Dissociation debates: everything you know is wrong

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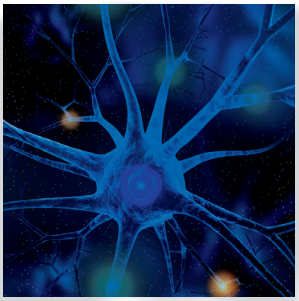

Controversy about dissociation and the dissociative disorders (DD) has existed since the beginning of modern psychiatry and psychology. Even among professionals, beliefs about dissociation/DD often are not based on the scientific literature. Multiple lines of evidence support a powerful relationship between dissociation/DD and psychological trauma, especially cumulative and/or early life trauma. Skeptics counter that dissociation produces fantasies of trauma, and that DD are artefactual conditions produced by iatrogenesis and/or socio-cultural factors. Almost no research or clinical data support this view. DD are common in general and clinical populations and represent a major underserved population with a substantial risk for suicidal and self-destructive behavior. Prospective treatment outcome studies of severely ill DD patients show significant improvement in symptoms including suicidal/self-destructive behaviors, with reductions in treatment cost. A major public health effort is needed to raise awareness about dissociation/DD, including educational efforts in all mental health training programs and increased funding for research.

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Introduction

The *Diagnostic and Statistical Manual of Mental Disorders*, fifth edition (*DSM-5*),[1] defines dissociation as a disruption, interruption, and/or discontinuity of the normal, subjective integration of behavior, memory, identity, consciousness, emotion, perception, body representation, and motor control.

The *DSM-5* dissociative disorders (DD) are:

1. Dissociative Identity Disorder (DID);
2. Dissociative Amnesia (DA);*
3. Depersonalization/Derealization Disorder (DPDRD);
4. Other Specified Dissociative Disorders (OSDD);
5. Unspecified Dissociative Disorder (UDD).

*In *DSM-5* Dissociative Fugue (DF) is now a subtype of Dissociative Amnesia (DA), and not a separate disorder.

The *DSM-5* diagnostic criteria for Posttraumatic Stress Disorder (PTSD) now include a Dissociative Subtype (PTSD-DS). Dissociative amnesia as a symptom is a diagnostic criterion for both DID and for PTSD. Criteria for PTSD-DS are that reminders of the

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PTSD Criterion A traumatic stressor lead to depersonalization/derealization symptoms. In *DSM-5*, the DD section is specifically placed after the Trauma-and-Stressor Related Disorders to show their relationship to traumatic experiences.[1]

Since first systematically described in the early 19th century, dissociative disorders and dissociation have been entangled not only in professional debates, but in controversies within the social, political, and cultural zeitgeist. The history of dissociation and dissociative disorders traverses the modern history of psychiatry and has been central to some of its most complex and controversial disputes.[2,3] The dissociation debate centers on whether dissociation/DD are fundamentally related to psychological trauma or artefactually created conditions, with confabulated trauma memories.[2]

Few mental health training programs educate about dissociation and the diagnosis and treatment of DD. In the author's experience, many clinicians, researchers, journalists, and members of the public have beliefs about dissociation/DD founded on unexamined ideas and influenced by media portrayals. Often, both skeptical and naively credulous views of DD appear to be based on the media portrayal, not the scientific literature.

The Trauma Model (TM)

The Trauma Model posits that dissociation is a psychobiological state or trait that functions as a protective response to traumatic or overwhelming experiences.[4] Dissociation is most commonly conceptualized as a continuum from normal to pathological, with states of intense absorption, like spacing out while driving and missing an exit at one end, and severe dissociative disorders like DID at the other. Research supports an alternative: the Taxon Model positing two continua: normal and *pathological dissociation*.[5] The latter comprises a distinct group of highly traumatized individuals–about 3.5% of the general population–who endorse a specific cluster of symptoms consistent with severe dissociative psychopathology such as DID. These include severe depersonalization, recurrent amnesia for current experiences, and identity alteration.[5] Dissociative symptoms, such as dissociative amnesia and depersonalization/derealization have been described trans-diagnostically.[2,6] Confusingly, the same terms used to describe these dissociative symptoms, are used for specific DD, such as DID, DA, and DP-DRD. In this review, the abbreviations DA and DP-DRD will be used when referring to the disorders; otherwise, the terms refer to symptoms.

The TM posits that dissociation mitigates the impact of trauma by psychobiologically sequestering information about trauma through protective activation of altered states of consciousness. Subsequently, dissociation segregates from ordinary awareness the full meaning and impact of traumatic events for the person.[2] There are empirically supported treatment models for severe DD, consistent with the TM.[7,8] Contrary to popular and skeptical belief, these do not prioritize "hypnosis for memory recovery" (see below).[9,10] Severely ill DD patients' symptoms are usually markedly exacerbated by a sole focus on traumatic memories, often requiring inpatient hospitalization for stabilization.[7,10] TM treatment models emphasize safety from suicidal and self-destructive behaviors, and stabilization of uncontrolled, overwhelming dissociative state shifting and PTSD intrusions.[2,7,10,11] Hypnosis is used primarily to help patients contain and modulate severe symptoms.[2,7]

Skeptical views of dissociation and dissociative disorder

Skeptics view DD as an unscientific fad of the 1980s.[9,12] They propose three interrelated models to support this idea. In the Iatrogenic Model (IM) DID is viewed as a condition produced in highly hypnotizable, "fantasy-prone," "suggestible" patients—many with Borderline Personality Disorder (BPD)—by clinicians who believe in "repressed memories" and "multiple personalities" using "risky" treatments like hypnosis for "recovered memory therapy" to exhume forgotten traumas as the primary treatment goal, but instead "implant" false memories.[2,9,10] "Fantasy-prone" is a specific construct from hypnosis and cognitive research, describing non-clinical samples of highly hypnotizable individuals with the ability to generate an extraordinarily vivid, compelling fantasy life with cognitive slippage and difficulty discerning the difference between internal and external experience.[7] This dissociation "epidemic" is based on "Freudian" ideas of complete repression of traumatic memories, that are revealed under hypnosis.[9] The Sociocognitive Model (SCM) posits that psychotherapy is not necessary for the development of severe DD. North American culture—with its media focus on childhood

sexual abuse, "repressed memories", and "multiple personalities"—is sufficient to cause highly suggestible people to develop the belief that they have dissociative conditions.[13] The Fantasy Model (FM) conceptualizes dissociation as a cognitive trait that leads to fantasies/confabulations of traumatic experiences.[14]

Proponents of the IM/SCM/FM claim that minimal data support the relationship of trauma and dissociation.[9,13] They posit that there are no psychological processes to explain amnesia for trauma, that traumatic experiences "are remembered too well."[12] Treatment involves ignoring the DD and trauma symptoms, debunking the false memories, focusing on "everyday" problems, reunification with "falsely accused" family members, and treatment of "real" psychiatric disorders such as depression.[12] In this view, the "decline" of the DD after the 1980s was the typical course of a fad.[9]

What does the historical record tell us?

DD are among the oldest reported psychiatric disorders with case reports appearing at the end of the 18th century and extensive descriptions in the medical literature of the 19th century.[3] Nineteenth-century controversies included whether hysteria should be conceptualized as dual consciousness (dissociation), somnambulism (ie, hypnotic states), or hysteria (somatoform symptoms).[2,3] Ultimately, somatoform hysteria became the unifying framework for all these conditions.[2,3] Nineteenth-century controversies about hysteria parallel modern ones. Was hysteria related to psychological trauma—including sexual trauma? Was it due to frustrated and/or repressed sexuality in women, or female sexual overindulgence? Was it an artifact of suggestion on impressionable women?[2,3]

Charcot/Babinski/Janet/Freud

Neurologist Jean-Martin Charcot's work with impoverished hysterical patients at La Salpetrière Hospital in Paris from the 1860s to his death in 1893 has become a part of the cultural history of psychiatry.[2,3,15] Charcot viewed hysteria as a neurological disease but later posited psychological and posttraumatic factors as etiological. He viewed hypnotic susceptibility as a core feature of hysteria.[2,3,15] After Charcot's death, Josef Babinski replaced Charcot at La Salpetrière, and defined hysteria (and dissociation) as produced by "suggestion," ameliorated by "persuasion," and exacerbated by hypnosis.[2,3] Since then, the generally accepted historical view has been that Charcot's patients were highly suggestible women and that most of their hysterical symptoms were an artefactual production of the setting and social demands to perform for Charcot.[2,3,15,16] They are believed to have disappeared by the end of 19th century.[2,3,15,16]

Pierre Janet, also at La Salpetrière, viewed traumatic experiences as central to hysterical and dissociative phenomena, and developed a conceptual and psychotherapeutic model whose basic elements are similar to the modern TM.[2,3,17] Sigmund Freud was influenced by Charcot and, early on, by Janet.[2,3] Contrary to the IM/SCM/FM attributions, Freud renounced the idea that repressed memories of childhood sexual trauma caused hysteria, ascribing these memories to Oedipal fantasies.[2,3] Early on, he eschewed hypnosis, as have his followers. Many contemporary psychoanalysts express skepticism about trauma-based conceptualizations of dissociation.[18]

Historical research

Charcot's patients

Historical research on the medical records of Charcot's patients at La Salpetrière support the TM.[19,20] This has documented extreme early and later life sexual, physical, medical and emotional trauma, injuries from serious accidents, sexual exploitation, massive traumatic losses, neglect, deprivation, and social marginalization among these impoverished women.[19,20] Many were also likely affected by wartime trauma, including the shelling of Paris in 1870 during the Franco-Prussian War, and exposure to the urban street battles, summary executions, and bombing of Parisian working class neighborhoods during the Paris Commune in May, 1871.[19,20]

Wartime trauma and dissociation

Until the latter part of the 20th century, except during wartime, there was decreased professional attention to dissociation, with the dissociative conditions seen as rare and exotic.[2] Babinski's theories lost many followers when all hysterical and dissociative symptoms were found in the battlefield ("shell shock") casualties of World War I.[2,3] In every subsequent war, psychogenic (dissociative) amnesia, fugue, depersonalization/derealization, hysterical (somatoform), and in modern studies, significant rat-

ing-scale elevations in dissociative symptoms have been reported in case series and systematic, international studies of soldiers in the immediate aftermath of combat, or as part of posttraumatic disorders related to war. This includes World War II, the Korean War, the Vietnam War, the 6-day Arab-Israeli War, Iran-Iraq War, the Gulf War, and Iraq and Afghanistan Wars.[2] Dissociative symptoms, such as amnesia, have also been reported in survivors of the European and Cambodian Holocausts,[21,22] in refugees and survivors of torture,[23,24] and among many other traumatized populations.[2,3]

Modern interest in dissociation and dissociative disorders

Modern study of dissociation results from several factors. Systematic, psychiatric attention to childhood maltreatment began in the 1960s with the description of the "Battered Child Syndrome" in 1962.[25] In the 1970s, feminist scholars, psychiatrists and psychologists debunked the Freudian theory that reports of childhood sexual abuse were primarily based in oedipal fantasies.[26] In 1980, the *DSM-III* added the diagnosis of PTSD–with psychogenic amnesia as a criterion symptom–discarded the term hysteria and created diagnostic categories for Somatoform and Dissociative Disorders. After the publication of the *DSM-IV*, the terms Psychogenic Amnesia and Psychogenic Fugue were replaced by Dissociative Amnesia (DA) and Dissociative Fugue (DF), respectively. Multiple Personality Disorder (MPD) was replaced by Dissociative Identity Disorder (DID). Returning Vietnam veterans brought wartime trauma and the diagnosis of PTSD into psychiatric and cultural awareness.[27] Rigorous research on hypnosis in the 1950s and 1960s began to move hypnosis into the mainstream of psychology and psychiatry.[28] The publication of *Sybil*[29] in 1976, and the subsequent television and movie productions based on it, ignited public interest in what was then known as Multiple Personality Disorder, although this has been cited by skeptics as part of the social contagion producing DID.[9]

Modern skepticism about dissociation and dissociative disorders

In the early 1990s, skeptical views of dissociation and DD emerged with the rise of "False Memory Syndrome" (FMS),[12] supported by an organized group, many of whose members had been "accused" – some in the courts - by their children of childhood sexual abuse, and academics and clinicians who supported them.[2] An extensive, highly publicized backlash occurred with promulgation of a legal theory where "recanting" former patients and/or "accused" parents sued mental health providers for malpractice and/or alienation of affections, alleging that the clinicians "implanted" false memories of childhood sexual abuse and created iatrogenic DD diagnoses. A cadre of attorneys and their experts divided up the country, seeking plaintiffs to bring these suits in local jurisdictions.

This legal theory was a counterpoint to a theory that survivors of childhood abuse could sue perpetrators outside the statute of limitations if they had completely "repressed" memories of abuse, and only recollected them later on, although dissociative autobiographical memory disturbances are often characterized by partial and/or fragmented recall.[2] "False-memory" views continue to have considerable following in standard psychology textbooks, the media, and among many mental health professionals.[2]

In fact, False-Memory Syndrome as a clinical construct has never been operationalized, studied, or validated.[2] Only one study investigated the clinical characteristics of "retractors" of abuse allegations.[2,30] These patients had significant personality disorders and embraced the victim role, looking externally for explanation of their problems: first by "accusing" their parents, sometimes through lawsuits, and, subsequently, by suing their clinicians. Retractors had long psychiatric histories, including documented PTSD, somatoform, dissociative, and factitious symptoms. In treatment, most dissociative and posttraumatic symptoms had improved, but the characterological issues had not been adequately addressed.[2,30]

What are the data on dissociation and dissociative disorders?

Scientific study of dissociation

Beginning in the 1980s, researchers on dissociation and DD developed a number of reliable and valid symptom self-report inventories, structured and semi-structured diagnostic interviews, and self-report diagnostic inventories to assess state and trait dissociation and DD in children, adolescents, and adults (See ref 2 for

a full review). Use of these measures, in international clinical and general population samples in the USA, Canada, China, Europe, Latin America, Japan, Korea, Israel, Turkey, Taiwan, Australia, and New Zealand (among others) have identified cross-cultural samples of individuals with DD.[2,32] Measures include the Dissociative Experiences Scale (DES),[6,33] the DES-Taxon Scale (DES-T),[5] the Adolescent DES (A-DES),[34] the Dissociative Disorders Interview Schedule (DDIS),[35] the Clinician Administered Dissociative States Scale (CADSS),[36] and the Structured Clinical Interview for DSM Dissociative Disorders (SCID-D).[31]

In these studies, higher dissociation scores and/or a DD diagnosis were strongly linked to acute and/or chronic traumatic experiences.[2] In retrospective, prospective, international, cross-cultural studies of traumatized populations–including children, adolescents, and adults–greater trauma severity and chronicity is generally associated with increased dissociative symptoms, higher dissociation scores on standard measures, and a diagnosis of a DD.[2,32] Studies have included victims of childhood maltreatment and/or neglect, adult rape, combat, prisoner-of-war (POW) experiences, torture, trafficking, genocide, civilian dislocation during wartime, repeated painful medical procedures, accidents, and natural disasters.[2,32] Studies show that earlier and cumulative trauma, as well as early life attachment pathology, particularly Disorganized (Type D) Attachment strongly predict elevated dissociation scores on standardized measures in later life, and/or development of a DD.[2,37,38]

Epidemiological studies

General population studies

Random samples of the general population in Canada and Turkey (female sample, 50% of whom were illiterate) found a life-time prevalence of DD of 12.2% and 18.3% respectively. A general population study in New York State found a 1-year prevalence of 9.1% for the DD.[2,32,39] In Canada and New York, prevalence of DID was 1.3% and 1.5% of the population. In Turkey, the lifetime prevalence of DID was 1.1% and the prevalence of DSM-IVTR Dissociative Disorder Not Otherwise Specified (DDNOS) "with multiple personality states" was 4.1%. The *DSM-5* diagnostic criteria for DID were modified to decrease DDNOS diagnoses. Under *DSM-5* diagnostic criteria, the prevalence of DID in this sample of Turkish women could be higher than 1.1% (*Table I*).[39,40]

A large, prospective Finnish general population study found a point prevalence for "pathological dissociation," as measured by the DES-T, of about 3.5%, initially and at 3-year follow-up. Higher dissociation scores were significantly associated with depression and suicidality.[41] Conventional belief associates dissociation with female sex. In this study, males and females did not differ on rates of pathological dissociation. A large international WHO study found that the Dissociative PTSD Subtype was found more commonly in males.[47] In a related study of a large sample of Finnish adolescents, 5.5% had the highest scores on the A-DES.[42] High A-DES scores characterized a group with higher rates of self-injury, substance and alcohol abuse, smoking, poor school performance, and social isolation.[43] Studies in military, clinical, and nonclinical samples have found a strong relationship between dissociation and suicidal and self-destructive behaviors, even after controlling for the known relationship between self-destruction and childhood and adult trauma.[44-46]

Studies of DD in clinical populations

In clinical populations, international epidemiological studies in North America, Europe, the Middle East, and Asia show that DD are readily found in adolescent, adult inpatient, residential, outpatient, substance abuse, and emergency department populations (*Table II*).[39] In most of these studies, probable DD patients were identified by using the DES or A-DES for screening. DD diagnoses were established by administering diagnostic interviews to patients scoring above a specific DES cutoff score. In these clinical studies, DD prevalence ranged from 4.6% to 46% across diverse samples (eg, private, community, state hospital), with DID from 0.4% to 14%.[39]

These epidemiological studies do not fit the IM/SCM/FM paradigms. Few subjects had previously been recognized as having a DD or were in specialized DD psychotherapy. They were identified by reliable and valid screening and diagnostic inventories. Several US samples were drawn from state hospitals or university clinics for impoverished chronically mentally ill patients.[39] Subjects from Turkey or China would have had little exposure to North American media depicting DD (*Table II*).

Psychobiology of dissociation

A number of lines of evidence support conceptualizing dissociation as the human equivalent of the animal "freeze" or "feigning death," protective response in the face of life-threatening danger, where fight/flight has failed or would be more dangerous.[2,48] Autonomic changes may include a decrease or no change in blood pressure, heart rate, heart rate variability, lowered skin conductance, and decrease in skeletal muscle tone.[2,48] The polyvagal theory of Stephen Porges posits that, as fight-flight sympathetic stress responses fail, dominance by the primitive vagal parasympathetic system results, leading to the freeze response.[49] This may result in a shut-down state characterized by dense trance, increase in pain threshold, and stupor – even to the extent of catatonic-like nonresponding.[2,48]

Genetic, developmental, neurobiological and psychophysiological studies have supported a model

Study	Ross[71] (1991) Winnipeg, Canada	Johnson et al (2006)[72] New York State, USA	Sar et al (2007)[40] Sivas, Turkey	Maaranen et al (2005,[73] 2005A*,[74] 2008)[41] Kuipio, Finland	Tolmunen et al (2007, 2008)[42,43] Kuipio, Finland
Measures	DES and DDIS	DES, SCID- D, SCID-II, GAF	DDIS, SCID-PTSD, and SCID-II	DES DES-T BDI TAS SDQ* ACE	A-DES YSR Drug/Etoh History Scale for NSSI
Number of subjects	502	658	628 (female)	2001 1497 (2008) 1585*	4214 (Adolescents)
Diagnosis	Subjects (%)	Subjects (%)	Subjects (%)	Subjects (%)	Subjects (%)
Pathological Dissociation				3.4 3.7 4.1*	
Dissociative amnesia	6.0	1.8	7.3		
Dissociative fugue	0	0	0.2		
Dissociative identity disorder	1.3	1.5	1.1		
Depersonalization disorder	2.8	0.8	1.4		
Dissociative disorder not otherwise specified (NOS)	0.2	4.3	8.3		
Dissociative disorder NOS with multiple personality states			4.1		
Dissociative disorder NOS with indirect cues for personality states			2.4		
Derealization without depersonalization			1.1		
Dissociative trance disorder			0.6		
All dissociative disorders	12.2	9.1	18.3		5.5 (highest dissociation)

Table I. Dissociative Disorders in the General Population. Adapted from Loewenstein et al (2017).[2] ACE, Adverse Childhood Experiences Scale; A-DES; Adolescent Dissociative Experiences Scale; BDI, Beck Depression Inventory; DDIS, Dissociative Disorders Interview Schedule; DES, Dissociative Experiences Scale; DES-T, DES Taxon Scale; GAFS, Global Assessment of Functioning Scale; SCID-D, Structured Clinical Interview for DSM-IV-TR Dissociative Disorders; SCID-PTSD; Structured Clinical Interview for DSM-IV-TR PTSD; SCID-II, Structured Clinical Interview for DSM-IV-TR Axis II Personality Disorders; SDQ, Somatoform Dissociation Scale; TAS, Tellegen Absorption Scale; YSR, Youth Self Report

where repeated chronic trauma, often in the setting of captivity, eg, childhood maltreatment, intimate partner violence (IPV), and/or trafficking experiences, may lead to a preferential freezing/dissociative response to threat.[2] In a study of 298 rape victims seen in a specialized emergency clinic within 1 month of the rape, 70% reported tonic immobility (TI), and 48% an extreme tonic immobility response during the rape. Women with a history of childhood or adult sexual assault were twice as likely to report tonic immobility. TI predicted the development of PTSD and depression. TI subjects reported high rates of detachment from themselves and/or the rape, as well as numbness and lack of pain perception.[50]

Study	Inclusion Rate	# approached	Diagnostic Instrument	DES cutoff	DID	All DD	Mean DES	SD DES	> DES[(a)]
Inpatient Studies									
Ross et al (Canada) 1991[75]	61.8%	484	DDIS	20	5.4%	20.7%	14.6	14.2	30.1%
Saxe et al (USA) 1993[76]	64.0%	172	DDIS	25	4.0%	13.0%	—	—	15.0%
Latz et al (USA) 1995[77]	99.0%	176	DDIS	—	12%	46%	—	—	—
Modestin et al (Switzerland) 1996[78]		207	DDIS	—	0.4%	5.0%	13.7	13.5	12.0%
Rifkin et al (USA) 1998[79]	63%	150	SCID-D		1.0				
Tutkun et al (Turkey) 1998[80]	63.6%	166	DDIS	30	5.4%[(a)] [5]	10.2%[(a)]	17.8	14.9	14.5%
Friedl et al (Netherlands) 2000[81]	50.4%	122	SCID-D	25	2.0%	8.0%	20.0	18.1	29.5%
Ross et al (USA) 2002[82]	51.6%	407	DDIS	—	7.5%	40.8%	—	—	—
Lipsanen et al (Finland) 2004[83]	—	39	DDIS	—	—	21.0%	—	—	—
Ginzburg et al (Israel) 2010[84]	84.0%	120	SCID-D	—	0.8%	12.0%	20.9	18.7	—
Yu et al (China) 2010[85]	96.0%	569	DDIS	Weighted[(c)]	0.53%[(a)]	15.3%[(a)]	—	—	—
Outpatient Studies									
Sar et al (Turkey) 2003[86]	81.5%	150	DDIS	30	2.0%[(a)]	12.0%[(a)]	15.3	14.0	15.3%
Sar et al (Turkey) 2000[87]	79.5%	240	SCID-D	25	2.5%	13.8%	20.0	18.9	27.9%
Lipsanen et al (Finland) 2004[83]	—	39	DDIS	—	—	14.0%	—	—	—
Foote et al (USA) 2006[88]	—	82	DDIS	—	6.0%	29.0%	—	—	—
Sar et al (Turkey) 2014[89] adolescents	62.9%	116	SCID-D	N/A	16.4%	45.2%	(A-DES)[(d)] 2.8	1.4	42.4%[(d)]
Emergency Ward									
Sar et al 2007[90] (Turkey)	44.3%	43	SCID-D	25	14.0%	34.9%	23.4	19.3	39.5%
Substance Abuse									
Ross et al (1992)[91] Canada	—	100	DDIS	—	14%	39%	17.8	14.4	—
Karadag et al (2005) [92] Turkey		215	SCID-D & DDIS	30	2.8%	17.2%	24.5	17.5	36.7%

Table II. Prevalence of dissociative disorders in psychiatric samples (Adapted from Sar, 2011[39]). DES (Dissociative Experiences Scale) DDIS (Dissociative Disorders Interview Schedule) SCID-D (Structured Clinical Interview for DSM-IVTR Dissociative Disorders). (a) Clinically confirmed diagnosis. (b) Percentage of patients with dissociative experiences scale (DES) score above cutoff point (1-100 scale). (c) Weighted average of patients with DES cutoff 0-10, 11-20, 21-40, >41. (d) The A-DES is scored on a 1-10 scale; cutoff point 3.0.

The Dissociative Subtype of PTSD (PTSD-DS) has been identified in many traumatized populations, including large international samples, and may comprise 15% to 30% of individuals with PTSD.[47] In fMRI studies, PTSD-DS subjects, in contrast those with non-dissociative PTSD, respond to personal trauma scripts with depersonalization/derealization and hypomotility, not flashbacks, and hyperarousal. PTSD-DS subjects show patterns of increased brain activation of frontal systems (medial and/or ventral pre-frontal cortex, dorsal anterior cingulate) and decreased activation of amygdala and insula. They show a pattern of decreased or no change in blood pressure and heart rate associated with these neural network patterns.[51]

Similarly, in response to aversive stimuli, Depersonalization/Derealization Disorder patients demonstrate inhibition of limbic arousal by increased activation of frontal systems along with autonomic blunting.[2] Studies in clinical and nonclinical populations have identified neural network patterns associated with Dissociative Amnesia (DA) and Dissociative Fugue (DF)[2,32] that involve top-down inhibition by frontal systems of hippocampal, temporal and occipital lobe areas involved in autobiographical memory.[2,32,52]

PET and fMRI studies of DID patients found that self-states subjectively experiencing traumatic memory scripts as personal autobiographical memory (Traumatic Identity State-TIS) showed patterns of limbic system activation and decreased activity in frontal systems similar to non-dissociative PTSD patients, as well as autonomic changes typical of sympathetic hyperarousal.[53] Neutral Identity States (NIS) did not report experiencing trauma scripts as autobiographical memory. NIS showed brain and psychophysiological responses similar to PTSD-DS. Simulating controls had markedly different brain activation and psychophysiological patterns from DID patients.[53]

In an MRI study, women with DID had significantly reduced hippocampal and amygdalar volumes compared to healthy controls.[54] Many studies have shown a relationship to trauma and reduced hippocampal volume, especially to chronic trauma, thought to be related to the impact on the hippocampus of repeated release of glucocorticoids.[38] Studies of amygdala volume in maltreated children and adults with a history of childhood adversity show that early, cumulative trauma, as reported by most DID patients, predicts stress-related reduction in amygdalar volumes, hypothesized as also due to the impact of repeated glucocorticoid release.[38]

Genetic studies

Genetic studies of dissociation suggest that there is a complex interplay between genetic factors and type, timing, and chronicity of trauma. Studies comparing child and adult cohorts of adoptive siblings, fraternal and identical twins suggest that genetics account for around 50% of the interindividual variance in dissociative symptoms, with "non-shared," stressful environmental experiences accounting for most of the additional variance.[55] Studies have linked dissociation to the interaction of traumatic experiences with specific single nucleotide polymorphisms in genes related to the HPA axis (FKBP5), serotonergic (5-HTTLPR), dopaminergic (COMT) and BDNF systems.[2]

Gene by adversity interactions have been described for FKBP5, an endogenous regulator of the stress-neuroendocrine system, conferring risk for a number of psychiatric disorders including major depressive disorder, PTSD, and for dissociation.[56] In a prospective study of 279 maltreated and 171 non-maltreated low socioeconomic-group adolescents, significant interactive effects were found between scores on the Adolescent Dissociative Experiences Scale (A-DES), the developmental timing and chronicity of prior maltreatment, and the CATT haplotype of the FK506 binding protein 5 gene (FKBP5).[57] The children in the study had been extensively screened at school age for maltreatment. In adolescents with no copies of the CATT haplotype, higher dissociation scores were significantly related to chronic maltreatment of early childhood onset, compared with adolescents with later onset and less chronic maltreatment, and non-maltreated adolescents.[57]

Studies of acute dissociative responses to trauma

Depersonalization/derealization symptoms are strongly associated with acute traumatic events including motor vehicle accidents and other forms of life-threatening danger.[2,32] Peritraumatic dissociation, including depersonalization/derealization, tunnel vision, trance-like experiences, confusion, changes in time-sense, disorientation, and amnesia are significantly correlated with later development of PTSD.[2,32]

Military Survival, Evasions, Resistance, and Escape (SERE) training is offered by the US military and may be the closest ethical experimental model of traumatic stress in healthy, drug-free non-clinical volunteers. Ines-

capable stressors–based on American POW experiences in wartime–include days of semi-starvation, exhaustion, sleep deprivation, lack of control over hygiene and bodily functions, abusive interrogations, hooding, and lack of control over movement, social contact, and communication. SERE trainees showed significant differences between pretest and posttest scores on the Clinician Administered Dissociative States Scale (CADSS)[36] with the greatest effects for depersonalization/derealization items.[58,59] Higher dissociation scores were associated with poorer performance and significantly correlated with lower cortisol levels. The cortisol/dissociation finding supports the model that dissociation is related to decreased activation of the sympathetic stress system.[58] Similar results were found in Norwegian naval cadets undergoing a POW simulation experience, and soldiers undertaking the grueling Combat Diver Qualification Course.[58]

Delayed recall of traumatic events - Dissociative Amnesia

Based on the controversies over "recovered memory," many clinicians, members of the media, and the public disbelieve that there can be delayed recall of previously experienced traumatic events. Over 70 studies in clinical and nonclinical populations have documented amnesia for traumatic events.[2,32] These include prospective studies, retrospective studies, studies of acutely traumatized soldiers after combat, victims of torture and genocide, and studies describing adults who fail to recall childhood traumas documented in their medical and/or social service records.[4] In a study of over 9000 members of a large HMO participating in the Adverse Childhood Experiences Study (ACE Study)[60] researchers found that the extent of childhood autobiographical memory disturbance–defined as inability to recall large aspects on one's childhood after age 4–was directly correlated with cumulative childhood adversities, particularly sexual abuse, physical abuse, and combined physical and sexual abuse.[61]

Another received idea is that delayed recall of trauma predicts confabulated pseudomemories.[12] Comprehensive literature reviews have found no difference in accuracy between trauma memories with delayed or continuous recall.[4] Proponents of the IM/SCM/FM rightly critique the commonly held naïve view that amnesia for trauma is entirely related to the severity of the trauma.[62] Many survivors of the European Holocaust had relatively low dissociation scores on the DES and relatively low scores on amnesia on standardized PTSD or dissociation inventories, although some Holocaust survivors endorsed dissociative amnesia.[21]

A variety of factors predict a relationship to amnesia for trauma. Interpersonal trauma, early life trauma, close personal relationship with the perpetrator, violence of the trauma, repeated trauma, sexual trauma, and level of betrayal, particularly by a childhood caregiver, all have been associated with later dissociative amnesia, although none definitively.[2,32] The ACE researchers hypothesize that cumulative developmental trauma may have a generalized effect on memory systems, making substantial aspects of ordinary autobiographical memory for early life relatively unavailable for recall, not just memory for trauma.[61]

Dissociative Identity Disorder

Childhood trauma

DID is conceptualized as a childhood onset posttraumatic developmental disorder.[63] Every study that has examined the question of early life trauma and DID has found the highest rates of childhood adversity, primarily beginning before the age of 6, in the histories of DID individuals, compared with any other diagnostic group.[2,32] In 10 studies of DID, childhood sexual abuse was found in 70% to 100% (median 83%); childhood physical abuse in 60% to 95% (median 81%); and both sexual and physical abuse in 77% to 100%, (median 94%), often by multiple perpetrators over many years.[2,32] Studies of children with DID have found 95% of maltreatment reports substantiated by social services.[64] Intensive case studies of DID adults have confirmed histories of severe, repeated childhood maltreatment based on corollary accounts, and childhood school, social service and medical records.[2,32] Consistent with a lifelong, childhood onset disorder, DID has been documented in children, adolescents, adults, and in geriatric samples.[2,32]

DID patients have a pattern of comorbid disorders and behaviors consistent with other severely traumatized populations. In clinical studies, 79% to 100% of DID patients met diagnostic criteria for comorbid PTSD; 83% to 96 % for comorbid depression; and 83% to 96% had a history of current or past substance abuse.[2,32,60] In clinical studies, 92% to 100% of DID pa-

tients endorsed current or past suicidal ideation; 60% to 80% reported a history of suicide attempts; 78% reported non-suicidal self-destructive behavior.[2,32] Logistic regression analysis of DD patients in an inner-city clinic found that a significant relationship remained only for multiple suicide attempts and dissociation when BPD, PTSD, substance abuse, and trauma history were entered into the analysis.[45]

Across studies, DID patients spend an average of 5-12.4 years in the mental health system before correct diagnosis, receiving an average of 3-4 incorrect diagnoses. In epidemiological studies, DID individuals had significantly lower mean GAF scores compared to other psychiatric disorders, even after controlling for age and gender, and have been characterized as having a severe, chronic, persistent mental illness.[2,32] DID individuals are frequently treated in more restrictive levels of care, with substantial cost to the mental health system.[2,32]

Clinical presentation

Symptom patterns of DID patients differ from portrayals in the media and many psychiatric and psychology textbooks. These portrayals are characterized by florid, histrionic behavior, and repeated, dramatic state switching between highly elaborated, distinct self-states, with stable characteristics over time–like "separate people."[2,32] Factor analytic studies have generally found that DID symptoms are subtle and covert.[2,32] They are characterized by overlapping and interfering states that typically manifest as inner voices or through symptoms of passive influence, not florid switching behavior–a state of multiple overlapping states.[63] Commonly, these states are not elaborated beyond a sense of personal identity, a self-representation, a set of (state-dependent) autobiographical memories, a sense of ownership of personal experience, and a capacity to control behavior, either directly or through influencing other states.[2,32] State switching may be relatively uncommon in DID, with states more typically subtly shifting, consistent with better functioning.[2,32] Studies repeatedly show that clinicians must make active efforts to diagnose DID in the clinical interview, rather than expect the disorder to dramatically appear.[1,2,32,65]

Contrary to common belief, the elaboration of the "fascinating" external characteristics of the states, with varying names, wardrobes, hairstyles, accents, etc. is not essential to DID diagnosis or core phenomenology.[2,32] Cross-cultural studies suggest that many of these external self-state characteristics represent socio-cultural influences on DID symptoms–actually congruent with aspects of the SCM.[2,32] However, the clinical presentation of all psychiatric disorders is shaped by social and cultural factors.[1,2,32] These sociocultural factors do not invalidate DID, any more than they invalidate mood disorders or psychotic disorders.[4]

Paradoxically, psychological assessment data suggest that early life dissociation is also a protective and resilience factor that allows for preservation of capacity for attachment, psychological complexity, intellectual abilities, creativity, sense of humor, and hopefulness.[2,66] When not overwhelmed by posttraumatic intrusions, DID patients show good reality testing, diminished cognitive distortions, and a hyperdeveloped capacity to observe their own psychological processes. These predict a positive response to a psychodynamically informed, insight-oriented psychotherapy.[2,66] In these studies, DID patients differed significantly from BPD patients, contradicting the IM/SCM/FM.[2,65,66]

Other studies have shown significant differences between DID and BPD, including extent and type of dissociative symptoms on the DES and SCID-D; severity and earlier onset of childhood trauma in DID; and studies showing that BPD symptoms in DID are related to severely dysregulated dissociative and PTSD symptoms, and mostly remit when the DID patient stabilizes.[2,65] A subgroup of BPD patients, when administered diagnostic interviews, will meet criteria for undiagnosed DD, such as DID.[65]

Studies comparing the validity of the DID diagnosis to that of other psychiatric disorders, across the three major validity paradigms for psychiatric disorders, found that DID satisfies virtually all of the criteria for inclusion, and none for exclusion from the current DSM diagnostic system.[2,65]

Childhood development and DID

Naïve views of the developmental origins of DID posit that the child's psyche–"the personality born into the body"–is "shattered" by trauma, fragmenting the mind, and creating "separate people in one body." A more developmentally congruent model hypothesizes that overwhelming early trauma, attachment disturbances, and lack of soothing or comfort after trauma prevent the normal development of continuity of the

young child's sense of self across states and contexts.[63] This produces multiple senses of self, often in conflict with one another, that differentiate over developmental time. DID is more like a never-assembled psychological jigsaw puzzle, not a shattered mirror.[2,63] All the DID self-states constitute the mind of the person; they are not "separate people."[2,65] Contrary to popular belief, in DID treatment, the "whole human being" is held responsible for the behavior ascribed to any self state, even if amnesia is claimed.[7]

Treatment outcome studies of DID

Treatment outcome studies of the phasic trauma treatment model of DID,[67] including recent international, prospective, longitudinal studies, have found that DID improves with appropriate treatment and that costs to the health system for DID treatment can decrease substantially as well.[2,8,65] In an international, 30-month, prospective, longitudinal study patients and therapists reported lower rates of hospitalization; decreased suicide attempts and self-destructive behavior; significant decreases in depression, PTSD, and dissociative symptoms; reduced substance abuse; physical pain, and general distress; and an increase in "feeling good." Patients also evinced significantly increased engagement in relationships, work, school, or volunteer jobs.[8] A prospective study of Norwegian inpatients with a history of sexual abuse and other traumas on a specialized trauma unit, showed that, unless specifically treated, severe dissociative symptoms predicted negative outcome at 1-year follow up.[10]

Depersonalization Derealization Disorder

DPDRD is not associated with the same controversies as DA and DID. Due to lack of professional awareness of DD, many DPDRD patients, who are often very anxious and depressed, are only conceptualized as suffering from these other disorders, as depersonalization/derealization symptoms may occur across many psychiatric diagnoses.[2,32] Lifetime prevalence of DPDRD may be about 2.5% in the general population.[2,32] Many DPDRD patients have a chronic course with severe impairment. DPDRD is strongly related to a history of childhood emotional abuse, but not to physical or sexual abuse.[2,32] Emotional abuse has been linked to adverse psychobiological outcomes, including higher dissociation scores, in non-clinical, general population samples.[38] Severely ill DPDRD patients are markedly impaired. There is no psychotropic regimen or psychotherapy that has shown consistent efficacy in alleviating DPDRD.[2,32]

Discussion

The posttraumatic basis of dissociation/DD has been demonstrated in the vast majority of studies in clinical and non-clinical populations.[2,4] Dalenberg et al,[4] in a series of meta-analyses of over 1500 studies, contrasted evidence for the TM versus the IM/SCM/FM. They concluded: "…[T]hat there is strong empirical support for the hypothesis that trauma causes dissociation, and that dissociation remains related to trauma history when fantasy proneness is controlled. We find little support for the hypothesis that the dissociation–trauma relationship is due to fantasy proneness or confabulated memories of trauma."[4] (p 550). Contrary to common beliefs, this study found that overall, average weighted effect sizes between dissociation and multiple suggestibility paradigms, accounted for 1% to 3% of the variance across suggestibility types.[4]

There is an increasingly compelling alignment of genetic, neurobiological, developmental, clinical, historical, and treatment outcome data on dissociation/DD.[2] DID may be a minimum 1% of the general population; DPDRD may be as high as 2.5%.[2,32,39] By the time many DD patients are correctly diagnosed, they are demoralized and have suffered substantial secondary losses from years of unproductive treatment, hospitalizations, suicide attempts, disfiguring self-harm, disability, and careers as chronic "treatment resistant" patients.[2,32] Transdiagnostically, elevated dissociation predicts poorer clinical outcome, unless directly treated.[6,65]

Treatment outcome studies of DID have shown reductions in suicidal and self-destructive behavior, as well as fewer inpatient admissions, and substantial reduced costs for treatment.[7,8,10,65] DID is a childhood onset disorder.[63] The role of dissociation in the inter-generational transmission of trauma and family violence remains a relatively unexplored area. Earlier intervention may allow better treatment of dissociative children and adolescents.[63,68]

There are no studies in clinical populations to support the IM/SCM/FM. There are no treatment outcome studies to test these models. Recently, IM/SCM/FM proponents have suggested that sleep pathology is a

causative factor in dissociation and could align the TM and the IM/SCM/FM.[69] Here, posttraumatic sleep disorders lead to dissociation, causing fantasy-proneness, memory confabulations, and, through SCM factors, a false belief in having multiple selves. They do not explore the possibility that sleep problems are symptomatic of severe DD, not causative. For example, an often refractory, multifaceted sleep disorder has been described in severely dissociative, complex trauma patients.[2,7] It consists of PTSD nightmares and sleep disruptions; mood-disorder-related sleep symptoms; posttraumatic reactivity to night, bed, sleep, etc. due to nocturnal childhood sexual and physical assaults; and, in DID, nighttime interactions of self-states that interfere with sleep.[2]

Diagnosis and treatment of dissociation/DD is a major public health issue. DD patients represent a large underserved population whose lack of recognition leads to substantial human and societal costs. Males with DD may particularly go unrecognized. The powerful relationship of dissociation, DD, and suicidal and self-destructive behavior needs to be part of efforts to lower suicide risk in general and clinical populations.

Every mental health training program should devote substantial resources to education about trauma-related disorders including dissociation/DD. Most DD research, like the recent treatment outcome studies, has been bootstrapped by dedicated researchers with minimal external funding.[8] Funding should be directed to dissociation/DD research. Research on dissociation/DD may also make important contributions to understanding relationships of mind/brain/body through study of discrete behavioral states (DBS).[70] DBS models may help elucidate many mind/brain/body conundrums in neuroscience, psychology, and psychiatry.[70]

The fantasy is that DD patients do not exist. The sociocognitive problem is the cultural and professional dismissal and obliviousness to the extent and severity of the kind of trauma that generates dissociation/DD, and the ubiquity of DD patients. Failure to properly diagnose and treat DD has a very high human cost. This is the real iatrogenesis. ❑

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Todo lo que usted cree saber es falso ó los debates sobre la disociación

La controversia acerca de la disociación y de los trastornos disociativos (TD) ha existido desde el inicio de la psiquiatría y de la psicología modernas. Incluso entre los profesionales, las creencias sobre la disociación / TD a menudo no se basan en la literatura científica. Múltiples líneas de evidencia apoyan una relación poderosa entre disociación / TD y trauma psicológico, especialmente el trauma acumulativo y / o el que ocurre en la infancia. En oposición, los escépticos plantean que la disociación produce fantasías de trauma y que los TD constituyen condiciones artificiales producidas por la iatrogénesis y / o por factores socioculturales. Casi ninguna investigación o datos clínicos apoyan esta opinión. Los TD son comunes tanto en poblaciones generales como clínicas y representan un importante grupo desatendido que tiene un alto riesgo de comportamiento suicida y de conductas autodestructivas. Los estudios prospectivos de resultados del tratamiento de pacientes con TD grave muestran una mejoría significativa en los síntomas, incluídos los comportamientos suicidas / autodestructivos, con reducciones en el costo del tratamiento. Se requiere de un gran esfuerzo de salud pública para aumentar la conciencia acerca de la disociación / TD, incluyendo los esfuerzos educacionales en todos los programas de capacitación en salud mental y un mayor financiamiento para la investigación.

« Tout ce que vous croyez savoir est faux » ou les débats sur la dissociation.

Les controverses au sujet de la dissociation et des troubles dissociatifs (TD) existent depuis les débuts de la psychologie et de la psychiatrie modernes. Même parmi les professionnels, les croyances au sujet de la dissociation et des TD sont rarement fondées sur la littérature scientifique. De nombreuses sources de données appuient la thèse d'une relation forte entre dissociation, TD et traumatisme psychologique, surtout quand celui-ci est cumulatif et/ou survenu dans l'enfance. Pour les sceptiques, la dissociation génère des traumatismes fictifs et les TD sont des maladies artificielles provoquées par des facteurs iatrogènes et/ou socioculturels. Pratiquement aucune donnée clinique ou de recherche ne vient conforter cette thèse. Les TD sont répandus dans la population générale et la population clinique, et touchent un nombre important de sujets sous-médicalisés pour lesquels le risque de suicide et de comportement auto-destructeur est élevé. Des études prospectives de résultats cliniques sur des patients sévèrement atteints de TD montrent une amélioration significative des symptômes, dont les comportements suicidaires et auto-destructeurs, avec une diminution des coûts de traitement. Un effort majeur de santé publique est nécessaire pour augmenter la vigilance sur la dissociation et les TD, y compris des efforts d'éducation dans tous les programmes de formation sur la santé mentale ainsi qu'une augmentation des fonds destinés à la recherche.