The best laid schemas of paranoid patients: Autonomy, sociotropy and need for closure

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Some theories implicate abnormal self-schemas in the development of psychosis in general and in paranoid delusions in particular. Patients with delusions may also be highly intolerant of ambiguity. No study has yet compared remitted and currently ill paranoid patients on schema measures, or on tolerance of ambiguity. Currently ill psychotic patients with persecutory delusions, patients whose persecutory delusions had remitted, and normal participants completed the Personal Style Inventory (PSI), a self-schema measure, and the Need for Closure Scale (NCS), a measure of intolerance of ambiguity. Acutely ill patients scored higher than normal participants on the PSI autonomy scale. This difference became nonsignificant when depression was included as a covariate. Ill and remitted patients scored higher than normal participants on the NCS. This difference could not be explained entirely by comorbid depression. Currently paranoid and remitted paranoid patients are highly intolerant of ambiguity. It is possible that this contributes to their performance on reasoning measures. The role of self-schemas in paranoid thinking needs to be studied further.

Recent research on psychosis has focused on the possibility that dysfunctional self-schemas play a role in positive symptoms. Garety, Kuipers, Fowler, Freeman, and Bebbington (2001) have suggested that social marginalization, childhood loss, and trauma may create an enduring cognitive vulnerability to psychosis characterized by negative schematic models of the self and the world. Focusing specifically on paranoid ideation, Colby and his colleagues (Colby, 1977; Colby, Faught, & Parkinson, 1979) and, more recently, Bentall and his colleagues (Bentall, Kinderman, & Kaney, 1994) have suggested that patients with persecutory delusions excessively attribute negative events to external causes (an exaggeration of the normal self-serving attributional bias) in order to avoid the activation of latent negative self-schemas. This type of model does not assume that these negative self-schemas necessarily have characteristics that are specific to paranoid patients (indeed, they may be similar to those with patients with

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depression), but that the paranoid patient attempts to compensate for them in a unique way, leading to ideas of persecution.

Critics of this model of paranoia have argued that paranoid patients often have low self-esteem (Garety & Freeman, 1999), and that this is inconsistent with the idea that their attributions are self-protective. In fact, research on self-esteem in paranoid patients has yielded inconsistent results, some studies reporting a high self-esteem (Candido & Romney, 1990; Lyon, Kaney, & Bentall, 1994) or high consistency between self-representations and ideals (Havner & Izard, 1962; Kinderman & Bentall, 1996) in paranoid patients, and others reporting low self-esteem in deluded patients in general (Bowins & Shugar, 1998) and in paranoid patients in particular (Freeman *et al.*, 1998). It is possible that the external attributions made by paranoid patients often fail to compensate for their underlying feelings of low self-worth, in which case normal or high self-esteem would be expected in some patients but not others (Bentall, Corcoran, Howard, Blackwood, & Kinderman, 2001). A hypothesis that is compatible with this account has been proposed by Trower and Chadwick (1995), who have argued on the basis of phenomenological data that there are two types of paranoia: one in which self-esteem is low and in which persecution is held to be deserved, and one in which self-esteem is relatively high and persecution is seen as undeserved.

Clearer evidence is available for the proposition that paranoid patients have dysfunctional schemas for evaluating self-worth. Fear, Sharp, and Healy (1996) reported that paranoid patients scored highly on the Dysfunctional Attitude Scale, a finding that was replicated by Bentall and Kaney (1996) in both currently depressed and currently non-depressed paranoid patients. Beck (1983) has argued that dysfunctional schemas can be divided into two main types, which he has described as sociotopy (the tendency to evaluate self-worth in terms of love and approval by others) and autonomy (the tendency to evaluate self-worth in terms of achievements and ability to control one's destiny). In a study of the relationship between self-schemas and personality disorders, Ouimette, Klein, Anderson, and Riso (1994) measured both types of schemas using Robins *et al.*'s (1994) Personal Style Inventory (PSI) and reported that paranoid personality traits were specifically associated with autonomy scores after depression had been controlled for.

These findings led to several important questions. First, it would be useful to know whether the dysfunctional schemas observed in paranoid patients are state-like and closely associated with florid paranoid symptoms, or trait-like, in which case they might be a source of vulnerability to paranoid thinking. Second, it would be useful to know whether paranoia, or a disposition to paranoia, is associated with any particular kind of dysfunctional schema. Given the findings reported by Ouimette *et al.* (1994) and that florid paranoia is associated with a dismissive-avoidant attachment style (Dozier & Lee, 1995; Dozier, Stevenson, Lee, & Velligan, 1991) and strong feelings of mistrust, it seems likely that autonomy schemas will be dominant during acute illness. However, on the premise that anxieties about the beliefs and attitudes of others towards the self confer vulnerability to paranoia, remitted patients might be expected to have high scores for sociotropy.

A second aim of the study was to explore the relationship between paranoid symptoms and intolerance of ambiguity and uncertainty. Colbert and Peters (2002) recently reported that delusional ideation in normal individuals is associated with self-reports of a high need for disclosure, which has been defined by Kruglanski (1989) as 'the desire for a definite answer on some topic, any answer compared to confusion and ambiguity' (p. 14). Interestingly, Need for Closure scores were not associated with

performance on an experimental measure of 'jumping to conclusions' on which deluded patients had previously been shown to perform abnormally (Garety, Hemsley, & Wessely, 1991; Huq, Garety, & Hemsley, 1988). Need for closure has yet to be studied in clinical groups. However, apparent evidence of intolerance of uncertainty and ambiguity in deluded patients was obtained in an investigation reported by Roberts (1991), in which a group of patients were asked if they would welcome disproof of their delusional beliefs. The majority said that they would not, leading Roberts to conclude that the patients' delusional worlds were often preferable to real life because they were more predictable. In this study, self-reported need for closure was measured in acutely ill and remitted paranoid patients for the first time.

Method

Participants

The clinical sample comprised 57 participants with a diagnosis of schizophrenia and one with a diagnosis of delusional disorder according to DSM-IV criteria (American Psychiatric Association, 1994). All were either suffering from persecutory delusions at the time of testing or had previously experienced persecutory delusions as indicated by case note data. Forty-three were receiving inpatient treatment, and 14 were under the care of a psychiatrist as outpatients; all were in receipt of neuroleptic medication. Current symptomatology was assessed using the Positive and Negative Syndromes Scale (PANSS; Kay, Opler, & Fiszbein, 1986), IQ was assessed using the National Adult Reading Test (NART; Nelson, 1982) and concurrent depressive symptomatology was assessed using the Beck Depression Inventory (BDI; Beck & Beamesderfer, 1974).

Thirty-three of these participants, 23 men and 10 women with a mean age of 34.47 years ($SD = 11.17$), fulfilled the symptom criteria for inclusion in the acute group, which was a total score of 9 or more on the PANSS delusions and suspiciousness scales (each scale minimum = 1, maximum = 7), and their estimated mean full-scale IQ was 109.48 ($SD = 9.35$). One of these participants did not complete the BDI, and the mean score of the remaining 32 was 20.25 ($SD = 13.33$). The criterion for inclusion in the remitted group, which consisted of 14 men and 10 women with a mean age of 36.75 years ($SD = 9.86$), was a total score of 3 or less on the PANSS delusions and suspiciousness scales. The mean IQ for this group was 110.97 ($SD = 9.45$). The mean BDI score for all but one remitted participant who failed to complete this assessment was 16.00 ($SD = 10.96$).

A convenience sample of 57 non-psychiatric control participants consisted of 35 men and 22 women with a mean age of 33.04 years ($SD = 11.07$), a mean IQ of 116.90 ($SD = 5.80$). One of these participants did not complete the BDI, and the mean score of remaining 56 was 7.41 ($SD = 5.44$). This group was recruited via the University of Liverpool subject panel.

There were no significant differences among the three groups for age. Despite attempts to recruit controls with a wide range of backgrounds, there was a significant difference between the groups for IQ scores, $F(2, 111) = 11.10$; $p < .0001$. Post-hoc Boneferroni tests revealed that both the acute patients ($p < .001$) and the remitted patients ($p < .01$) scored less than the controls. This difference was controlled for by including IQ as a covariate in all of the main statistical analyses.

Consistent with our previous findings, a significant difference was also found for BDI scores, $F(2, 108) = 20.08$, $p < .001$, accounted for by the control participants scoring

less than both the remitted ($p < .001$) and acute ($p < .001$) participants. Because of the considerable theoretical significance of any covariation between paranoid ideation and depression (Zigler & Glick, 1988), and because self-schema scores are typically elevated in depressed patients (Gotlib & Hammen, 1992; Williams, 1992) we conducted our main analyses both excluding and including depression as a covariate.

Materials

The Personality Style Inventory (PSI; Robins *et al.*, 1994), a 48-item self-schema measure, which was developed as a result of dissatisfaction with previously existing self-schema measures, was completed by all participants. It has six subscales, which can be added to obtain composite scores of autonomy and sociotropy. The three sociotropy subscales are *concerns about what others think* (7 statements, e.g. "I am easily persuaded by others") *dependency* (7 statements, e.g. "It is hard for me to break off a relationship even if it is making me unhappy") and *pleasing others* (10 statements, e.g. "I often put other people's needs before my own"). The three autonomy subscales are *perfectionism/self-criticism* (4 statements, e.g. "It bothers me when I feel that I am only average and ordinary"); *need for control* (8 statements, e.g. "I am easily bothered by other people making demands of me") and *defensive separation* (12 statements, e.g. "I tend to keep other people at a distance"). Items are scored using 6-point Likert scales ranging from *strongly agree* to *strongly disagree*. Subscales are considered to have good factor structure, internal consistencies and temporal stabilities (Robins *et al.*, 1994). *The Need For Closure Scale* (NFCS; Kruglanski, Webster, & Klem, 1993), a 42-item scale designed to assess the epistemic need for closure, was completed by all but one acute and one control participant. In its original form, items are scored along 6-point Likert scales but, after piloting, these were simplified to true/false for ease of completion by psychiatric patients. A total need for closure score is the total positive score for all 42 items (maximum score $= 42$). In addition to the total score, the scale is divided into five facets that represent "heterogeneous potential sources of the need for closure" (Kruglanski *et al.*, 1993). These are: *need for order and structure* (10 items); *affective discomfort as a consequence of levels of ambiguity* (8 items); *decisiveness of the individual's choices* (7 items); *ability to cope with unpredictability* (9 items); and *close-mindedness* (8 items). The NFCS has satisfactory reliability and test–retest reliability over 12 weeks (Kruglanski *et al.*, 1993). Because of persisting debate about the merits of calculating total or facet scores (Neuberg, Judice, & West, 1997) both methods were used in this study.

Results

PSI data

Mean scores on the six PSI subscales and the composite sociotropy and autonomy scales are shown in Table 1. It can be seen that the highest autonomy scores were obtained from the acute patients and the highest sociotropy scores from the remitted patients. A MANOVA performed on these data, with groups as a between-subjects factor, composite scores as dependent variables, and IQ as a covariate, revealed a significant group effect, Wilks's $F(4, 216) = 4.60$, $p < .001$, with no significant effects for IQ. When univariate tests were carried out, the apparent group difference for sociotropy did not reach significance, $F(2, 109) = 2.33$, $p = .10$, but that there was a significant effect for

autonomy, $F(2, 109) = 5.98$, $p < .005$, which was accounted for by the higher scores of the acute patients compared with the controls ($p < .005$). When these analyses were repeated with BDI scores as an additional covariate, the effect of depression on sociotropy was significant, $F(1, 105) = 16.82$, $p < .001$, and the group main effect just failed to reach significance, $F(2, 105) = 2.94$, $p = .06$. The effect of depression on autonomy was also highly significant, $F(1, 105) = 27.18$, $p < .001$, and group differences in autonomy disappeared entirely when this was taken into account, $F(2, 105) = .27$, $p = .81$.

Table 1. Personal Style Inventory and Need for Closure Scale means for acutely ill paranoid patients, remitted paranoid patients and normal controls (SDs in parentheses)

	Group		
Measure	Acute (N = 33)	Remitted (N = 24)	Normal (N = 57)
PSI Sociotropy total	90.78 (21.87)	99.46 (23.47)	91.44 (15.18)
Concern for what others think	26.28 (8.02)	29.17 (7.78)	24.58 (6.11)
Dependency	28.03 (6.12)	30.54 (7.70)	26.98 (6.10)
Pleasing others	36.47 (11.35)	39.75 (12.55)	39.88 (7.40)
PSI Autonomy total	90.66 (18.23)	86.00 (18.26)	78.87 (13.71)
Perfectionism/self-criticism	15.00 (4.71)	15.21 (4.70)	13.60 (3.77)
Need for control	31.72 (7.84)	29.25 (7.36)	26.81 (4.82)
Defensive separation	43.94 (9.00)	41.54 (9.56)	38.47 (8.75)
Need for Closure total	27.03 (4.62)	25.96 (5.57)	19.59 (5.90)
Need for order	7.37 (2.06)	7.08 (2.43)	5.11 (2.53)
Affective discomfort in the face of ambiguity	5.84 (1.72)	5.83 (2.28)	3.52 (2.30)
Decisive	3.75 (2.38)	3.08 (2.32)	3.39 (1.86)
Ability to cope with unpredictability	6.66 (1.89)	6.62 (1.81)	5.21 (1.93)
Close-mindedness	3.41 (1.54)	3.33 (1.27)	2.36 (1.35)

Similar results were obtained with the six subscale scores. A MANOVA revealed a significant effect for group, Wilks's $F(12, 208) = 3.30$, $p < .001$, again without a significant effect for IQ. Univariate tests revealed significant differences between the groups for concern about what others think, $F(2, 109) = 5.27$, $p < .01$; perfectionism/self-criticism, $F(2, 109) = 3.26$, $p < .01$; and need for control, $F(2, 109) = 6.88$, $p < .01$; and a marginally significant effect for defensive separation, $F(2, 109) = 3.04$, $p = .05$. Bonferroni tests revealed that the remitted patients scored significantly higher than the controls on concern about what others think ($p < .005$), whereas the acute patients scored higher than the controls on need for control ($p < .001$) and defensive separation ($p < .05$). When the univariate tests were repeated including BDI scores in the covariate list, significant associations were found between depression and all of the PSI subscales (p at least $<.05$) and the only significant group effect that remained was for need to please others, $F(2, 105) = 3.16$, $p < .05$, which was accounted for by the marginally significant higher scores of the remitted patients compared with the controls (Bonferroni $p = .05$).

NFCS data

Total and subscale scores on the NFCS are also shown in Table 1. A one-way ANOVA on the total scores revealed a statistically significant effect for group, $F(2, 108) = 14.83$; $p < .0001$, with a modest effect for IQ, $F(1, 108) = 4.02$, $p < .05$. The group difference was accounted for by both the acute patients ($p < .001$) and the remitted patients ($p < .001$) scoring higher than the control participants. No difference was observed between the acute and remitted groups. When depression was added to the covariate list, it had no significant effect, $F(1, 104) = 0.37$, $p = .85$, and the group effect remained highly significant, $F(2, 104) = 9.74$, $p < .0001$, still accounted for by differences between the acute and control participants ($p < .001$), and between the remitted and control participants ($p < .001$).

These conclusions were broadly supported by analysis of the five NFCS facets. A significant group difference was observed when these scores were analysed by MANOVA, Wilks's $F(10, 208) = 3.18$; $p < .0001$; in this analysis the effect for IQ did not approach significance. Univariate analyses revealed that both clinical groups measured higher than the normal controls, but not significantly different from each other on need for order (p at least $< .05$), affective discomfort in the face of ambiguity (p at least $< .001$), difficulty coping with uncertainty (p at least $< .02$), and close-mindedness (p at least $< .05$). When these analyses were repeated with BDI scores as an additional covariate, significant effects of depression were found for affective discomfort as a consequence of ambiguity, decisiveness, and coping with uncertainty (p at least $< .01$). However, significant group differences remained for need for order, $F(2, 104) = 5.27$, $p < .01$, affective discomfort, $F(2, 104) = 3.99$, $p < .05$, decisiveness, $F(2, 104) = 4.94$, $p < .01$, and close-mindedness, $F(2, 104) = 3.40$, $p < .05$. Bonferroni tests confirmed that both clinical groups scored higher than the normal controls on need for order (p at least $< .05$), the acute patients scored higher than the controls on decisiveness ($p < .01$) and the remitted patients scored higher than the controls on affective discomfort as a consequence of ambiguity ($p < .05$).

Discussion

Our initial analyses of the schema data provided some support for our prediction that acute paranoid psychosis would be associated with high scores for autonomy, but only marginal support for our additional prediction that remitted patients would score high on sociotropy. (In the case of the latter data, nonsignificant trends in the expected direction were found for most analyses, although the group difference on the specific sociotropy scale, concern for what others think, was statistically significant.) However, the effect of including BDI scores as a covariate complicated this picture. The observed association between autonomy and depression was so great that the group differences in autonomy were abolished when this was taken into account. Despite a similar effect of BDI scores on sociotropy, group differences on this variable were less affected, and marginal evidence of high sociotropy in the remitted group remained when depression was taken into account. Nonetheless, overall, the present findings were contrary to expectation and do not obviously support the hypothesis that self-schemas play a critical role in paranoid ideation, as proposed by ourselves (Bentall *et al.*, 2001) and others (Garety *et al.*, 2001).

Given the substantial evidence of abnormal schemas in depressed patients (Gotlib &

Hammen, 1992; Williams, 1992), the observed associations between depression and the schema measures are unsurprising. However, the present findings are inconsistent with our previous observation of high DAS scores in nondepressed paranoid patients (Bentall & Kaney, 1996) and with Ouimette *et al.*'s (1994) finding that high autonomy scores in people with paranoid personality traits could not be explained by comorbid depression. As Ouimette *et al.* used the same measure as that used in the present study, the method of assessment is unlikely to be responsible for these discrepancies. One possible interpretation is that dysfunctional self-schemas in currently ill and remitted paranoid patients become more activated when they are depressed, a finding that has been reported in the depression literature (Segal & Ingram, 1994). This effect might be expected in people who are vulnerable to or actually experiencing paranoia if, as supposed by Zigler and Glick (1988), paranoia is a form of camouflaged depression. The obvious alternative possibility is that dysfunctional self-schemas do not have the causal role in paranoid thinking that we have supposed, and that previous reports of an association between schema measures and paranoia reflect self-doubt, discomfort, and a search for meaning as a consequence of feeling persecuted. Further studies, perhaps using longitudinal designs or mood-induction procedures with remitted patients, will be required to disentangle these hypotheses.

The need for closure data is more easily interpreted. Paranoid patients reported a high subjective need for order, affective discomfort in the face of ambiguity, difficulty coping with uncertainty, and a high level of close-mindedness. These findings were obtained not only from the acutely ill patients, but also from the remitted patients, and could not be accounted for by depressive symptoms. These characteristics accord well with clinical experience, are consistent with Roberts' (1991) observation that deluded patients often prefer the certainty of their delusional worlds, and concur with Colbert and Peters' (2002) observation of a high need for closure in a nonclinical sample of individuals scoring highly on a measure of delusional ideation. The high scores in the remitted patients assessed in the current study, and also in Colbert and Peters' (2002) nonclinical sample, suggest that need for closure may be associated with vulnerability to delusions rather than active delusional ideation. However, although the covariance analysis suggests that these scores cannot be attributed to comorbid depression, further studies with other clinical groups are required to establish whether this characteristic is specifically associated with delusions or present in people who are vulnerable to other kinds of difficulties.

The most important limitation of the present study is that we used a simplified response format for the Need for Closure Scale. However, given the magnitude of the group differences observed, it is difficult to see how this simplified format could have undermined our conclusions. Against this limitation, the strengths of the study were that we included remitted patients and systematically explored associations between the observed group differences and comorbid depression. These methodological refinements, have been absent in most research on the psychology of delusions.

As psychological interventions for delusions often address schema issues (Fowler, Garety, & Kuipers, 1995) the main clinical implications of the present findings concern the need for closure data. The present findings suggest that directly addressing patients' emotional reactions to uncertainty may be of some clinical utility. It is conceivable that current cognitive behavioural techniques could be modified to better address this issue with psychotic patients.

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