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Abstract: Abstract

The main objective of this study was to analyze the hypothesis that patients with persecutory delusions would show a depressive-type self-concept when using implicit measures of self-schema (i.e., a free recall test of self-relevant adjectives) but not when using explicit measures (i.e., a self-concept questionnaire and a task requiring endorsement of self-relevant adjectives). The sample consisted of 136 participants (40 acute deluded participants, 25 remitted deluded participants, 35 depressed patients and 36 normal controls). Our results showed that both groups of deluded participants showed no significant discrepancy between explicit and implicit measures of self-concept. These findings do not support the hypothesis of an implicit negative cognitive schema in persecutory deluded participants.

IMPLICIT AND EXPLICIT SELF-SCHEMA IN ACTIVE DELUDED, REMITTED
DELUDED, AND DEPRESSED PATIENTS

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1. Introduction

Some theories of persecutory delusions have proposed that delusions have the function of protecting against low self-esteem and depression (Bentall, Kinderman, & Kaney, 1994; Neale, 1988). In earlier accounts of these motivational approaches to delusion formation, Bentall and his colleagues proposed that persecutory delusions are motivated by a need to prevent negative contents of the self-schema gaining access to consciousness (Bentall, 1994; Lyon, Kaney, & Bentall, 1994). According to this view, the typical externalizing attributional pattern found in people with persecutory delusions (e.g., Díez-Alegría, Vázquez, Nieto Moreno, Valiente, & Fuentenebro, 2006; Kinderman & Bentall, 1997) is a mechanism to avoid the activation of negative self-representations at the cost of forming a hostile and malevolent image of the interpersonal world. Further elaborations of this delusion-as-defense model (Freeman et al., 1998) are based on Higgins' (1987) self-discrepancy theory, according to which self-esteem is a product of either a negative *actual* self or a discrepancy between the *actual* and the *ideal* self. Specifically, Bentall et al. (1994) proposed that externalizing attributions are elicited in negative situations that are likely to highlight discrepancies between the actual and the ideal self. In those cases, paranoid causal attributions would serve to minimize the possibility of awareness of those discrepancies, and thereby to protect oneself from the effects of perceiving low self-esteem.

This motivational model predicts that persecutory deluded individuals will show high self-esteem, like normal nondepressed people, when overt measures are used (e.g., self-esteem questionnaires) and they will show low self-esteem, like the levels found in depressed people, when covert measures are used (e.g., information-processing based measures—McKay, Langdon, & Coltheart, 2007). Yet the evidence supporting this theory is inconclusive, as results are contradictory (see Garety & Freeman, 1999; McKay, Langdon, & Coltheart, 2005a).

The prediction that patients with persecutory delusions will show negative self-schema similar to depressed patients only when *indirect* measures of self-schema and cognitive processing are used, has been confirmed in some studies on cognitive processes. For instance, when standard, explicit measures of attributional style are used (e.g., the Attributional Style Questionnaire, Peterson et al., 1982) where subjects have to generate possible causal explanations for hypothetical positive and negative events, persecutory deluded patients show a pattern of causal attributions similar to that of nondepressed people (i.e., they make external explanations for negative events and internal explanations for positive ones—Candido & Romney, 1990; Díez-Alegría, et al., 2006; Kaney & Bentall, 1989). However, when the attributional measure is disguised so that participants are not aware that the researchers are measuring causal attributions (Díez-Alegría et al., 2006; Lyon et al., 1994), deluded patients perform similarly to the depressives, as both groups make internal, self-blaming attributions for negative events. This has been interpreted as a demonstration of an underlying negative self-schema common to both depression and paranoia (McKay, Langdon, & Coltheart, 2005b).

Using the Implicit Association Test (IAT), a widely used task to assess covert attitudes (Greenwald, McGhee, & Schwartz, 1998), McKay et al. (2007) found that persecutory deluded patients showed lower covert self-esteem than did healthy controls and remitted patients but there were no significant differences in overt measures of self-esteem (i.e., a self-esteem questionnaire) among groups of participants.

Several studies in the domain of memory biases for positive and negative materials have also found a similar pattern of results in patients with persecutory delusions and depressed patients (Kaney, Bowen-Jones, & Bentall, 1999; Kaney, Bowen-Jones, & Dewey, 1997), which indirectly supports the hypothesis that persecutory deluded patients may have an underlying negative self-schema. Research on memory performance using the self-referent encoding paradigm (Rogers, Kuiper, & Kirker, 1977) is highly relevant to the issue of detecting overt versus covert discrepancies, as it includes a two-stage procedure that can be

used as a measure of explicit and implicit self-schema, respectively (Greenberg, Vázquez, & Alloy, 1987; Smith, Freeman, & Kuipers, 2005). In the first stage, patients are required to *explicitly* respond to whether a number of trait adjectives are self-descriptive (i.e., explicit self-schema). In the second stage, which has traditionally been considered as a measure of *implicit* memory, participants are required to recall or recognize as many words as possible from the list presented previously. Bentall, Kaney, and Bowen-Jones (1995) used the self-referent encoding paradigm to assess the recall of self-schema-related information. They studied schizophrenic patients with persecutory delusions, depressed patients, and healthy subjects' free recall of a mixed list of threat-related, depression-related, and neutral words. Whereas depressed subjects showed a specific recall bias for depressed words, the deluded patients showed a recall bias for *both* depression-related and threat-related words. In another study using this paradigm, Bentall and Kaney (1996) asked normal and depressed controls, and depressed and non-depressed deluded subjects to endorse and recall a list of trait words (by using the Self-Referent Incidental Recall Task, SRIRT) and found that, like normals, both depressed and non-depressed deluded participants endorsed more positive than negative trait words whereas the depressed control participants endorsed more negative than positive ones. Yet, unlike the normal participants, neither deluded nor depressed participants showed a recall bias towards positive words. Yet these results may not be generalizable for any type of deluded patient. Using a sample of patients with grandiose delusions, Smith et al. (2005) found no evidence of discrepancy between overt self-esteem measures (i.e., a questionnaire) and covert measures of self-esteem (i.e., an emotional Stroop task and the recall part of the SRIRT).

Till now, the results of studies on discrepancies in self-esteem between overt and covert measures were based on the comparison of the results between groups for each type of measurement separately. However, we believe that to adequately prove the hypothesis of discrepancy, it is necessary to analyze the difference between overt and covert measures in each group, in addition to the differences between groups, obviously. This innovative strategy

of analysis within this context of research was one of the main goals of the present study. According to the defense model of delusion formation, we first hypothesized that deluded participants would show normal self-esteem with overt measures but low self-esteem, similar to that found in the depressed participants, when covert or implicit measures are used. Finding this pattern of results with the above-mentioned analysis strategy would be more direct and adequate proof of the model. For this purpose, a group of depressed patients and a normal control group were included in the study. A second goal of this study was to analyze whether this pattern of discrepancies is a stable characteristic of deluded participants or whether it is associated with the active symptomatology of the acute deluded state. For this second purpose, we analyzed the pattern of explicit and implicit self-concept in a group of acute deluded patients and in a group of remitted deluded patients. Based on previous studies on explicit and implicit attributions (see Díez-Alegría et al., 2006), we hypothesized that this pattern of results would be similar in both groups of participants, and might therefore be considered a stable characteristic of persecutory delusions.

2. Methods

2.1. Participants

A total of 136 people participated across four groups. An *Acute Delusional Group* (AD) that comprised 40 inpatients (27 men and 13 women) receiving psychiatric treatment and currently suffering paranoid delusions as assessed by the Present State Examination (PSE-10, SCAN, Sect. 18 and 19, WHO 1992). Participants with delusions of guilt were excluded, as these are usually associated with major depressive disorders with psychotic characteristics. All these patients were receiving antipsychotic medication at the time of the study. A *Remitted Delusional Group* (RD) comprised 25 people (21 men and 4 women) who, according to the PSE-10, had suffered from paranoid delusions in the past, but not within the last six months. All these participants were recruited from outpatient clinics and from psychosocial

rehabilitation centers and were still receiving antipsychotic medication. Thirty-five patients (9 men and 26 women) comprised a *Major Depressive Episode Group* (MD). This psychiatric control group met the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed. text revision; (American Psychiatric Association, 2000) criteria for a current depressive episode (both inpatients and outpatients) and had never had a delusional episode. Twenty-three patients met *DSM-IV-TR* (APA, 2000) criteria for major depressive disorder, and 12 for dysthymia. Finally, a nonpsychiatric *Normal Control Group* (NC) of 36 people (21 men and 15 women), was recruited via informal contacts. No participant in this group had ever suffered either clinical delusions or major depression episodes, as assessed by the computerized version of the Quick Diagnostic Interview Schedule (Q-DIS; Marcus, Robins, & Bucholz, 1990), and none had ever required psychological assistance for any mental disorder.

All participants were within a range of 18-65 years of age and were excluded if they had a history of use or abuse of drugs and alcohol.

2.2. Assessment

2.2.1. *Brief Psychiatric Rating Scale-Expanded (BPRS;* (Lukoff, Nuechterlein, & Ventura, 1986). This is a semistructured interview that assesses the severity of illness during the past two weeks. The BPRS has been employed in diverse investigations and its reliability is acceptable (Cronbach's $\alpha = .76$ for the total score in our study).

2.2.2. *Present State Examination (PSE-10)*. This is a semistructured interview included in the Schedules for Clinical Assessment in Neuropsychiatry (SCAN, WHO 1992). It was used to explore the presence and content of positive symptoms of psychosis (Sections 18 and 19).

2.2.3. *Quick Diagnostic Interview Schedule (Q-DIS)* This instrument is a computerized interview of the DIS that was used to exclude participants with a life history of major depression (Marcus et al., 1990). The Q-DIS has shown good test-retest reliability and agreement with the standard-format DIS for diagnosing depression ($\kappa = .76$).

2.2.4. *Beck Depression Inventory (BDI; Beck, Rush, Shaw, & Emery, 1978)*. This is a 21-item questionnaire to assess symptoms of depression. There is much support for its reliability and predictive validity both in clinical and nonclinical populations (Kendall, Hollon, Beck, Hammen, & Ingram, 1987). Cronbach's $\alpha = .93$ in our study.

2.2.5. *Rosenberg Self-Esteem Questionnaire (RSEQ; Rosenberg, 1965)*. The RSEQ is a 10-item questionnaire that explicitly measures global feelings of self-esteem. There is a large body of research on its reliability and validity (Blascovich & Tomaka, 1991). Cronbach's $\alpha = .86$ in our study.

2.2.6. *The Self-Referent Incidental Recall Task (SRIRT; Dent & Teasdale, 1988; Williams, Healy, Teasdale, White, & Paykel, 1990)*. The SRIRT is based on a similar task used in research on self-schemata in depression (Hammen, Marks, Mayall, & De Mayo, 1985). Participants are asked to read a 30-item list of trait words, randomly ordered, with the following instructions: "Please, read the words below and decide if they describe you. Place a tick in the 'yes' or 'no' box." Twelve are positive (successful, capable, important, dynamic, confident, entertaining, sociable, optimistic, respected, outgoing, valuable, skilful), twelve are negative (deficient, stupid, unloved, weak, useless, incompetent, inferior, pathetic, unwanted, failure, worthless, inadequate) and six are neutral (choosey, cautious, ordinary, realistic, neutral, modern)—see Bentall and Kaney (1996). Immediately after completing this ascription task, participants are asked to recall as many of the words as possible. Cronbach's coefficient was identical for both positive and negative scales in our study ($\alpha = .81$).

In sum, as explicit measures of self-esteem we included both the RSEQ and the self-ascription of positive and negative adjectives included in the SRIRT. Following the rationale of previous studies (Bentall & Kaney, 1996; Greenberg et al., 1987; Smith et al., 2005), memory bias for positive versus negative information shown on the SRIRT was considered a covert measure of implicit self-concept.

2.3. Procedure

All participants volunteered to collaborate in the study. After reading and signing informed consent, participants were individually assessed by two clinical psychologists in a quiet room for approximately 1 hr. The order of administration of the assessment protocol was the same for all participants: evaluation of sociodemographic data, BPRS, PSE, BDI, RSEQ, QDIS, and SRIRT.

2.4. Statistical Analyses

Data analyses were conducted with SPSS version 12.0. Type I error rate was set at $\alpha = .05$. A series of ANOVAS and ANCOVAS was performed, after testing all the required assumptions. For repeated measures analyses, depending upon whether or not sphericity requirements were met, univariate or multivariate statistics, respectively, were conducted. For independent measures analyses, Brown-Forsythe correction was used when the criterion of homogeneity of variances was not met. Post hoc analyses of means were tested, following the Bonferroni method when variances were not statistically different, or the Tamhane method when variances were not equal. For categorical variables, chi square analyses were performed.

3. Results

3.1. Clinical and Demographic Status

A summary of participants' characteristics is presented in Table 1. A unifactorial ANOVA of Group (acute delusional / remitted delusional / depressed) on participants' age, yielded statistically significant differences in age of participants, *Brown-Forsythe* (3, 100.62) = 8.08, $p < .0001$, with the depressed group being older. A test of gender differences among groups revealed a significant difference, χ^2 (3, $N = 136$) = 23.28, $C = 0.38$, $p < .05$, with the proportion of women being higher in the depressed group than in the other three groups. With regard to the years of education, a unifactorial ANOVA showed statistically significant

differences for Group, *Brown-Forsythe* (3, 101.21) = 20.26, $p < .0001$. Tamhane post-hoc analyses showed that the NC group had higher degrees of education than the rest of the groups.

A one-way ANOVA revealed statistically significant differences in onset of illness among the clinical groups, *Brown-Forsythe* (2, 74.29) = 7.85, $p < .0001$. Tamhane post hoc tests showed that the depressed group's age at the onset of the illness was higher than that of the two delusional groups. There was no significant effect for the duration of illness in the clinical groups.

In regard to the severity of the symptoms, assessed by the overall total score on the BPRS (i.e., the sum of the 18 items), the one-way ANOVA showed a significant effect for Group, *Brown-Forsythe* (3, 88.57) = 89.81, $p < .0001$, $\eta^2 = .65$. Tamhane tests further revealed that there were no differences in BPRS overall severity between acute delusional and depressed groups, whereas there were differences in the rest of the comparisons—see mean scores in Table 1.

Insert Table 1 about here

A one-way ANOVA on the BDI total score revealed statistically significant differences among participating groups, *Brown-Forsythe* (3, 90.4) = 60.53, $p < .0001$, $\eta^2 = .57$. Tamhane post-hoc tests showed that Group NC had lower scores in depression than the rest of the groups and Group MD had higher scores than the other three groups.

Finally, a one-way ANOVA on the RSEQ total score showed statistically significant differences, $F(3, 135) = 21.71$, $p < .0001$, $\eta^2 = .40$. Bonferroni post-hoc test revealed that, as expected, Group NC had higher scores in explicit self-esteem than the rest of the groups, and Group MD had lower scores than the rest of the groups.

3.2. SRIRT Task

The mean number of endorsed words (self-ascription task) and recalled traits words (recall task) for the four groups are shown in Table 2.

3.2.1. Self-ascription task (*explicit self-schema*)

As expected, there was a significant correlation between the two measures of self-concept (i.e., the Rosenberg questionnaire and the ascription task on the SRIRT). For positive self-ascribed words, the correlation with the RSEQ was $r(132) = .67$, $p < .001$, whereas for negative words, it was $r(132) = -.68$, $p < .001$, which suggests that the self-ascription phase of the SRIRT can indeed be used as an estimate of self-concept.

A two-way ANOVA on Group (4) x Type of Trait word (positive / negative) on the self-ascribed words showed a nonsignificant effect for group, $F(3, 132) = 0.519$, $p < .670$. The type of trait word was significant, $F(1, 132) = 315.42$, $p < .0001$, $\eta^2 = .70$, indicating that all groups endorsed more positive than negative words. The interaction factor was also significant, $F(3, 132) = 16.32$, $p < .0001$, $\eta^2 = .26$. Post hoc Bonferroni tests revealed that Group MD endorsed fewer positive words than the other three groups, and Group NC endorsed fewer negative words than the deluded and depressed participants. Furthermore, Group MD endorsed more negative traits words than Group AD participants. An ANCOVA using age, gender, and years of education as covariates yielded the same results.

 Insert Table 2 about here

3.2.2. Recall task (*implicit self-schema*)

A two way ANOVA Group (4) x Valence (2: Positive / Negative) on the total number of recalled words revealed a significant effect for Group, $F(3, 132) = 5.52$, $p < .0001$, $\eta^2 =$

0.11; Valence, $F(1, 132) = 19.00, p < .0001, \eta^2 = 0.12$; and the interaction of these two factors, $F(3, 132) = 5.18, p < .002, \eta^2 = 0.10$. Multiple post-hoc Bonferroni tests showed that the participants in Group NC remembered more words overall than Group AD or than Group MD. No significant differences were detected in the total number of words recalled among the other groups. Additionally, Group NC was found to recall significantly more positive words than the rest of the groups, whereas no statistically significant differences were found between any of the groups in the recall of negative words. A series of ANCOVAs using age, gender, and years of education as covariates showed that the interaction effect disappeared.

Following Bentall & Kaney's (1996) strategy of data analyses, in order to assess the recall data in more detail, we conducted an ANOVA on the mean number of words recalled among those which were endorsed. The means of these variables are presented in Table 3. A two-way ANOVA Group (4) \times Valence (2: Positive / Negative) of the total number of endorsed positive and negative words that were correctly recalled by the participants revealed a statistically significant effect for Group, $F(3, 132) = 5.52, p < .0001, \eta^2 = 0.11$; Valence, $F(1, 132) = 127.87, p < .0001, \eta^2 = 0.49$; and interaction factor, $F(3, 132) = 11.55, p < .0001, \eta^2 = 0.20$. Multiple post-hoc Bonferroni tests showed that Group NC recalled more total words from the endorsing task than did the other groups, which showed no statistically significant differences among each other. Group NC recalled more positive ascribed words than the rest of the groups, and less negative ascribed words than Group MD. No statistically significant differences were found for the negative words recalled between Groups NC, AD, and RD, or for the recall of negative ascribed words among the three clinical groups. A series of ANCOVAs on this dependent variable using age, gender, and years of education as covariates did not significantly change the results.

Insert Table 3 about here

3.2.3. Discrepancies between explicit and implicit tasks

Studies on overt versus covert self-schema discrepancies on the SRIRT (Bentall & Kaney, 1996; Smith et al., 2005) have not directly addressed this issue by comparing participants' scores on the two ways of measuring self-schema. Thus, to allow comparison of these two measures, all the measures (i.e., endorsed positive, endorsed negative, recalled positive and recalled negative) were standardized. A three-way ANOVA Group (4) \times Type of Measure (endorsed / recalled) \times Valence (negative / positive) on the total number words revealed the same results as the previous ANOVAs, as expected, but also a triple interaction effect, $F(3, 132) = 5.61, p < .001, \eta^2 = 0.11$. Post hoc Bonferroni tests revealed that discrepancies between explicit (i.e., endorsed words) versus Implicit (i.e., recalled words) measures were found in Groups MD and NC but, contrary to the motivational hypothesis of delusions, *not* in any of the two groups of deluded participants. A closer look at the pattern of scores in the overt and covert measures of self-schema revealed that, for negative words, Group MD showed a lower explicit than implicit self-esteem, whereas Group NC showed an opposite pattern, as their explicit self-esteem was higher than their implicit self-esteem. There were no further significant differences.

To further explore the magnitude of these discrepancies (see Figures 1 and 2), a series of contrast tests were performed to assess whether the mean z -scores were statistically different from zero, for each group. Thus, all these discrepancies scores were converted to z -scores across groups, and then the mean z -score within each group was assessed as to whether it significantly differed from zero. Contrast tests showed that only Group MD ($t [34] = -4.45, p < .0001$, and $t [34] = -2.85, p < .007$, for endorsed and recalled words, respectively) and Group NC ($t [35] = 8.81, p < .0001$, and $t [35] = 2.55, p < .015$, for endorsed and recalled words, respectively) had mean z -scores significantly different from zero. Thus, this pattern of results suggested a robust mood-congruent effect. Yet, neither group of deluded participants showed

any bias towards either positive or negative information under either explicit or implicit self-schema measures.

Insert Figures 1 and 2 about here

4. Discussion

Our pattern of results did not confirm our first hypothesis that deluded patients have a more negative self-concept when assessed by covert measures than when assessed by more direct measures. When standardized scores in covert and overt measures of self-esteem are used to directly evaluate the discrepancy hypothesis, a type of analysis that we consider to be a more adequate test of the theory, the only discrepancies between overt versus covert measures of self-concept were observed, for negative words, in the depressed group and the normal control group. Surprisingly, the strategy of performing a direct within-group comparison between implicit and explicit measures of self-esteem has never been done in previous studies (e.g., Bentall and Kaney, 1996; Kinderman, 1994) and, according to our results, it should be done to adequately test the discrepancy hypothesis.

Using the same methodological technique as previous studies (i.e., focusing on between-group comparisons for covert and overt measures in separate analyses), we found that depressed patients self-ascribed fewer positive words and more negative words on the SRIRT ascription tasks—an explicit measure of self-esteem—than did deluded patients. The control subjects self-ascribed more positive words than any other group. These results are consistent with previous studies that showed that deluded subjects had a more positive self-schema than did depressed participants (Bentall & Kaney, 1996; Kinderman, 1994; Kinderman & Bentall, 1996; Kinderman & Bentall, 2000). This negative pattern in depressed patients has also been shown in numerous previous studies (e.g., Bentall & Kaney, 1996; Dent & Teasdale, 1988;

Matt, Vazquez, & Campbell, 1992; Williams et al., 1990). Furthermore, the results obtained on the RSEQ, an overt measure of self-esteem, are consistent with the results of the SRIRT self-ascription task in that the depressed subjects displayed lower self-esteem, and the control group show higher self-esteem, when compared to the other groups. This finding is also consistent with studies reporting that the RSEQ is strongly associated with depression in community studies (Schmitz, Kugler, & Rollnik, 2003).

The recall task was used as a covert measure of self-schema. The results show that the subjects in the control group recalled more positive words than the rest of the groups. There were no differences between groups in the recall of negative words. Yet, further analyses of the endorsed and non-endorsed recalled words revealed that subjects in the control group recalled more positive endorsed words than did the rest of the subjects, and fewer negative endorsed words than the depressed subjects. These results on the recall task are similar to those reported by Bentall and Kaney (1996) using the SRIRT, and appear to be consistent with the studies that report that deluded subjects present a positive self-concept when directly assessed, but a negative self-concept when the assessment is implicit (Bentall, 1994; Bentall et al., 1994; Kinderman, 1994; Kinderman, Prince, Waller, & Peters, 2003; Zigler & Glick, 1988). Nevertheless, these results, using the standard method of analysis, should be interpreted with caution because this method does not check statistically to which group the observed discrepancies are due. This is, however, verified using a direct method of analysis. In fact, direct analysis of the differences shows that both deluded groups are the ones with no discrepancies, either in positive and negative adjectives, and in direct and indirect measures of self-esteem (see Figures 1 and 2). In any case, the differences are observed in the depressed group and the control group, contrary to what could have been interpreted if we had only performed separate statistical analyses for each measure.

Although the deluded patients in our study did not show significant discrepancies between overt and covert assessments of self-esteem our results do not exclude the possibility that self-esteem is an important psychological factor associated with delusion. Whereas for

some authors, low self-esteem activates mechanisms implicated in the genesis of delusions (Bentall, 2003), other authors maintain that low self-esteem is a mere consequence of the emotional impact of delusion and of the clinical circumstances of a deluded patient (Smith et al., 2005). Indeed, despite having shown significantly higher self-esteem than the depressed group on all measures, the deluded patients in our study did show *lower* self-esteem than the normal controls. Further analyses of the content of this pattern of results revealed some very interesting differences. In the case of the two groups of deluded participants, no bias (positive or negative) was shown on implicit or explicit measures of self-esteem whereas the normal controls showed a positive bias and the depressed group showed a negative bias, in accordance with theories related to mood-congruent information processing (Mathews & McLeod, 2005; Matt et al., 1992).

In relation to the second objective of the study, the results did confirm our hypothesis that the pattern of results of both groups of deluded subjects (active and remitted) is similar, which seems to indicate that the self-schema of deluded subjects is not directly related to their clinical state. Along similar lines, studies of attributions and delusion have not found differences between active and remitted deluded subjects in the covert or overt pattern of attributional style (Diez-Alegría et al., 2006; Krstev, Jackson, & Maude, 1999). However, in a recent study by McKay et al. (2007) using the Rosenberg questionnaire to assess overt self-esteem and the IAT to assess covert self-esteem, a discrepancy was found only among actively deluded ($n = 10$) but not remitted deluded ($n = 10$) participants. It appears that the available evidence related to the nature and stability of the discrepancies between overt and covert measures is insufficient and inconsistent. Clearly, more study is required.

Finally, we would like to comment on some of the limitations of our study. First, the study only included psychotic patients with persecutory delusions. It is possible that the hypothesized discrepancies between overt and covert self-schema are more apparent in some subtypes of paranoia, such as poor-me paranoia—characterized by depressed cognition (Chadwick, Trower, Juusti-Butler, & Maguire, 2005)—or in depressed deluded patients

(Bentall & Kaney, 1996). In a recent study by Smith, Fowler, Freeman et al. (2006), the authors found that patients with grandiose delusions had less depression, higher self-esteem and less negative evaluations about themselves than patients with persecutory delusions. Second, it remains controversial which is the best way to define self-schema (Bentall, Corcoran, Howard, Blackwood, & Kinderman, 2001) or to assess covert processes related to self-schema (Garety & Freeman, 1999; McKay et al., 2007). For example, it is still unclear as to whether the indicators related to recall on the SRIRT used in this study and other similar studies (Bentall & Kaney, 1996; Smith et al., 2005) are an apt measure to penetrate the defenses hypothesized by the model (see a related discussion in Smith et al., 2005, and Garety & Freeman, 1999). These difficulties may explain why some studies have found discrepancies between covert and overt measures of self-schema (Bentall & Kaney, 1996; Kinderman, 1994; Kinderman et al., 2003; McKay et al., 2007) whereas other studies, such as ours, have not found significant differences (Bentall & Kaney, 1989; Fear, Sharp, & Healy, 1996).

It is necessary to develop more direct and effective methods to assess the existence of discrepancies between direct and indirect measures of self-concept, which would, at the same time, provide very relevant information for the development of intervention plans for psychological treatment of psychosis. Again, future studies should explore in depth the very nature of self-schema in these participants and attempt to confirm whether the discrepancies between implicit and explicit measures hypothesized by current cognitive models of delusions (see Bentall, 2003; Bentall et al., 2001) are related to as yet unknown clinical or cognitive characteristics.

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Table 1

Means and Standard Deviations (in brackets) of Participants' Demographic and Clinical Variables

Characteristics	Group			
	AD (n = 40)	RD (n = 25)	MD (n = 35)	NC (n = 36)
Mean age in years (<i>SD</i>)	33.3 (8.4)	31.1 (4.9)	39.6 (12.2)	30.4 (7.4)
Male (%)	67.5%	84.0%	25.7%	58.3%
Mean age at onset in years (<i>SD</i>)	25.2 (7.6)	22.7 (5.7)	33.6 (12.01)	-
Mean duration of illness in years (<i>SD</i>)	8.1 (7.0)	8.4 (5.7)	5.8 (8.5)	-
Mean medication	348.65 (184.6)	263.12 (186.3)	-	-
BPRS Total score	19.0 (8.2)	3.8 (3.5)	14.9 (6.7)	0.91 (1.1)
BDI Total score	10.6 (9.01)	8.9 (5.7)	26.3 (1.1)	1.94 (2.3)
RSEQ Total score	31.5 (4.8)	30.5 (4.7)	24.5 (6.02)	35.6 (3.9)

Note. AD = Acute deluded; RD = Remitted deluded; MD = Major depression episode; NC = Normal control. BDI = Beck Depression Inventory; RSEQ = Rosenberg Self-Esteem Questionnaire; BPRS = Brief Psychiatric Rating Scale.

Table 2

Mean Scores and Standard Deviations (in brackets) of Endorsed and Recalled Adjectives in the Self-Referent Incidental Recall Task (SRIRT)

SRIRT	AD	RD	MD	NC
Endorsed Words				
Positive	8.90 (3.26)	8.80 (2.16)	6.37 (2.82)	9.80 (1.86)
Negative	1.77 (2.51)	1.68 (2.07)	3.74 (3.26)	0.22 (0.42)
Neutral	4.65 (1.27)	4.08 (1.55)	4.51 (1.44)	3.97 (1.36)
Recalled Words				
Positive	2.75 (2.09)	3.04 (1.67)	2.22 (1.86)	4.41 (1.97)
Negative	2.10 (1.48)	2.40 (1.41)	2.17 (1.50)	2.33 (1.51)
Neutral	0.62 (0.83)	0.68 (0.85)	0.45 (0.61)	1.38 (1.22)

Note. AD = Acute deluded; RD = Remitted deluded; MD = Major depression episode; NC = Normal control.

Table 3

Mean Scores and Standard Deviations (in brackets) of Endorsed and Unendorsed Adjectives Recalled in the Self-Referent Incidental Recall Task (SRIRT)

SRIRT	AD	RD	MD	NC
Positive Words				
Endorsed	2.27 (2.14)	2.16 (1.57)	1.37 (1.51)	3.58 (1.69)
Unendorsed	0.52 (0.84)	0.88 (0.88)	0.82 (0.92)	0.88 (0.82)
All items	2.80 (2.10)	3.04 (1.69)	2.20 (1.82)	4.41 (1.73)
Negative Words				
Endorsed	0.32 (0.65)	0.44 (0.58)	0.65 (0.80)	0.11 (0.31)
Unendorsed	1.97 (1.59)	2.00 (1.35)	1.51 (1.52)	2.16 (1.46)
All items	2.30 (1.69)	2.44 (1.38)	2.17 (1.46)	2.27 (1.50)

Note. AD = Acute deluded; RD = Remitted deluded; MD = Major depression episode; NC = Normal control.

Figure 1. Standardized mean scores of the total number of positive endorsed and recalled adjectives in the Self-Referent Incidental Recall Task (SRIRT).

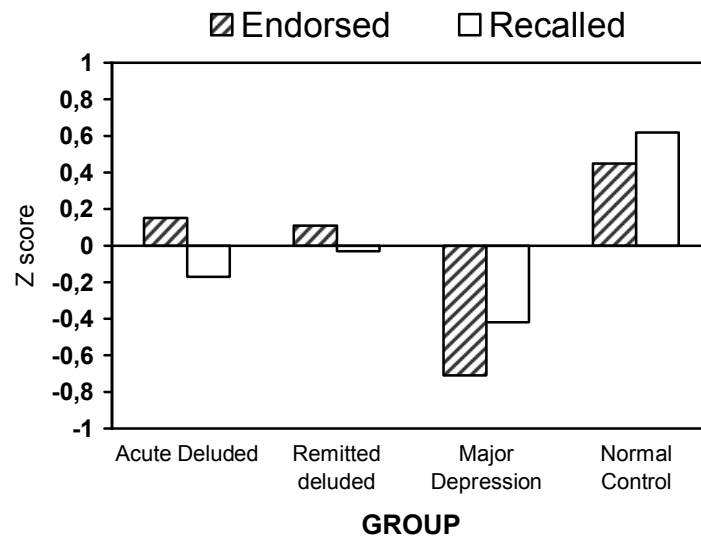


Figure 2. Standardized mean scores of the total number of negative endorsed and recalled adjectives in the Self-Referent Incidental Recall Task (SRIRT).

