

A Critical Review of Case Studies on Dissociative Amnesia

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Abstract

Dissociative amnesia, defined as an inability to remember important autobiographical experiences, usually of a stressful nature, is a controversial phenomenon. We systematically reviewed 128 case studies of dissociative amnesia reported in 60 articles that appeared in peer-reviewed journals in English over the past 20 years (2000–2020). Our aim was to examine to what extent these cases met core features of dissociative amnesia. All cases were about reports of autobiographical memory loss, but the evidence offered in support of a dissociative amnesia interpretation was often weak and plagued by an ambiguous heterogeneity with respect to nature, etiology, and differential diagnoses of alleged memory loss. Most case studies failed to rule out plausible alternative explanations of dissociative amnesia, such as ordinary forgetting and malingering. We encourage clinicians and researchers to more critically investigate alleged cases of dissociative amnesia and provide criteria for how a dissociative amnesia case ideally would look like.

Keywords

dissociative amnesia, organic amnesia, trauma, ordinary forgetting, malingering

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The inability to remember past or new information is defined as *amnesia* (i.e., retrograde or anterograde memory loss, respectively), which oftentimes is due to various types of brain dysfunction (e.g., Parkin, 1997). However, sometimes, reported memory loss of outstanding autobiographical events cannot be easily explained by brain injury or transient neurological disturbances (e.g., partial complex seizure, transient global amnesia). In these circumstances, clinicians may invoke psychogenic antecedents (e.g., overwhelming stress) to explain autobiographical memory impairment and interpret it as *dissociative amnesia*, also referred to as *psychogenic* or *functional amnesia* (i.e., memory loss due to dissociative or repressive coping). However, some scholars have criticized dissociative amnesia as an explanatory concept because it seems difficult to differentiate from well-established phenomena such as ordinary forgetting (McNally, 2004; Merckelbach et al., 2003; Pope et al., 2007). The controversial status of dissociative amnesia in psychology boils down to the question of how people remember traumatic or highly

stressful autobiographical experiences (D. S. Holmes, 1990; Pope & Hudson, 1995). Whereas some scholars have postulated that, in general, traumatic experiences are well remembered (e.g., Manzanero & Palomo, 2020; McNally, 2005), others have claimed that in exceptional cases, traumatic events can lead to dissociative amnesia (e.g., Dalenberg et al., 2020).

What Is Dissociative Amnesia?

Dissociative amnesia has its historical roots in 19th-century French psychology (Hacking, 1995), but as a concept, it has stood against the test of time. According to the widely accepted fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-5)*; American Psychiatric Association [APA], 2013, p. 298),

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dissociative amnesia is (a) “an inability to recall important autobiographical information, usually of a traumatic or stressful nature, that is inconsistent with ordinary forgetting”; (b) “that causes significant distress in social, occupational or other important area of functioning”; (c) “not attributable to psychological effects of substance (e.g., alcohol or drugs), neurological, or medical condition”; and equally (d) “not better explained by other psychological disturbances such as (among others) posttraumatic stress disorder, neurocognitive disorders, traumatic brain injury and factitious disorder.” Dissociative amnesia has been said to occur in the context of fugue states, a condition in which memory and sense of identity are compromised, which leads individuals to lose their autobiographical memory (e.g., McKay & Kopelman, 2009; for an historical review, see Hacking, 1997). It has also been described as a symptom accompanying severe posttraumatic stress disorder (PTSD; e.g., Choi et al., 2017).

According to the *DSM-5* (APA, 2013), dissociative amnesia can take on three forms: *localized*, *selective*, or *generalized*. Whereas localized amnesia refers to memory loss for a circumscribed time period (e.g., abuse that occurred during childhood), selective amnesia refers to individuals being able to recollect some pieces but not the entire event. Although localized and selective amnesia may co-occur, localized amnesia is assumed to be the most prevalent type (APA, 2013, p. 298). Generalized dissociative amnesia, which is considered to be rare (APA, 2013, p. 298), refers to a total memory loss for one’s autobiographical history and oftentimes identity. According to the *DSM-5* (APA, 2013), people with dissociative amnesia are frequently unaware of their memory problems. Furthermore, a commonly voiced view is that people with dissociative amnesia rarely exhibit anterograde memory impairment (Kopelman, 2000; McKay & Kopelman, 2009).

The prevalence of dissociative amnesia reports in the general population is estimated to be in the range of 1.8% to 7.3% (e.g., Spiegel et al., 2011; see also Staniloiu & Markowitsch, 2014), and researchers have reported that men and women are evenly represented (Maldonado & Spiegel, 2008; Staniloiu & Markowitsch, 2012). Evidence suggests that dissociative amnesia reports are among the most prevalent dissociative symptoms both in the general population (e.g., 7.3%; Şar et al., 2007) and in clinical settings (e.g., 7.3%–13.4%; Ross et al., 2002), although some researchers have also commented on the suboptimal reliability of diagnostic tools to detect dissociative amnesia (Ross et al., 2002). There is one context in which reports of dissociative amnesia are particularly prevalent: forensic settings. For instance, Cima and colleagues (2003) found in their sample of 308 forensic inpatients, most

of whom had committed violent crimes, that 72 of them (23%) claimed either total or partial amnesia for their crimes (see also Pyszora et al., 2003). The high prevalence of dissociative amnesia claims among perpetrators of violent crimes brings home the point that dissociative amnesia is a self-reported experience that might be amenable to strategic control (e.g., malingering; Cima et al., 2003).

Still, people who report dissociative amnesia are commonly hypothesized to have experienced a trauma, such as child abuse and victimization. They might reexperience traumatic events through dissociative flashbacks, and many report a history of self-destructive behaviors, including suicide attempts (APA, 2013, pp. 299–300). Patients diagnosed with dissociative amnesia may report memory loss for hours, days, or even longer. The amnesic onset, triggered by precipitating episodes, may be sudden, and the same is true for recovery (Lucchelli et al., 1995), although some people have been reported to gradually regain their memories years later. Reliable estimates of the number of patients who ostensibly recovered their forgotten memories are lacking, although Pyszora and co-workers (2003) found in their forensic sample a recovery of 61% (both complete and partial return of memories). According to the *DSM-5* (APA, 2013), in some cases, dissociated memories are restored quite rapidly, whereas other patients never fully recover them. There are suggestions in the medical and psychological literature that specific treatments (e.g., benzodiazepines; Seo et al., 2013) may assist individuals with dissociative amnesia to recover their memories. Some authors have advocated psychological support, “gentle suggestion,” and psychotherapy to help patients to recover their forgotten memories (e.g., Brandt & van Gorp, 2006). The number of psychotherapeutic interventions for dissociative amnesia is limited and ranges from cognitive behavioral therapy to hypnotic techniques (e.g., Cassel & Humphreys, 2016; Toussi et al., 2014).

Starting with Schacter and colleagues’ (1982) case study of dissociative amnesia, authors have used a broad variety of testing tools to document and characterize dissociative memory loss in individuals. Thus, tests of retrograde episodic and semantic memory functioning (e.g., Kopelman, 2000; Kritchevsky et al., 2004; Markowitsch & Staniloiu, 2013) have been employed, as have tests of anterograde memory (e.g., McKay & Kopelman, 2009; Staniloiu et al., 2018) and autobiographical memory interviews (e.g., Brand et al., 2009; Fujiwara et al., 2008). Likewise, authors have administered memory tests along with tests of, for instance, attention capacity, executive functions, intelligence (e.g., Fujiwara et al., 2008; Reinhold & Markowitsch, 2007, 2009), and/or symptom validity (e.g., Staniloiu et al., 2018). Moreover,

a number of authors have included data from neuroimaging techniques, such as structural MRI, computed tomography, or positron emission tomography (PET), to substantiate that their dissociative amnesia patients did not suffer from structural brain dysfunction (Brand et al., 2009; Efrati et al., 2018; Staniloiu et al., 2018; Thomas-Antérion et al., 2014).

Repression and Dissociation

Paraphrasing Hacking (1995), one could say that in their description of dissociative amnesia, many contemporary authors are the heirs of Pierre Janet's (1907) work on dissociation and Sigmund Freud's (1893) early work on hysteria (see also Breuer & Freud, 1895). Janet argued that just as a brain trauma may underlie memory loss, a psychological trauma has the potential to create amnesia. Freud believed that hysteria, including memory loss, was symptomatic of repressed memories of sexual abuse during childhood. Although Freud abandoned this theory later in his career, the concept of repression acquired momentum during the 20th century and was co-opted by mainstream psychology (Crews, 1995; Erdelyi, 2006; Hornstein, 1992). The key idea here is that to deal with the traumatic or stressful experiences, individuals unconsciously repress their aversive memories, thereby manifesting amnesia for them. According to the Freudian view, repressed memories are not permanently lost because they can implicitly resurface through emotions and behavior, and their explicit reintegration into consciousness (i.e., recovery) may occur during skillful therapy.

A number of contemporary researchers and clinicians prefer to interpret amnesia in terms of dissociation rather than repression and have argued that dissociation is the mechanism allowing individuals to block unwanted memories (P. Brown & van der Hart, 1998; Chu et al., 1999; van der Hart, 1996; van der Kolk & van der Hart, 1989). Thus, dissociative amnesia is both a descriptive and an explanatory concept. More specifically, dissociative amnesia is assumed to represent a natural human response to traumatic events (e.g., wars, natural catastrophes, crimes, and childhood abuse), wherein the inability to remember the past—not better explained by brain dysfunctions—is a psychogenic form of coping with the trauma. This assumption has been conceptualized in several models that explicate both onset and maintenance of the dissociative amnesia state (see Staniloiu et al., 2020; Staniloiu & Markowitz, 2012). The common denominator of those models is that dissociative amnesia for autobiographical experiences (or parts of them) does not entail that memories are gone. Rather, they are temporarily unavailable.

Evidence for this has been based primarily on two observations: First, there are, indeed, individuals who eventually seem to regain access to their forgotten memories (e.g., Chu et al., 1999; Lucchelli et al., 1995). Second, some psychotherapeutic treatments, such as hypnosis, are said to support dissociative patients in gradually regaining their own past (e.g., Cassel & Humphreys, 2016; Fine, 2012).

Note that a subset of individuals recovering memories during therapy reported to suffer from dissociative identity disorder (DID; formerly called multiple personality disorder; see Patihis & Pendergrast, 2019). DID consists of an identity disruption characterized by two or more diverse personality states (APA, 2013). Much debate has surrounded the relationship between DID and dissociative amnesia. Some scholars have argued that there exist amnesic barriers between personality states resulting in an inability to recall traumatic events from certain identities (e.g., Dalenberg et al., 2012). However, research has shown that there actually is transfer of autobiographical memories between or across different personality states, rendering the idea of traumatic memory loss unlikely (Huntjens et al., 2012; see also Marsh et al., 2021). Critics contend that DID and dissociative amnesia may be fueled, perhaps even iatrogenically created or embellished, by widely prevalent sociocultural dramatizations of dissociative amnesia that are promoted and reinforced by the media (e.g., books, movies, television, Internet) and therapists (e.g., Lilienfeld et al., 1999; see also Pope et al., 2006).

Regardless of the nomenclature adopted, repression and dissociation share similar historical roots. Furthermore, some scholars have argued that repressed memory and dissociative amnesia are highly overlapping constructs (e.g., D. S. Holmes, 1994; Otgaar et al., 2021; Pope et al., 2006). Otgaar and colleagues (2019) pointed out that in the past decade, the concept of dissociative amnesia replaced repressed memory, likely because Freudian repression fell into disgrace after the 1990s (see Crews, 1995), which led to what is called the *jingle jangle fallacy* (i.e., using different terms for the same construct; Lilienfeld et al., 2015). The conundrum here is that dissociative amnesia is widely accepted as a real and unproblematic phenomenon because of its presence in the *DSM-5* (APA, 2013).

The Controversial Aspects of Dissociative Amnesia

When people claim that they suffer from a lack of autobiographical memories, such a statement is basically a self-report referring to memory impairment. Self-reported memory impairments are not necessarily

accurate. For instance, in their lab studies, Belli and colleagues (1998) found that requiring participants to retrieve more childhood memories led to judgments of having poorer memory of one's childhood (for a partial replication, see Merckelbach et al., 2001). This paradoxical phenomenon challenges the validity of dissociative amnesia reports that emerge in the context of memory recovery attempts (see below). Another metamemory aspect of dissociative amnesia reports was demonstrated in the pioneering study of Parks (1999; see also Taylor et al., 2020), who probed participants to think of vivid childhood memories and then, after a short while, asked them to indicate how recently they had thought about these memories. Many participants underestimated their prior remembering, (i.e., they unintentionally overestimated their incomplete memory; for a replication, see Merckelbach et al., 2006; also see Arnold & Lindsay, 2002).

Moreover, reports of dissociative amnesia can be easily malingered (Centor, 1982; Jelicic & Merckelbach, 2007; Peters et al., 2013). Typically, malingering of symptoms (e.g., amnesia) can occur in situations in which financial and/or legal stakes are high (APA, 2013), although sometimes invalid symptom reports might be motivated by internal incentives (e.g., playing the sick role in factitious disorder; but see Merten & Merckelbach, 2020). As mentioned above, approximately 20% of violent offenders claim amnesia for their crimes (e.g., sexual assault, homicide; Cima et al., 2002; Jelicic, 2018). By doing so, malingerers try to obstruct police interrogations or interfere with trial proceedings (Mangiulli et al., 2018; Tysse & Hafemeister, 2006). In civil forensic settings, individuals might malingering amnesia symptoms in an attempt to seek financial compensations such as insurance fees and disability pensions. However, because of the widespread assumption that malingering is most likely to occur in criminal and civil law contexts (Merckelbach et al., 2009; Mittenberg et al., 2002), practitioners may underestimate its prevalence in clinical settings (McCarter et al., 2009; also see Dandachi-FitzGerald et al., 2011).

Diagnosing reports of autobiographical memory impairments as dissociative amnesia requires exclusion of alternative interpretations. Malingering is only one of these alternatives. There are several other important alternatives, but they are not always easy to rule out. For instance, Williams (1994) interviewed 129 women (ages 18–31) who had been abused 17 years earlier. Some of them ($n = 33$) failed to report the critical event, whereas others ($n = 16$) denied the event even though the author had hospital records to substantiate the abuse. The author reasoned that the nonreporting could not simply be accounted for in terms of ordinary forgetting (D. Brown et al., 1998; Williams, 1994; see also

Dalenberg, 1996) and pointed in the direction of dissociative amnesia. However, there might be other explanations, such as feeling embarrassed, being ashamed, or a failure to encode the abusive event (e.g., childhood amnesia). These explanations were not ruled out in this study, meaning that we do not know the extent to which the nonreporting in this study truly reflects dissociative amnesia. Note that lack of disclosure of traumatic experiences does not necessarily correspond to an inability to remember the trauma. Many trauma survivors prefer not to think of or talk about their traumatic past episodes (e.g., Goodman-Brown et al., 2003). In addition, what is described as dissociative amnesia might instead reflect either a failure to encode (part of) the past experience, everyday forgetting, or both (e.g., McNally, 2003; Patihis et al., 2019).

Recently, Harrison and colleagues (2017) reported 53 cases of retrograde memory loss, which they described as psychogenic in nature. Even though the authors observed that a history of brain damage often preceded psychogenic amnesia (p. 2507), in none of the cases was brain dysfunction excluded as an alternative explanation of patients' psychogenic memory impairments. This issue is important because some authors have argued that organic amnesia might be easily misinterpreted as dissociative forgetting (e.g., McNally, 2003, 2007).

Thus, dissociative amnesia is supposed to be more than just not thinking about or not reporting an event. Rather, it refers to a condition in which traumatic memories were stored but are temporarily inaccessible for conscious inspection because of dissociative coping. However, the idea that psychological trauma can lead to memory loss is difficult to reconcile with evidence suggesting that traumatic events are generally well remembered (McGaugh, 2006; McNally, 2005). Still, the sudden recollection of trauma is often seen as a strong indication that the person previously must have suffered from dissociative amnesia or repressed memory, especially if memories pertain to an adverse childhood. Arguably, such interpretation touches on the debate surrounding the existence of repressed memory (i.e., memory wars; Crews, 1995; Otgaar et al., 2019).

The Scope of the Current Review

Given that several alternative explanations for reports of memory loss exist, how convincing is the evidence in favor of a dissociative amnesia interpretation that case studies offer? With this key question in mind, we critically reviewed published case studies on dissociative amnesia and evaluated whether alternative interpretations were sufficiently ruled out. Specifically, we systematically gathered dissociative amnesia cases that

appeared in English, peer-reviewed journals over the past 20 years (2000–2020). In doing so, we first determined whether the dissociative amnesia cases were in line with the diagnostic features of dissociative amnesia as indicated in the *DSM-5* (APA, 2013). Next, we focused on whether alternative explanations for dissociative amnesia were not merely considered but were actively ruled out. We argued that stringently ruling out alternative reasons for patients' functional memory loss would represent a fair way to evaluate the evidential value of case reports in favor of dissociative amnesia.

Method

Sampling procedure

A literature search was carried out (between November 2019 and March 2020) to identify case studies that could be included in our review. Our literature search covered the period from 2000 to 2020. This was done because terminology, methodology, and ethical issues (e.g., anonymization) have become more uniform over the past two decades. Specifically, only in the past 20 years have psychological and neuropsychological tests (e.g., the Autobiographical Memory Interview; Kopelman, 2000) and symptom validity tests (e.g., the Structured Inventory of Malingered Symptomatology; Smith & Burger, 1997) become widely available and to some extent standardized. Much of the same is true for neuroimaging technology. Because we wanted to ensure that the case studies we included could have used such instruments, we focused our search on a period of 20 years. For instance, it would make little sense to conclude that early case studies on dissociative amnesia did not sufficiently rule out feigning as an alternative account when the authors of these studies had no access to symptom validity tests with which one can screen for feigning. Search terms were the following keywords, which were used for separate queries: "dissociative amnesia," "psychogenic amnesia," "functional amnesia," "hysterical amnesia," "dissociative fugue," "red-outs," "repressed memory," and "recovered memory." Using these search terms, we located a total of 220 articles in PsycINFO and Google Scholar,¹ and we manually retrieved articles from reference lists within articles. Three inclusion criteria were used to select articles for the current review: The articles had to be peer reviewed, had to be written in English, and had to describe at least one case of dissociative, psychogenic, functional, or hysterical amnesia. Sixty articles met our inclusion criteria. Of those, 44 articles (73.3%) reported a single case study, whereas 16 (26.7%) described multiple cases. In total, the 60 articles reported on 128 cases, which we evaluated using a coding scheme.

Coding scheme

During a series of consensus meetings, we created a scheme for coding relevant information provided by dissociative amnesia case reports. We specifically distinguished three sections in the coding scheme (see below). A pilot version of the coding scheme was evaluated by a clinical psychologist who was unaware of the goal of the current review, and in this way, a final version was developed (see Table 1).

Section 1: descriptive information about dissociative amnesia cases. The first section of the coding scheme focused on general features of the patients and their memory loss. First, we sought to clarify whether a case was either clinically based or forensically related. We treated a case as forensically related when (a) the described patients were involved in proceedings as victims, witnesses, claimants, or suspects/perpetrators of crime (e.g., sexual abuse) and/or when (b) the nature of the forgotten memory or, alternatively, the amnesic onset was triggered by an event that was the object of legal proceedings (e.g., amnesia following financial loss, fraud; Cima, 2016; Rogers & Bender, 2018).

Second, we tried to identify the period for which the patients reported memory loss. Using *DSM-5*'s description of dissociative amnesia (APA, 2013, pp. 298–299), we coded whether patients' memory loss pertained to (a) early childhood events, (b) remote events during adolescence, (c) remote events during adulthood, (d) recent autobiographical events, (e) life span and loss of identity, (f) continuous (i.e., forgetting new events as they occur), or (g) loss of mother language. Third, and relatedly, we checked whether dissociative amnesia reports were accompanied by any signs of semantic memory impairment (i.e., inability to recall general context-free facts) and/or anterograde amnesia.

Fourth, we evaluated how dissociative amnesia was documented. Specifically, we aimed to determine whether the case study moved beyond self-reports. We coded for (a) the presence of neuropsychological tests (e.g., episodic memory tests, autobiographical interviews), (b) use of neuroimaging tools (e.g., functional MRI, PET, or similar), (c) comparison with normal or control group, (d) test-retest or observation over a longer time period, (e) collateral data (e.g., source of information other than the patients: police and medical reports, other witnesses), and (f) referral sources (e.g., practitioners, clinicians, judges). Fifth, we determined whether (a) memory loss was recovered and whether (b) the patient underwent psychotherapeutic intervention.

Section 2: clarity and quality of the scientific evidence for dissociative amnesia. The coding of Section

Table 1. Variables in Coding Scheme and Interrater Agreement

Feature	Krippendorff's α reliability	
	α	95% CI
Section 1		
Case type	1	[1, 1]
Amnesic time period	.96	[.87, 1]
Additional memory impairments	.76	[.60, .92]
Documentation	.93	[.83, 1]
Amnesia recovery	.78	[.61, .96]
Psychotherapy treatment	.93	[.79, 1]
Type of psychotherapy	1	[1, 1]
Section 2		
Concepts	.90	[.75, 1]
Amnesia diagnosis	.91	[.78, 1]
Amnesia diagnostic features	.83	[.69, .96]
Trauma	.93	[.78, 1]
Type of trauma	.88	[.72, 1]
Trauma corroboration	.91	[.73, 1]
Amnesia-associated features	.71	[.46, .90]
Section 3		
Differential diagnosis	.92	[.80, 1]
Ordinary forgetting	.91	[.74, 1]
Encoding failure	.91	[.74, 1]
Malingering	.93	[.80, 1]
Context	.91	[.74, 1]
Forensic examination	.84	[.60, 1]
Tools used	.83	[.51, 1]

Note: Each estimate is the result of 10,000 bootstraps. CI = confidence interval.

2 revolved around diagnostic features. First, we investigated whether the authors specifically referred to dissociation, repression, or both. According to many clinicians (e.g., Freyd, 1994; van der Kolk, 1994; van der Kolk & Fisler, 1995), amnesia involves a failure to report traumatic or stressful memories as a result of either dissociation or repression. Hence, we inspected whether the authors of our dissociative amnesia cases referred to these key concepts in their articles.

Second, we coded whether patients were given a specific type of diagnosis (i.e., dissociative, functional, psychogenic, dissociative/psychogenic fugue, or hysterical amnesia). Third, we evaluated the diagnostic features of dissociative amnesia descriptions. Specifically, we examined whether the authors of the case reports referred to diagnostic features as listed in the *DSM-5*² (APA, 2013). Thus, we checked (a) whether the authors reported a traumatic or stressful autobiographical event, which is supposed to occur before memory loss (we also categorized the nature of the trauma and whether

it was corroborated); (b) whether the amnesia was presented as a localized, selective, or generalized form of memory loss; (c) whether duration of dissociative amnesia was specified; (d) whether substance abuse or medical conditions were ruled out; (e) whether impairment following memory loss was explicitly mentioned; and finally, (f) whether the patient was unaware of his or her memory loss.

Fourth, and finally, we additionally looked for associated features commonly supporting dissociative amnesia cases. Following *DSM-5* (APA, 2013), we coded whether the patients (a) had experienced a history of trauma, child abuse, victimization, or repeated traumatic experiences; (b) had engaged in self-mutilation, suicide attempts, or other self-destructive behaviors; or (c) had experienced dissociative flashback (i.e., behavioral reexperiencing of traumatic events).

Section 3: alternative explanations for dissociative amnesia. The third section of the coding scheme focused on three types of alternative explanations for claimed memory loss. First, we relied on the differential diagnoses³ as indicated in the *DSM-5* (APA, 2013). We specifically examined whether the authors of case descriptions explicitly differentiated between dissociative amnesia and other conditions that share similar symptoms or characteristics. Hence, we checked whether the authors ruled out (a) neurocognitive disorders, wherein “memory loss for personal information is usually embedded in cognitive, linguistic, affective, attentional, and behavioral disturbances” (APA 2013, pp. 300–301); (b) substance-related disorders, such as “black-outs” due to drug or alcohol intoxication; (c) posttraumatic amnesia as a result of brain injury, in which memory loss occurs after traumatic brain injury; (d) seizure disorders, wherein individuals might report memory loss, although that is usually not related to traumatic episodes; (e) catatonic stupor, usually characterized by mutism, which superficially might look like dissociative amnesia; and finally, (f) factitious disorder, wherein individuals fabricate symptoms without any evident gain.

Second, we focused on whether the authors ruled out ordinary forgetting. Although part of the *DSM-5* definition (i.e., Criterion A; APA, 2013), we effectively checked whether authors took into account that ordinary, normal forgetting could have explained the patients' inability to remember past autobiographical events. Relatedly, we coded whether the authors were sensitive to the possibility that an encoding failure might have played a role in patients' reported memory loss. Of course, ordinary forgetting and encoding failure were relevant options only for cases involving

localized forgotten memories (e.g., those that pertained to childhood events). We did not code for ordinary mnemonic mechanisms as alternative explanations in cases of life-span memory loss or long amnesic periods (i.e., patients who claimed not to remember the past 15 years of their lives).

Third and finally, we coded for malingering as a potential alternative explanation for patients' dissociative amnesia claims (Merten & Merckelbach, 2013). More precisely, we looked at (a) whether authors considered malingering to begin with. If so, (b) we checked whether the authors explicitly mentioned patients' potential benefits within either a civil or criminal context, (c) we noted whether authors actually conducted a forensic assessment (e.g., forensic interview, symptom validity tests) to test whether patients were possibly intentionally overreporting their memory loss, and (d) we coded the tool or tools that were used during the forensic examination.

Coding procedure and interrater reliability

Articles ($k = 60$) were randomly and evenly distributed over the authorship team, who independently coded the information in the case reports using the taxonomy described above. The presence of the above listed characteristics in each case description was rated such that a range of binary variables emerged (e.g., "Was the trauma corroborated by other sources?"). If a characteristic was not reported or mentioned within the case report under consideration, the feature was coded as being absent. Of course, most variables were not binary, such as the amnesic time frame (e.g., "Amnesia pertained to recent autobiographical events") or the type of diagnosis (e.g., "Was the patient given a diagnosis of amnesia? If so, specify what type"). Here, we took note of what was stated in the articles without categorizing the remaining options as being absent.

An independent researcher, unaware of the scope of this review, received the characteristics previously listed and was instructed to examine 25% of the dissociative amnesia articles under investigation ($n = 15$). Her coding was compared with those of the authors, and every discrepancy was resolved vis-à-vis among the coders. We computed interrater reliability statistics using Krippendorff's α ($K\alpha$; Hayes & Krippendorff, 2007). $K\alpha$ yields conservative reliability estimates for judgments with two or more raters with or without missing data. Table 1 shows agreement for coded variables. Agreement levels were overall high (range = 0.76–1.0; $Mdn = 0.91$); 14 of the 21 characteristics reached at least 0.90 agreement, and only three characteristics had an agreement of less than 0.80.

Results

The IBM SPSS (Version 26) data matrix, coding scheme, and list of articles used for the current review are available on OSF (<https://osf.io/ebjwh>).

Descriptive information

Of the 128 individuals described in the case reports, 60.9% ($n = 78$) were men. The age range for the total sample varied from 11 to 66 ($M = 35.33$ years, $SD = 12.57$; missing data: $n = 2$). The majority of the cases (80.5%, $n = 103$) were clinically based, and the remaining (19.5%, $n = 25$) were forensically related.

Amnesic period. Although the *DSM-5* (APA, 2013) suggests that localized amnesia is the most common type of dissociative amnesia, 75% ($n = 96$) of the cases involved extended lifetime periods (e.g., life span). In 24.2% of cases ($n = 31$), memory loss pertained to circumscribed autobiographical events (e.g., recent autobiographical events). We excluded a single case study (0.8%; Iglesias & Iglesias, 2009) of an individual who "solely" forgot his native language but nevertheless was presented as someone suffering from dissociative amnesia. Among those who had amnesia for an extended period, the majority suffered from identity loss and, consequently, generalized amnesia for their entire life (68.8%; $n = 66$). Relatedly, two other individuals who reported life-span memory loss additionally lost their ability to speak their native language (2.1%; 1.6% of the total). In addition, among those with circumscribed amnesia, 74.2% ($n = 23$) reported memory loss only for recent autobiographical events. For details of patients' amnesic periods, see Table S1 in the Supplemental Material available online.

Additional memory impairments. A minority of 22.7% ($n = 29$) also reported semantic memory problems, and 10.9% ($n = 14$) exhibited features of anterograde amnesia. In 10.2% ($n = 13$) of cases, individuals showed both semantic and anterograde memory impairments, whereas in 18% ($n = 23$) of the cases, no additional memory impairments were observed by the authors even though patients were explicitly tested for those deficits. Finally, we observed that in 38.3% ($n = 49$) of the cases, information about the patients' semantic and/or anterograde memory issues was absent.

Examination. Neuropsychological tests were used most often to examine cases of dissociative amnesia, either in combination with other tools such as neuroimaging (17.2%; $n = 22$) or as single diagnostic method (16.4%; $n = 21$). In 9.4% ($n = 12$) of the cases, dissociative amnesia was not substantiated with psychometric or neuropsychological

tools (for information on the remaining cases, see Table S2 in the Supplemental Material).

Recovery. Apparently, 43% ($n = 55$) of the patients did not recover their memory, 28.9% ($n = 37$) fully restored their memory, and 11.7% ($n = 15$) partially recovered their memory. In 16.4% ($n = 21$) of the cases, no information was reported about patients' recovery. Moreover, among all the patients, we observed that 22.7% ($n = 29$) were given psychotherapy. For the remaining group, information about psychotherapeutic treatment was absent. A contingency table analysis plotting memory recovery against psychotherapeutic treatment showed a statistically significant effect, $\chi^2(3, n = 128) = 38.58, p < .001$, Cramér's $V = 0.549$. Post hoc tests were conducted using Bonferroni correction (Beasley & Schumacker, 1995; Garcia-Perez & Nunez-Anton, 2003). Among individuals who received psychotherapeutic treatment, 69% ($n = 20$) of individuals restored their memory, an association that statistically significantly deviated from the null hypothesis ($p < .001$). On the other hand, 6.9% ($n = 2$) of individuals who underwent psychotherapy did not recover their memory. Again, this relationship statistically significantly deviated from the null hypothesis ($p < .001$). Furthermore, 20.7% ($n = 6$) of individuals who underwent psychotherapy partially recovered their memory ($p = .349$), whereas no information about memory recovery was provided about one single dissociative amnesia patient who received psychotherapy (3.4%; $p = .129$). These percentages did not statistically significantly differ from the null hypothesis. Of those 29 individuals who received psychotherapy, 42.9% ($n = 12$) were given hypnosis or hypnotherapy, 10.7% ($n = 3$) underwent supportive psychotherapy, and five patients were exposed to either imaginal exposure therapy, relaxation therapy, mindfulness, cognitive behavioral therapy, or the latter one in combination with eye movement desensitization and reprocessing (EMDR; 3.6% each). Finally, in 28.6% ($n = 8$) of the cases, the type of psychotherapy was not specified. The relationship between type of psychotherapy and memory recovery was not statistically significant, $\chi^2(21, n = 29) = 13.31, p = .897$, Cramér's $V = 0.392$.

Clarity and quality of evidence for the dissociative amnesia cases

Concepts. In 41.4% of the case reports ($n = 53$), researchers referred to dissociation as a theoretical account for the reported memory loss, and in 19.5% ($n = 25$) of the cases, authors referred to repression. In 14.8% ($n = 19$) of the cases, authors employed both constructs interchangeably. However, a nontrivial percentage of authors did not mention either of the concepts (24.2%; $n = 31$).

Diagnosis. Across all the cases ($N = 128$), 79.7% ($n = 102$) of the patients received a diagnosis, and in the remaining cases, no diagnostic information was reported. More than half of the diagnosed patients were given the label of *dissociative amnesia* (63.7%; $n = 65$), 18.6% ($n = 19$) were diagnosed with functional amnesia, 8.8% ($n = 9$) were diagnosed with dissociative/psychogenic fugue, 6.9% ($n = 7$) were diagnosed with psychogenic amnesia, and 2 (2%) individuals were diagnosed with hysterical amnesia.

Trauma and diagnostic features. Authors reported traumatic or stressful episodes before the onset of amnesia in 96 cases (75%). In 27 out of 96 (21.1%) cases, traumatic or stressful events were corroborated. Figure 1 specifies the type of trauma. Note that most of the traumatic experiences had an organic component (e.g., mild head trauma or similar injuries, 33.3%; $n = 32$), followed by work- or life-related stressful episodes (e.g., being bullied, 22.9%; $n = 22$). In 12.5% ($n = 12$) of the cases, severe traumatic experiences during adulthood (e.g., being the victim of sexual assault or witnessing homicide) were mentioned. Severe traumatic experiences during childhood (e.g., child sexual abuse) and conflicts with relatives or partners were each mentioned in 9.4% ($n = 9$) of the cases. Moreover, 6.3% ($n = 6$) of the traumatic experiences before the manifestation of memory loss were related to legal issues (e.g., being confronted with an accusation). In 6.3% ($n = 6$) of the cases, traumatic experiences were not further specified.

Next, we focused on the diagnostic features of the dissociative amnesia cases in which a trauma or stressful event was mentioned as (potential) antecedent in the etiology of the memory loss ($n = 96$; for a complete overview of the diagnostic features, irrespective of a traumatic antecedent, see Table S3 in the Supplemental Material). In the majority of cases (55.2%; $n = 53$), the authors referred to trauma, type of memory loss, and duration of dissociative amnesia, thereby covering three out of the six diagnostic features listed by the *DSM-5* (APA, 2013). In 2.1% ($n = 2$; Chechko et al., 2018; Kumar et al., 2007) of the cases, the authors addressed all the *DSM-5* features, including that the amnesia was not due to substances, that patients were unaware, and that they were functionally impaired. In the remaining cases (42.7%, $n = 41$), authors addressed one or more of the *DSM-5* features in addition to the traumatic origin of the memory loss (see Table S3 in the Supplemental Material).

Associated diagnostic features. In 101 of the 128 case reports (78.9%), authors did not report any of the associated features (e.g., histories of trauma, child abuse,

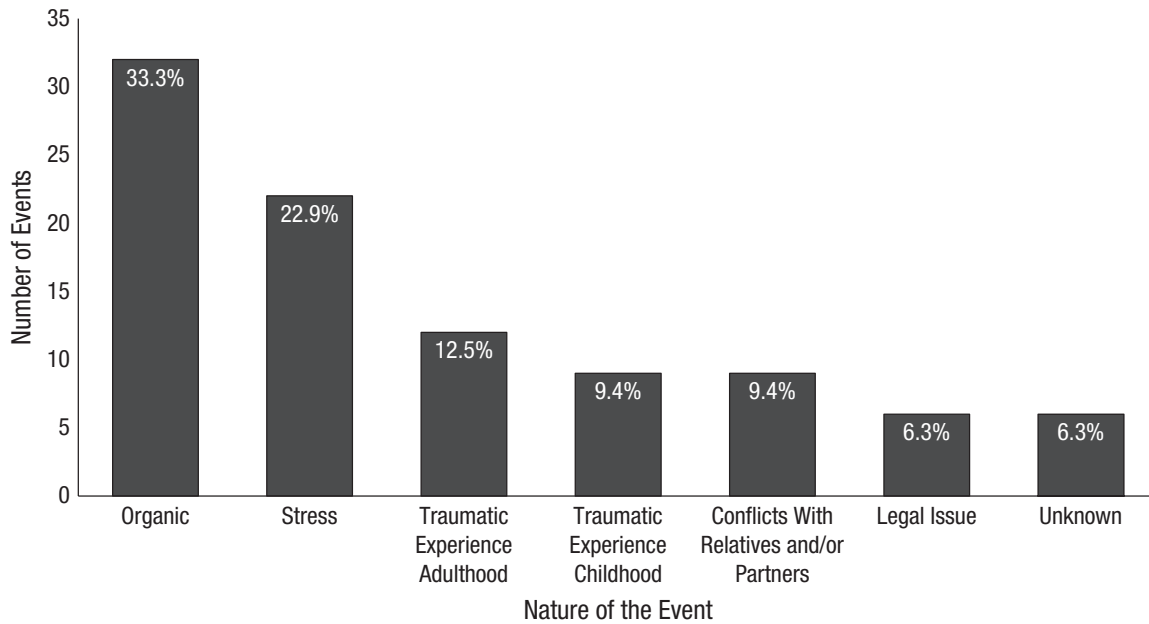


Fig. 1. Frequency of several types of traumatic and stressful experiences related to the patients' onset of dissociative amnesia (in 96 out of 128 cases in which such experiences were specified).

and victimization; self-mutilation; suicidal attempts; dissociative flashback). One patient description (0.8%; Colangelo, 2009) alluded to all listed associated characteristics. In the remaining cases, isolated associated features were reported alone or sometimes in combination with one another (for details, see Table S4 in the Supplemental Material).

Alternative explanations to the dissociative amnesia cases

Differential diagnosis. In 40 of the 128 case reports (31.3%), dissociative amnesia was differentiated from both neurocognitive disorders (i.e., intellectual and cognitive impairments) and posttraumatic amnesia due to brain injury. Note that 20.3% ($n = 26$) of the articles did not mention or refer to any differential diagnosis. In the remaining cases, the authors did rule out neurocognitive disorders in association with one or more differential diagnosis (for details, see Table S5 in the Supplemental Material).

Ordinary forgetting and encoding failure. For this analysis, we considered only cases concerning circumscribed amnesic episodes (e.g., amnesia for event or events that occurred during childhood). Figure 2 summarizes our findings. Of 31 cases with circumscribed memory loss, ordinary forgetting was explicitly considered as an alternative explanation for two patients (6.5%; Milchman, 2008; Staniloiu et al., 2020). In three cases

(9.7%; Chadda et al., 2002; Milchman, 2008; O'Neill of Tyrone & Fernandez, 2000), authors excluded failure to encode the event as an explanation for their patients' memory loss.

Malingering. We first explored malingering in those cases initially labeled as *forensically related* ($n = 25$). Surprisingly, no information was provided as to possible malingering in 64% ($n = 16$) of these cases. For the total set ($N = 128$), malingering was considered in 31.3% ($n = 40$) of the cases. In the remaining subsample, no information was reported or provided by the authors with respect to malingering. We checked whether dissociative amnesia reports arose in circumstances in which the examinees might have benefited from either financial or legal advantages. Of the 40 relevant cases, 29 reports (72.5%) did not mention the patients' potential benefits or legal advantages. In the remaining case descriptions, authors acknowledged that patients could have taken advantage from their amnesia reports in either a civil (15%; $n = 6$) or criminal context (12.5%; $n = 5$). Furthermore, in 45% of the relevant cases ($n = 18$ out of 40), the authors conducted a forensic examination, whereas in the others, the possibility of malingering was mentioned but not followed up with any investigation (see Fig. 2).

Among cases in which a forensic examination was conducted ($n = 18$), the most frequently used tests were Test of Memory Malingering (ToMM; Teichner & Wagner, 2004; Tombaugh, 1997) (38.1%, $n = 8$), ToMM in combination with the Amsterdam Short Term Memory Test

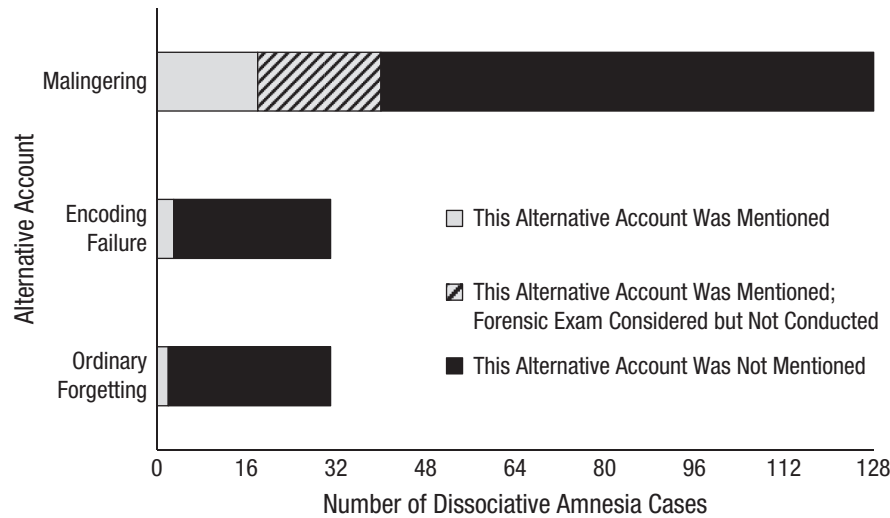


Fig. 2. Overview of the alternative accounts for dissociative amnesia considered in the examined cases ($N = 128$). For each alternative account, the graph shows whether the particular account was mentioned by the original authors or not. In addition, for malingering, the graph shows cases in which forensic examination was actually conducted (solid gray; 18 of 40) and cases in which no further forensic examination was assessed (stripe; 22 of 40). Ordinary forgetting and failure to encode the event or events were considered as alternative explanations for dissociative amnesia only in reports concerning circumscribed amnesic episodes (31 out of 128).

(ASTM; Schmand & Lindeboom, 2005; 19%, $n = 4$), and ToMM in combination with the Rey 15-Items Test (FIT; Lezak et al., 2012; 14.3%, $n = 3$). In three cases, the authors used either only the FIT, only the Personality Assessment Inventory (Morey & Lowmaster, 2010), or a combination of tools such as ToMM, ASTM, FIT, and the Test Battery for Forensic Neuropsychology (Heubrock & Petermann, 2000; 4.8%; $n = 1$, respectively). Finally, in three cases (14.2%), no information was provided regarding the tools used to conduct the forensic examination.

Discussion

The *DSM-5* (APA, 2013) definition of dissociative amnesia encompasses several critical elements, including that the person does not have the ability to recall important autobiographical information that is usually of a psycho-traumatic or stressful nature; that although the person is not always aware of his or her deficits, the memory loss interferes with daily functioning; and that memory loss cannot be explained by ordinary forgetting or by conditions such as substance use, neurocognitive disorders (e.g., dementia, partial seizures), or traumatic brain injury. Over the years, researchers have further elaborated on these elements, for instance, the idea that psychological trauma is a prominent antecedent of dissociative amnesia (e.g., Chu et al., 1999; Freyd, 1994;

Staniloiu et al., 2020; Staniloiu & Markowitsch, 2012; van der Hart, 1996).

In the current review, we screened 128 dissociative amnesia case studies published during the past 20 years to examine to what extent these case descriptions actually met the features that the *DSM-5* (APA, 2013) deem to be typical for dissociative amnesia. Our main conclusion is that the overwhelming majority of case studies covered an incomplete and limited set of isolated characteristics of dissociative amnesia as portrayed in the *DSM-5* (APA, 2013). Only two case studies addressed all *DSM-5* features (APA, 2013). However, even these two cases were not particularly compelling illustrations of patients suffering from dissociative amnesia as conceptualized by *DSM-5* (APA, 2013). In the first one, Chechko et al. (2018) described the case of a woman (“N.N.”) with life-span memory loss due to (unknown) trauma. Compared with a control group, N.N. exhibited weaker involvement of the hippocampus during recollection of previously learned face-name pairs (Chechko et al., 2018, p. 1970). However, hippocampal spreading depression is considered to be a risk factor of transient global amnesia (TGA; e.g., Jørgensen & Schmidt-Olsen, 1986; Tynas & Panegyres, 2020), and so a plausible alternative account is that N.N.’s memory deficit could have reflected TGA rather than dissociative memory loss. In the second case study, Kumar and colleagues (2007) presented a patient with severe anterograde

amnesia following stress as a result of failure to return money borrowed from a friend. With this particular background, malingering might have been an alternative interpretation, as the authors acknowledged in their discussion (Kumar et al., 2007, p. 584). However, they did not conduct any further forensic examination to rule out whether their patient was malingering his amnesia.

Thus, in terms of *DSM-5* features (APA, 2013), no strong compelling patient descriptions of dissociative amnesia have been published over the past 20 years. We discuss in turn the key elements of the *DSM-5* description (APA, 2013), the limitations of our study, and the more general conclusions that can be drawn from our findings.

Retrospective memory loss and recovery

The most frequently reported dissociative amnesia characteristics were its type (e.g., generalized) and duration (e.g., life span), and other diagnostic criteria (e.g., functioning impairment and unawareness) were only incidentally addressed. The large majority of case studies (75%; $n = 96$) were about patients who reported memory loss for extended time periods. As stated in the introduction, reports of retrospective memory loss are, in essence, self-reports and may be inaccurate. In most case studies (90.6%; $n = 116$; see Table S2 in the Supplemental Material), authors attempted to move beyond the level of self-reported memory loss by administering tests (e.g., neuropsychological tests) and/or tools (e.g., neuroimaging methods) and/or by consulting collateral sources. It is therefore fair to conclude that in general, the retrospective memory loss described in these case studies involved more than just a subjective metacognitive judgment.

Although the *DSM-5* (APA, 2013) states that the memory loss in dissociative amnesia is “always potentially reversible because the memory has been successfully stored” (p. 298), the prevalence of memory recovery is virtually unknown. We found that the number of patients who did not recover their memory slightly exceeded the number of patients who did fully (or partially) regain their memory. Most patients (69%; $n = 20$) who recovered their memory did so in the context of psychotherapeutic treatment. Although it is impossible to draw causal conclusions from this constellation, the association of memory recovery with psychotherapy is in itself in accordance with the idea that dissociative amnesia involves temporary memory loss and that a promising way to treat patients with dissociative amnesia is through psychotherapy (e.g., Staniloiu et al.,

2020). However, frequently employed interventions, such as hypnosis or EMDR, are not without problems (e.g., Houben et al., 2018; Lilienfeld, 2007; Lynn et al., 2003). Specifically, laboratory studies have indicated that hypnosis and EMDR might increase the amount of memory information reported, but often at the expense of accuracy (e.g., Houben et al., 2020; Steblay & Bothwell, 1994). Thus, what might look like recovery of memory loss may, in fact, involve inaccurate or even false memories that have never been dissociated to begin with. It is for that reason that some authors have been critical about the potential of therapeutic techniques to recover autobiographical memories (see Loftus & Guyer, 2002; Mazzoni et al., 2010; Whitehouse et al., 1991).

Trauma and stress

In a quarter of the case descriptions ($n = 32$), authors did not mention or even refer to traumatic or stressful episodes related to the amnesic onset. In some cases, it remained unclear why patients were labeled as suffering from dissociative amnesia (or similar) if neither a psychological nor an apparent organic deficit could account for those memory impairments. For instance, Reinhold and Markowitsch (2007) reported a case of a 16-year-old patient (“I.K.”) for which the authors “could not find any stressful or distressing factors in [her] life history” (p. 57; see also case “M.M.” in Brand et al., 2009). Likewise, Kritchevsky and colleagues (2004) studied a series of patients with functional amnesia. Out of 10 patients (of whom one eventually admitted having feigned his amnesia), four (Patients 1, 4, 6, and 8) did not experience any stressful event before or related to their memory loss. What these patients had in common, however, was a history of substance abuse and psychiatric comorbidity, both of which perhaps may have contributed to their memory loss (e.g., Korsakoff syndrome; psychosis). Meanwhile, the *DSM-5* (APA, 2013) is in no way strict or dogmatic about the connection between trauma and dissociative memory loss. All the *DSM-5* (APA, 2013) states is that the retrospective memory loss is “usually” of a traumatic or stressful nature and that psychological trauma often precedes dissociative amnesia. Obviously, such a formulation leaves room even for nontraumatic antecedents of dissociative memory loss. Furthermore, this wide definition easily invites diagnosis by exclusion: When there are no obvious organic disturbances, researchers or clinicians might be tempted to reason that the amnesia *must* therefore be dissociative in nature, irrespective of whether a traumatic or stressful event can be identified.

In this regard, we concur with Lynn and colleagues (2014), who argued that the central diagnostic criterion for dissociative amnesia is perhaps too vague in stipulating that one or more episodes of inability to recall important information must be “inconsistent with ordinary forgetting.” What constitutes ordinary forgetfulness is difficult to delineate, and what is ordinary hinges on a variety of factors, including the situational context (e.g., whether psychotherapeutically guided memory recovery attempts are undertaken). For instance, Read and Lindsay (2000) demonstrated that when people are encouraged to remember more about a selected target event, they report their forgetting to be more extensive compared with individuals who are asked to simply reminisce about a target event.

In case descriptions in which traumatic causes were linked to the dissociative amnesia reports, the most frequently identified antecedent was organic in nature (e.g., mild or minor brain injury as a result of vehicle accidents, falls; $n = 32$). *DSM-5's* (APA, 2013) acknowledgment that “mild traumatic brain injury may precede dissociative amnesia” (APA, 2013, p. 299) might have led some authors to consider brain damage as a prominent precursor of dissociative amnesia. Indeed, dissociative amnesia reports were mostly examined by administering neuropsychological tests, sometimes in combination with other instruments (e.g., neuroimaging and comparison with control group). However, Lucchelli and Spinnler (2002) speculated that subtle brain injury may go unnoticed when it falls below the sensitivity threshold of neuroimaging tools. Accordingly, these authors argued that lack of a congruent brain lesion does not necessary rule out an organic etiology of memory loss. The problem with this type of reasoning is that it allows for untestable, not falsifiable interpretations. That is, one can always invoke unobservable organic antecedents of amnesia without being proven wrong. Still, it is true that conditions such as TGA may simulate dissociate amnesia, although TGA is often a consequence of mild head trauma (e.g., Hodges, 1998; Lewis, 1998; Lucchelli et al., 1998). In sum, then, looking at the cases in our set, it is often not clear why some authors conceptualized the memory loss as dissociative in nature when there is a clear hint in the direction of organic factors and, at the same time, psycho-traumatic or stressful experiences that precede the amnesia are absent.

A common characteristic of cases in which there was long-lasting, generalized memory impairment (e.g., extensive retrospective memory loss; see Staniloiu et al., 2018) was that the authors tended to look for any type of psychological stressors in their patients' life. Sometimes, these stressors were severe and dated back to early childhood, such as multiple sexual abuse (e.g.,

patient “P” in Staniloiu et al., 2018), or involved domestic violence (e.g., Helmes et al., 2015). Yet in other cases, stressors appeared to be relatively “minor” events such as marital issues (e.g., Degun-Mather, 2002) or broken careers (e.g., Markowitsch & Staniloiu, 2013). More precisely, in 39 cases, the onset of dissociative amnesia was marked by work- and life-related stress, conflicts with partners or relatives, and legal issues, which all might be seen as belonging to the less spectacular range of adverse events. For instance, in their study of 28 dissociative amnesia cases, Staniloiu and colleagues (2018) reported that some of the critical accidents before dissociative amnesia were police accusations (patients A, B, and C), lifetime inability to work in preferred job (patient E), or arguments with a good friend (patient M) or with other children at school (patient N). In addition, Lee et al. (2011) reported a case of an 18-year-old man who was admitted to the psychiatric facility because of his aggressive behavior and consequently developed amnesia for it because of “unfulfilled wishes for love” (p. 378). The theoretical problem here is that when mild stressful experiences are considered to be antecedents of dissociative amnesia (e.g., Brewin et al., 2009; McHugh & Treisman, 2007), it becomes difficult to understand why it would be so important for a person to dissociate from them.

Authors often assume that previously experienced stressful events can be latent (e.g., abuse, maltreatment) and suddenly reactivated by biological events (e.g., accident) such that both organic and psychogenic factors contribute to memory loss and its maintenance (e.g., Staniloiu et al., 2018). This type of explanation is particularly put forward to explain rare cases of anterograde (or continuous) dissociative amnesia (Staniloiu et al., 2018; cf. Brandt & van Gorp, 2006; Kopelman, 2000). A potential problem here is, of course, hindsight bias (e.g., Fischhoff, 1996; Merckelbach & Patihis, 2018; Patihis et al., 2019), in which memory loss is retrospectively attributed to types of psychological and biological life events that most people will experience from time to time. For instance, Fujiwara et al. (2008) reasoned that their patient's (“C.D.”) amnesic onset must be psychogenic given the presence of conversion symptoms and somatic complaints (p. 40) even though C.D. began suffering from severe retrograde and anterograde memory impairments following a car accident.

Differential diagnosis and alternative explanations for dissociative amnesia

As stated before, neuropsychological tests were mostly used to examine dissociative amnesia. Relatedly, the most common differential diagnoses endorsed by the authors of the case studies were neurocognitive

disorders, both as stand-alone or in combination with others (e.g., posttraumatic amnesia as a result of brain injury and substances-related disorders; Brand et al., 2009; Fujiwara et al., 2008). In only six cases, authors considered three or more differential diagnoses (e.g., Hennig-Fast et al., 2008) indicated by the *DSM-5* (APA, 2013), whereas in 26 reports, we found no reference to any of them (e.g., Chadda et al., 2002; Efrati et al., 2018; Lee et al., 2011). Little attention was paid to the possibility that amnesia reports might have reflected ordinary forgetting and/or a failure to encode events. Colangelo (2009), for instance, presented a detailed case of a 23-year-old patient who recovered memories of child sexual abuse during therapy. The author explained this patient's amnesia report in terms of repression and dissociation but did not consider that it might instead have been an instance of normal forgetting, a failure to properly encode the abuse, or simply a voluntarily decision to not disclose the experience (e.g., because of feeling ashamed).

Likewise, Efrati and colleagues (2018) reported a study including three women who recovered their repressed child sexual abuse memories following hyperbaric oxygen treatment. However, the authors were silent about why repression or dissociation could account for their patients' amnesia better than any other cognitive or social mechanism, such as ordinary forgetting or reluctance to talk about an emotionally painful episode. In their prospective study on victims of documented child sexual abuse, Goodman and colleagues (2003) found that forgetting of trauma memories is not a common experience. The most parsimonious explanation for nondisclosure of trauma memories seemed to be lack of willingness to disclose, although the researchers also found that nondisclosure was associated with higher levels of dissociative symptoms. Thus, most of the evidence adduced in support of (traumatic) dissociative amnesia could as well be reinterpreted as normal forgetting or failure to disclose rather than being attributed to an inability to remember the trauma in itself as a result of repression or dissociation (e.g., McNally, 2003). In this respect, the majority of the reviewed articles failed to rule out such cognitive-related alternative explanations, thereby perhaps attributing instances of ordinary forgetting to dissociative amnesia.

Finally, in more than two thirds of the dissociative amnesia reports ($n = 88$), malingering was not considered as an alternative interpretation even when background information could have suggested the possibility of feigned memory loss. A case in point is the article of Mizutani and colleagues (2014) about a young woman claiming selective amnesia surrounding an episode of shoplifting. In a similar vein, Brand et al. (2009) did not question whether patient "H.H.," previously

arrested for two rapes, was malingering his amnesia related to a new accusation of sexual assault. The failure to consider malingering in such case descriptions is surprising given that there are psychometrically strong tests to rule out this differential interpretation (see Peters et al., 2013).

When malingering was considered, it was frequently assessed in a suboptimal way. To properly evaluate the credibility of symptom reports, clinicians are well advised to rely on a so-called multimethod approach involving several types of tests and tasks (Boskovic et al., 2019; Jelacic, 2018; Rogers & Bender, 2018; for a good example in the context of dissociative amnesia, see Marcopulos et al., 2016). In addition, some authors seemed to be reluctant to take malingering into account as a plausible explanation for memory loss claims. For instance, when discussing a patient's below-chance performance on some neuropsychological tasks, Fujiwara et al. (2008) stated that "although malingering might seem likely, we cannot conclude simulation without confession of the patient" (patient "G.H.," p. 42). This is in stark contrast to the broadly endorsed view of forensic neuropsychologists that below-chance performance is a smoking gun of deliberate underperformance (Binder & Chafetz, 2018). In some case studies, signs of malingering were framed as a cry for help (e.g., patients "Charles" and "Heidi," respectively, Staniloiu et al., 2020), although a cry for help is consistent with rather than conflicting with deliberate fabrication of memory loss (Young, 2019). Overall, our findings support the conclusion of Jenkins and colleagues (2009) that "the acceptance of 'malingering' as the most likely explanation for some cases of retrograde amnesia requires greater consideration" (p. 604).

Limitations

Our critical review of case studies has some obvious limitations. To begin with, in light of the prevalence estimates of dissociative amnesia (i.e., 1.8%–7.3%; Spiegel et al., 2011; Staniloiu & Markowitsch, 2014), it might be surprising that we were able to locate only 128 case studies on this subject. The paucity of cases might be due to several reasons. For one thing, we restricted our review to articles that appeared in English, peer-reviewed journals. Hence, there might be case descriptions of dissociative amnesia in other languages that more fully cover the *DSM-5* (APA, 2013) essentials of this disorder. More generally, there is a rich literature in other languages on dissociative amnesia and how it might be confused with, for instance, TGA (e.g., Gil et al., 2010), that we did not include. Furthermore, clinicians might believe that cases of dissociative amnesia are so common that they do not warrant publication.

Thus, our set of case studies may have been biased by selection effects. For instance, clinicians might have selectively published atypical cases of retrospective memory loss that did not encompass all diagnostic features of dissociative amnesia as portrayed in *DSM-5* (APA, 2013), as they deemed these sorts of cases particularly informative and worthy of publication. However, the authors of the case studies we reviewed did not stipulate this consideration as a basis for their selection of case material. Our interrater reliability analysis indicated less than perfect agreement for several characteristics of dissociative amnesia described in *DSM-5* (e.g., amnesic associated features, additional memory impairments, recovery; APA, 2013). Less than perfect agreement, however, does not necessarily reflect a limitation of our procedure. Rather, it may echo the unclarity with which the dissociative amnesia cases are presented in the literature.

Another limitation of our review is that we looked only at case studies, leaving aside the experimental literature on amnesia-like phenomena (e.g., Hulbert et al., 2016; Loftus & Burns, 1982). Finally, our review does not take into account the word limits for authors of case studies. That is, many journals use word limits that might force authors to omit interesting or even crucial background information about a dissociative amnesia case. Yet the critical issue here is that omitting or not reporting crucial information about dissociative amnesia patients may hinder the understanding of this condition.

Conclusion and Future Recommendations

Given historical considerations, some critics have argued that dissociative amnesia is not a natural neuropsychological category (e.g., hallucinations) but, rather, a culture-bound syndrome (McNally, 2007; Pope et al., 2007). Our data neither support nor contradict such a position. Likewise, authors have criticized the way *DSM-5* (APA, 2013) defines dissociative amnesia, particularly the basic assumption that intense distress precedes dissociative memory loss (Rivard et al., 2002). Our data do not allow us to question the *DSM-5* (APA, 2013) criteria for dissociative amnesia. We do contend, however, that none of the 128 case studies in our set covered all of those criteria. Dissociative amnesia, as sketched in these case studies, appeared to be a rather elastic and openly defined construct that described various types of memory loss in the presence or absence of a broad range of psychosocial and biological stressors and without alternative explanations being ruled out. Thus, further descriptive research on the dissociative amnesia is certainly warranted, and what is especially needed are case studies in which other

interpretations are meticulously ruled out (e.g., ordinary forgetting, encoding failure, TGA, malingering). Arguably, it is not always possible to rule out all the alternative explanations for dissociative amnesia. Still, claims of dissociative memory loss should be tempered to the extent that it is impossible to exclude these alternative explanations. It is difficult to escape the conclusion that as a diagnostic label, *dissociative amnesia* is often prematurely used. Having said that, the burden of proof for dissociative amnesia falls on scholars who claim that it is a useful diagnostic category. Future case studies may well meet the high bar that the *DSM-5* (APA, 2013) sets, but to date, none have done so convincingly.

In this respect, there are three further points that deserve comment. First, as stated before, authors of dissociative amnesia case reports often present relatively mild events as if they are somehow causally related to the memory loss. This type of interpretation is reminiscent of the ever-widening range of adverse events (e.g., marital disruption, affairs and divorce, employment-related and money issues, breaking up with friends) that is subsumed under the A (“trauma exposure”) criterion of PTSD (e.g., Rosen, 2004; Rosen & Lilienfeld, 2008), thereby inflating the concept of trauma (see also Brewin et al., 2009). We have no strong opinions about whether mildly adverse events might elicit dissociative coping, but we do argue that case studies on dissociative amnesia could become more convincing if they would pay more attention to the dissociative element by administering tests and interviews that gauge patients’ habitual tendency to react with dissociative detachment to distressing events. Yet even if future case studies on dissociative amnesia would more systematically cover dissociative features, the qualifier *dissociative* may still be problematic (Briere et al., 2005). The point here is that it may potentially refer to a broad range of phenomena, some of which are benign (e.g., absent-mindedness) and others of which are pathological (e.g., derealization). Admittedly, scholars have tried to conceptualize these different phenomena as the manifestations of a limited number of underlying mechanisms (e.g., detachment vs. compartmentalization; see E. A. Holmes et al., 2005), but the issue remains that there seems to be no unitary latent factor that one could reasonably refer to as *dissociative*.

Given the multidimensionality of dissociative symptoms and the ensuing lack of consensus about their underlying mechanisms (e.g., Briere et al., 2005), it is not surprising that authors of dissociative amnesia case studies attribute different characteristics to what is assumed to be one and the same phenomenon (i.e., dissociative amnesia). For instance, whereas Lee and

colleagues (2011) emphasized “functional dissociation of the fronto-temporal regions through the release of stress hormones” (p. 379), Staniloiu and colleagues (2018) related dissociative tendencies to vegetative-emotional cognitive reactions, and Tramoni et al. (2008) speculated about a “double dissociation” between “preserved cognitive processing of emotion and altered experienced somatic arousal” (p. 15). Clearly, when scholars describing dissociative amnesia cannot find a common ground in what the term *dissociation* entails, one wonders why certain memory disturbances have to be labeled as *dissociative* in the first place. Thus, considering the intrinsically problematic nature of the qualifier *dissociative* and the difficulty to rule out other mechanisms (e.g., feigning), we recommend employing neutral labels such as *unexplained memory loss* or *amnesia of uncertain etiology* to describe individuals who present with what seems to be a nonorganic form of extreme forgetting (for a similar analysis, see Brandt & van Gorp, 2006).

Second, many case studies on dissociative amnesia cast the interpretational options of such cases in terms of a dichotomy: organic as opposed to dissociative or dissociative as opposed to malingering. Kopelman (2000) suggested that these dichotomies might be false. That is, patients may develop memory loss as a result of brain injury, then later react with dissociative detachment to the distress, and still eventually feign their memory impairments. Case studies on dissociative amnesia would gain in strength if they would take such dynamics into account. Third, neuroimaging studies that show reduced prefrontal-temporal connectivity or a hypometabolic state of the right temporo-frontal region in patients with dissociative amnesia are certainly intriguing (Staniloiu & Markowitsch, 2014), but they illustrate at most a correlation, not causation. Whether reduced brain metabolism in certain areas is the organic vehicle of dissociative memory loss could be examined with transcranial magnetic stimulation techniques (e.g., Boggio et al., 2009).

Finally, authors presenting dissociative amnesia cases should provide readers with sufficient information regarding their patients’ condition and anchor their diagnosis as much as possible in *DSM-5* (APA, 2013), specifically in terms of diagnostic criteria, associated features, and differential diagnoses. As noted above, we are aware that some journals have word limits in place. However, at present, readers might be provided with available supplemental materials on online platforms (e.g., OSF). Equally, authors should consider possible alternative accounts for dissociative amnesia. Indeed, as our findings show, omitting or not reporting crucial information about dissociative amnesia patients (e.g., trauma) does not contribute to a fair understanding of this phenomenon. Rather, it may cast doubts on diagnostic

coherence and prevalence of dissociative amnesia. We encourage reviewers of case study manuscripts on dissociative amnesia to critically look for falsifiable signs of dissociative amnesia accounts. For instance, reviewers and editors should challenge the authors regarding whether memory loss might rather be due to (a) undetected organic dysfunctions, (b) normal memory phenomena (e.g., ordinary forgetting, childhood amnesia, failure to encode the experience), and (c) malingering. Related to the latter, we further suggest that reviewers and editors should carefully investigate the circumstances in which reports of memory loss emerge and perhaps ask for more details if needed.

In closing, we do not want to imply that dissociative amnesia is a nonexistent diagnostic entity. Rather, our findings highlight that case study data surrounding the nature and etiology of dissociative amnesia are unconvincing and lack convergence and cohesion across clinicians and academics. Taken together, we provide strong evidence that without proper examination that rules out differential diagnosis and alternative explanations, the diagnostic label of *dissociative amnesia* as currently known may be deceiving.

Transparency

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Author Contributions

All of the authors were involved in realizing the coding scheme, coding the case studies, and analyzing the data. I. Mangiulli drafted the manuscript, and the coauthors added to and edited the manuscript. All of the authors approved the final manuscript for submission.

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Supplemental Material

Additional supporting information can be found at <http://journals.sagepub.com/doi/suppl/10.1177/21677026211018194>

Notes

1. We employed Google Scholar because it is an inclusive resource that covers psychological journals not indexed by medical databases or vice versa (see also Shultz, 2007).
2. Some articles, specifically those published between 2000 and 2013, refer to the fourth edition of the *DSM (DSM-IV; APA, 1994)* or the fourth edition, text revision edition of the *DSM (DSM-IV-TR; APA, 2000)*. Note, however, that the only major change from the *DSM-IV* and *DSM-IV-TR* to the *DSM-5 (APA, 2013)* is that dissociative fugue is now considered a specifier of dissociative amnesia rather than as a separate diagnostic entity.
3. We did not treat DID or PTSD as differential diagnoses because dissociative amnesia is thought to occur as an associated symptom in both diagnostic entities.

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