in certain contexts.

At the level of cognition, severe identity disruptions also appear to involve processes of attention and awareness. It seems reasonable to speculate, therefore, that episodes of dissociated identity might be related to patterns of cortical inhibition affecting areas responsible for awareness—much like the patterns of top-down inhibition associated with conversion symptoms. The ability of individuals suffering from DID to execute complex behaviors without conscious awareness also suggests disruptions between higher order cognitive mechanisms responsible for volition and awareness and lower level information processing and motor systems.

The literature on memory disruptions in DID remains contentious. The evidence for memory disruptions is not well validated, and the studies are typically not well designed (Kihlstrom 2005). Indeed, many researchers and clinicians still question whether these disorders are real or are entirely co-constructions of overzealous doctors and attention-hungry patients, or perhaps the product of a less intentional, but equally social, 'looping process' as described by Ian Hacking (1995, 1998). However, debates over the iatrogenesis and authenticity of DID and other dissociative disorders do not obviate consideration of the social meanings of alterations in the experience of identity, memory gaps and amnesia (Kirmayer 1996). Psychiatric researchers should be asking what it means when someone does not fill in the gaps in his or her self-narrative or fills them in with borrowed memories. To say that DID/MPD or other dissociative disorders are socially shaped or constructed does not mean that individuals presenting with these symptoms are not articulating real distress in distinctive ways. Nor should it imply that its symptoms, including memory impairments and severe disruption of identity, are not instantiated in some way in the brain.

## An Integrative View of Dissociative Phenomena

While dissociation may involve cortical inhibitory mechanisms and may function to protect individuals in situations of extreme stress, this does not mean that dissociation is primarily a psychophysiological response to stress and trauma; it is also always a social and rhetorical phenomenon. Here we present an integrative view of dissociation, which takes into account both meaning and mechanism.

Across cultural contexts, what is common to dissociation is experience and behavior that does not feel self-directed and the pattern of attributing such behaviors and experiences to agencies other than the self. In North America, these other agencies are likely to be fragments of one's own self or "unconscious" conflicts, while in many other parts of the world, the agencies that take control of the body may be gods or spirits. This leads us back to our discussion of the functions of dissociation. Dissociative phenomena involve alterations in, or suspension of, ongoing integration of sensory perception, information processing, emotional processing and memory that give rise to the unified sense of self. However, instead of being an organized, adaptive response to blocking the painful consequences of acute stress, lack of integration among the elements of consciousness may be a side effect of an intense focusing of attention that is itself adaptive in situations of immediate threat. Fronto-cortical inhibition of higher order processing of non-essential information (that is still processed at lower levels) and of some emotional information (that may still register implicitly) aid this focus; in other words, to cope with a severe immediate

threat or trauma, much information may be actively kept out of awareness to commit conscious processing to seeking solutions.[5]

Non-pathological dissociative phenomena like absorption may also be evoked by situations that are more effectively managed through forms of more focused attention. It is an empirical question whether these forms of dissociation are instantiated in the brain in ways similar to those associated with acute stress or threat—that is, with top-down inhibition of various connections that affect the integration of multi-level neural processing.

Our integrative model of dissociation follows from an understanding of self-regulation as a continuous process involving emotion, cognition and attention that are always in complex interaction with one another and with the behavioral environment (Damasio 1994). This interaction determines the allocation of attention and cognitive resources, and the level at which information is processed. Socio-cultural context provides cognitive and discursive resources for making sense of both stimuli and responses—through processes of interpretation and attribution. Hence, dissociative experiences of all kinds are likely to be the product of a "bio-looping" process in which patterns of attention and information processing create experiences that must be explained by cultural scripts, and cultural scripts and social imperatives, in turn, influence the allocation of attention and information processing resources.

Self-regulatory processes of attention emerge over the course of development in particular social and cultural contexts. Our understanding of this process can be informed by evidence that some forms of non-pathological dissociation are more prevalent among children; for instance, studies indicate that children are more hypnotizable and that hypnotizability declines after adolescence (Butler et al. 1996). This developmental pattern of dissociative capacity may relate to neurological development. Self-awareness increases over the span of children's cognitive development (Piaget 1995) and may compete with more focused attention and absorption. Self-consciousness and social anxiety may interfere with the willingness and ability to become deeply absorbed. In addition, as children grow older, they may learn to strive to remain vigilant about external consensual reality and devalue the ability to engage in private revery, fantasy or other internally focused activities. Finally, in cultural contexts where unified, autonomous, integrated selves are highly valued, anything that encourages the person to experience autonomous agencies separate from the self will be viewed as pathological and hence, feared and avoided.

In contrast, in cultural contexts where absorption is a recognized skill that is used in socially valued ways, children will retain and strengthen their capacity for such attentional focus. Coupled with cultural knowledge and practices that allow or invite altered experiences of agency and control, this will lead to increased opportunities to experience dissociative phenomena like trance and possession.

[5]This focusing may follow the classic 'inverted U' function with an optimal level of arousal appropriate for coping under situations of less-than-catastrophic stress. Lower level processing follows the basic pattern of organization in terms of fight or flight, or freezing, a strategy that allows animals to attempt to evade a potential predator by remaining motionless or 'playing dead' (Porges 2003; Kalin et al. 2005).

The connection between dissociation and trauma, then, may in part reflect a coping strategy in situations of acute stress or threat. Where cultural values allow for spontaneous, playful or other uses of dissociation, however, this will be far outnumbered by non-pathological occurrences of dissociation. Only when such normative dissociative experiences are discounted, devalued and suppressed will dissociation seem to be primarily or exclusively linked to trauma. However, conflict, trauma and other forms of personal, family, or social pathology may give rise to dissociative phenomena that do not serve adaptive functions or follow socially prescribed scripts. Hence, even in settings where dissociation is socially expected and valued, there may be individuals who show pathological dissociation, marked by its violation of social norms and expectations.

There is evidence for a link between childhood trauma and dissociative capacity, including depersonalization, in Euro-American populations (Chu and Dill 1990; Mulder et al. 1998; Sanders and Giolas 1991; Simeon et al. 2001; Reyes-Perez et al. 2005). Individuals who use dissociative techniques for self-preservation during childhood tend to maintain this as a long-term strategy for dealing with stress. It may be that the capacity for dissociation antecedes traumatic exposure and is a preferred coping strategy for those with a high propensity. However, it appears that individuals who suffer traumatic experiences during childhood also tend to be more highly hypnotizable, suggesting that traumatic experience may foster the development or expression of dissociative ability (Bremner 1999; Butler et al. 1996). It is often assumed that such correlations reflect an innate tendency toward dissociation among these individuals that may develop into pathological dissociation in the context of extreme stress and trauma (i.e., a stress-diathesis model of dissociation). However, as Butler et al. (1996) suggest, the effort to cope with stress and trauma may actually lead individuals to cultivate their capacity for dissociation. It is also possible that trauma simply reinforces the dissociative abilities already possessed by most children, encouraging them to be retained rather than declining with development as is idealized in the dominant Euro-American culture. Children, who are already more prone to move in and out of dissociative states spontaneously, may learn to induce such states in situations in which they represent more effective modes of awareness. This is not limited, of course, to traumatic situations, but may take place in various social and cultural contexts (i.e. group-oriented social situations, religious contexts, etc.), in which the self-conscious mode of awareness is not the most efficient or effective mode. Learning of dissociative responses is likely to involve non-cognized shifts in awareness in response to situational cues, which are instantiated in the brain as the establishment and reinforcement of certain neural pathways, including cortical inhibitory pathways.

Although dissociation is instantiated in the brain, the phenomenological experience of dissociation is only partly a product of neurological activity. The patterns of neural activation that produce the experience of dissociation are a result of a complex interaction among proximate causes, like trauma, and more complex socio-cultural and cognitive processes. These processes shape the situations in which this mode of awareness is experienced by creating conditions under which it is efficacious, appropriate, and desirable. Sociocultural and cognitive processes are responsible for shaping the moral economies of self and personhood that contextualize dissociative experiences, and therefore also shape the way that dissociation is integrated, or not, into the larger narratives and metaphors through

which individuals understand themselves. Thus, in the dominant Euro-American contexts, dissociation is frequently associated with traumatic experiences in which the autonomous self is violated, and the experience of dissociation is narrated as a metaphor for this violation of normative selfhood and related existential distress. In cultural contexts in which dissociative states are effective and even desirable modes of awareness, individuals have access to cultural narratives that elaborate those experiences in non-pathological ways; in such cultures there is the opportunity to use dissociation in order to create narratives of expansiveness, rather than narratives of violation. In other cultures, including some Euro-American cultures, dissociated states are normative, e.g., possession by Holy Ghost, spirits, demons, devils, the gifts of tongues, translation and healing and the tradition of the inspired clergy. We also note that there are the many musical contexts, for players and dancers, in Jazz, Blues, Hard Rock and Heavy Metal, where dissociation is de rigeur among the dominant group as well as others.

These observations are very well illustrated by cross-cultural cases of dissociation in the context of spirit possession religion. Mediums of the Candomblé religion in Northeastern Brazil, for example, have histories of psychosocial stress, traumatic experience, emotional distress and psychosomatic illness that tend to precede or accompany the onset of dissociative symptoms (Seligman 2005a, b). Such experiences are largely a product of the poverty, discrimination and social marginalization to which many Afro-Brazilians, particularly females, are vulnerable and which expose them to financial uncertainty, housing crises, violence, death and injury of loved ones and so forth (Seligman 2005a, b; Gregg 2003). Experiences of stress, trauma, and illness are profoundly self-implicating and often violate individuals' self-worth and identity, undermining their sense of self-coherence, volition and autonomy (Leventhal et al. 1999; Pennebaker and Keough 1999; Seligman n.d.).

All of this sounds like a formula for the production of short-term adaptive, long-term maladaptive dissociative responses in the context of acute (and sustained) stress. In the dominant Euro-American context, this pattern would likely result in emotional distress and psychiatric victimhood, as individuals would evaluate their own dissociative experiences as non-normative, leading to pathologizing attributions by self and others. Further distress and cementing of the sick role might then result from the residue of un-addressed traumatic experience, in a context in which un-narrated traumas are both internally burdensome, involving constant cognitive effort to suppress (Pennebaker 1989; Pennebaker and Keough 1999), and socially meaningful, fitting larger cultural templates for morally valued suffering and victimhood (McKinney 2007; Young 1995). These larger sociocultural 'niches,' within which the individual can understand and narrate their distress, loop back to the fundamental experience of the divided self that is characteristic of dissociation. This looping effect can stabilize and even contribute to an increase in the prevalence of dissociative disorders (Hacking 1995, 1998).

In contrast to this Euro-American cultural context, many Afro-Brazilians have access to an attribution system, provided by the Candomblé religion, that can affect this looping process by providing normalizing evaluations of, and spiritual attributions for, dissociative experiences as well as the stressful life events that often precede them (Seligman 2005a, b). The Candomblé belief system involves the idea that a pantheon of deities, called the Orixas,

control human destinies and, oftentimes, human bodies as well, as the Orixas may choose to possess particular individuals. Hence, individuals experiencing acute psychosocial stress and dissociation may interpret these experiences as products of a spiritual disturbance caused by the Candomblé deities. By facilitating such interpretations, Candomblé encourages the belief that individuals may experience discontinuity among aspects of the self, including body, memory, responsibility and personal identity. Such attributions allow individuals to understand their stressful experiences as non-self-implicating, thus alleviating the need to face the trauma directly. As well, belief in possession allows them to embrace their dissociative experiences as spiritually productive, as such alterations in consciousness represent the replacement of their own self with that of a possessing deity. Performance of the role of medium, and accompanying discursive practices that articulate dissociation as an expansive, spiritual experience that frees the self from its bodily constraints, works in concert with, and reinforces the allocation of cognitive resources away from self-conscious modes of awareness. In fact, individuals learn how to induce such states of awareness in ritual contexts, where they are not only accepted and comfortable, but beneficial to the performance of ritual possession and the spiritual communion it enables.

Less obvious is the way that such an integrated approach can illuminate clinical cases within North America, and by taking into account both the social context and discursive meaning of dissociative symptoms, help to provide culturally appropriate psychiatric care. A brief example will suffice.

> Mrs. T. is a 28-year-old year old married Sikh woman from South Asia, who has applied for refugee status in Canada, and is referred for psychiatric assessment because of increasing distress.[6] She describes recurrent episodes of disorientation with complete loss of autobiographical memory. During these episodes, she does not recognize her husband and is unable to care for herself and her child.
>
> Her husband was active politically in their country of origin, and had been repeatedly beaten and tortured by the police over a period of several years prior to their migration. After his first beating, Mrs. T. had an episode at home when she suddenly became anxious and disoriented, with a sensation of cool limbs and dizziness. She did not recognize her husband and pushed him away. It took her some hours to come back to herself. When she did, she was tearful and anxious. Her husband thought that she might have had a seizure because she had straightened her limbs and was shaking. She was evaluated neurologically but there was no evidence of epilepsy or any other neurological disorders.
>
> Eventually, she was also taken by the police as a way to strike at her husband who was out of the country. She was pregnant and, as they beat her, they told her that they would kill her and the baby. They kicked her in the stomach and she started to bleed. She was released and, with the help of family and her religious community, fled with her husband to Canada, where she delivered a healthy baby boy.

[6]This case is drawn from the work of the Cultural Consultation Service, based at the Sir Mortimer B. Davis–Jewish General Hospital in Montreal (Kirmayer et al., 2003) and is part of an ongoing research project on the place of culture in psychiatric theory and practice approved by the hospital research ethics review board. Details have been changed to protect patient anonymity.

> The episode that prompted psychiatric referral occurred around the time of the festival of Diwali during a telephone call to her children who had remained in her country of origin. They were crying and said that they wanted her home. She became acutely distressed and then disoriented and unresponsive. She was hospitalized for 3 days and it took about 1 week for the feeling of disorientation to subside. During this time, she would do things like throw out food, kitchen utensils and the baby's clothes; she would forget to feed the baby; when the baby would cry or fall she would not hear him, and so on.
>
> On one occasion she decided to go to the Gurdwara, the Sikh temple, because her husband had gone out. Although it was mid-winter, she went out without her coat, taking the baby with her. At the Gurdwara, she became very disoriented and unresponsive to others. The baby vomited and was crying and she did not respond to it, so the people in the temple got very worried. Her husband was located and took her home.
>
> When she described the dissociative episode in the temple, she talked about putting her feet towards the Guru Granth Sahib or Holy book. She recalled that people in the temple gasped at this odd and transgressive behavior. The cultural consultant at the psychiatric clinic suggested that this gesture might have had a specific meaning, expressing her feeling that she has lost her faith in where God is situated. In response to this interpretation, she said "I have no comfort at all in my religious life."

This case illustrates dissociative experiences of depersonalization, disorientation, amnesia, pseudoseizures and alterations of identity occurring in response to acute trauma (the assault on her husband and later on her self). These episodes recurred during times of high stress, including uncertainty over her refugee status and the concern for her children's welfare in her absence. With each recurrence, she had periods of disorientation and amnesia, but also intense anxiety and intrusive thoughts about her own past trauma and concerns about the vulnerability of her children. In the interim, she suffered from depression and demoralization. The dissociative symptoms seemed to be a result of her exposure to trauma, but many other individuals exposed to the same level of violence do not show such prominent dissociation. It seems likely, therefore, that she had a constitutional predisposition to dissociative reactions; that is, she had a pre-existing tendency to be able to narrowly focus her attention, become deeply absorbed and partition or compartmentalize her subsequent experience.

Her dissociative behavior was also exhibited in the religious setting of the Gurdwara, a place where dissociative behavior is not expected. Usually, devotees sit cross-legged on the floor and show reverence for the Holy Book, which sits on a throne. Her disorientation and lack of response to others served to communicate her distress and call for help. She ratified the cultural consultant's interpretation that her socially inappropriate behavior also signaled a loss or crisis of faith. As this example suggests, dissociation can be viewed at once as a response to trauma, as an emphatic means to communicate that one feels overwhelmed, disoriented and out-of-control, and as a way to explore and express one's stance toward larger social, moral and spiritual issues.

## Conclusion

Understanding of dissociative phenomena like trance, possession and certain healing practices has been derailed by polemical ‘either/or’ arguments: either dissociation is real, spontaneous and reflects basic neurobiological changes in brain state, or it is imaginary, socially constructed and entirely dictated by interpersonal expectations, power dynamics and cultural scripts that demand specific role performances. We have argued that this is a false dichotomy: every complex human experience emerges from an interaction of individual biology and psychology with social context. In an effort to describe this interaction, we have outlined an approach to dissociation that integrates the neuropsychological notions of underlying mechanism with sociocultural processes of the narrative construction and social presentation of the self. Our aim has been to trace the cycle from narrative through metaphor to mechanism and back.

Dissociation reflects the culturally and neurobiologically patterned regulation of attentional mechanisms. Under the guidance of a cognitive expectation or cultural script, individuals can learn to actively inhibit or suppress specific perceptual and cognitive processes. Individuals differ in their ability to do this, based on personality and life experiences. Intense fear, threat or trauma can provoke and intensify this self-regulatory process, leading individuals to experience dissociation more frequently or persistently.

Dissociation reflects a compartmentalization of memory and experience or an inhibition of the normal integration of otherwise fragmentary or punctuated awareness. In the context of stress, higher order integration might fail to take place, and in fact might be actively inhibited from occurring, because coping with stressful experience may be more effective that way. In other words, a general ability to narrowly focus attention might be recruited in the context of stress because it helps people to cope. Narrowing of attention and alterations in awareness may also occur in the context of stress simply because the stressor forces itself on attention in such a way that other aspects of awareness are suppressed. In either case, cultural ways of interpreting the alteration of perception, memory, and identity determine whether the experience will be ignored or singled out as pathological or beneficial.

The fact that dissociative experiences are so often linked in the dominant Euro-American context to situations in which the individual lacks control—i.e., traumatic and stressful experiences that are themselves *defined* in part by the way they violate our expectations of autonomy and our feelings of control—is not coincidental. Situations that make people feel out of control and that undermine their sense of volition are mirrored in a dissociative response in which the centralized, autonomous self is suspended or breaks down. This parallelism, however, is not purely metaphorical. There are links from narrative through metaphoric constructions of the self, to underlying neuropsychological and physiological mechanisms of the regulation of cognition, affect and attention.

The integrative perspective we propose has implications for ethnographic work on the nature of trance, possession and related dissociative phenomena in religious practices and healing. People vary widely in their capacity to experience dissociative phenomena. Accordingly, it is important to consider individual variation in attention regulation, hypnotizability and the

capacity for dissociation. This may be one crucial determinant of why some individuals are attracted to and become active participants in certain religious or healing practices. Someone who is highly hypnotizable or prone to dissociation is more likely to experience such practices as rewarding and have the sort of spontaneous and compelling experiences that lead to a conviction that something real and important has happened. This, in turn, will lead others to ratify their experience and may support their long term commitment to the tradition or launch them on a career as a healer or spiritual practitioner.

This individual variation in dissociation may reflect personality or life events including exposure to trauma. There is a need to systematically inquire into the role of trauma and other aspects of developmental history in the life trajectories of individuals involved in dissociative practices. Specific experiences and events may mark the onset of dissociation and influence its ongoing use.

The model we have sketched draws from the emerging paradigm of cultural neuroscience, which uses the conceptual tools and models of social neuroscience to consider cultural difference. Hopefully, this will not only lead to novel neurobiological studies of complex social and cultural processes, but to a culturally informed critique of some of the parochial assumptions of contemporary neuroscience theory and research. With the collaboration of interested practitioners, functional brain imaging or other cognitive neuroscience techniques can be used to study the specific neural pathways involved in dissociative behavior and experience. This can be extended to consider the interaction of dissociative mechanisms with other aspects of brain function that may be shaped or modulated by cultural factors both during development and in current social contexts.

The model also has implications for the approach to dissociative symptoms and behaviors in clinical settings. First, it is worth repeating that, worldwide, most dissociation is normative and part of healthy functioning. This should encourage clinicians not to equate dissociation with pathology but to consider the ways in which it may be either normative and incidental to an individual’s difficulties or actually represent a positive coping strategy or source of resilience. By considering the social context and discursive functions of their patients’ dissociative experiences, practitioners can decipher more nuanced meanings and implications of these experiences beyond their clinical significance as indicators of a psychiatric condition.

The ethnographic literature makes it abundantly clear that cultural models and ideas can easily shape both the propensity for dissociation and its specific forms and content. To a large extent, these reflect broad social and religious interests and concerns, but individuals make use of this culturally mediated ontology of experience to articulate their own predicaments. There is a need to understand the ways in which dissociation functions in social contexts from couple to family to local community or transnational company to serve various communicative functions of comment, protest and contestation.

The cultural shaping of dissociation implies that there are appropriate times and places for dissociative experiences and performances and that these are expected to follow explicit or implicit cultural scripts or templates. Clinicians need to be aware of these cultural contexts

and scripts to appreciate when behavior is cognitively or socially deviant or problematic. When dissociation escapes from these scripts or is performed out of context, it may be a sign of psychopathology—but that pathology need not, in itself, be dissociative. Co-existing psychosis, affective disorder, conflicts or personality factors may undermine the person's adaptation and so provoke dissociative responses, or more directly, lead to the conscious or unintentional use of dissociation to express dissatisfaction and distress. While it may seem paradoxical to talk of the conscious use of dissociation, any human event occurs in a matrix of social behavior. Thus, just as individuals make conscious use of alcohol to become disinhibited and can then try to disavow responsibility for their actions, so can individuals choose a time and place to relinquish ordinary volitional control and allow themselves to experience dissociative states. Thus, like other complex cognitive and social phenomena, dissociation spans a range of processes that are both volitional and automatic. Only an approach that encompasses both neuropsychological mechanisms and the social, rhetorical shaping of experience and positioning of the self can hope to capture the complex dynamics of dissociative behavior and experience.

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