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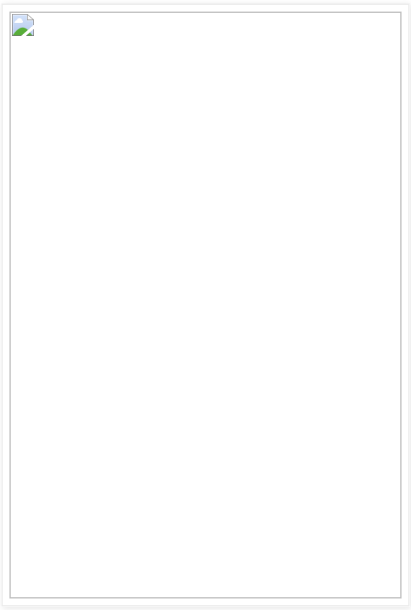
David Spiegel - Coming Apart: Trauma and the Fragmentation of the Self



David Spiegel is one of the experts on Dissociative Identity Disorder and dissociation, an area of psychology that is still quite mysterious to a lot of people, including therapists. This is his Dana Foundation biography:

> **David Spiegel**
>
> David Spiegel, M.D., is the Willson Professor in the School of Medicine and Associate Chair of Psychiatry and Behavioral Sciences at the Stanford University School of Medicine. He collaborated in the inclusion of Acute Stress Disorder, a new psychiatric diagnosis in the Diagnostic Statistical Manual, Fourth Edition (DSM-IV), and chaired the work group on Dissociative Disorders. Among his more than 400 scientific journal articles and chapters and 10 books, he is the editor of *Dissociation: Culture, Mind and Body* (American Psychiatric Press, 1994), and co-editor of *Traumatic Dissociation* (American Psychiatric Publishing, 2007). His research on the health effects of psychosocial support was the subject of a segment on Bill Moyers' Emmy Award–winning special *Healing and the Mind*. He is Past-President of the American College of Psychiatrists and the Society for Clinical and Experimental Hypnosis.

The diagnosis of DID in trauma patients has sky-rocketed in recent years, but I suspect (as do many others) that what we are seeing is a lot of false diagnoses. The incidence of proven DID cases (what were once known as multiple personality disorder) is rare at best - and some would argue that since it is largely confined to North America, it is not a "real" disorder at all.

I don't reject the diagnosis outright, mostly because I know a therapist who is working with a true multiple (who has suffered unimaginable abuse and trauma). This patient has a "part" who bought and paid for a house which was unknown to the patient's main identity, or to her husband. Besides the anecdotal evidence, there is considerable evidence that in true multiples, there are distinct physiologies as well as identities, a mystery no one seems able to solve so far.

Anyway, here is the Spiegel article.

Coming Apart: Trauma and the Fragmentation of the Self

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By David Spiegel, M.D.
About David Spiegel, M.D.
January 31, 2008

The controversial diagnosis of dissociative identity disorder (DID) has replaced what once was called "multiple personality disorder." People diagnosed with DID have trouble integrating their memories, sense of identity, and aspects of consciousness into a unified whole. New research supports the diagnosis and sheds light on what may have gone wrong in patients' brains, suggests David Spiegel, M.D. Spiegel, who chaired the professional working group that recommended the change of name in psychiatry's principle diagnostic manual, notes that the disorder likely stems from trauma and can be considered a severe form of post-traumatic stress disorder. Among the biological markers he describes are a smaller hippocampus and certain neurotransmitters. A better understanding of the importance of specific regions of the brain to memory and emotion may help push research forward.

In pop culture, “multiple personality disorder” is often portrayed as involving strategic, dramatic, and seductive battles among personalities that are uncomfortably sharing one hapless body. On TV crime shows and in movies the “split personality” is used as a dramatic excuse for mayhem or is feigned to evade criminal responsibility. Some believe that the disorder is the creation of credulous and overeager therapists. However, these and other common perceptions are mistaken. This article is written to set the record straight, to explain what this disorder is and what we understand about its causes, both in early life experience and in the brain. Some people do have what scientists now call “dissociative identity disorder” (DID), a name change made official in 1994, when the American Psychiatric Association published the fourth edition of its Diagnostic and Statistical Manual of Mental Disorders. Sufferers experience sudden loss of episodic memory, change from a sad, dependent, and helpless personality state to an angry, demanding, hostile one in seconds, and may find themselves in situations that they cannot understand. But they are the victims, not the authors, of their own fragmentation.

One "identity" may inflict physical damage on their body as "punishment" for another "personality" state, such as the patient who carved "I hate Mary," another of her identities, into her forearm with a knife. Mary was frightened and mystified about the injury. Such memory loss is often asymmetrical —one identity may be aware when another is prominent, but not vice versa.

The problem is not that there are "multiple personalities" existing in one body, as the old name of the disorder implied, but rather that the brain fails to integrate our different personae. We normally act like "different people" at work and at a party (hopefully), but we have continuity of memory and identity across the differences. Patients with DID do not. In fact, the problem is not that they have more than one personality, but rather that they have less than one—a fragmentation of self rather than a proliferation of selves.

People with dissociative disorders are like actors trapped in a variety of roles. They have difficulty integrating their memories, their sense of identity and aspects of their consciousness into a continuous whole. They find many parts of their experience alien, as if belonging to someone else. They cannot remember or make sense of parts of their past.

Dissociative symptoms involving alterations in identity, memory, consciousness, and body function are seen in cultures around the world, described as "*ataques de nervios*" in many Hispanic cultures and as states of trance and possession in China, Japan, and India. DID is not all that rare. It affects some 1 percent of people in the United States, 0.5 percent in China, and 1.5 percent in Turkey and the Netherlands, according to various studies in these countries.

Controversy has swirled around the disorder, in part because it is extreme and dramatic. But new research has helped us understand the origins of this tragic condition, as well as how it is reflected in the brain.

Roots in Trauma

Evidence is accumulating that trauma, especially early in life, repeated, and inflicted by relatives or caretakers, produces dissociative disorders. DID can be thought of as a chronic, severe form of post-traumatic stress disorder. The essence of traumatic stress is helplessness—a loss of control over one's body. The mental imprint of such frightening experiences sometimes takes the form of loss of control over parts of one’s mind—identity, memory, and consciousness—just as physical control is regained. During and in the immediate aftermath of acute trauma, such as an automobile accident or a physical assault, victims have reported being dazed, unaware of serious physical injury, or experiencing the trauma as if they were in a dream. Many rape victims report floating above their body, feeling sorry for the person being assaulted below them. Sexually or physically abused children often report seeking comfort from imaginary playmates or imagined protectors, or by imagining themselves absorbed in the pattern of the wallpaper. Some continue to feel detached and dis-integrated for weeks, months or years after trauma.

Abuse by a trusted authority figure such as a parent creates special problems. A child abused by a family member faces an ongoing dilemma: this beloved figure is inflicting harm, pain, and humiliation, yet the child is both emotionally and physically dependent. The child has to maintain two diametrically opposing views of the same person, which creates considerable tension and confusion, a situation described by psychologist Jennifer Freyd as "betrayal trauma."[1] She showed that people prone to dissociation have selective amnesia for trauma-related words such as "incest." Freud wrote that “hysterics [his term for people prone to dissociation] suffer mainly from reminiscences." His point was that their often dramatic mental and physical symptoms were the product of early life trauma and conflict over sexually charged situations.

Can a Person Forget Trauma?

Humans process vast amounts of information. We can function only by being strategically selective in our awareness. To do otherwise would be like having every stored file in a computer open at once, or all the contents of one’s office file cabinets spread out on the desk at the same time. Emotional arousal typically leads to increases in recall—most of us remember September 11, 2001,

with more than average detail. However, we frequently try to control our emotional response to traumatic events, sometimes at the expense of recollection of them. Chelsea Clinton, who was living in Manhattan on 9/11, wrote in a magazine article that she started walking downtown toward the World Trade Center after the attack but hours later found herself uptown, with no memory of how she had gotten there.

Research bears out that blocking emotion about a trauma can also block memory of it. Neuroscientists Larry Cahill, James McGaugh and colleagues at the University of California–Irvine had volunteers watch slides of an accident. Before seeing the slides, one group was given a beta-blocker, a drug that blocks the stress-induced increase in heart rate and blood pressure triggered by the sympathetic nervous system. These subjects' arousal-related increase in recall was also blocked, compared to the recall of those subjects given a placebo rather than the beta-blocker.[2] Other research goes a step further, helping us understand what happens in the brain when we suppress memories. John and Susan Gabrieli and colleagues at Stanford and Michael Anderson at the University of Oregon[3] used positron emission tomography (PET), a sophisticated brain imaging technique, to study the brain's ability to inhibit memory. When participants were asked to block their memory of word associations, PET imaging showed increased activity in the dorsolateral portion of the prefrontal cortex, the part of the brain that enables us to stop and think, coupled with decreased activity in the hippocampus, the structure deep in the brain that controls memory storage and retrieval.

Evidence that this inhibition of memory happens in real life is more than anecdotal. Linda Meyer Williams[4] tracked down young women who had been treated in hospital emergency rooms for physical and sexual abuse an average of seven years earlier, during their childhood, and interviewed them about their history of trauma. Thirty-eight percent of them could not remember the episode that made a trip to the hospital necessary, although many discussed other episodes of abuse in detail. Another 14 percent reported that they had been unable to recall the traumatic episode for a period of time, lasting months to years. One would think that anyone actually brought to a hospital emergency room for treatment would recall the necessitating episode, yet a substantial minority could not. While voluntary suppression of emotionally laden memories is less likely to be successful than suppression of neutral memories, psychologist Martin Conway of the University of Bristol in England has found that when people are motivated to forget, they are more likely to do so for trauma-related memories than for neutral ones.[5]

The pressure to forget is greater when children are abused by a trusted caregiver, who might cue memory retrieval unavoidably. The only way to prevent persistent recall of damaging memories would be to adapt internally and to deliberately avoid thinking of such memories—in Freud's terms, to push them away from consciousness. A study published in 2007 by Geraerts and colleagues at Maastricht University in the Netherlands[6] provides additional evidence that some people simply do not persistently remember traumatic experiences. Forty percent of their sample of 98 people who responded to a newspaper advertisement about an abuse history reported discontinuous memories of it.

Why does this happen? For one thing, people naturally enter an unusual mental state during traumatic experiences. Their attention is narrowly focused. "The prospect of the gallows concentrates a man's mind wonderfully," Samuel Johnson famously noted. Mugging victims can often give a precise and detailed description of the assailant's gun, but can describe little about his face. Dissociation can further isolate memories, by separating them from common associative networks in the brain that would make associative memory retrieval easier. Thus trauma can elicit dissociation, complicating the necessary working through of traumatic memories. The nature of the acute response may influence long-term adjustment.

Often people who have suffered trauma consciously try to suppress their recollection of the painful events. Over time the forgetting becomes automatic rather than willful, in the same way that riding a bicycle requires a great deal of conscious mental and physical effort during the learning phase but becomes automatic over time.

Trauma can be conceptualized as a sudden discontinuity in experience: one minute everything is fine; the next, one is in serious danger. This may lead to a process of memory storage that is similarly discontinuous with the usual range of associated memories, which might explain the "off/on" quality of dissociative amnesia, and its reversibility with techniques such as hypnosis. However, though dissociated information is out of sight, it is not out of mind. The information kept out of consciousness nonetheless has effects on it.

Insight from Post-Traumatic Stress Disorder

Many people suffering from PTSD are unable to recall important aspects of the trauma. Others feel detached or estranged from people afterward. Emory University psychiatrist Douglas Bremner found high levels of dissociative symptoms among Vietnam veterans with PTSD, and they also reported dissociating during combat.[7]

In a sample of 122 women seeking treatment for childhood sexual abuse, my research team found that a majority (66, or 54 percent) experienced PTSD symptoms. These women had more dissociative symptoms than those who did not evidence PTSD symptoms.[8] Furthermore, among those with PTSD, dissociative symptoms were associated with higher levels of childhood abuse. Those with symptoms of dissociation also had more symptoms of physiological hyperarousal, such as a pronounced startle response after hearing a loud noise, suggesting that there is an association between psychological avoidance and physiological hyper-reactivity.

However, other studies provide evidence that dissociative detachment after a traumatic experience numbs the body as well as the mind. Psychologists Michael Griffin, Patricia Resick, and Mindy Mechanic at the University of Missouri studied women who had been raped. Within two weeks of the rape, women with PTSD resulting from the assault who reported high levels of dissociation during the rape had smaller increases in heart rate and skin conductance, each a measure of the autonomic nervous system's stress response, during exposure to trauma-related memories. The women with PTSD but lower levels of dissociation responded with larger increases.[9] Similarly,

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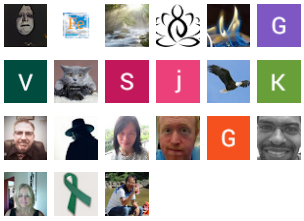

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neuroscientist Ruth Lanius at the University of Western Ontario in Canada[10, 11] studied people with PTSD and dissociative symptoms resulting from sexual abuse. Those with high levels of dissociation showed no increase in heart rate when read scripts with vivid descriptions of their trauma but had activation in the prefrontal cortex (which is responsible for thought and inhibition) and parts of the limbic system (which is responsible for emotion) on functional magnetic resonance imaging scans. Those with lower levels of dissociation responded with increased heart rates and less activity in those brain regions during this task.

Other studies reveal a distinction between the body's immediate, neural stress response and the secondary, hormonal response. Dissociation after trauma is linked with higher levels of cortisol, a stress hormone that mobilizes glucose into the blood to assist with the fight-or-flight response, in the saliva, according to research in which cortisol levels were measured 24 hours after a stressful interview among adult women who were sexually abused during childhood.[12] So while the immediate neural stress response system is suppressed by dissociation, the secondary hormonal stress response system is triggered by it.

What Happens in the Brain

Dissociative disorders involving fragmentation of identity, memory and consciousness seem less mysterious if we conceptualize identity as the product of mental effort rather than a given—a bottom-up rather than a top-down model of how the brain processes information. Neural systems that process the coincident firing of millions of neurons at a time must extract coherence from all this activity, and it is not surprising that in some cases these systems do not succeed. Neurons that fire together wire together, but building large, complex, and yet coherent neural networks may not always lead to a coherent sense of identity. Factors that restrict neurons from firing in association may limit the continuity of identity that emerges from experience and memory.

Hippocampal Volume

Another plausible neurobiological mechanism linking childhood trauma to dissociative difficulties with the integration of memory is smaller hippocampal volume. As mentioned above, the hippocampus, part of the limbic system situated in the middle portion of the temporal lobe, organizes memory storage and retrieval. The hippocampus is rich in glucocorticoid receptors, which are sensitive to stress-induced exposure to cortisol. Researchers have provided strong evidence in animals that early life experiences have lasting effects on the hormonal stress response system, either making it unduly sensitive to stress or protecting it from overreaction throughout life. Studies in humans show that while minor stressors may produce resilience, childhood sexual abuse does the opposite: it sensitizes the individual to subsequent stressors decades later. This research indicates that chronically elevated cortisol levels may damage the hippocampus, leading to smaller size and poorer function.

Imaging studies by Murray Stein at the University of California, San Diego, and Eric Vermetten at Utrecht University in the Netherlands have shown that people with a history of childhood abuse and dissociative disorders indeed have smaller hippocampi, and that the reduction in size correlates with the severity of dissociative symptoms.[13, 14] Vermetten also found reductions in the size of the amygdala, the seat of fear and anger conditioning. Researcher Douglas Bremner found similarly smaller hippocampal size among veterans with PTSD symptoms. However, Harvard psychiatrist Roger Pitman proposed an alternative explanation for this relationship.[15] He studied 35 pairs of identical twins, one of whom had been exposed to trauma and one of whom had not. Pitman found that smaller hippocampal volume is indeed a risk factor for PTSD severity, but is not affected by exposure to trauma. A smaller hippocampus, he reasoned, may underlie vulnerability to the development of PTSD symptoms rather than occurring as a result of trauma exposure.

In any case, a smaller hippocampus would likely limit a person's ability to encode, store and retrieve memories and manage the emotions associated with them. The hippocampus is a context generator, helping us to put information into perspective. Wolf has shown that activity in the hippocampus buffers the effects of stressful input on the hormonal stress response system.[16] Ruth Lanius demonstrated that those who dissociate in response to listening to accounts of their traumatic experiences have decreased activity in the brain adjacent to the hippocampus—they remember less and their brain memory systems are less active.[11] Limitations on hippocampal size and function hinder memory processing and the ability to comprehend context, especially in light of contradictory memory encoding and storage. Among patients with PTSD and dissociative symptoms, research also indicates that there is higher connectivity between two portions of the brain—the right insula and the left ventrolateral thalamus—that are involved in perception of bodily processes and emotion and consciousness. This finding provides further evidence that both mental and physical distress are triggered by traumatic memories.

Neurotransmitter Activity

Neurotransmitters convey information from one nerve cell to another, and a specific one may be involved in dissociation. It has long been known that drugs that block the activity of the N-methyl-d-aspartate (NMDA) subtype of glutamate receptors in cortical and limbic brain regions produce dissociative symptoms, perhaps via a one-time release of glutamate. Anti-anxiety medications such as lorazepam stimulate the release of gamma amino butyric acid (GABA), a neurotransmitter that inhibits rather than stimulates activity in many regions of the brain. Yale researcher John Krystal has suggested that GABA may also play a role in dissociative symptoms. His work suggests that administering a drug that stimulates GABA increases dissociation.[17, 18]

Coming Together: Future Research on Dissociation

Two heads are not better than one when they share the same brain. The fragmentation of mental function that can occur after a series of traumatic experiences may both protect a person from distress and make it harder for the individual to put the trauma into perspective. As we come to appreciate the complexity of neural development, we also understand that early life experiences have a profound effect on the developing brain. In dissociation, achieving a sense of mental unity is such a difficult task that it can be disrupted by events that challenge body integrity, emotional

control, and the development of relationships. Future research will reveal more about specific genetic vulnerabilities that may make certain individuals especially susceptible to the disorganizing effects of traumatic stress.

We also need to understand more about neural development and function: How do specific regions of the brain facilitate or inhibit memory, emotion, and their interaction? How can we use this knowledge to better treat individuals suffering from dissociation? Current treatments primarily involve psychotherapy, and increasing knowledge of brain structure and function may provide necessary connections for therapists and their patients, helping these individuals to understand and control their dissociative tendencies while working through the consequences of traumatic experiences. Other research may lead us to a specific medication that treats uncontrolled dissociation; at present there is none.

As we better understand control systems in the brain that underlie dissociation, we hope to enable people so that their response to trauma does not reinforce feelings of helplessness but rather augments their control over their identity, memory and consciousness.

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Tags: psychology, brain, neuroscience, consciousness, trauma, David Spiegel, Coming Apart, Trauma and the Fragmentation of the Self, DID, Dissociative Identity Disorder, multiple personality, dissociation

Posted by william harryman at Thursday, January 15, 2009

Labels: brain, consciousness, Psychology, trauma

2 comments:

Anonymous said...

Thank-you for this article. I want to point out what we call "culture bound" conditions (those that are tied or limited to certain cultures) are very real. In the DSM-IV, which we use to diagnose mental illness, there is an entire chapter on culture bound conditions, and they are very "real" expressions of emotional imbalance - even if it is a condition bound by our own industrialized, relatively affluent culture (some eating disorders are very similar, with low incidence globally). I think it is hard to see dissociative disorders as "real" because of the ways they are portrayed in movies and TV. The DID I see in popular media has little to do with how dissociation unfolds for people who live with it.

January 15, 2009 at 2:20 PM

trustinspace said...

I loved the article. Here is a book that I would recommend about trauma.
On Combat: The Psychology and Physiology of Deadly Conflict in War and Peace, by Dave Grossman and Loren W. Christensen.

January 15, 2009 at 5:46 PM

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