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Testing the Trower and Chadwick model of paranoia: Is 'poor-me' and 'bad-me' paranoia acting as a defence?

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Abstract

The study tested the predicted differences in phenomenology (self-esteem and depression) and insecurity of the subgroups of paranoia proposed by the Trower and Chadwick (1995) model of paranoia. Thirty-two inpatients experiencing persecutory delusions were assigned to either the *poor me* or *bad me* paranoid group. Questionnaire assessment of depression and self-esteem were conducted. A Dot Probe task measured detection latency (reaction time) to *poor me* words, *bad me* words and neutral words. The *poor me* and *bad me* groups displayed the predicted phenomenological differences. The dot probe task did not support the predicted insecurities of the Trower and Chadwick model, but unexpected significant results for the *poor me* subgroup may offer support for an alternative explanation of paranoia as an unstable phenomenon.

Key words: Paranoia, Subgroups, Persecutory Delusions, Depression, Self-Esteem

1. Introduction

Bentall and co-authors (Bentall and Kaney, 1989; Kaney and Bentall, 1989; Bentall et al., 1991) propose that individuals experiencing paranoid delusions demonstrate an exaggerated self-serving bias which externalises blame for failure onto the outside world, allowing for self-esteem to be maintained (Bentall, 1994; Bentall et al., 1994; Lyon et al., 1994). However, a number of studies have found paranoid individuals

suffer from depression (Lyon et al., 1994) and low levels of self-esteem (Freeman et al., 1998). These mixed findings have led to the proposal that there may be distinct subgroups of paranoia with different psychological processes involved in their formation and maintenance (Garety and Freeman, 1999; Kinderman, 1994; Trower and Chadwick, 1995).

Trower and Chadwick (1995) propose paranoia as two distinct groups – *poor me*, defined by views of persecution, and *bad me*, defined by views of punishment. The *poor me* subgroup is described as predisposed to experiencing the self as lacking success or presence in the world. Construing others as persecutors is a way of blaming others for one's feared lack of success or presence. The *bad me* subtype is described as predisposed to experiencing the self as bad or flawed, and the paranoia is a defence against the flawed self being revealed. The difference between feeling punished, rather than persecuted, the authors claim, is due to the fact that the *bad me* paranoid individual knows (experienced as fact) themselves to be bad, and deserving of punishment.

A number of studies have confirmed the predicted phenomenological differences regarding self-esteem and depression of the two subtypes of paranoia (Chadwick and Trower, 1997; Chadwick et al., 2005; Fornells-Ambrojo and Garety, 2005; Fornells-Ambrojo and Garety, 2009; Freeman et al., 2001; Green et al., 2006; Melo and Bentall, 2013; Morris et al., 2011; Peters and Garety, 2006; Startup et al., 2003; Udachina et al., 2012). However, within these confirmed phenomenological differences, some interesting findings have emerged which cast doubt on the possibility that the subtypes are distinct groups, including the rarity of the *bad me* subtype (Fornells-Ambrojo and Garety, 2005) and the instability of the 'deservedness' of perceived persecution (Udachina, et al., 2012; Melo and Bentall,

2013), leading to the hypothesis that individuals experiencing paranoia may in fact fluctuate between the two presentations (Bentall et al., 2001; Sigmaringa-Melo et al., 2006). Given these mixed findings, empirical testing of the Trower and Chadwick model may offer clarity; however, there have been no empirical investigations of the predicted insecurities as yet. The small number of studies that have tested predicted insecurities relating to paranoia have focused on the Bentall model (Bentall and Kaney, 1989; Fear et al., 1996; Kinderman, 1994) using the Emotional Stroop Test (EST: Stroop, 1935), but this approach has been criticised as it is not possible to ensure that the results of the task reflect attention to threat (Koster et al., 2004).

An alternative approach that may prove more suitable for the investigation is the Dot-Probe task; this procedure investigates selective attention to threat that enables direct measurement of how visual attention is distributed is the Dot-Probe task (Mogg and Bradley, 1998). With the Dot-Probe task, words are simultaneously presented on two areas of a computer screen and the ensuing distribution of visual attention is measured by a secondary task involving the detection of a dot, which appears in the position of either of the displayed words once the words have disappeared. The detection latency (reaction time to the dot) is considered to be a sensitive measure of visual attention, with the difference between reaction time to threat related compared to neutral words viewed as vigilance for threat (MacLeod et al., 1986; Mogg and Bradley, 1998; Navon and Margalit, 1983).

The present study aimed to investigate the insecurities of the subgroups proposed by Trower and Chadwick (1995) using the Dot-Probe task. Specifically, the investigation tested whether *poor me* paranoid individuals are defending against the belief that they lack success or presence in the world and whether *bad me* paranoid individuals are defending against revealing the self as bad or flawed. The study also

aimed to investigate the phenomenological differences associated with each group; specifically, self-esteem and depression. The aims were carried out by testing two hypotheses. Hypothesis 1: the *bad me* group would display high levels of depression and low self-esteem and the *poor me* group would display low levels of depression and high self-esteem.

Hypothesis 2: the *poor me* group would be significantly faster to react to the dot probe when it replaced *poor me* compared to *bad me* and neutral words and the *bad me* group would be significantly faster to react to the dot probe when it replaced *bad me* compared to *poor me* and neutral words.

2. Methods

The study was conducted in accordance with the latest version of the Declaration of Helsinki, the design was reviewed by an appropriate ethical committee, and informed consent was obtained after the study had been fully explained.

2.1. Participants

Participants were over the age of 18, currently experiencing delusions of persecution as determined by a psychiatrist, had capacity to consent to participate, not suffering from an organic psychosis, and not abusing drugs or alcohol. Participants were drawn from two medium secure forensic settings and one acute inpatient setting. A total of 40 participants agreed to take part in the study (30 male, 10 female). Of these, 17 were from the forensic settings (14 male, 3 female), and 23 from the acute inpatient setting (16 male, 7 female). A Chi-Square analysis highlighted that there was no relationship between setting and allocation to paranoia subgroup ($X^2 = 1.587$, df = 1, $p = 0.28$). The age range of the participants was 20-49 years (mean: 35.48; sd:

7.78). The control group were recruited from staff working in the clinical settings. The age range of the non-clinical control group was 27-44 (mean: 35.55; sd: 5.236). All participants in the clinical groups had a diagnosis of paranoid schizophrenia.

2.2. Materials

2.2.1 Measures

The Rosenberg Self-Esteem Scale (RSE: Rosenberg, 1965) is the most widely used measure of global self-esteem (Rosenberg et al., 1995).

The Hospital Anxiety and Depression Scale (HADS: Zigmond and Snaith, 1983). Only the depression subscale was used in the study.

The Evaluative Beliefs Scale (EBS: Chadwick et al., 1999) contains 18-items which measure global and stable negative person evaluations.

2.2.2. System

The Dot Probe task was developed specifically for this project and was based on descriptions of previous Dot Probe tasks (Koster et al., 2004; Mogg and Bradley, 1998). The task was developed using Visual Basic (VB) programming language and presented on a windows-based operating system. The task was presented on a laptop computer; the display on the computer was 15.4 inch WXGA Acer CrystalBrite Color TFT LCD, 1280x800 pixel resolution.

2.3. Paranoia subgroup classification procedure

The classification of the paranoid sample into *poor me* and *bad me* paranoia was based on the participant's scores on Evaluative Beliefs Scale (EBS: Chadwick et al., 1999). Specifically, if the participant endorsed high other-to-self (OS) and self-to-other (SO) negative evaluations, and low negative self-to-self (SS) negative

evaluations relative to the control group and in the range provided for the *poor me* group in the Chadwick et al. (2005) study, they were categorised as *poor me* paranoid. If the participant endorsed high (OS) and (SS) negative evaluations, and low (SO) negative evaluations relative to the control group and in the range provided for the *bad me* group in the Chadwick et al. (2005) study, they were categorised as *bad me* paranoid. The author and two independent mental health practitioners carried out the procedure. Only the categorisations that the author and both independent practitioners agreed on were included in the study. A reliability analysis was carried out with the EBS to check for the required differences as predicted by the model.

2.4. Word categorisation procedure

The words used in the Dot-Probe task were provided by two independent linguists. Each was provided with the Trower and Chadwick (1995) model of *poor me* and *bad me* paranoia and asked to develop a list of words that could describe the predicted insecurity of each subgroup, and a list of corresponding neutral words that matched on the insecurity words on length and syllables. The words provided were then matched on linguistic variables (number of letters, phonemes, syllables, familiarity rating and concreteness rating) using the MRC Psycholinguistic Database (Coltheart, 1981). A rating sheet of the remaining words was produced, which included the words, a brief explanation of the subgroups of paranoia and the predicted insecurity described by the model. The rating sheet was completed by 10 independent lay members of the public. Only the words that all 10 individuals agreed constituted *poor me*, *bad me*, and neutral words were used.

2.5. Design

One way between-subjects ANOVA and Scheffe post-hoc analysis was

conducted for normally distributed questionnaire data. Kruskal-Wallis non-parametric equivalent of the one way between-subjects and Mann-Whitney non-parametric equivalent of t-test for post hoc analysis was conducted for non-normally distributed questionnaire data.

A 9 × 3 × 3 (word group × dot position × group) mixed repeated measures ANOVA was conducted for reaction time. The within-subjects factors were word group (word group 1-9: see Dot Probe Task description below) and dot position (dot replacing *poor me*, *bad me* or neutral word). The between-subjects factor was group (*poor me*, *bad me*, control). A further 9 × 3 × 3 mixed repeated measures ANOVA using the same factors was carried out on correct responses as means of checking reliability of the task. Planned contrasts were conducted for post hoc analysis.

2.6. Dot Probe Task

The task contained nine neutral words, nine *poor me* words, and nine *bad me* words. One of each word (*poor me*, *bad me*, neutral), based on matched linguistic variables, were combined to form a word group. There were nine word groups in total, each constituted from one *poor me*, *bad me*, neutral word. All word pairings, dot position, and word position were counterbalanced, enabling all possible combinations of word/dot replacement to be presented in both the upper and lower visual fields. In practice, this allowed for 9 trials (word group), each with 12 individual runs of the dot probe, presenting each of the 3 words in each word group together in both upper and lower visual fields. The presentation order was randomised by the Dot Probe programme. Table 1 displays word groups 1-9 and Table 2 provides an example of the counterbalanced dot probe trials for word group 1 (all word groups were balanced similarly). Each word group resulted in 12 dot probe runs, totalling 108 individual dot probe runs.

Detection latency (time to react to dot probe) is the difference in reaction time when the dot probe replaces a threat related word when presented with a neutral word compared to the reaction time when the dot replaces a neutral word when presented with a threat related word. When the dot replaces a threat related word when presented with a neutral word, reaction times are expected to be faster due to attentional bias for threat orientating visual attention to the threat related location. Similarly, when the dot replaces a neutral word when presented with a threat related word, reaction times are expected to be slower due visual attention being orientated to the threat related word slowing reaction time to the dot probe. However, as we had three word groupings (*poor me*, *bad me*, neutral), we opted only to compare reaction times to the dot probe replacing each of the three word types; as such, we expected the reaction time of each paranoia subgroup to be fastest when replacing the specific subgroup threat related word when compared to the remaining subgroup threat related word and neutral word. This approach also reduced the possibility of the influence of difficulty to disengage from threat related trials (Koster et al., 2004).

2.7. Preparation of Reaction Time Data

The preparation of the reaction data was in accordance with previous Dot Probe research (Koster et al., 2004). Erroneous responses were excluded from analyses. Reaction times shorter than 200 ms or longer than 2000 ms were removed. Individual outliers were defined as reaction times that deviated more than three standard deviations from the individual mean reaction time. These were also removed. The number of outliers and errors per participant (including controls) ranged from 1-50 (Mean: 9.516, SD: 9.68222). Errors and outliers accounted for 8.8% of the data. As the data was not normally distributed, it was transformed using the log transformation procedure in SPSS. The log transformation procedure returned the

base-e (natural) logarithm of each of the reaction time variables before data analysis was commenced, as recommended by Cleveland (1984). All analyses were conducted using the log transformed data.

3. Results

3.1. EBS Reliability Check

Significant differences were found for evaluative beliefs. Post hoc analysis revealed both paranoid groups to be significantly higher on the self-to-other scale (PM: U = 13.5, N1 = 19, N2 = 20, p = 0.0001; BM: U = 64, N1 = 13, N2 = 20, p = 0.001) and the other-to-self scale (PM: U = 36.5, N1 = 19, N2 = 20, p = 0.0001; BM: U = 3, N1 = 13, N2 = 20, p = 0.0001) compared to the control group. However, only the *bad me* group scored significantly higher than the control group on the self-to-self scale (U = 0, N1 = 13, N2 = 20, p = 0.0001) with the difference between the control group and the *poor me* group being non-significant (U = 130, N1 = 20, N2 = 13, p = 0.095). Further significant differences were found between the two paranoid groups, with the *bad me* group scoring significantly higher on the other-to-self scale (U = 40, N1 = 19, N2 = 13, p = 0.001) and the self-to-self scale (U = 11.5, N1 = 19, N2 = 13, p = 0.001) compared to the *poor me* group. Significant differences were also found between the paranoid groups on the self-to-other scale with the *poor me* group scoring significantly higher (U = 66.5, N1 = 19, N2 = 13, p = 0.02) than the *bad me* group. The analysis was carried out as a reliability check on the group categorisation procedure – the significant differences between the groups, which are in accordance with the model's predictions, suggest the procedure was successful. Table 3 summarises the relevant measure of central tendency and test statistic for each group for each questionnaire.

3.2. Hypothesis 1

Significant differences were found for depression. The *bad me* group scored significantly higher (U = 70.5, N1 = 19, N2 = 13, p = 0.04) than the *poor me* group, with both paranoid groups scoring significantly higher than the control group (PM: U = 44.5, N1 = 19, N2 = 20, p = 0.0001; BM: U = 0.5, N1 = 13, N2 = 20, p = 0.0001).

Significant differences were found for self-esteem: F (2, 49) = 45.23, p = 0.001. The control group displayed the highest score with the *poor me* group next, the *bad me* group displayed the lowest scores. Post-hoc analysis revealed the control group to be significantly higher than the *poor me* group (p = 0.002) and the *bad me* group (p = 0.0001). The *poor me* group were found to be significantly higher than the *bad me* group (p = 0.0001).

3.3. Hypothesis 2

3.3.1. Number of correct responses.

The main effect of word group on number of correct responses on the Dot Probe task was found to be non-significant: F (5.17, 253.31) = 1.329, p = 0.25. The group by word group interaction was also found to be non-significant: F (10.34, 253.31) = 0.139, p = 0.73. The task consisted of 108 trials - the mean correct response was 103 (range: 65-108; sd: 6.97). This was taken to indicate that all respondents reacted similarly and therefore understood the task instructions (Greenhouse-Geisser correction reported).

3.3.2. Impact on reaction times

The main effect of word group on reaction time was found to be non-significant: F (5.61, 269.15) = 1.05, p = 0.39 (see Table 4). The main effect of dot

position (whether the dot replaced a *poor me*, a *bad me* or a neutral word) was also found to be non-significant: F (1.84, 88.12) = 1.71, p = 0.19. The two-way interaction between word group and group on reaction time was also found to be non-significant: F (11.22, 269.15) = 1.23, p = 0.27. This was taken to indicate that each word group had the same salience, indicating that the word categorisation procedure was accurate and that were no effects associated with visual field presentation (Greenhouse-Geisser correction reported).

A main effect of group on reaction time was found: F (2, 48) = 7.52, p = 0.001 (see Table 4). Planned contrasts (see Table 5) revealed that the control group was significantly faster to respond when the dot replaced *poor me* words (0.404s) compared to both groups (BM: 0.524s: F (2,48) = 4.28, p = 0.04; PM: 0.620s: F (2, 48) = 17.21, p = 0.001); when the dot replaced *bad me* words (0.401s) compared to both groups (BM: 0.556s: F (2,48) = 4.97, p = 0.03; PM: 0.602s: F (2, 48) = 14.84, p = 0.001); and when the dot replaced neutral words (0.409s) compared to both groups (BM: 0.530s: F (2,48) = 3.76, p = 0.05; PM: 0.593s: F (2, 48) = 12.03, p = 0.001).

The two-way interaction between dot position (word replaced by the dot) and group on reaction time was significant: F (3.67, 88.12) = 3.00, p = 0.02) (see Table 4). Planned contrasts (see Table 6) revealed that the *poor me* group was significantly slower to respond when the dot replaced *poor me* words (0.620s) compared to *bad me* words (0.602s: F (2, 48) = 5.10, p = 0.03) and neutral words (0.593s: F (2, 48) = 11.39, p = 0.001); however, when the dot replaced *bad me* words (0.602s) compared to neutral words (0.593s) this was not significant F (2, 48) = 2.97, p = 0.09). Neither the *bad me* or control group showed any significant interference on any of the word forms.

4. Discussion

The first hypothesis was that the *bad me* group would score lower on self-esteem and higher on depression than the *poor me* group. These predictions were supported. The *bad me* group did manifest significantly higher levels of depressions and lower levels of self-esteem than the *poor me* group. The significant difference between the two groups in relation to depression and self-esteem is evidence that the categorisation procedure was reliable as these phenomenological differences replicate findings from previous studies (Chadwick and Trower, 1997; Chadwick et al., 2005; Fornells-Ambrojo and Garety, 2005; Fornells-Ambrojo and Garety, 2009; Freeman et al., 2001; Green et al., 2006; Melo and Bentall, 2013; Morris et al., 2011; Peters and Garety, 2006; Startup et al., 2003; Udachina et al., 2012). Further, in relation to the control group, the *poor me* group did not differ significantly on self-esteem but were significantly more depressed, which is predicted by the Trower and Chadwick (1995) model.

The second hypothesis tested the specific insecurity of each group. A Dot Probe task was used to test this hypothesis. It was predicted that the *bad me* group would be quicker react to the dot probe when it replaced *bad me* words compared to *poor me* words or neutral words, whereas the *poor me* group would be quicker to react to the dot probe when it replaced *poor me* words compared to *bad me* words or neutral words. This hypothesis was not confirmed. However, the results of the Dot Probe task were significant for the *poor me* group, but in the opposite direction to our hypothesis, in that the group were significant slower to react when the dot replaced *poor me* compared to *bad me* and neutral words. The remaining two groups did not exhibit a significant impact on reaction time when responding to the dot probe. That

is, both groups responded similarly when the dot replaced all word forms (*poor me*, *bad me*, and neutral).

In short, only some of predictions of the Trower and Chadwick (1995) model are supported by the present study. Further evidence of the phenomenological differences between the two subgroups - specifically, that *poor me* paranoia is associated with higher self-esteem and lower levels of depression than the *bad me* group – is offered by the present study. However, the prediction that each subgroup will be associated with a distinct insecurity was not supported. Nevertheless, our investigation resulted in some unexpected findings; specifically, that the *poor me* paranoid subtype, rather than being quicker to react to specific threat related words, were significantly slower to react. In addition, the *bad me* paranoid subtype did not display any impact on reaction time when responding to either of the subgroup threat related words or the neutral words.

It could be argued that the inconsistent findings indicate the categorisation procedure as not robust enough or that sampling of the *poor me* and *bad me* subtypes was not pure enough. However, this does not account for the significant differences between self-esteem and depression between the groups or explain the similarity to previous studies of the EBS (Chadwick et al., 1999; Chadwick and Trower, 1997; Chadwick et al., 2005). It could also be argued that the questionnaires were not sufficiently sensitive enough to tease apart the intricacies of model. This is possible, but the questionnaires have good psychometric properties and the findings of this study replicate the findings of a number of other studies (Chadwick and Trower, 1997; Chadwick, et al., 2005; Fornells-Ambrojo and Garety, 2005; Fornells-Ambrojo and Garety, 2009; Freeman, et al., 2001; Green et al., 2006; Melo and Bentall, 2013;

Morris et al., 2011; Peters and Garety, 2006; Startup et al., 2003; Udachina et al., 2012).

The lack of confirmation of the second hypothesis could indicate that the Dot Probe task was not a sufficiently sensitive enough tool for measuring the predicted insecurities. However, the significant finding for the *poor me* group could be indicating task interference from threatening stimuli rather than a specific congruency to the predicted insecurity (Koster et al., 2004). To indicate specific congruency to the predicted insecurity, the *poor me* subgroup would be faster when responding to the dot probe when replacing *poor me* compared to *bad me* and neutral words, whereas our findings indicated the *poor me* group reaction times as being significantly slower. In previous Dot Probe research, slowed reaction time is considered to indicate task interference from generalised threat rather than congruency of threat (Koster et al., 2004). This hypothesis may account for the slowed *poor me* subgroup mean reaction times for all word types and the gradual slowing of reaction time across the three word groups (neutral words: 0.593s; *bad me* words: 0.602s; *poor me* word: 0.620s). However, given that only the *poor me* reaction time was significantly different, this indicates a particular salience for this word type. In addition, our findings only relate to the *poor me* group, with the *bad me* group not displaying any form of interference on reaction time across any of the words groups.

A tentative explanation for this finding could be taken from Bentall and colleagues' account of paranoia as a dynamic process arising from dysfunctional strategies for regulating self-esteem (Bentall et al., 2001; Sigmaringa-Melo et al., 2006). If we consider the *poor me* presentation, rather than as guarding against the specific insecurity predicted by the Trower and Chadwick model, but as functioning

as a defence against non-specific threats to self-esteem, failure could lead to low self-esteem and depression; in effect, the *bad me* paranoid presentation. In addition, the lack of impact of threatening and non-threatening stimuli for the *bad me* subgroup could be considered to indicate the dissipation of the defensive process, which is contrary to the Trower and Chadwick prediction that the *bad me* subgroup would be defending against being revealed as bad.

This alternative explanation does not refute the existence of the *bad me* paranoid presentation but, like Bentall and colleagues, it suggests that paranoia may be dynamic and that levels of depression and self-esteem can fluctuate. This would also offer an explanation for the rarity of the *bad me* presentation (Fornells-Ambrojo and Garety, 2005). However, before our finding can considered clinically useful, it would require replication. This investigation followed a cross-sectional approach, meaning the findings cannot be considered as supporting the Bentall and colleagues' account of paranoia as a dynamic process. For this to occur, future studies would need to utilise the Dot-Probe task with a longitudinal and within-subjects focus. Further, the study suffered from several limitations that could be improved upon by future research. The present study was over-reliant on psychiatrist accounts of delusional content of included participants; an improvement would be the inclusion of content analysis of delusional content through use of the persecution and deservedness scale (PaDS) (Melo, Corcoran, Shryane, and Bentall, 2009) or other standardised psychiatric rating scales (e.g. PANSS: Kay, Fiszbein, and Opfer, 1987).

Upon improvement and replication, a number of clinical implications would be highlighted. The potential for paranoid individuals to shift evaluations of themselves could be utilised in therapy. These transitory phases could signal an opportunity for therapists to access beliefs that were, up to the point of transition,

guarded against. Further, replication would highlight the importance of addressing specific issues such as self-esteem and depression when considering therapy for individuals suffering from persecutory delusions.

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Table 1. Word groups: 1-9

	Word Group								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
PM	Fake	Phony	Hollow	Rejected	Abandoned	Discarded	Forgotten	Irrelevant	Overlooked
BM	Evil	Nasty	Wicked	Disgrace	Artillery	Dominated	Possessed	Controlled	Abominable
N	Toll	Tally	Import	Congress	Atrocious	Furniture	Passenger	Indigenous	Chronology

PM = Poor Me Word; BM = Bad Me Word; N = Neutral Word

Table 2. Example of counterbalancing: Word group 1, combination of word pairs, word position and dot position

Fake *	Fake	**Evil ***	Evil
Evil	**Evil ***	Fake	**Fake ***
Fake *	Fake	**Toll ***	Toll
Toll	**Toll ***	Fake	**Fake ***
Evil *	Evil	**Toll ***	Toll
Toll	**Toll ***	Evil	**Evil ***

** Dot Position*

Table 3. Questionnaire: Measures of central tendency and test statistics

Scale/Subscale	**Measure of Central tendency**			**Statistic**
	Mean (standard deviation) or Median (min, max)			*** p<0.05, ** p<0.01**
	PM	**BM**	**CO**	
RSE	19.53 (3.95)	11.85 (2.61)	23.75 (3.58)	F (2,49) = 45.23 **

HADS (Depression)	5 (0, 13)	11 (6, 18)	1 (0, 6)	χ^2 = 29.84, df = 2 **
EBS				
Self-Other	2 (0, 12)	1 (0, 4)	0 (0, 1)	χ^2 = 29.22, df = 2 **
Self-Self	0 (0, 11)	5 (1, 12)	0 (0, 0)	χ^2 = 37.80, df = 2 **
Other-Self	3 (0, 11)	7 (3, 17)	0 (0, 4)	χ^2 = 35.27, df = 2 **

Table 4. Mean reaction time

Group	Measure	Dot Replacing Poor Me Word	Dot Replacing Bad Me Word	Dot Replacing Neutral Word
Poor	**Mean**	0.620	0.602	0.593
Me	**SD**	0.198	0.186	0.199
	Min	0.280	0.277	0.280
	Max	1.045	1.018	1.033
Bad	**Mean**	0.524	0.556	0.530
Me	**SD**	0.240	0.269	0.232
	Min	0.355	0.364	0.348
	Max	1.056	1.194	1.004
Control	**Mean**	0.404	0.401	0.409
	SD	0.078	0.076	0.086
	Min	0.315	0.328	0.317
	Max	0.610	0.606	0.667

Table 5. Planned contrasts: Analysis by dot position (between group) (F values and sig. level)

Dot Replacing	Poor Me Group Versus Bad Me Group		Poor Me Group Versus Control Group		Bad Me Group Versus Control Group	
	F	**Sig**	***F***	**Sig**	***F***	**Sig**
Poor Me Word	2.42	0.13	17.21	**0.00**	4.28	**0.04**
Bad Me Word	1.30	0.26	14.84	**0.00**	4.97	**0.03**
Neutral Word	1.20	0.28	12.03	**0.00**	3.76	**0.05**

Table 6. Planned contrasts: Analysis by group (within group) (F values and sig. level)

Group	Poor Me Word Versus Bad Me Word		Poor Me Word Versus Neutral Word		Bad Me Word Versus Neutral Word	
	F	**Sig**	***F***	**Sig**	***F***	**Sig**
Poor Me Group	5.10	**0.03**	11.39	**0.00**	2.97	0.09
Bad Me Group	1.46	0.23	0.02	0.89	1.25	0.27
Control Group	0.07	0.79	0.26	0.61	0.58	0.45

Highlights:

- Offers support for paranoia as an unstable phenomena
- Indicates persecutory evaluations as transitory, which could be utilised in therapy
- Indicates depression and self-esteem as important in the treatment of paranoia