Self-Affirmation and Nonclinical Paranoia

Abstract

Background and Objectives: This experiment examined whether reflecting on a core value—value-affirmation—was effective in attenuating state paranoia in students.

Methods: University students (N=55) were randomised to either a value-affirmation or non-affirmation control condition before exposure to a paranoia-induction manipulation (high self-awareness plus failure feedback). Paranoid cognitions were measured before (T1) and after (T2) the value-affirmation task and after the paranoia-induction task (T3). Depressive cognitions were also measured at T3.

Results: Affirming a valued domain had a direct and significant effect on reducing state paranoia prior to the paranoia-induction task (T2), such that the overall impact of the paranoia-induction on state paranoia was not significantly different from baseline. This effect was not attributable to differential changes in depression across groups.

Limitations: Use of a nonclinical sample limits generalisation to clinical groups. Repeat testing of key variables is a limitation, although this was necessary to assess change over time, and use of randomisation increased the internal validity of the study.

Conclusions: These findings suggest that self-affirmation is effective in reducing state paranoia in a nonclinical sample.

Keywords: paranoia; self-awareness; self-affirmation; student sample.

Paranoid thinking is characterised by the belief that another person is, or is planning, to cause one harm—be that physical, social or psychological (Freeman & Garety, 2000). Whilst paranoia can be a central feature of severe mental ill-health, substantial evidence suggests that paranoid thinking commonly occurs, in an attenuated form, in the general population (e.g. Ellett, Lopes, & Chadwick, 2003; Freeman, 2007); a view that is consistent with modern dimensional models of mental ill-health (Caspi et al., 2013). It is estimated that at least 10-15% of the general public experience suspiciousness, assumptions of another's hostile intentions, and even notions of conspirational intent (Freeman, 2007).

The experimental investigation of paranoid thinking is beginning to validate key theoretical assumptions about phenomenology and underlying mechanisms of paranoia (e.g. Bodner & Mikulincer, 1998; Ellett et al., 2013; Ellett & Chadwick, 2007; Freeman et al., 2008). For example, several studies have now shown that state paranoia can be triggered in virtual environments even though the avatars are programmed to behave in neutral ways (e.g. Freeman et al., 2008). This demonstrates that paranoid perception goes beyond the environmental stimuli, and involves top-down alongside bottom-up processing. Likewise, recent research using the Prisoner's Dilemma Game (Ellett et al., 2013) has suggested that paranoia is indeed necessarily interpersonal (i.e. one is always paranoid about someone) and associated with fear-based, rather than greed-based, processes.

A third experimental paradigm has identified a key role for self-awareness and task failure in the emergence of paranoid thinking in students. Fenigstein & Vanable (1992) found that increasing self-awareness (e.g., through a mirror) had the effect of increasing paranoid cognitions, perhaps by increasing the *self-as-target bias*—a tendency to see the self as the target of others' thoughts and actions. Based on these findings, Bodner and Mikulincer (1998) developed a unique paradigm that brought level of self-awareness under experimental

control. In this design, participants completed an impossible computer task (failure feedback) under conditions of high or low self-awareness, determined by the presence (high self-awareness) or absence (low self-awareness) of a video camera plus monitor. Research has demonstrated that these environmental conditions reliably trigger state paranoia in students (Bodner & Mikulincer, 1998; Ellett & Chadwick, 2007), perhaps by setting up an actual-ideal self discrepancy (i.e., heightened awareness of not living up to one's ideal standards), which the paranoid attribution functions to resolve (see Bentall, 2003 on actual-ideal self-discrepancy and paranoia). This account is consistent with the defensive effects of self-evaluation (Sedikides & Strube, 1997) and research that documents increased self-enhancement bias under conditions of high self-awareness (Cohen et al., 1985; Campbell & Sedikides, 1999).

Steele's (1988) well-validated theory of self-affirmation posits that affirming the self in a domain unrelated to the source of self-threat, attenuates the need for defensive processing, by boosting psychological resources. Consistent with this, a plethora of research has reliably demonstrated that affirming a highly valued domain, unrelated to the source of threat, significantly attenuates defensive processing, as measured by a host of dependent variables (e.g., attitude change, biased information processing, self-serving causal attributions: see Sherman & Cohen, 2006 and McQueen & Klein, 2006). In their study, Ellett and Chadwick (2007, study 3) found that boosting psychological resources by priming participants with positive self-cognitions before exposure to failure plus camera conditions resulted in significantly lower state paranoia than those primed with negative self-cognitions. However, the absence of baseline measures and of a control group limits the conclusions that can be drawn.

This study was designed to test the effect of self-affirmation on state paranoia. Participants were randomised to either a self-affirmation or a control task prior to exposure to the paranoia induction (failure plus camera). Participants reported on state paranoia at baseline (T1), post affirmation task (T2), and following the paranoia induction (T3). Based on the theory of self-affirmation (Steele, 1988), and consistent with the findings of Ellett and Chadwick (2007, study 3), we predicted that state paranoia would be significantly lower in affirmed participants relative to non-affirmed controls at T3. Given that depressed mood co-occurs with paranoia, and may legitimately be induced by high self-awareness and failure feedback, this was controlled for in the analyses.

Method

Design. A repeated measures experimental design was employed. The independent variable was affirmation condition (self-affirmation versus control) and the dependent variable was state paranoia following the failure plus camera condition. Covariates included baseline state paranoia and a state measure of depressed mood (measured at T3 only). A trait measure of depression was also taken at baseline to ensure group equivalence.

Participants. An opportunity sample of students (N = 55) from a British university (74% female, 66% White British, mean age 21.36 years) took part. The sample size was determined by a priori power calculations: estimating an effect size of 0.7 (McQueen & Klein, 2006), with alpha at 0.05 and power at 0.80.

Measures.

Paranoia and Depression Scale (PDS; Bodner & Mikulincer, 1998) is a 17-item state measure of depressive (10-items) and paranoid (7-items) thoughts and feelings. Items are rated on a 6-point scale (1 - *not at all* to 6 - *very often*) and were derived from measures of depressive and paranoid psychopathology. Only the paranoia items (e.g., “I feel that people

are hostile to me", "I feel that others are picking on me") were measured at baseline (most depression items relate directly to task performance). Both depression (e.g., "I feel ashamed of my task performance", "I don't have the appropriate abilities to perform the task") and paranoia items were administered following the task. These items have shown good discriminant and convergent validity and internal consistency (Bodner & Mikulincer, 1998). For example, Bodner & Mikulincer (1998) report that paranoia items were significantly related to the paranoia subscale of the SCL-90 (r = .67, p < .001) and depression items were significantly related to the BDI (r = .68, p < .001). In the current sample, the internal consistency was α = .83 for depression and α = .78 for paranoia. In support of the convergent and discriminant validity of the PDS, in the current study, the paranoia items correlated significantly with a well-validated measure of trait paranoia (Paranoia Scale, Fenigstein & Vanable, 1992; r = .53, p <.001) and did not significantly correlate with a measure of social anxiety (Self-Consciousness Scale – Social Anxiety subscale; Fenigstein, Scheier & Buss, 1975; r = .06, p = .68). The PDS depression items correlated significantly with a well-validated measure of depression (Depression Anxiety and Stress Scale – Depression items, Lovibond & Lovibond, 1995; r = .44, p < .001) and were not significantly correlated to anxiety (Depression Anxiety and Stress Scale – Anxiety items, Lovibond & Lovibond, 1995; r = .08, p = .53).

***Depression, Anxiety and Stress Scale (*Lovibond & Lovibond, 1995)** is a 42-item measure designed to assess the core symptoms of depression, anxiety and stress over the last week. Depression items were used in this study to assess group equivalence at baseline. Items are rated using a 4-point Likert scale of frequency or severity. Good discriminant and concurrent validity (Antony, Bieling, Cox, Enns, Swinson, 1998) and internal consistency values have been reported in normative samples (e.g., Depression α = 0.91, Anxiety α = 0.84

and Stress $\alpha = 0.90$, Lovibond & Lovibond, 1995). In the current sample, the internal consistency of the depression subscale was good ($\alpha = 0.91$).

Procedure. Ethical approval was gained prior to the commencement of the study, and all participants gave written informed consent. Participants were randomised to condition by a third party independent of the study, using an online randomisation tool (www.randomisation.org). Participants first completed baseline demographic questionnaires, paranoia items of the PDS, and the DASS. Participants were then blindly randomised to the self-affirmation or affirmation control. In both conditions, participants rank ordered the importance of 11 valued domains (see Sherman, Nelson, & Steele, 2000): Artistic skills/ Aesthetic appreciation; Sense of Humour; Relations with friends/family; Spontaneity/ Living life in the moment; Social Skills; Athletics, Musical ability/ appreciation; Physical Attractiveness; Creativity; Business/Money and Romantic values. Self-affirmation participants then wrote, for 10 minutes, about their top value (i.e., why it was meaningful to them and describing a time that it made them feel good about themselves). Conversely, control participants wrote about their least valued domain from the perspective of an average university student. As a post-task manipulation check, participants rated four statements ('This value or personal characteristic has influenced my life'; 'In general, I try to live up to this value'; 'This value is an important part of who I am'; 'I care about this value') using the scale 1 '*strongly disagree'* – 6 '*strongly agree'* (see Sherman et al., 2000).

Participants then re-completed paranoia items of the PDS, after which they moved to a separate section of the experimental room to complete the paranoia induction task, which involved completing an unsolvable task under conditions of high self-awareness, manipulated using a video camera and linked monitor (see Ellett and Chadwick (2007), for further details). Following Duval and Silvia (2002), participants were told that the camera was used to ensure

experimental consistency. After the paranoia induction, participants completed a final version of the PDS (paranoia plus depression items: T3).

Statistical approach. To test the effect of self-affirmation on state paranoia, a 3 (Time: state paranoia T1, T2 and T3) x 2 (Condition: self-affirmation versus non-affirmed control) repeated measures ANCOVA was computed, controlling for state depression at T3. Significant findings were decomposed using between-group t-tests and a repeated measures ANOVA with contrasts.

Results

Independent t-tests and chi-square analyses were computed to assess group equivalence at baseline and to confirm the success of the self-affirmation manipulation (see Table 1).

Table 1 also shows the means and standard deviations for state paranoia and depression, split by condition, across time. A repeated measures 3 (Time: state paranoia T1, T2 and T3) x 2 (Condition: self-affirmation versus non-affirmed control) ANCOVA (co-varying for state depression scores at T3) showed a significant Time x Condition interaction ($F_{(2, 53)} = 3.15$, $p = .05$), suggesting the two groups differed in their paranoia scores across the three time points. Between-group t-tests (Table 1) indicated that state paranoia was significantly lower in affirmed participants both after the act of self-affirmation (comparing groups at T2) and after exposure to the paranoia induction (comparing groups at T3). In support of the selective effect of affirmation condition on paranoia, independent t-tests also showed that there was no significant between-group difference on depression scores following the task. These findings suggest that paranoia was significantly lower amongst participants in the self-affirmation condition compared with the control and that this was not attributable to differential changes in mood.

INSERT TABLE 1

Repeated measures ANOVA contrasts were also conducted in the affirmation and control conditions separately, to ascertain the pattern of change in paranoia across the study. In the affirmation condition, there was a significant reduction in state paranoia following the affirmation manipulation ($F_{(1,27)} = 5.26$, $p = .03$), suggesting that affirming a valued domain reduced state paranoia. Paranoia then significantly increased following exposure to the paranoia induction ($F_{(1,27)} = 6.45$, $p = .01$). In the control condition, there was no change in paranoia following the control task ($F_{(1,26)} = 0.63$, $p = .44$), but as expected, paranoia significantly increased following exposure to the paranoia induction ($F_{(1,26)} = 15.03$, $p = .001$).

Discussion.

This study used a well-validated experimental paradigm, which combines high self-awareness and failure, to examine the possible protective function of self-affirmation on state paranoia in college students. Our data also show empirically for the first time that self-affirmation resulted in a reduction in state paranoia in a student population and that this impact was not attributable to confounding changes in depression. In fact, the effect of self-affirmation was specific to paranoid thinking and appeared to have no differential effect on low mood. These findings are consistent with a robust literature on the effects of self-affirmation on defensive processes in social psychology (e.g., Cohen et al., 2000; McQueen & Klein, 2006) and complements existing data that suggests the impact of self-affirmation on defensive processing is not attributable to changes in mood (e.g., Cohen et al., 2000, study 3; Sherman et al., 2000, study 1, 2005, study 1).

Our findings also raise an interesting question about the mechanism by which affirmation influences paranoia—does affirmation act as a buffer (attenuating a rise in

paranoia pre-post camera plus failure) or as an intervention (directly reducing paranoia prior to a threatening encounter)? Social psychology research has found evidence for both (McQueen & Klein, 2006), and the data reported here are consistent with affirmation acting as an intervention—that is, reducing baseline levels of state paranoia, rather than preventing a subsequent increase in paranoia when exposed to camera plus failure. These findings suggest that affirming a valued domain may incur benefits by rendering the individual more psychologically robust when they enter into an environment that poses a threat to self. Future research might usefully examine the processes through which affirmations achieve their effects, which remain largely unknown and frequently debated (Stapel & van der Linden, 2011). Recent research has suggested that affirmations may boost psychological resources through enhancing a sense of social belonging—a feeling of closeness and connectedness with others (see Shnabel, Purdie-Vaughns, Cook, Garcia, & Cohen, 2013). This is a promising mechanism for further exploration.

The current findings join a growing body of literature showing that paranoia is common in the general population (e.g. Ellett et al, 2003; Fenigstein & Vanable, 1992; Freeman, 2007). It is therefore important to consider why paranoia might be so common? Ellett et al. (2003) proposed that paranoia is a trait that was selected and distributed in humans due to its adaptive value under past environmental conditions. Paranoia is a promising trait to consider from an evolutionary perspective. It is first and foremost a perception of interpersonal threat to self and has clear ecological importance (Sedikides & Showronski, 1997). We therefore suggest that paranoia evolved to solve a specific problem (i.e. interpersonal safety) posed by ancestral selection pressures. The evolutionary maxim, better safe than sorry, might further elucidate the notorious resistance to change of clinical paranoia – that is, perception of threat once activated is slow to perseverate (Ellett & Chadwick, 2007). The present findings can thus be interpreted from an evolutionary

perspective—that is, paranoia has been selected by having past adaptive value at times when one is experiencing both high public self-awareness (i.e. feels oneself to be the object of others' attention) and failure in one's interactions with the environment—a form of vulnerability.

An important methodological consideration in any experimental study that seeks to assess change over time is the use of repeat testing of key variables, which can affect the validity of participant responses. Linked to this is the issue of measurement reactivity (Cook & Campbell, 1979), in which the act of being asked about certain thoughts, feelings and behaviours has an effect on their subsequent occurrence. Repeat testing of key variables was a necessary component of the present design, as a way of addressing limitations in previous studies (i.e. Ellett & Chadwick, 2007), by enabling the assessment of change within participants over time, and ensuring equivalence at baseline between groups. The following points are also relevant. First, use of randomisation reduced the potential for variability across participants, and thus increased internal validity. Second, our data converge with existing empirical and conceptual work (e.g. Ellett & Chadwick, 2007; Fenigstein & Vanable, 1992; Steele, 1988), lending support to the generalizability of our findings.

There are important ways in which the findings and linked model can be developed through future research. It will be important to extend these findings to real-world settings, for example through the use of experience sampling methodology, to determine whether feelings of suspicion and mistrust experienced in everyday situations can be modified by self-affirmation processes. Future research could also investigate the effects of self-affirmation procedures following a higher dose of exposure to threat, such as repeated failure under conditions of high self-awareness (see Ellett & Chadwick, 2007), and determine the durability of self-affirmation effects over time (e.g. Cohen et al., 2009; Harris & Napier, 2005). Future research might also usefully determine the applicability of self-affirmation in

the attenuation of clinical paranoia, perhaps especially in relation to Poor Me and Bad Me Paranoia (Trower & Chadwick, 1995), in which issues of self take centre stage.

Declaration of Interest
None

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Table 1: Means (standard deviations) for demographics and study measures, split by condition.

Study Variable	Affirmation Group Mean (SD)	Control group Mean (SD)	Comparison Statistics
Age	22.71 (7.82)	21.96 (5.72)	$t_{(54)}$ =.41, p = .69
Gender (% female)	82%	68%	$\chi^2_{(1)}$=1.74, p=.19
Baseline Depression	7.15 (7.31)	6.18 (6.16)	$t_{(54)}$ =.52, p = .60
State paranoia T1	12.75 (3.62)	13.74 (3.82)	$t_{(54)}$ = .10, p = .34
State paranoia T2	11.82 (2.67)	14.07 (3.80)	$t_{(54)}$ = 2.55, p = .01
State paranoia T3	13.07 (3.88)	15.48 (4.13)	$t_{(54)}$ = 2.24, p = .03
State depression T3	20.5 (8.82)	19.0 (6.68)	$t_{(54)}$ = .76, p = .45
Values task manipulation check			
This value has influenced my life	5.72 (.54)	3.60 (1.08)	$t_{(53)}$ = 8.77, p < .001
I try to live up to this value	5.40 (.70)	3.16 (1.06)	$t_{(53)}$ = 8.75, p < .001
This value is an important part of who I am	5.52 (.77)	3.72 (1.27)	$t_{(53)}$ = 6.04, p < .001
I care about this value	5.76 (.59)	3.60 (1.15)	$t_{(53)}$ = 8.31, p < .001