The value of an implicit self-associative measure specific to core beliefs of depression

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ABSTRACT

Background and objectives: The present study examined differences in explicit and implicit measures of self-esteem between depressed patients and healthy controls using an indirect measurement procedure especially adapted to measure self-esteem aspects of core beliefs of depression. Furthermore, we examined whether our implicit and explicit self-associative measures were associated with each other and with depressive symptoms, and investigated the effect of a discrepancy between the implicit and explicit measure on depression.
Methods: Participants were 87 depressed patients and 30 healthy controls. The Self-Liking and Self-Competence Scale was administered as a measure of explicit self-esteem. A depression-specific variant of the Single Category Implicit Association Test served as a measure of implicit self-esteem.
Results: Patients showed significantly lower levels of explicit self-esteem as compared to healthy controls. In spite of our adaptations, no differences were found on the implicit measure. The implicit measure of self-esteem was neither related to the explicit measure nor to depressive symptoms. Furthermore, although both the explicit measure of self-esteem and the difference score of the explicit and implicit measure were related to symptoms of depression, the relation between the explicit measure and depression was found to be significantly stronger.
Limitations: Results should be interpreted with caution because it is not clear yet to what extent these implicit measures really reflect self-esteem.
Conclusions: This study suggests that only the explicit measure of self-esteem — and not the implicit — is related to depression. Future research using well-designed measurement procedures for obtaining implicit and explicit measures could contribute to a better insight in the nature of these constructs.

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1. Introduction

According to cognitive theory, the self-concept is negatively biased in depressed patients (Beck, 1987; Greenwald & Farnham, 2000). Depressed patients tend to think more negatively about themselves, and report lower self-esteem than healthy controls do (Ingram, Miranda, & Segal, 1998). This reduces subjective wellbeing. Cognitive theory states that individuals at risk for depression developed latent negative schemas about the self, the world and the future. More specifically, depressogenic core beliefs about the self are categorized as beliefs related to unlovability, helplessness, and incompetence (Beck, Rush, Shaw, & Emery, 1979). These schemas come to the surface in periods of stress and influence the responses to stressful life circumstances (Beck, 1987; Clark, Beck, & Alford, 1999). However, the relation between negative core beliefs about the self and depressive symptoms has not been elucidated yet, and the current state of the art in this field is mainly based on research using explicit measures. Explicit measures of self-esteem reflect rational and conscious processing of self-relevant stimuli. However, in the past decades, an increasing number of researchers have acknowledged that self-schemata may also be reflected by more automatic and intuitive processing of affective experiences (Clark et al., 1999; Haaga, Dyck, & Ernst, 1991; Steinberg, Karpinski, & Alloy, 2007). To the extent that implicit

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measures reflect uncontrollable, unaware and fast mechanisms, they could reveal insights beyond those of explicit measures. Furthermore, the use of explicit measures has methodological disadvantages such as reliance on introspection capacities and socially desirable answering tendencies, which might bias the outcomes. Implicit measures partly overcome these drawbacks because they do not rely on introspection and participants only have limited possibilities to respond in a socially desirable way (De Houwer, 2006; Glashouwer & de Jong, 2008; Steffens, 2004).

As a result, the interest for the use of implicit measures in research on vulnerability to depression has grown, and various measurement procedures have been developed to obtain implicit measures of self-esteem (e.g. the Word Completion Task (WCT; Bosson, Swann, & Pennebaker, 2000); the Name Letter Task (NLT; Nuttin, 1985); and the Go/No-Go Association Task (GNAT; Nosek & Banaji, 2001)), with the Implicit Association Task (IAT: Greenwald & Farnham, 2000) being the most frequently used in this field. As recommended by De Houwer, Teige-Mocigemba, Spruyt, and Moors (2009), it is useful to distinguish between indirect measurement procedures and measures. A measurement procedure is the specific methodology; the set of guidelines followed that lead to an outcome. A measure is defined as 'a measurement outcome that is causally produced by the to-be-measured attribute in the absence of certain goals, awareness, substantial cognitive resources, or substantial time' (p.350). In this article, we will use the term 'implicit measure' to refer to the outcome of the Single Category Implicit Association Test (Sc-IAT: Karpinski & Steinman, 2006) specific to measure core beliefs of depression.

The introduction of implicit measures in the field of self-esteem initially led to a debate about which measure reflected a person's 'true' attitude (e.g. Fazio & Olson, 2003). However, dual-process models (Epstein, 1994) showed that both implicit and explicit cognitive processes influence depressive reactions to stressful life events, but do so in different ways (e.g. Beevers, 2005; Haeffel et al., 2007). The current thinking therefore treats implicit and explicit measures as complementary rather than as competitors, and consensus has been reached about the fact that using both measures can contribute to a deeper understanding of self-esteem (De Houwer, 2006; De Houwer et al., 2009; De Raedt, Schacht, Franck, & De Houwer, 2006; Karpinski & Steinman, 2006; Roefs et al., 2011).

Even though interest has grown, research with implicit measures of self-esteem is relatively scarce. Remarkably, the results of the few studies that actually obtained implicit measures of self-esteem in the context of depression often contradict results obtained by explicit measures. Although it is consistently shown in research using explicit measures that depressed patients have a more negative self-image than healthy controls (e.g. Hollon, Kendall, & Lumry, 1986; Silverman, Silverman, & Eardley, 1984; Xi, Zhang, & Li, 2007), up until now only two studies found evidence for decreased self-esteem on implicit measures in currently depressed patients (Glashouwer & de Jong, 2010; Risch et al., 2010). The vast majority of studies that obtained implicit measures of self-depressive associations in depressed patients found evidence for positive self-esteem in both healthy individuals and in depressed patients, regardless of the measurement procedure that was used (De Raedt et al., 2006; Franck, De Raedt, & De Houwer, 2007; Franck, De Raedt, & De Houwer, 2008; Franck, De Raedt, Dereu, & van den Abbeele, 2007; Gemar, Segal, Sagrati, & Kennedy, 2001; Valiente et al., 2011).

The observation that implicit and explicit measures consistently show diverging results is at least unexpected, and might suggest that they reflect different constructs. Several research groups explain these findings as an indication that not the absolute levels of implicit and explicit measures of self-esteem separately, but the discrepancy between them (either expressed as an interaction or difference score of the explicit and implicit measure) plays a crucial role in the cause and maintenance of depression, because it represents deficiencies in the integration of self-representations, which is related to internalizing problems (e.g. Bosson, Brown, Zeigler-Hill, & Swann, 2003; Creemers, Scholte, Engels, Prinstein, & Wiers, 2012; Franck, De Raedt, & De Houwer, 2007; Schröder-Abé, Rudolph, & Schütz, 2007). Moreover, because these findings are consistent but not in line with cognitive theory of depression, one could even argue that the theory needs to be adapted. However, because measurement procedures for obtaining implicit measures are relatively young and the best way to obtain an implicit measure of self-esteem is still unclear (Garety & Freeman, 1999; McKay, Langdon, & Coltheart, 2007), these conclusions might be premature and it might be too soon to question the validity of cognitive theory. Another, in our view more plausible, reason for these contradictory findings between results obtained by implicit and explicit measures might be the lack of specificity of the instruments that have been used. Further research would benefit from careful design of measurement procedures to obtain implicit measures, paying attention to factors such as the exact choice of paradigm, and the selection of stimuli.

With regard to the selection of stimuli, it would make sense to design a task that is more specifically designed to measure depressogenic core beliefs related to self-esteem: unlovability, helplessness, and incompetence (Beck et al., 1979). This might lead to larger contrasts between the groups because specific beliefs are only expected to be revealed in depressed patients and not in healthy controls. Several studies have already used target words related to depression (e.g., Franck, De Raedt, Dereu, et al., 2007; Glashouwer & de Jong, 2010; Risch et al., 2010), and found results that were contradictory to each other and (in some cases) to cognitive theory. It has to be noted that these studies chose a different focus in the selection of stimuli. Glashouwer and de Jong (2010) and Risch et al. (2010) used words that were related to the general concept of depression (for example fragile, pessimistic, negative vs. active, cheerful, lively), whereas Franck, De Raedt, Dereu, et al. (2007) specifically focused on 'worthlessness', one of the core concepts of depression (e.g., capable, valuable vs. inferior, worthless).

Furthermore, these studies (Franck, De Raedt, Dereu, et al., 2007; Glashouwer & de Jong, 2010; Risch et al., 2010) used an original IAT paradigm. A drawback of the original IAT is that it can only provide information regarding the relative strength of various associations ('me' compared to 'other'). Because the IAT opposes the 'self' category with 'other', the strength of the association between self and attributes is partially biased by the strength of the association between the category 'other' and attributes. The IAT is therefore unable to indicate the strength of the evaluation of 'me' or 'other' separately. To avoid this potential contamination, and measure the associations with the self in isolation, a variant of the IAT: the single category IAT (Sc-IAT: Karpinski & Steinman, 2006) can be used. Because the Sc-IAT has no reference group 'other', it is able to measure the absolute strength of associations between the target category (i.e., 'self' in our study) and the attributes.

The central goal of the present study was therefore to optimize our implicit measure by not only adapting the measurement procedure to reflect the depressogenic core beliefs, but also by using a Sc-IAT paradigm. To our knowledge, this is the first study using a single category measurement procedure exclusively adapted to this target group. By comparing scores on implicit and explicit measures of self-esteem of depressed patients and healthy controls, the hypothesis was tested that depressed patients, who were about to start psychotherapy, would show more negative self-associations than would healthy control participants. Furthermore, we examined whether our implicit and explicit self-associative measures