

AFFECT-RELATED CHANGES IN PATIENTS WITH DISSOCIATIVE AMNESIA

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Abstract

Dissociative amnesia is a psychiatric syndrome accompanied by severe memory disturbances which are usually retrograde and restricted to the autobiographical domain. If the amnesia relates to the whole past life, self-consciousness (“autonoetic consciousness”) is considerably disturbed. Due to the fact that autobiographical memories are usually affect-related, it is of interest to investigate whether a reason for the patients’ memory disturbances can be sought in changes in affect and emotion. We therefore investigated possible affect-related changes in 34 patients with a diagnosis of dissociative amnesia using neuropsychological tests and questionnaires.

Patients: The patients were between 11 and 54 years of age at the time of their investigation (mean age: 37 years). All but one of them had live-long retrograde amnesia; the exception had continuous anterograde amnesia (a very rare, but existing form of dissociative amnesia). The majority of the patients had deficits in attention and concentration (20 patients; 59%). With respect to affect-related changes, many of the patients (24 patients; 71%) had a blunt affect in interviews and conversations; and in affect-related tests (Florida Affect Battery; Reading the Mind in the Eyes Test; Toronto-Alexithymia-Scale), again most of them (26 patients; 76.5%) showed remarkable deficits. Furthermore, in questionnaires used to investigate personality dimensions (Freiburg-Personality-Inventory; Symptom-Check-List 90; Dissociative Experiences Scale-II; Beck Depression Inventory; Interpersonal Reactivity Index), the clear majority (>75% of the patients tested with these instruments) manifested deviances suggestive of affect-related changes (tendencies of depression, anxiety, somatization, alexithymia).

It is concluded that the old concepts for dissociative amnesia, namely ‘hysteria’ and that patients with this disease condition demonstrate a kind of ‘belle indifference’ towards their social environment, are still valid and may contribute significantly to their lack of self- or autonoetic consciousness. Furthermore, their usually selective autobiographical retrograde amnesia seems to be attributable to a desynchronization between affect-related and memory-processing regions of the brain, a hypothesis which is confirmed by more recent functional neuroimaging data in patients with dissociative amnesia.

Keywords: *Emotion, autonoetic consciousness, memory, personality dimensions.*

1. Introduction

‘Dissociative amnesia’ is a term that was introduced relatively lately in the last century. Other terms in use were ‘psychogenic amnesia’, ‘medically unexplained amnesia’, ‘functional amnesia’ and – above all – ‘hysteria’, a term used by Charcot in France (Bogousslavsky, 2011). The concept of *hysteria* spread to German-speaking countries by Sigmund Freud’s work, and thereafter quickly reached further countries and continents. While hysteria was initially seen as a condition affecting exclusively women, this view dramatically changed after the description of many World War I soldiers who were labeled “war tremblers” (or “Kriegszitterer” in German-speaking countries). ‘Dissociative amnesia’, however, is the legitimate diagnostic entity in international nosology.

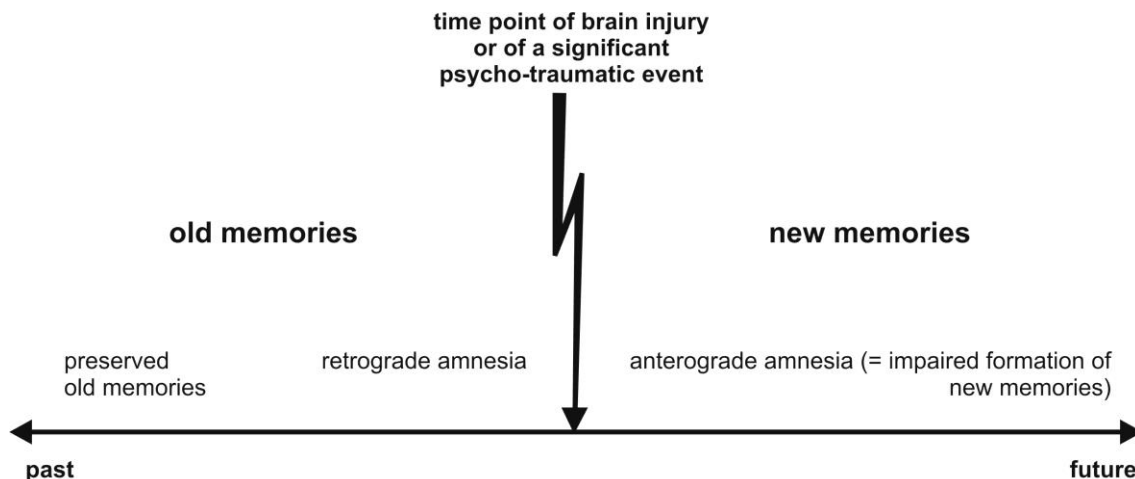
The expression ‘dissociation’ refers to spreading (of emotion and cognition) in opposite directions (Markowitsch, 1999); it is therefore the opposite of unity or synchronization. The term ‘dissociation’ is also used to indicate a measurable psychobiologic trait. Some authors view ‘dissociation’ as a spectrum, while others argue for a categorical division into normal (e.g., absorption) and pathologic dissociation (e.g., amnesia). A bridging view postulated that normal dissociative reactions provide a fertile ground for pathologic dissociation rather than being categorically distinct phenomena.

Dissociative amnesia is a psychopathologic condition, which can lead to disaggregation of personhood through a disruption or discontinuity of otherwise normally integrated functions of memory, consciousness, emotion, personal identity (self-reference), and behavior (Staniloiu & Markowitsch, 2014; Markowitsch & Staniloiu, 2016).

Prevalence rates of dissociative amnesia were found to vary considerably across countries and populations (0.2 to 7.3%) (Staniloiu & Markowitsch, 2014). Most patients are between 20 and 40 years of age at the time of diagnosis, but children and old people can develop the condition as well (Staniloiu & Markowitsch, 2014). Dissociative amnesia can be recurrent, but data are largely missing. In many patients, long-lasting disability was found. Genetic and epigenetic data on dissociative amnesia are missing, although heritability rates of dissociation are estimated to be 50% or higher (see also Markowitsch, 2015, on an epigenetic hypothesis).

The hallmark of dissociative amnesia is a temporary or long-lasting inability to recollect personal (autobiographical) memory, which is termed retrograde amnesia (Fig. 1). The underlying mechanism is assumed to be blockade of accessing the old personal memories. Therefore, dissociative amnesia was named ‘mnestic block syndrome’ as well (Markowitsch, 2002). Contrary, to the frequently observed Ribot’s law (implying that old information is easier accessible than recent one; Ribot, 1882), the inaccessible memories in dissociative amnesia can be related to any time period, but are related more frequently to early periods in life, as in these often more affect-connnotated incidents occurred.

Figure 1. Possible consequences of a significant event on old and new memories. Anterograde amnesia refers to the inability to store new memories long-term, retrograde amnesia to an inability to retrieve stored information (biographical events, facts). Very old memories are usually more likely preserved than more recent ones.



A frequent phenomenon accompanying dissociative amnesia is ‘la belle indifference’ (Reinhold & Markowitsch, 2007, 2009), a term used by Sigmund Freud that may have been originally coined by Jean-Marie Charcot (Bogousslavsky, 2011) or by Pierre Janet (Janet, 1892, 1907). It implies that patients with dissociative amnesia have reduced emotional responsiveness – they remain in a narrow emotional equilibrium. The possible reason for this can be explained from results obtained by using functional brain scanning (FDG-positron emission tomography) in patients with dissociative amnesia (Brand et al., 2009; Staniloiu et al., 2010). Here, it was found that these patients show a hypometabolism in emotion-processing areas of the right anterior temporal region, including the amygdala, plus a reduced ventral prefrontal metabolism, that is, in an area necessary for monitoring, controlling and retrieving memories (Kroll et al., 1997; Fink et al., 1996).

2. Patients and methods

We studied altogether 34 patients (age range: 11-54 years; mean age: 37 years) with the diagnosis of dissociative amnesia. All but one of them had live-long retrograde amnesia; the exception had continuous anterograde amnesia (a very rare, but existing form of dissociative amnesia; see Staniloiu & Markowitsch, 2014, Table 2).

Patients were investigated with a psychiatric interview and various neuropsychological tests. Nearly half of them had static and functional brain imaging as well. In addition to tests on attention and concentration, problem solving and concept formation, several memory tests, including an autobiographical memory interview were applied. In addition, tests on symptom validity were used.

Special emphasis was laid on testing affect-related tests (Florida Affect Battery; Reading the Mind in the Eyes Test; Toronto-Alexithymia-Scale; in 3 patients a test on remembering neutral and emotional pictures was applied as well; Bowers et al., 1991; Breitenstein et al., 1996; Baron-Cohen et al., 2001; von Cramon et al., 1993). As questionnaires we used the Freiburg-Personality-Inventory (Fahrenberg et al., 2001), the Symptom-Check-List 90-R (Franke, 2002), the Dissociative Experiences Scale-II (Gast & Rodewald, 2004), the Beck Depression Inventory (Hautzinger et al., 2006), the Structured Clinical Interview for DSM-IV Dissociative Disorders (SKID-D; Steinberg et al., 1993) and the Interpersonal Reactivity Index (Paulus, 2012).

3. Results

Deficits in attention and concentration were found in most patients (20 = 59%). Of course, all of them had severe and lasting retrograde amnesia in the episodic-autobiographical domain (cf. Markowitsch & Staniloiu, 2012, especially their Figure, and Markowitsch & Staniloiu, 2022a, especially their Figure 1), while fact memory (semantic memory) was largely unimpaired or was regained within weeks (with 2 exceptions). Many of the patients (24 patients; 71%) had affect-related changes, manifesting from the start as blunt affect in interviews and conversations. In affect- or emotion-related tests (Florida Affect Battery; Reading the Mind in the Eyes Test; Toronto-Alexithymia-Scale) most of the patients (26 patients; 76.5%) showed remarkable deficits. These were especially seen in the more complex tests of the Florida Affect Battery and in the Reading the Mind in the Eyes Test. The results of the Toronto-Alexithymia-Scale revealed a reduced emotional responsiveness in about half of the patients, tested with this questionnaire.

The application of the other questionnaires confirmed this impression. Frequently minor depressive tendencies were observed (Beck Depression Inventory, Symptom Checklist 90-R), confirming our results from patients with dissociative amnesia that we had tested more than 20 years ago (Markowitsch et al., 1997, 1999). The results from the other questionnaires brought a high number of sometimes were individual deviances from the normal. Roughly three quarters of the patients manifested deviances suggestive of affect-related changes (tendencies of depression, anxiety, somatization, alexithymia).

4. Discussion and conclusions

As the name of the disease – dissociative amnesia and its predecessors (hysteria) – implies, there is a disorganization or decay of normally integrated, or, as we favor to term them, synchronized functions in patients affected by the disease (Markowitsch & Staniloiu, 2022b). The two functional complexes disturbed are emotional evaluation and memory processing (Staniloiu & Markowitsch, 2020). In normal individuals, episodic-autobiographical memories are affectively colored (Staniloiu & Markowitsch, 2020a, b); when we think of a past personal event, we simultaneously create an image, how we felt, when experiencing the happening. We do this by activating a special form of consciousness, named ‘auto-noetic consciousness’ (Markowitsch, 2003; Markowitsch & Staniloiu, 2011; Tulving, 2005).

Patients with dissociative amnesia usually have a long history of stressful or traumatic events which made their personality labile and susceptible towards influences from the social environment (Staniloiu & Markowitsch, 2010, 2012a, b). It is possible to compare their situation with one of ‘learned helplessness’ (e.g., Seligman, 1972; Maier & Seligman, 1976); they fall into a kind of stupor, of which they know no way out. Consequently, they lose their past – become retrogradely amnesic. And because of their autobiographical amnesia, they also no longer remember, how they behaved to others, when they showed which kinds of emotion. They regress into a state of ‘belle indifference’, some researchers name it ‘anhedonia’ (Bremner & Wittbrodt, 2020), others even would compare it to a zombie-like condition. Taken together, these findings of an amalgamation of episodic-autobiographical memory and affect-related changes in patients with dissociative amnesia strongly point to the fact, mentioned already 150 years by Ewald Hering (1870). Hering wrote: “Memory connects innumerable single phenomena into a whole, and just as the body would be scattered like dust in countless atoms if the attraction of matter did not hold it together so consciousness – without the connecting power of memory – would fall apart in as many fragments as it contains moments” (p. 12).

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