Brief Report

Dependent personality traits and information processing: Assessing the interpretation of ambiguous information using the Thematic Apperception Test

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Objectives. This study was designed to investigate interpretation bias in people with dependent personality traits.

Method. Eight Thematic Apperception Test (TAT) cards were administered to participants \(N=56\) who scored high or low on DSM-III-R dependent personality pathology. Two independent judges rated the TAT stories using a rating list based on the cognitive model of the dependent and paranoid personality disorder.

Results. Controlling for self-esteem, the dependent interpretation bias appeared to be specific for dependent personality pathology. SEM analysis supported a mediation model in which beliefs mediate the relationship between DSM-III-R traits and interpretation bias.

Conclusions. The findings in this study support the hypothesis that people with dependent traits are characterized by a schema-related interpretation bias and that this bias is mediated by dependent beliefs.

Although in the past decades, information processing in Axis I disorders has been extensively investigated, little is known about information processing in personality disorders (PDs). The present study was designed to test the cognitive model of information PD. It was decided to investigate a particular, but important, aspect of information processing, the interpretation of ambiguous information. Previous research into interpretation bias has demonstrated that ambiguity triggers the tendency to selectively impose schema-related interpretations on information (Mathews & MacLeod, 1994). In case of several competitive interpretations, it can be hypothesized that people

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with a PD draw conclusions (from the given information) in conformity with their schemas. Because of the strong interpersonal character of dependent PD (Beck et al., 2004), the present study uses stimuli that activate cognitive structures related to interpersonal functioning. The Thematic Apperception Test (TAT; Murray, 1943) is particularly suited for assessing interpersonal relations (Westen, 1991). The stimulus is social but ambiguous as to the exact meaning of the relationships and internal state of the persons on the cards.

In the present study, eight TAT cards were used as stimulus material to measure interpretation bias in high and low dependent subjects. A rating list1 was developed based on the cognitive model of the dependent and paranoid PD according to Beck et al. (2004). The paranoid items served as a control category to test the specificity of the assumed interpretation bias. We tested the following hypotheses:

(1) Dependent traits are related to dependent interpretation bias (stories with interpretations, emotions, thoughts and interpersonal relations that are assumed to be typical of the schemas of dependent PD). This relation is determined by dependent beliefs. In other words, beliefs are an essential factor in information processing, mediating the relation between dependent traits and interpretation bias.

(2) The assumed relation between dependent traits and dependent interpretation bias is disorder specific. We included paranoid PD in the model to test whether the interpretation bias is specific for dependent PD. We chose paranoid PD because it is a disorder from another DSM personality cluster (Cluster A) compared with dependent PD (Cluster C) and because participants showed enough variance on paranoid traits.

(3) The dependent interpretation bias is not a result of a more general pathology variable, namely, self-esteem (in general, low self-esteem and PDs are closely linked; Silverstone, 1991).

We would like to emphasize that we do not pretend to unravel the question whether beliefs predispose PDs or inverse. We were primarily interested in the question of whether PDs are characterized by schema-congruent interpretation bias and, if so, are beliefs an essential factor of this relation?

Method

Participants
A group of 56 participants (45 women, 11 men) scoring high (highest 33%) or low (lowest 33%) on the dependent subscale of the SCID-II questionnaire were selected out of 137 first-year students of health sciences (Maastricht University). The mean age of the participants was 20.4 years (range 19–24). The gender distribution was not significantly different in the high and low dependent groups.

Materials
An adapted version of the SCID-Personality Questionnaire (SCID-IIQ; Arntz et al., 1992; First, Spitzer, Gibbon, & Williams, 1995) was used for measuring the DSM-III-R

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1The complete rating list is available from the first author.
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dependent and paranoid traits. Whereas the original SCID-IIQ has categorical scoring possibilities, the Dutch version we used contains 100 mm visual analogue scales (VASs).

The dependent and paranoid subscales of the Personality Disorder Belief Questionnaire (PDBQ; Dreessen, Arntz, & Weertman, 1996) were used to assess dependent and paranoid beliefs. Each scale consists of 20 beliefs hypothesized to be typical for the concerning PD. The beliefs have to be rated on 100 mm VASs. Arntz, Dreessen, Schouten, and Weertman (2004) provide support for the psychometric qualities of the PDBQ in a sample of 643 subjects.

The Rosenberg self-esteem scale (RSES; Rosenberg, 1965) consists of 15 items that have to be rated on 5-point scales (0 = completely true, 5 = completely untrue). The results of a study by Beekers (1982) indicated that the internal consistency of the Dutch version of the RSES is good (Cronbach \( \alpha \) = .83, \( N \) = 201). In the present study, the internal consistency was excellent (\( \alpha \) = .89).

The TAT (Murray, 1943) is a widely used clinical instrument to reveal significant components of personality by presenting a series of pictures to a participant and encouraging him or her to tell stories about them, invented on the spur of the moment. Because the assessment time was limited, eight TAT cards were selected (3B/M, 4, 8G/F, 10, 12M, 13MF, 16 and 18).

The rating list consists of 15 items that refer to the story’s main affect (e.g. dependent PD: anxious), the qualities of the interpersonal relationships (e.g. dependent PD: loss of relationships), the interpersonal strategies (e.g. paranoid PD: cautiousness), the self- (e.g. dependent PD: helpless) and other view (e.g. paranoid PD: malicious) of the dependent and paranoid PD and to general story themes. All items were an almost literal translation of the specific cognitive profiles of the dependent and paranoid PD as described by Beck et al. (2004), including the self-view, view of others, interpersonal strategy and main affect. Six psychotherapists working with PD patients checked the disorder specificity of the items of the TAT rating list before the experiment started. They rated the disorder specificity of the original 16 items on 100 mm VASs. Based on these results, one item was discarded. The final 15 items were rated on 100 mm VASs (0 = not characteristic, 100 = extremely characteristic) by two independent raters. For each card, the stories of 12 participants were rated by both raters to determine the intra-class correlation coefficient (ICC; Fleiss, 1981). The stories of the other participants were divided according to a fixed schema so that for each subject, half of the stories were scored by Rater 1 and the other half by Rater 2.

Procedure
The experiment took place an average of 2 months after the SCID-IIQ and PDBQ data were collected. The first author, who was blind for the classification of the participants, administered the eight cards in standard order (3B/M, 4, 8G/F, 10, 12M, 13MF, 16 and 18). For each card, participants were asked to tell a story, including what was happening in the picture, what led to it and what was going to happen (after Westen, 1991). Stories were recorded and later typed out.

Results
To enhance power, scores of all the dependent and paranoid items (except for the general themes items) were combined into a dependent and paranoid sumscore. Furthermore, we combined \( z \) scores of the sumscores of the dependent and paranoid
items and the general themes items into a dependent and paranoid composite score. ICCs for dependent and paranoid sumscores (ICC = 0.97, 0.96) and for general dependent themes and general paranoid themes (ICC = 0.94 and 0.74) were good to excellent. The eight cards were analysed together.

We tested the hypotheses by means of structural equation modelling (SEM; Lisrel 8.30; Jöreskog & Sörbom, 2000). We used the \( \chi^2 \) goodness-of-fit statistic, the comparative fit index (CFI: = 0.95 = good fit), the standardized root mean squared residual (SRMR: = 0.08 = good fit) and the root mean square error of approximation (RMSEA: = 0.06 = good fit) to determine the fit of the models (Hu & Bentler, 1999). Because the homogeneity of the dependent and paranoid sumscores for all cards together was moderate (\( \alpha = 0.59, 0.69 \)), we analysed the data with correction for attenuation for all paths to and between both composite scores (see Figure 1).

We first tested the hypothesis that dependent PD is characterized by specific interpretation bias and that dependent beliefs mediate this relationship (see Figure 1, Model A). The model achieved a good fit (\( \chi^2 = 2.46, df = 3, p = .48, CFI = 1.00, SRMR = 0.030 \) and RMSEA = 0.05). The paths between dependent beliefs and paranoid TAT scores and from paranoid beliefs to dependent TAT scores were negative and non-significant. The fit of the more parsimonious Model B (see Figure 1; \( \chi^2 = 7.13, df = 9, p = .62, CFI = 1.00, SRMR = 0.075 \) and RMSEA = 0.04) appeared to be as good as the fit of Model A (comparison of the nested models with chi square, \( \chi^2 = 4.67, df = 6, p = .59 \)), endorsing the specificity of dependent and paranoid interpretation bias. Finally, we added self-esteem to the mediation model to test if a more general pathology variable underlies dependent interpretation bias (Model C). The fit of the model was good (\( \chi^2 = 11.81, df = 10, p = 0.30, CFI = 0.99, SRMR = 0.093, RMSEA = 0.05 \)). The results of Model C indicate that the specific relationship between PD traits, PD beliefs and interpretation bias remains, even taking into account the role of self-esteem.

**Discussion**

The results of this study support the assumption that dependent PD is characterized by specific interpretation bias and that dependent beliefs mediate this relationship. Identical disorder-specific associations were found with respect to paranoid PD, when self-esteem is controlled for.

The results of the present study are consistent with the study of Dreessen, Arntz, Hendriks, Keune, and Van den Hout (1999), which examined interpretation bias in avoidant PD. They found a relationship between avoidant PD and specific beliefs, and between specific beliefs and schema-related interpretation bias, but no direct relationship between avoidant personality pathology and the hypothesized bias.

Although according to the DSM-III-R, PD traits and specific beliefs are associated, DSM-III-R traits refer to a broader concept than PDBQ beliefs. DSM-III-R defines PDs in terms of behaviours, emotions and impulse control, and to a lesser extent, in terms of beliefs. Viewed from the cognitive model, it is not surprising that specific beliefs appear to be more closely related to interpretation processing bias than DSM-III-R traits.

Several limitations of this study should be considered. We used an analogue sample: participants scored relatively high on a questionnaire. Second, we only administered the dependent and paranoid subscales of the SCID-HQ and PDBQ.
Further research is needed to investigate the interpretation bias in PDs in a clinical sample.

References


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