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Memory specificity in borderline personality disorder: Associations with depression and self-discrepancy

Kris Van den Broeck [a,b,*], Laurence Claes [a], Guido Pieters [a,b], Filip Raes [a]

[a] Department of Psychology, University of Leuven, Belgium
[b] University Psychiatric Centre, Campus Kortenberg, Belgium

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ABSTRACT

Reduced memory specificity (RMS) is a robust finding in (previously) depressed patients and patients suffering from posttraumatic symptoms. It has been associated with depression severity, rumination, and – more recently – with cue content (e.g., cues referring to highly discrepant self-guides are assumed to hinder specific memory retrieval more likely than cues that match one's self-concept). In this study we have investigated the presence of these relationships in 34 patients diagnosed with borderline personality disorder (BPD). All participants completed the Self-Description Questionnaire (SDQ), the Autobiographical Memory Test (AMT), the Beck Depression Inventory (BDI-II), and the Ruminative Response Scale (RRS). First, it was observed that both rumination and depression severity were associated with RMS. However, when confounding between rumination and depression severity was considered using partial correlations, only depression severity was found to be significantly associated with RMS. Second, in the currently depressed BPD patients ($n = 11$), memory specificity was significantly related to cue content suggesting that, at least for depressed BPD patients RMS is related to the extent to which cues activate highly discrepant personal domains. Although our data suggest that depression severity as well as current depression (in interaction with cue content) play an important role in the occurrence of RMS in BPD, we will discuss that these findings could be moderated by posttraumatic stress and/or executive functioning.

First described by Williams and Broadbent (1986), reduced memory specificity (RMS) is often observed in depressed, previously depressed, and traumatized patients (for an overview, see Moore & Zoellner, 2007; Williams et al., 2007). RMS refers to the difficulties these clinical groups experience in retrieving specific information from their autobiographical memory, typically assessed using the Autobiographical Memory Test (AMT; Williams & Broadbent, 1986). In this task, respondents are asked to recall specific memories in response to cue words. Instead of recalling, as instructed, detailed information on 'personally experienced events that happened only once and did not last longer than one day', the aforementioned patients regularly respond with general (categorical) rather than specific recollections (e.g., 'every time I play tennis', rather than 'that one time I broke my racquet in that thrilling tiebreak against my brother.').

In relation to mood, RMS is found to be associated with delayed recovery from depressive episodes or future mood disturbances (e.g., Brittlebank, Scott, Williams, & Ferrier, 1993; Gibbs & Rude, 2004; Hermans et al., 2008; van Minnen, Wessel, Verhaak, & Smeenk, 2005). It has been suggested that RMS more strongly relates to diagnostic status of depression than to depression severity (Williams et al., 2007). In relation to trauma, Moore and Zoellner (2007) concluded in their review that "posttraumatic symptoms, rather than trauma exposure per se, are associated with overgenerality" (p. 433). Furthermore, RMS is also found to be associated with poor problem solving abilities (e.g., Goddard, Dritschel, & Burton, 1996; Sutherland & Bryant, 2008), higher levels of rumination (e.g., Raes et al., 2005; Watkins & Teasdale, 2001) and feelings of hopelessness (Williams et al., 1996).

All above-mentioned associations taken into account, one would expect patients diagnosed with borderline personality disorder (BPD), too, to have difficulties retrieving specific memories. First, depression and trauma are common phenomena in BPD patients. Zanarini, Frankenburg, Hennen, Reich, and Silk (2004) conclude that even after treatment 61% of BPD patients meet criteria for major depression, and 35% meet criteria for posttraumatic stress disorder. Second, BPD patients often ruminate (e.g., Smith, Grandin, Alloy, & Abramson, 2006) and have difficulties to adequately solve problems (Kremers, Spinhoven, Van der Does, & Van Dyck, 2006b; Maurex et al., 2010; Reid, 2008).

* Corresponding author. UPC K.U. Leuven Campus Kortenberg, Leuvensesteenweg 517, B-3070 Kortenberg, Belgium.
E-mail address: kris.vandenbroeck@psy.kuleuven.be (K. Van den Broeck).

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The number of studies published so far that have focused on RMS in BPD, is still relatively small ($n = 9$). Differences in RMS between patients with and patients without BPD have found to be mediated by differences in IQ and education (Reid & Startup, 2010), and RMS in BPD has found to be associated with poor social-problem solving capacity (Kremers et al., 2006b; Maurex et al., 2010; Reid, 2008) and with less parasuicidal acts (Startup et al., 2001). But in relation to mood, most of these studies have shown that RMS in BPD is unrelated to depressive status (Maurex et al., 2010; Reid & Startup, 2010; Renneberg, Theobald, Nobs, & Weisbrod, 2005) or depression severity (Jones et al., 1999; Kremers, Spinhoven, & Van der Does, 2004; Kremers, Spinhoven, Van der Does, & Van Dyck, 2006a; Maurex et al., 2010; Renneberg et al., 2005). However, Kremers and co-workers (Kremers et al., 2004; 2006a) did find RMS in the clinically depressed subgroup of their borderline sample, independent of depression severity. Also Arntz, Meeren, and Wessel (2002) found RMS to be related with diagnosis of MDD, independent of diagnosis of BPD. Reid (2008) suggests that borderlines' memory specificity is situated in between the specificity levels of depressed and normal controls, being closer to the latter. Given these inconsistent findings, the first aim of this study was to further elucidate the relationship between RMS and depression and depression severity in BPD.

As theories and studies on RMS in depression evolved, rumination has been considered as an important mediating factor in the relation between depression and RMS (e.g., Kleim & Ehlers, 2008; Raes, Herman, Williams, Beyers et al., 2006), and, to a lesser extent, in the relation between posttrauma psychopathology and RMS (Kleim & Ehlers, 2008). Rumination, defined as "repetitively thinking about one's (depressed) feelings and about their causes, meanings, and consequences" (Nolen-Hoeksema, 1991, p. 569), is known to be associated with increased vulnerability for depressive episodes or symptoms (for a review, see Watkins, 2008). In addition, a considerable body of correlational (e.g., Raes, Hermans, Williams, Beyers, et al., 2006; Raes, Hermans, Williams, Demyttenaere, et al., 2006; Watkins & Baracaia, 2002), as well as experimental (e.g., Watkins & Teasdale, 2001, 2004; Watkins, Teasdale, & Williams, 2000) evidence has emerged during the last decade, showing that RMS in depression is significantly associated with rumination. Moreover, RMS and rumination appear mutually reinforcing vulnerability factors for depression (Debeer, Hermans, & Raes, 2009). As far as we know, the relationship between rumination and RMS in BPD patients has not previously been studied, however. Hence, the second aim of this study was to investigate the relations between rumination, RMS, and depression in BPD patients.

Recently, it has been suggested that autobiographical memory specificity in clinical groups also depends on the content of the information that has to be retrieved. Or, more precisely, on the meaning the information has for the respondent (Barnhofer, Crane, Spinhoven, & Williams, 2007; Crane, Barnhofer, & Williams, 2007; Dalgleish et al., 2003; Spinhoven, Bockting, Kremers, Schene, & Williams, 2007). These predictions are based on the Self-Memory System (SMS; Conway, 2005; Conway & Pleydell-Pearce, 2000; Conway, Singer, & Tagini, 2004), an influential model on (autobiographical) memory organisation. Basically, this model assumes that a lot of personally experienced events lead us to draw coherent conclusions, named schemas or self-concept, about "who" we actually are and "how" we function. Additionally, the self is supposed to contain ideas about how we ideally would like to be or how we ought to be according to our own or others' standards. These ideas are referred to as self-guides (e.g., Higgins, Strauman, & Klein, 1986) or goals (Conway et al., 2004). Discrepancies between one's self-concept and these goals will evoke a kind of discomfort, which will motivate one to change one's behaviour, which in time will lead to adjusting the ideas about oneself. Discomfort evoked by discrepancies between one's actual and one's ideal self is assumed to give rise to feelings of dejection, whereas discomfort related on discrepancies between one's actual and one's ought self will rather elicit feelings of agitation. Indeed, in depressed patients actual–ideal discrepancies appear more prominently present, whereas in anxious subjects the actual–ought discrepancies are more important (e.g., Higgins, Bond, Klein, & Strauman, 1986; Strauman, 1989). In 2004, Conway et al. have defined the Working Self (WS), which is responsible for (1) maintaining an integrated sense of self-identity (i.e. self-coherence) and (2) monitoring progress in goal-directed activities (i.e. adaptive correspondence). With the latter Conway et al. (2004) refer to the encoding and use of information related to here-and-now experiences that are relevant in the light of the ongoing goal-attainment processes. In order to construct an accurate, integrated and stable sense of self, the WS operates to make information that supports current self-concepts highly available, but in order to change towards one's goals the WS should also focus on episodic clues that give information on goal-attainment. Problems arise when challenges towards goal progress appear. If the discrepancies between the actual self and one's personal goals are largely emphasized, e.g., in case of traumatic experiences or in self-referent thinking by depressed patients, the stability of the self gets threatened. According to the SMS, resources are then shifted away from adaptive correspondence to self-coherence in order to maintain or stabilize the self by trying to resolve the present discrepancies. In case of intentional search processes, no resources will be available to retrieve event-specific knowledge, therefore increasing the likelihood of retrieving general memories.[1]

The SMS thus suggests that it would be more difficult (or unlikely) for a depressed respondent to recall specific information on a topic that relates to one of his ideals that significantly differs from the person's actual view of the self. Indeed, Crane et al. (2007) found a negative correlation between the number of self-relevant AMT cues and total memory specificity in previously depressed individuals. Likewise, Spinhoven et al. (2007) and Barnhofer et al. (2007) found that less specific memories were retrieved in response to cues that were thematically related to a participant's relevant set of dysfunctional attitudes[2] concerning 'need for approval' in (remitted) depressed patients. In addition, Barnhofer et al. (2007) found that the association was moderated by executive capacity. Finally, Spinhoven et al. (2007) were able to replicate these findings in borderline patients. The third and final aim of this study, therefore, was to investigate the relationships between the meaning of the cues and memory specificity in BPD patients.

In summary, the main aims of the present study are to get a clearer view on the relationships between (1) RMS and depression (severity); (2) RMS and rumination; and (3) RMS and cue content in BPD patients. First, given the fact that the current balance of evidence suggests that there is no association between memory specificity and depression (severity) in BPD (see Jones et al., 1999; Maurex et al., 2010; Reid & Startup, 2010; Renneberg et al., 2005, and to a lesser extent also Kremers et al., 2004; 2006a)

[1] This more or less connects with the idea that an overgeneral style may function as a protective mechanism in order to avoid the reactivation of painful memories and the related discomfort evoking sensory and perceptual features ('affect regulation hypothesis', Williams, 1996; 'functional avoidance', Williams et al., 2007).

[2] Dysfunctional attitudes, such as 'If I fail partly, it is as bad as being a complete failure' (item 14 from the Dysfunctional Attitude Scale (DAS), Weissman & Beck, 1978), are thought to be indicatory for maladaptive schemas that may trigger self-referent thinking. Two sets of attitudes in particular are related to depression: 'need for approval by others' and 'performance evaluation'. These can be assessed using the DAS (Weissman & Beck, 1978).