

# **The Legitimacy and Etiology of Dissociative Identity Disorder**

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## **Abstract**

There exists a significant amount of disputation surrounding both the legitimacy and etiology of dissociative identity disorder (DID); two separate conflicts that are not mutually exclusive. It is unclear whether DID should be considered a valid diagnosis, stemming from questions about the reliability of the diagnostic criteria included in the current Diagnostic and Statistical Manual of Mental Disorders, published by the American Psychological Association, and from the debate between etiological hypotheses. Specifically, the post-traumatic model and the sociocognitive model proffer separate etiological explanations that are often interpreted as mutually exclusive and that have implications for the current conceptualization of DID as a legitimate or valid mental disorder. The current review explores the debates associated with this disorder and suggests that defining a reliable DID syndrome is necessary for claiming legitimacy and that future research on the disorder could be hindered by necessarily assuming that the proposed etiological hypotheses are mutually exclusive.

## **The Legitimacy and Etiology of Dissociative Identity Disorder**

A significant amount of controversy has surrounded the legitimacy of a diagnosis of dissociative identity disorder (DID – previously known as multiple personality disorder, MPD), particularly within the framework of disagreements on the disorders etiology. Several models exist to explain the development of DID, including the post-traumatic model (PTM) and the sociocognitive model (SCM). The PTM suggests that DID develops as a reactionary defense mechanism after exposure to a traumatic experience and can include multiple identities that have differential access to memories (Gleaves, 1996). The SCM, on the other hand, posits that DID develops as a result of influences from the media and therapist expectations or demands (Spanos, 1994). The models and their purported supporting evidence will be further discussed below; however, it is first necessary to establish the syndrome of DID as a specific, differentiable disorder.

Largely in response to the uncertainty and disputation about how DID develops, the legitimacy of DID as a diagnosis has come into question. This is because if the SCM is true, it has implications for the effectiveness and potential negative outcomes of treatment. If DID arises through elicitation by the therapist, the disorder seems less “real”, or less authentic. However, if this model is accurate, does that necessarily make DID illegitimate as a diagnosis? The DSM provides descriptions of symptomology for the use of differential diagnosis; it does not imply specific etiology. If DID presents as a particular set of symptoms, it is therefore classifiable and

diagnosable. Additionally, it is undeniable that these individuals often exhibit distress and impairment in their everyday lives as alters intrude on their cognitive and behavioral processes. It clearly remains necessary to continue research in determining the etiology of DID to inform appropriate treatment options; however, the legitimacy of DID as a diagnosis covers more than etiology.

## **Phenomenology of Dissociative Identity Disorder**

The DSM-IV-TR lists DID under the section of Dissociative Disorders and describes it as having “the presence of two or more distinct identities or personality states” characterized by “an inability to recall important personal information... too great to be explained by ordinary forgetfulness” (APA, 2000, p. 526). This description illustrates the phenomenology commonly associated with DID. The multiple identities characteristic of the disorder are commonly called alters. Although the DSM-IV-TR also describes the alters as a fragmentation of identity, it is often colloquially thought of as a production of separate, complete personalities. However, more commonly, the host appears affectively flat while the alters show a specific exaggerated mood, none of which individually seem to constitute a well-rounded personality (Humphrey & Dennett, 1989). Additionally, in concordance with the specific exaggerated emotion, each alter appears well suited to deal with a particular set of social experiences. This is more consistent with DID presenting as a fragmentation of identity. However, the patients seem convinced that the alters constitute separate selves, rather than acting roles, and insist on such (Humphrey & Dennett, 1989). They are similarly capable of convincing others, particularly their therapists, that the alters are truly non-acted, separate personalities.

In addition to the diagnostic criteria included in the DSM-IV-TR, there are a number of other characteristic features present in individuals with DID. Dissociative disorders in general can exhibit dissociative features in multiple functions of consciousness, including the perception of the self and the environment, the experience of identity, and memory (Gast, 2006). DID is thought to be the most serious dissociative disorder and displays dissociative features in all three categories. More specifically, a reliable DID syndrome has been found to include thirteen different dissociative symptoms cohesively termed the subjective/phenomenological model: amnesia, conversion symptoms, voices, depersonalization, trance states, self-alteration, derealization, awareness of the presence of other personalities, identity confusion, flashbacks, psychotic-like dissociative symptoms, auditory hallucinations, visual hallucinations and Schneiderian first-rank symptoms (Dell, 2006). The DSM arguably describes only two of these symptoms, amnesia and the presence of other personalities. Therefore, it appears that the DSM narrowly views DID as an alter disorder when it is truly characterized by a number of other descriptive symptoms that should be taken into account in the phenomenological picture of DID.

## **Dissociative Identity Disorder as a Valid Diagnosis**

Whether using the description of DID provided by the DSM or by the subjective/phenomenological model, a syndrome characteristic of DID appears to truly exist and be reliably found, at least in North American populations. Additionally, there are a number of factors that are thought to increase the diagnostic validity of the disorder (Gleaves & May, 2001). These factors include a sufficient amount of existing academic literature on DID, a systematized diagnostic criteria, reliability in diagnosis with instruments such as structured interviews and self-report measures, a syndrome of co-occurring symptoms, and differentiation from other mental disorders. However, others have disagreed on this latter point, suggesting that DID can be confused with a number of other mental disorders, including other dissociative disorders, schizophrenia, borderline personality disorder and temporal lobe epilepsy (Osei, 2004). This is not surprising, considering a number of features characteristic of DID are found in other mental disorders. For example, auditory and visual hallucinations and Schneiderian first-rank symptoms are often found in patients with schizophrenia. Flashbacks, depersonalization and derealization can be found in post-traumatic stress disorder (PTSD).

While it is not abnormal for core symptoms of a mental disorder to be present in others, such as anxious or depressive features, this overlapping of characteristics may support the development of a more inclusive diagnostic criteria for DID, such as with the subjective/phenomenological model. Alternatively, a diathesis-stress model suggests that DID could be a complex form of PTSD given that both are often conceptualized as responding to a traumatic event (Gast, 2006). In the case of DID, the traumatization occurs during childhood, a time where development of an integrative self is still occurring and is therefore disrupted, leading to the development of a fragmented identity, along with the other dissociative features often found with PTSD. This explanation is characteristic of the post-traumatic model of DID, which will be discussed in further detail below. For the moment, it is important to note that this theory suggests that rather than altering the current categorical diagnostic criteria for DID, it would be more beneficial to conceptualize dissociation as a dimension with DID being a more extreme dimensional form of PTSD. Similarly, DID has been posited to represent a personality disorder along a continuum of repression and splitting features, related to both borderline and narcissistic personality disorder (Fahy, 1988).

These inconsistencies in diagnostic suggestions for DID illustrate that it is not completely formed as a valid diagnosis, though it shows an obvious existence as a syndrome. It is clear that the phenomenon of DID exists and that these individuals show distress and impairment that would benefit from psychological treatment (Humphrey & Dennet, 1989). However, the specific etiology of DID also remains unclear and disputed. Understanding how the dissociative symptoms develop may not only be helpful in describing the disorder as a whole, but also in informing how its treatment should be framed.

## **Inter-Identity Variances**

As one of the core features of DID mentioned in the DSM, the development and maintenance of alters is of particular interest. The development of alters is associated with etiology of the disorder, and so understanding the characteristics of how they exist and function could inform various etiological hypothesis. One line of research focuses on investigating the observable differences between the reported alters to both legitimize their existence as separate selves and to determine their functional use. This research involves the study of differences in memory and other physiological measurements between alters. The current review attempts to show a representative rather than an exhaustive discussion of such research.

## **Inter-Identity Amnesia**

There are several different forms of inter-identity amnesia reported by DID patients that differ in directionality of forgetfulness (Eich, Macaulay, Loewenstein, & Dihle, 1997). This discussion of alters will restrict descriptions to comparisons between two alters, designated Identity A and B. These identities can be mutually amnesic or mutually cognizant of each other. Alternatively, two identities may show one-way amnesia, which will currently be described as Identity A being amnesic for B while Identity B is cognizant of A. A number of experiments have investigated inter-identity amnesia for explicit knowledge, such as episodic memory, versus implicit knowledge, such as procedure skills; however, results are largely mixed (Peters, Uytterlinde, Consemulder, & van der Hart, 1998; Huntjens, Peters, Woertman, van der Hart, & Postma, 2007; Huntjens, Postma, Peters, Woertman, & van der Hart, 2003, Huntjens, Postma, Woertman, van der Hart, & Peters, 2005). These inconclusive results are further complicated by the fact that not all experiments utilize a simulating control group in which normal participants are instructed to mimic the features of DID, acting as a separate alter for specific parts of the experiment. However, the interpretation of simulating control group results itself is controversial, considering the idea of manifesting alters as “role-playing” in DID may be qualitatively different from controls pretending to have the disorder. Additionally, these experiments largely utilize a population of DID patients that are able to switch to an alter on command either freely or during hypnosis. This may only reflect a sub-population of DID patients, which may be a particularly important distinction if DID can be developed in multiple ways, as will be discussed below.

Experiments using explicit memory tasks exhibit mixed results. For example, a study using one-way amnesic DID patients showed transfer of explicit information about emotionally neutral stimuli from Identity A to B, but not from Identity B to A (Peters et al., 1998). This is consistent with one-way amnesia for explicit information, though no simulator control group was used as comparison. Additionally, one patient in this study showed some transfer of explicit information from Identity B to A on a free recall test, suggesting some leakage of explicit information. Several studies using an interference paradigm have shown intact memory in recall and recognition tests in DID patients, contrary to reported one-way amnesia (Huntjens et al., 2007;

Huntjens et al., 2003). In this task, word list A is shown to Identity A and word list B is shown to Identity B. Each identity is then later tested for intrusion of words from the list given to the other identity in recall and recognition of the words from their own list. Patients did show intrusions for negative, positive and neutral words, conflicting with the reported subjective amnesia. Additionally, when asked to characterize words in the recognition test as known or remembered, DID patients showed no difference in response for recognizing words learned in the two different identities. This suggests that they do not experience recognizing words learned in separate identities differently, such as recollecting an event experience by a different identity as if watching from a third person perspective.

On the other hand, there are studies that support exhibition of amnesia for explicit information learned in another identity differently from simulators. One experiment studied performance of DID patients, simulators and guessers, the latter being naïve to all study material at test (Huntjens et al., 2006). On a recall test, the patient's exhibited no knowledge of the story learned in another identity. However, on a multiple choice recognition test, the guessers showed chance level performance while the patients and simulators showed below chance performance, suggesting they used knowledge of correct answers to choose the incorrect answers. Interestingly, the simulators and patients showed different strategies in choosing incorrect answers from the multiple choices, the former choosing more implausible answers. Overall, the results from explicit memory tasks suggest that DID patients do not show strict amnesia as is subjectively reported, but instead exhibit a leakage of information between identities. However, patients still show differences in performance from simulators, such as strategy of exhibiting amnesia, that suggest they are not simply acting or pretending to not remember information from other identities.

While procedural memory is normally thought to transfer across alters implicitly, this result is not always found. For example, one experiment investigated performance of DID patients, simulators and normal controls on Serial Reaction Time (SRT) task (Huntjens et al., 2005). In this task multiple blocks are given to a participant in which they parrot a presented finger pressing sequence that is either random or repeated within the block. Normal controls show a decreased reaction time with repeating sequence blocks as they implicitly learn the procedural skill and a subsequent increase in reaction time when switched to a random block. Both patients and simulators showed a pattern consistent with inter-identity amnesia with a decrease in reaction time during a subsequent repeating block after a switch to a new identity. The patient's results are therefore ambiguous as to whether they exhibit true inter-identity amnesia or a simulation of it.

Alternatively, another study found an intact affective priming effect in DID patients, consistent with functional implicit processing of conditioned responses (Huntjens, Peters, et al., 2005). In this study, patients were shown pairs of neutral words that were previously associated with either positive or negative, trauma-related words. Like normal controls, patients show faster response times to the target word when the neutral words were previously paired with congruent affective words (negative and negative, or positive and positive) versus incongruent affective

words (negative and positive). This suggests intact transfer of the affective associations made with one identity to the testing performance of another identity. The transfer of implicit information across identities, as with explicit information, shows mixed result; however, implicit memories are commonly thought of as more transferable between identities than explicit memories.

Importantly, there may be a difference in the transfer of implicit information with tasks that vary in amount of data-driven processing. One experiment administered a word stem completion task and a picture-fragment completion task to DID individuals (Eich et al., 1997). One identity was asked to rate a list of words that was meant to prime answers for a word-stem completion task in the second identity. Additionally, one identity was administered a picture-fragment completion task, in which progressive pictures with more detail are given until object identification, that was meant to prime faster identification of the same objects in the second identity. DID patients showed no inter-identity priming for the stem-completion task but showed evidence of priming in the picture-fragment task. This might reflect the fact that the word-stem completion task allows for multiple responses where differing interpretive processes of identities may operate. The picture-fragment task, on the other hand, requires more data-driven processes and only one specific answer. Leaking across identities may therefore be better characterized as dependent on the extent to which varying inter-identity processes can operate on the encoding and retrieval of a particular type of memory, as opposed to dependent on whether the memory is explicit versus implicit *per se*.

In sum, there appears to be a disconnection between what patients subjectively report as strict amnesia, and what is often found to be either leaky amnesia or a lack of it completely. It has been suggested that amnesia found in DID patients may be related to a dysfunction in meta-memory as opposed to actual memory (Kindt & van den Hout, 2003). One study showed participants aversive fragments of a film that included sexual and physical violence to induce state dissociation (which is separate from trait dissociation). There was no correlation between state dissociation scores and actual memory, measured by a sequential memory task where they were asked to place clips in the originally presented order. However, there was a significant correlation between state dissociation and meta-memory, measured by asking for the subjective characteristic of their film recollections. Dissociation after watching an aversive film was therefore related to the subjective experience of memory fragmentation as opposed to actual fragmentation of memory performance.

These memory studies suggest that dissociation could be related to alterations in meta-memory as opposed to actual memory accuracy, another important distinction beyond simply distinguishing explicit from implicit memory. This idea is consistent with the fact that while patients subjectively report inter-identity amnesia, a meta-memory process, the memories may, in fact, be accessible across identities. Additionally, the amount of data-driven versus conceptually-driven processing may influence the amount of leakage occurring across identities, considering that separate alters may exhibit varying conceptual schemas. Notably, this may be

reflected in the fact that explicit memory is more conceptually-driven than implicit memory, the latter showing more leakage across identities.

## **Inter-Identity Physiological Differences**

A number of experiments have also aimed to determine the physiological differences between identities. Not only are there behavioral reports of memory loss, but a specific neural system is thought to be involved in purposeful forgetting or memory suppression (Anderson et al., 2004). During a think/no-think task, participants were presented with one member of a pair and asked to either suppress or recall the associated member. It appears that activation of the dorsolateral prefrontal cortex and deactivation of the hippocampus was associated with suppressing the unwanted memories and, importantly, with their subsequent impaired maintenance. While this active suppression may mimic simulator participant's processes more closely than those of patients, it would still be informative to determine whether there were differences in brain activation of this neural system in DID patients that show one-way amnesia. Does the suppression, or repression, of memories from Identity B by Identity A show activation of similar brain areas?

A large portion of the studies investigating differences in cerebral blood flow have looked at reactions to neutral or trauma-related scripts in varying identities. These studies often designate two separate identities, one as a neutral-identity state, and one as a traumatic identity state, the latter of which is thought to be fixated on and reactive to the experienced trauma. Multiple experiments have found differential cerebral activation to the two scripts across identities that suggest differential processing of the two scripts in the neutral versus trauma identity state (Reinders et al., 2006; Reinders, Willemsen, Vos, den Boer, & Nijenhuis, 2012). When compared to previous research exploring self versus non-self memory retrieval, the neutral identity appears to process the trauma-related script in a non-biographical manner, consistent with the idea that this identity dissociates to a trauma identity in order to not directly experience the traumatic event. In a similar experiment, it was suggested that simulating controls did not satisfactorily replicate the neural differences found between identities in DID patients (Reinders et al., 2012). However, it may not be surprising that simulators create alters for themselves differently from DID patients. This is consistent with the fact that patients seem to truly believe in the existence of the alters, and also the finding described above in which these groups show different strategies in exhibiting amnesia.

There are a number of anecdotal reports on the differences between alters of the same individual. These include changes in posture, handwriting, mannerisms, voice patterns, allergic reaction and responsivity to alcohol and sedatives (Humphrey & Dennett, 1989). A number of these are consistent with physiological alterations between identities. Similarly, experiments have also shown variations in responses to neutral versus trauma-related scripts in cardiovascular response (Reinders et al., 2006). However, these physiological results may be explained by a change in the level of subject arousal during separate alter presentations (Fahy, 1988). Viewed in

this way, it may not be surprising that different alters exhibit changes in heart rate or neural activity. Additionally, these variations could lead to the psychological experimental results on memory described in the previous section. Differences in memories across identities could occur through state-dependent learning, in which bodily state during encoding and retrieval affect the ability to remember a memory (Fahy, 1988). This is consistent with the finding that a data-driven task is less susceptible to inter-identity amnesia because it may be less influenced by state-dependent factors. Additionally, differences in level of arousal between identities may serve as the state-dependent distinction.

In sum, differences can readily be found between alters with psychological and physiological tests. These separate selves are convincingly so and constitute a core symptom in the syndrome of DID. However, the split between alters is clearly not complete, often exhibiting leakage of information. It is likely that in the development of alters, meta-memory, rather than actual memory *per se*, is affected, leading to a subjective amnesia between identities. Fully identifying the characteristics of how patients differentiate the alters could be useful for informing treatment of DID. Additionally, the way in which these alters are developed, which is inevitably related to the characteristic of the splitting, would similarly be informative. However, there is disagreement about the etiology of DID, largely divided into two camps: supporters of the post-traumatic model and those of the sociocognitive model.

## **Etiological Models for Dissociative Identity Disorder**

Many proponents of the post-traumatic model (PTM) and the sociocognitive model (SCM) of DID dispute each other's model as if they were mutually exclusive. This is evident in a series of articles responding to and disagreeing or even arguing with each other (Spanos, 1994; Gleaves, 1996; Lilienfeld et al., 1999). However, as we will see, not all components of these models are mutually exclusive, nor is it necessary for there to be a single explanation for the phenomenology exhibited by DID patients.

### **Post-Traumatic Model**

The PTM suggests that individuals who experience a traumatic event compartmentalize these experiences into alters as a defense mechanism for coping with the emotional and physical pain of the trauma (Gleaves, 1996). This model is consistent with the previously mentioned theory that DID can be conceptualized as a form of PTSD. It is also consistent with the phenomenon that people who experience a stressful event can exhibit subsequent amnesia for it. For example, a person who commits a violent murder sometimes report going into a "craze" and not remembering committing the murder (Gleaves, 1996). Perhaps an individual who experiences childhood abuse exhibits the same phenomenon during traumatic events, which then becomes a patterned or entrained mechanism to deal with the environment, which often involves repeated traumas, that develops into the syndrome of DID.

## **Sociocognitive Model**

The SCM, on the other hand, states that alters develop through patient role-enactment that appears governed by rules and goal-directed (Spanos, 1994). The alters are therefore elicited, crystalized and preserved by social reinforcement, largely within the context of therapy. Rather than occurring through conscious deception, the role-enactment is thought to occur spontaneously in suggestible individuals without conscious intent (Lilienfeld et al, 1999). The surrounding culture is thought to influence the expectations of how DID is manifested. For example, in India changes between alters often follows a period of sleep, which is the common presentation of DID in the movie culture of the country (Spanos, 1994).

We already act differently in different situations, which may show extreme variations in response to stressors. During therapy, certain suggestible individuals are thought to crystalize these differences into alters in response to suggestions from the therapist (Lilienfeld et al., 1999). This model emphasizes the importance of therapy in the actual development and maintenance of the alters, particularly when using hypnosis and other leading techniques. The therapist is thought to implicitly supply demand characteristics for DID symptoms, which patients then respond to appropriately.

In comparing the PTM and the SCM, it is useful to view them in the framework of how DID shows variations across history and across cultures. The influence of iatrogenic factors, or negative outcomes of therapy, on alter creation and the link between childhood abuse and DID are also important in distinguishing, as well as synthesizing, the different models.

## **Variations in the Expression of Dissociative Symptoms**

The expression of dissociative symptoms show differences both throughout history and across cultures. While this does not necessary rule out the PTM as an explanation, it is highly consistent with the SCM.

## **A Brief History of Dissociative Identity Disorder**

There has been an exponentially increasing number of reported DID cases throughout recent history. The first purported case of DID was reported in 1816, after which several cases in the late 19<sup>th</sup> century led to a lengthy published discussion between several authors (Merskey, 1992). After this, the number of cases reported showed surges after the publication of books on the disorder, such as *The Three Faces of Eve* in 1957 and *Sybil* in 1973. Additionally, after multiple personality disorder (MPD) was established as a category in the DSM-III in 1980, the number of cases increases. The surge of reported cases is illustrated by the fact that their number changed from 79 in 1970 to about 6,000 in 1986 to the tens of thousands by the end of the 20<sup>th</sup> century (Lilienfeld et al., 1999). This exponential increase in the number of cases could potentially be

consistent with both the PTM and the SCM. It appears to indicate that as the surrounding culture becomes more specified and vocal about the disorder, the number of cases increases as a response to culture expectations. However, it could also be consistent with the fact that an increased awareness of the disorder could lead to more accurate diagnoses of patients.

Of particular note was the proliferation of public knowledge about DID after the publication of the book *Sybil*, by Flora Schreiber, and its subsequent movie production. This movie appears to have precipitated not only a surge in DID diagnoses but also an explanation of the disorder as causally linked to childhood abuse, which is largely highlighted in the movie (Lynn & Deming, 2010). Interestingly, while the book was based on an actual patient, *Sybil* was later evaluated to be highly suggestible and thought to have contrived the multiple identities to satisfy her therapist, who held an inappropriately close relationship with her client. This appears more consistent with the SCM, which suggests clients may create alters to please the therapist, whether conscious or not. Additionally, the increase in reports of childhood abuse linked to DID is not as convincingly explained by the PTM; although it could still be argued that increased awareness led to uncovering an actual, pre-existing link. Similarly, recently the number of abuse cases involving satanic ritual abuse has markedly increased (Vogelsang, 2010). However, over years of investigation, federal law enforcement has continually been unsuccessful in uncovering underground satanic groups of a size that would account for the amount of satanic abuse currently reported by DID patients. Together with the fact that increased rates of other childhood reported traumas are not always corroborated, this suggests that the expression of DID has altered as a response to historical expectations.

The earliest descriptions of DID cases do not appear to reflect the current syndrome normally associated with DID patients. Instead, many of these cases showed evidence of organic disease, brain damage, and epilepsy, or more closely resembled fugues, somnambulistic states, hypnotic induction or bipolar disorder (BPD; Merskey, 1992). These cases were a large portion of the principal 19<sup>th</sup> century cases that initiated the developing interest in DID. In examination of cases after the turn of the 20<sup>th</sup> century, it is suggested that no case has been found to undoubtedly emerge unconsciously and without influence from the popular media, particularly after the popularization of *The Three Faces of Eve* and *Sybil*. This suggests that DID developed as a historically new syndrome from a misinterpretation of other disorders in early reported cases. Subsequently, the assumption of knowledge of DID as a syndrome led to a proliferation of cases that responded to expectations from these assumptions and developed into the current picture of DID.

Consistent with this idea, the expression of dissociative and somatoform disorders has changed with passing history as expectation have changed for prevailing characteristics of the disorders. During the 19<sup>th</sup> century, sudden somatic symptoms were common relative to previous historical rates, which was then replaced by fainting spells, also known as the vapors (Lilienfeld et al., 1999). At the end of the 19<sup>th</sup> century, conversion disorders were relatively common and may have been subsequently replaced by DID as the “in season” disorder. Therefore, dissociative symptoms appear to traverse historical contexts under the name of what is thought to be popular

and appropriate at the time. Viewing this disorder within a historical context appears most consistent with the SCM, which is developed under the assumption that cultural context influences the expression of what we now call DID.

## **Dissociative Identity Disorder across Cultures**

Similar to influences of historical context, dissociative symptoms appear to traverse cultures and be expressed in ways found appropriate by the surrounding society. These expressions can range from DID, demonic possession, and mass hysteria to glossolalia (Spanos, 1994). Additionally, DID itself exhibits different rates of prevalence across varying cultures. The proliferation previously discussed occurred largely in North America, whereas a number of other countries continue to exhibit a dearth of cases, such as in Japan, France, England, India and Russia (Merskey, 1992). However, it has also been reported that DID can be found in a variety of countries, including the United States, China, Turkey and Australia (Ross, 2006).

The idea that culture can influence the exhibition of a mental disorder is not new; several “culture-bound syndromes” are acknowledged. For example, *taijin-kyofusho*, or the fear of offending others particularly with one’s own body odor, primarily occurs in Japan. Therefore, it seems to reason that culture could influence the particular fashion in which a dissociative state is both explained and exhibited. A wide variety of states have been described that suggest dissociation as a common trait colored by the particular culture (Somer, 2006). Kinetically induced dissociation occurs with rhythmic music and dance, often used to promote well-being and relieve distress, particularly in African indigenous communities. Kinetically associated dissociation is also found in a variety of religions to express devoutness and commune with the Creator, such as with torso-rocking movements in Jewish prayer. Additionally, trances are often explained as possession by a spiritual being or deity. Interestingly, this possession can range from socially sanctioned, positive deity possession to unsanctioned, negative demonic possession. It is thought that these dissociative states can have ameliorative characteristics through self-hypnotic analgesia and the cathartic expression of unsanctioned thoughts or behaviors, such as outbursts from females in strict, patriarchal societies.

The SCM suggests that dissociative symptoms are enacted through a cultural context of what is considered appropriate. The variations in expressing dissociative symptoms and the differences in DID rates across cultures is therefore consistent with the SCM. However, it is also important to note that these observations do not necessarily rule out the PTM, which states that the variation in DID rates across cultures could be due to a difference in the ability to diagnose DID because of diverse levels of understanding and acknowledgement of it. In North America, where DID is highly prevalent in comparison to other cultures, the SCM suggests that therapists play a major role in the cultural formulation of dissociative symptoms in DID.

## **Iatrogenic Influences on Dissociative Identity Disorder**

Iatrogenic effects refer to negative outcomes resulting from treatment or diagnosis, in this case of DID (Bootzin & Bailey, 2005). In the SCM, therapists that use suggestive techniques, often involving hypnosis, are thought to cause such effects by eliciting the development of alters that were not previously manifested. This ability to influence symptom expression in patients is thought to be related to suggestibility, absorption and fantasy proneness.

## **Suggestive Therapy and Hypnosis**

It has been noted that a significant portion of DID diagnoses are reported by a small number of therapists, whereas others report encountering no cases at all (Merskey, 1992). Proponents of the SCM suggest that this reflects the influence of therapist expectations on the outcomes of patients' symptom expressions. Supporters of the PTM, on the other hand, state that this occurs because particular therapists are aware and knowledgeable about the disorder, and so are able to elicit alters that were previously established after a traumatic event during childhood.

During the treatment of DID, therapists may tend to ask leading questions that can influence suggestive individuals into creating alters to assume the role being elicited. Such leading questions include statements such as “do you ever feel as if you are not alone, as if there is someone else or some other part watching you?”, “everybody listen”, and instructions that “there will be a chair for every personality in the system” (Lilienfeld et al., 1999). These leading questions are particularly influential during hypnotic interviewing, which is often used to elicit alters. Guided imagery is another therapeutic technique that could potentially elicit the creation of alters, such as with hypnosis (Lilienfeld et al., 1999). It is quite easy to see how therapists who support the PTM would be more likely to generate alters in this way during treatment than those who support the SCM.

Hypnosis is a common therapeutic technique used by therapists to elicit alters in patients who they believe to have DID. The leading questions previously described often occur during hypnotic interviewing. Additionally, both during treatment and at the time of diagnosis, DID patients that were hypnotized during therapy show a greater variance in their number of alters than those who were not (Lilienfeld et al., 1999). Hypnosis has also been found to elicit different personalities in normal individuals, such as during age-regression to previous life times (Fahy, 1988). However, these personalities tend to be less complex than those exhibited by DID patients and are transitory, though the long-term effects of such hypnosis are unknown. Also, while hypnosis has not been shown to increase memory accuracy, it may instead increase the confidence one has in false memories, which may lead to an increase in reporting false memories of abuse. It is clearly important to understand the etiological factors of DID to inform therapy and prevent what could be considered an unethical worsening or maintenance of symptoms.

## **Hypnotic Ability, Absorption and Fantasy Proneness**

Associations have been found between DID and hypnotic ability, absorption and fantasy proneness. High scores on the dissociative experiences survey (DES) were associated with high levels of normal involvement of the imagination, such as with fantasy proneness, absorption and daydream immersion (Levin & Spei, 2004). Additionally, DID patients exhibit higher hypnotizability scores than normal individuals, as well as patients with schizophrenia, mood disorders, or anxiety disorders (Frischholz, Lipman, Braun, & Sachs, 1992). This may suggest that assessment of hypnotizability could be helpful in differentially diagnosing dissociative patients. It may also suggest that individuals who are highly hypnotizable, and therefore highly suggestible, are more likely to be influenced by the leading questions from therapists described above, precipitating the development of DID features.

There are also individuals who report difficulties in distinguishing between dreams and reality, which may lead to the creation of false memories (Rassin, Merckelbach, & Spaan, 2001). Interestingly, these individuals also tend to exhibit high scores in measures of fantasy proneness and dissociation. This has implications for the ability of people who score highly on these measures, such as individuals with DID, to easily create false memories, such as of traumatic events like child abuse. Consistent with this idea, dissociation is found to show a propensity for false memories, which raises questions about the accuracy of reported traumatic memories (Lynn, Lilienfeld, Merckelbach, Giesrecht, & van der Kloet, 2012). Consistent with this, memories of events prior to age 1 are thought to not exist and those prior to age 3 are said to exhibit questionable validity (Lilienfeld et al., 1999). There are cases in which DID patients report memories for abuse or for the emergence of alters during these ages, which may reflect such false memory production.

However, it remains possible that the connections between propensities for dissociation, fantasy proneness, hypnotizability and false memories could exaggerate the already existing link between trauma and DID. Trauma may also lead to characteristics such as fantasy proneness that lead to highly suggestible individuals that are then more susceptible to developing DID through iatrogenic factors. Clearly, there are a variety of explanations that need not exclusively focus on the PTM versus the SCM. It is possible that both models describe processes through which DID could develop or that they, in fact, interact with each other. As another example, self-hypnosis refers to the automatic ability to place the self into a trance, which can be trained by a hypnotist, but may also exist as a natural ability in certain individuals (Fahy, 1988). If these individuals are exposed to extremely stressful events, such as sexual abuse, the use of self-hypnosis may lead to the development of DID features.

## **Childhood Abuse**

A major controversy between the PTM and SCM model is the validity of childhood abuse reports from DID patients. The SCM model calls these reports into question because of the

recent surge in their occurrence and in the historical change in their content of satanic ritual abuse, and because of the described propensity for false memories in these individuals. One study claimed to have concretely established the link between DID and traumatic childhood abuse (Lewis, Yeager, Swica, Pincus, & Lewis, 1997). In this study, the abuse and the existence of dissociative symptoms in childhood for a number of DID patients was corroborated with multiple sources. However, these authors used a population of inmates on death row who had committed murder, and so may be examining a population that is not generalizable to all DID patients and who may be particularly likely to have associated childhood abuse. This study does, on the other hand, exemplify the ability to amass evidence that corroborates childhood abuse and the existence of dissociative symptoms in those individuals prior to treatment. This technique should be used on a much larger scale with a variety of DID patients to more generally determine the relationship between childhood abuse and DID. However, as it stands, a concrete link between abuse and DID has yet to be seen.

Again, it is important to note that while the models appear largely divergent on the issue of childhood abuse in DID patients, the SCM is not necessarily exclusive about abuse not truly having occurred in these individuals (Lilienfeld et al., 1999). It is possible that such events lead to a predisposition for qualities such as fantasy proneness or absorption that, as discussed, increase an individuals' susceptibility to suggestion during therapy. Additionally, it is possible that during childhood abuse, the perpetrator elicits alters in the victim in a way similar to therapeutic suggestion (Humphrey & Dennett, 1989). In these situations, the perpetrator may call the victim by a different name during the abusive sessions, which could crystalize an alter during a dissociative state, much like how asking for a patient to give the identity a name during therapy crystalizes it as a separate self.

The PTM would be called into question if a large amount of DID cases were found to not exhibit a history of childhood abuse (Lilienfeld et al., 1999). However, it is difficult to rule it out completely, considering that proponents of this model believe the patients may repress the memories of the traumatic event to cope with it. In this case, absence of evidence does not equate to evidence of absence. Additionally, the SCM may be undermined by evidence for the existence of alters well before the time of therapy. However, as discussed, the cultural influence that demands role-enactment does not necessarily have to come from a therapist. It could originate from self-expectations after watching the movie *Sybil*, or even from the perpetrator of childhood abuse.

## **Concluding Remarks**

A syndrome that we currently name DID reliably exists within several populations, particularly in North America. However, the current diagnostic criteria may require some revisions to increase the disorder's diagnostic validity. For example, it may be useful to expand the criteria to include the characteristics described by the subjective/phenomenological model. However, much current research is limited by simply canvassing the existence of particular

symptoms in DID. While this is necessary in developing reliable criteria for diagnosing the disorder, it also limits comparison to other disorders as descriptive of current phenomenology. Other methods of studying the connection between DID and other disorders should be explored. For example, it should be explored whether DID is better categorized as a complex version of PTSD. It could be useful to determine whether trauma during childhood, when integration of the self is still developing, can lead to PTSD or only DID. The factors involved in developing one or the other could inform whether they represent completely separate disorders or levels of the same stress diathesis. Alternatively, it could be useful to determine what disorders may be exhibited by patients prior to the development of DID, considering its historical relationship with inappropriately diagnosing disorders such as BPD.

Beyond the changes that could be made to the criteria for DID, the reality of the disorder as an existing syndrome is characterized by measurable differences in memory and physiological reactions between the manifested alters. The differences in reported memory may be largely driven by a deficit in meta-memory in which the patient subjectively believes that the alters retain separate memories when, in fact, subconscious access to memories is universal. Additionally, the amount of leakage between alters may be largely based on the type of processing involved in the memory task. Highly conceptually-driven memories may be easily distinguishable between alters because of their varying memory schemas, which are perhaps directed by the deficient meta-memory. On the other hand, leakage between alters may be difficult to prevent with data-driven memories. This suggests that future research should not be limited in broadly comparing explicit and implicit tasks, and should instead include investigations of both meta-memory and processing levels involved in memory tasks.

Additionally, the physiological differences between alters, such as heart rate, may be involved in state-dependent memory that dictates when to subjectively experience amnesia. Future research may therefore benefit in measuring physiological differences, such as arousal, while in the process of completing such memory tasks as discussed above. Alternatively, it would be interesting to see whether inter-identity amnesia could be influenced by priming arousal levels between alters. While the PTM and the SCM do not necessarily define what the psychological or physiological differences between alters should be, the idea that meta-memory is highly involved mimics the tenant of SCM that beliefs in how dissociative symptoms should be expressed influence how they are actually manifested, in this case as amnesia between alters. However, these results are also not necessarily inconsistent with the PTM. In either case, the psychological and physiological differences that are found between alters are consistent with considering DID as a legitimate diagnosis in terms of its symptoms being truly manifested in some way.

The variations in the expressions of both DID and dissociative symptoms across history and cultures are highly consistent with the SCM. However, it does not necessarily rule out the PTM. Similarly, reports of childhood abuse have not been concretely linked to DID without a possibility of false memory creation. More thorough corroboration of these reports may help to better understand the relationship between DID, abuse, and perhaps other factors such as

hypnotizability, fantasy proneness and absorption. While the development of DID without a history of child abuse may rule out a strict interpretation of the PTM, abuse may still be a factor in some patients.

Unfortunately, it appears that there are a variety of issues in attempting to prove or disprove either the PTM or the SCM. This may be a reflection of the fact that these models need not be mutually exclusive and may actually interact in leading to the development of DID. For example, an individual who exhibits a proneness for fantasy or dissociation may come to explain their own variant behaviors by developing alters. This development could be exacerbated or instigated either by suggestive therapeutic techniques, such as hypnosis, or by a traumatic childhood event. While it appears difficult to differentiate between the ways DID develops, it remains important for informing therapeutic techniques. DID patients are often ignorant of the other identities prior to therapy, and as treatment continues, the number of alters tends to increase (Lilienfeld et al., 1999). This is explained by the PTM as patients hiding their symptoms prior to treatment and by the SCM as being iatrogenically elicited. Clearly, the difference between these explanations would influence whether therapists should attempt to elicit alters at all. If hypnosis is used, perhaps the therapist should ignore references to third person variants of the self in case this leads to crystallization of alters and a full blown manifestation of the DID syndrome. Perhaps these etiological hypotheses should be considered in parallel, rather than as mutually exclusive. Alternatively, supporters of either model must develop methods that can conclusively differentiate between the models, which, as has been described, is largely absent in the literature.

In light of historical and cultural contextual changes in dissociative symptom expressions, it is likely to change again with the proceeding of the current century. It may therefore be more beneficial to study the dissociative symptoms individually, focusing on the specific processes involved in them, which will inevitably inform the diagnoses that include them, but will also remain pertinent with the coming changes. In fact, altering the approach of investigating DID would influence the cultural expectations of the disorder and possibly lead to these changes in symptom expression. Additionally, investigating the relationship between dissociative symptoms and childhood traumas, hypnotizability, fantasy proneness and absorption may help in understanding which aspects of the PTM and the SCM are pertinent in the etiology of DID. Understanding the role of particular dissociative symptoms, and the influence of other factors on those symptoms, will ultimately aid in developing a more concretely legitimate picture of DID as a diagnosis.

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