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The relationship between positive future thinking, brooding, defeat and entrapment

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ABSTRACT

Although there is robust evidence linking the absence of positive future thinking (PFT) to suicide risk, we know little about the factors associated with PFT or the characteristics of those who may be more vulnerable to such deficits when mood is low. In the present experimental studies, we investigated whether PFT would decrease following minor fluctuations in mood/defeat and whether such changes would vary as a function of brooding rumination and entrapment, established correlates of psychological distress. Positive future thinking was assessed before/after a negative mood or negative mood/defeat induction across two studies of healthy adults. In addition, participants completed measures of depressive symptoms, brooding rumination and/or entrapment at baseline. In Study one, positive future thinking decreased significantly following the negative mood induction and this reduction was associated with brooding. Following the mood/defeat induction, in Study two, positive future thinking decreased and this reduction was marked among those high on entrapment. Positive future thinking can be affected by even minor fluctuations in mood or feelings of defeat and these changes are most marked in individuals characterized by high brooding and entrapment.

1. Introduction

There is robust evidence that a pattern of future thinking characterized by the absence of positive thoughts (positive future thinking; PFT) rather than the over-representation of negative thoughts is associated with suicidal thinking and behaviour, independent of the effects of depression and general verbal fluency (MacLeod, Pankhania, Lee, & Mitchell, 1997; O'Connor, Connery, & Cheyne, 2000; O'Connor, Fraser, Whyte, MacHale, & Masterton, 2008; Sargalska, Miranda, & Marroquin, 2011; Williams, Van Der Does, Barnhofer, Crane, & Segal, 2008).[1] It is this paucity of positive cognitions when mood is low that is especially marked among suicidal patients. Recent research also suggests that PFT may be a more sensitive predictor of suicidal ideation than standard measures of global hopelessness (O'Connor et al., 2008) and that it moderates the effect of diathesis variables (e.g., perfectionism) on suicide risk (O'Connor et al., 2007). PFT is usually assessed by the future thinking task wherein participants are asked to generate thoughts about what they are looking forward to across different future time periods (MacLeod et al., 1997). PFT is distinct from more global measures of the future like hope and optimism because it taps an individual's specific expectations for the future rather than generalized expectations.

Despite its empirical and conceptual importance, we know little about the factors associated with PFT, or the characteristics of those who may be more vulnerable to such deficits when mood is low. Very few published studies have experimentally manipulated PFT (Lavender & Watkins, 2004; Williams et al., 2008). Given the dearth of such empirical studies, across two studies, we aimed to manipulate PFT experimentally in healthy adults to investigate whether positive future thinking variability could be explained in terms of three psychological factors known to be implicated in the aetiology and course of psychological distress (McLaughlin & Nolen-Hoeksema, 2011; Miranda, Tsypes, Gallagher, & Rajappa, 2013; O'Connor & Nock, 2014; O'Connor, Smyth, Ferguson, Ryan, & Williams, 2013; Taylor, Gooding, Wood, & Tarrier, 2011; Williams, 2001; Williams, Crane, Barnhofer, & Duggan, 2005).

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[1] There is a wider research literature on the relationship between future thinking and depression and anxiety, however, given the established relationship between positive future thinking and suicidal behaviour, we have focused on positive future thinking in the present study.

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Specifically, we investigated whether changes in PFT following experimental manipulation varied as a function of the extent to which participants tended to brood (Study one), feel defeated and trapped by life's circumstances (Study two).

Brooding refers to resource intense, trait-like ruminative cognitions which repetitively compare one's present situation with another unachieved benchmark (Treynor, Gonzalez, & Nolen-Hoeksema, 2003) and it is known to be associated with depression, anxiety and suicide risk (Chan, Miranda, & Surrence, 2009; Michl, McLaughlin, Shepherd, & Nolen-Hoeksema, 2013; Miranda & Nolen-Hoeksema, 2007; Morrison & O'Connor, 2008; O'Connor & Noyce, 2008) though the mechanism of effect is less clear. Consistent with information processing approaches (e.g., Joormann, Yoon, & Zetsche, 2007; Mathews & MacLeod, 2005), when mood is low, brooding may bias cognitions away from positive future thoughts. Alternatively, it may also increase one's cognitive reactivity to mood fluctuations, defined as the ease by which maladaptive cognitive processes are triggered by minor mood fluctuations (Ingram, Miranda, & Segal, 1998). In Study one, therefore, we investigated whether brooding may interfere with one's ability to generate PFT when mood is low.

In Study two, we focused on the concomitant effects of defeat and entrapment on positive future thinking as previous research has shown that both of these constructs is implicated in psychological distress (Gilbert & Allan, 1998; O'Connor et al., 2013; Taylor, Gooding et al., 2011; Taylor, Wood, Gooding, & Tarrier, 2011; Williams, Duggan, Crane, & Hepburn, 2011) and they are correlated with positive future thinking (Rasmussen et al., 2010). To do so, we experimentally induced defeat in healthy participants and investigated whether changes in PFT pre- vs post-induction changed as a function of individual differences in self-reported baseline entrapment beliefs. Consistent with research which suggests that the co-existence of defeat and entrapment is most pernicious (O'Connor, 2011), we postulated that the most marked reductions in PFT post-defeat induction would be evident among those who also reported high levels of entrapment prior to the defeat induction.

Taking both studies together, we formulated two hypotheses. In Study one, we hypothesized that brooding rumination would predict PFT following the negative mood induction (after controlling for pre-induction PFT and depressive symptoms) such that the relationship between brooding and positive future thinking would be stronger and negative post the negative mood induction compared to pre-induction (hypothesis one). In Study two, we hypothesized that reductions in PFT following the defeat induction would be significantly greater among those who reported high levels of entrapment and such reductions would be less evident in those with low levels of entrapment (hypothesis two). As the majority of research on positive future thinking has been conducted in the context of low mood (MacLeod et al., 1997; O'Connor et al., 2008; Williams et al., 2008), all participants were subject to a negative mood induction before the defeat manipulation in Study two.

2. Method study one

2.1. Participants

Thirty-nine healthy young adults were recruited from a Scottish University. All participants were first informed that participation was voluntary and confidential and even after giving initial consent, they were free to withdraw at any stage. Participants were aged between 18 and 39 years with a mean age of 23.2 years (SD = 5.62). In total, 28 females and 11 males participated in the study and the men and women did not differ in age, $t(37) = .60$, *ns*.

2.2. Measures

2.2.1. Depressive symptoms

The Beck Depression Inventory (BDI-II; Beck, Steer, & Brown, 1996) was employed to assess the presence of depressive symptoms in the past 2 weeks. Cronbach's α was .88.

2.2.2. Brooding rumination

Brooding, defined as the extent to which individuals passively focus on the reasons for their distress, was measured using the five items from the Response Styles Questionnaire (RSQ; Nolen-Hoeksema & Morrow, 1991; Treynor et al., 2003). Cronbach's α was .77.

2.2.3. Positive future thinking (PFT)

Positive future thinking was assessed following MacLeod et al.'s (1997) procedure before and after the mood induction. Participants were given four time intervals (next week, next month, next year and next 5–10 years) and asked to think of as many events as possible that they were looking forward to. Participants were randomly allocated to receive two time intervals before the mood induction and two time intervals following the mood induction such that the four time intervals were completed by each participant. Each time interval lasted 1 min. The pre-and post-induction responses were aggregated separately to yield a total positive future thinking score pre- and post-induction, respectively.

2.2.4. Negative mood induction

The negative mood induction task followed Moore and Oaksford's (2002) procedure where an adaptation of the Velten mood induction procedure (Velten, 1968) was combined with music and a specific request to participants to try to alter their mood state. Statements such as 'Just when I think things are going to get better, something else goes wrong' were accompanied by Barber's Adagio for Strings. The induction procedure takes 8 min. Mood was measured pre- and post-induction using a 100 m Visual Analogue Scale indicating how sad the participant is feeling at that moment. After completion of the second positive thinking task, all participants completed a positive mood induction which consisted of Mozart's Einekleine Nachtmusik, alongside statements including 'I have complete confidence in myself'.

2.2.5. Visual analogue scale (VAS) mood rating

Participants were asked to rate their mood in terms of sadness on a 100 mm VAS immediately before the first future thinking task and again immediately following the mood induction. Participants were asked to rate as follows: "At this moment I feel…" and sadness was printed above the 100 mm line which was anchored on a scale of not at all to extremely.

2.3. Procedure

Prior to the collection of any data, ethical approval was obtained from the University Psychology Department's ethics committee. At Time one, a few days before the mood induction, participants completed the BDI-II and the measure of brooding via an online survey system. To ensure anonymity and confidentiality, participants generated a unique identifier by answering four questions and this identifier was then used to anonymously link participants' online responses to their performance in the laboratory-based phase of the study. Approximately 1 week later, all participants attended a laboratory-based session and completed the mood induction procedure and the PFT task. Participants also rated their mood immediately before the first half of positive future thinking task and again immediately following the negative mood induction. The experimental session ended with a positive mood induction