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Fantasy proneness and counterfactual thinking

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ABSTRACT

Counterfactual thinking (CFT; mentally simulating alternatives to reality) is central to learning and motivation. Two studies explored the relationship between CFT and fantasy proneness, a personality trait typified by excessive fantasies hard to distinguish from reality. In study1, participants completed a fictional diary entry which was used to measure spontaneous CFT and the Creative Experiences Questionnaire measure of fantasy proneness. Fantasy proneness was significantly correlated with the generation of counterfactual thoughts. Both CFT and fantasy proneness have been independently associated with low mood and study2 included a measure of negative emotional state (the Depression, Anxiety and Stress scale) in addition to the CEQ and CFT. Fantasy proneness and negative emotion both predicted CFT, but no interaction between them was observed. The results suggest that individuals high in fantasy proneness have a general tendency to think counterfactually.

1. Introduction

Counterfactual thinking (CFT) refers to the mental simulation of alternatives to reality. It takes the form of "if only ..." thoughts about what might have been. For example, a person might imagine "*if only I had gone to university, I could have pursued a different career*." The tendency for people to imagine events beyond those that actually occurred is a pervasive feature of human thought (Byrne, 2002). It occurs across cultures, even in the absence of linguistic cues (Au, 1983) and at pre-school age, children can already draw conclusions about what might have happened if antecedent events had been different (Harris, German, & Mills, 1996). A range of emotions including guilt and shame (Niedenthal, Tangney, & Gavanski, 1994), sympathy and blame (Alicke, Buckingham, Zell, & Davis, 2008), regret (Seta & Seta, in press) and relief (Sweeny & Vohs, 2012) are associated with imagining that events could have turned out differently.

Our understanding of CFT is critical because reflecting on what might have been facilitates important psychological functions which impact on behaviour and wellbeing (Epstude & Roese, 2008; Roese & Morrison, 2009). Functions may be affective, for instance contrasting the current situation with less desired states can enhance mood (Sanna, 2000), or preparative, such as when mental simulations of better realities support improved future outcomes (Roese, 1997). Counterfactuals highlight causal relations (Walsh & Byrne, 2007) and are hence a means by which individuals can learn from past mistakes, plan ahead and modify behaviour (Markman, Gavanski, Sherman, & McMullen, 1993; Smallman & Roese, 2009). In relation to specific goals, CFT can improve motivation, encourage persistence and model success through a process of reflection and evaluation of alternative states (Markman, McMullen, & Elizaga, 2008) or as a function of regret (Seta & Seta, in press). In sum, this functional explanation suggests that counterfactual simulation can be an antecedent of performance, with behavioural regulation serving to avoid undesirable outcomes, or promote desirable ones, in the future (Epstude & Roese, 2008). Accordingly, understanding how individual differences influence CFT has important implications for learning and personal development.

Surprisingly little is known about how personality influences CFT and it is this which forms the focus of the present studies. Roese (1997) identified two stages of counterfactual generation: activation (whether counterfactuals actually come to mind) and functional content (what these thoughts focus on). Research on activation has mainly concentrated on understanding the situational and emotional contexts which trigger CFT. For instance, individuals generate more counterfactuals following negative outcomes (Roese & Hur, 1997) and when in a low mood, whether naturally occurring (Monroe, Skowronski, MacDonald, & Wood, 2005) or induced (Sanna, Turley-Ames, & Meier, 1999). However, far less research has examined personality correlates of activation. Kasimatis and Wells (1995) presented a series of studies which demonstrated little relation between CFT activation and a range of personality factors including the Big Five, need for cognition and locus of control. Variations were only observed when

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counterfactuals were examined for functional content. Later work has also linked personality and counterfactual content – for example, optimists and individuals high in self-esteem are more likely to think about how things could have turned out worse (Sanna, 2000; Sanna et al., 1999) and Wong, Haselhuhn, and Kray (2012) have shown that individuals who perceive cognitive abilities as malleable were more likely to consider how things could have been better (as opposed to worse) when reflecting on previous experience.

The present work concentrates on a personality factor not previously considered in the context of CFT, fantasy proneness, and specifically on how this may impact on the activation of counterfactuals. Individuals high in fantasy proneness tend to spend considerable amounts of time daydreaming (Schupak & Rosenthal, 2009) and experience "deep, profound, and long-standing involvement in fantasy and imagination" (Lynn & Rhue, 1988, p. 35). Such individuals may have fantasies and pseudomemories so vivid that they can be hard to distinguish from reality (Horselenberg, Merckelbach, van Breukelen, & Wessel, 2004; Merckelbach, 2004; Merckelbach, Horselenberg, & Muris, 2001). Fantasy proneness can be seen as normally distributed within the general population (Eisen & Lynn, 2001) with various degrees of daydreaming a fairly universal part of normal emotional functioning (Mason et al., 2007). Importantly, being prone to fantasy is not the same as being prone to CFT. CFT involves the simulation of alternative outcomes to actual life events, but tends to involve minimal changes to those events (Byrne, 2002). Fantasy proneness however, is conceptualised as the tendency to imagine fictitious situations, often to escape reality. What the concepts share is a tendency to mentally construct alternative realities. As such, we might reasonably expect that individuals high in fantasy proneness will also have a tendency towards the spontaneous activation of counterfactual thoughts.

Much previous research has measured cued CFT, whereby participants are explicitly asked to state ways in which a given situation might have turned out differently, for better and worse. While these tasks can present a rich source of data on counterfactual content, a more sensitive measure of the general propensity to engage in CFT can be achieved by examining a free narrative response within which counterfactual thoughts are spontaneously embedded (McEleney & Byrne, 2006; Sanna & Turley, 1996). As our interest was in the natural propensity to CFT, we examined the number of counterfactuals that participants spontaneously generated in a fictional diary entry (McEleney & Byrne, 2006). We also presented a self-report measure of fantasy proneness and expected that scores on this measure would significantly predict the tendency to generate counterfactuals.

2. Experiment 1

2.1. Methods

2.1.1. Participants

A volunteer sample of 106 undergraduate students (80 female; mean age 26.56 years, *SD* = 12.22) participated in small groups. All were native English speakers.

2.1.2. Measures and procedures

All participants completed two measures:

2.1.2.1. Counterfactual thinking. Participants read a scenario about moving house to a new job in a new city (from McEleney & Byrne, 2006). The scenario described a number of decisions made and events that occurred in the first few weeks after the move which resulted in difficulties settling in and making new friends. Participants were given 5 min to write a free narrative of their thoughts and feelings in the style of a personal diary entry and we counted the number of counterfactuals generated in each narrative. A counterfactual was defined as any thought about how a change to the scenario would change the outcome (McEleney & Byrne, 2006; for instance, "*If only I had gone to that party, I would have made friends*"). Participants typically generate between 0 and 4 counterfactuals in response to this scenario (McEleney & Byrne, 2006, present a mean of 1.75).

The Creative Experiences Questionnaire (CEQ: Merckelbach et al., 2001) is a dichotomous measure of fantasy proneness comprising 25 items, for example, "*My fantasies are so vivid that they are like a good movie*". "Yes" responses were summed to yield a total CEQ score with good internal consistency ($\alpha = .82$).

2.2. Results

The mean number of counterfactuals ($M = 1.56$; $SD = 1.61$) was fairly typical for this task (e.g. McEleney & Byrne, 2006). CEQ scores ($M = 9.69$, $SD = 4.76$) were within the expected range for a non-clinical sample (Merckelbach et al., 2001). As predicted, scores on this fantasy proneness measure were positively correlated with number of counterfactuals generated ($r = .55$, $p < .01$, $\eta^2 = .30$).

2.3. Discussion

As predicted, Experiment 1 showed that higher levels of fantasy proneness were correlated with higher levels of spontaneous CFT. This is one of the first studies to show a significant association between a specific personality trait and individual differences in the activation of counterfactuals.

However, as noted earlier, individuals with low mood show a propensity to think counterfactually (Monroe et al., 2005; Sanna et al., 1999) and one of the key affective functions of CFT is to regulate emotion (Sanna, 2000). Fantasy proneness has also been associated with subclinical levels of mood disorder (Levin & Spei, 2003; Maaranen et al., 2005) and schizotypy (Merckelbach & Giesbrecht, 2006) and, in clinical populations, an association with schizophrenia, dissociation, depression and anxiety is documented (Ross, Joshi, & Currie, 1990; Tutkun et al., 1998). Accordingly, it is possible that the relationship between fantasy proneness and CFT may be based on their mutual association with low mood, a factor not considered in Experiment 1. In Experiment 2, therefore, we presented the same CFT and fantasy proneness measures as previously, together with a measure of mood state. We expected to replicate the relationship between fantasy proneness and CFT found in Experiment 1. In addition, we predicted that both fantasy proneness and CFT would be positively correlated with negative mood. Finally, we aimed to investigate whether mood would mediate the association between fantasy proneness and CFT.

3. Experiment 2

3.1. Methods

3.1.1. Participants

A volunteer sample of 76 students (52 female; mean age 27.85 years, *SD* = 8.69) participated in small groups. All were native English speakers and self-declared as not having been clinically diagnosed with any form of psychological disorder, including depression and anxiety. None had taken part in Experiment 1.

3.1.2. Measures and procedures

3.1.2.1. Counterfactual thinking. All participants completed the same task as in Experiment 1 and counterfactuals were identified