Short Communication

Multidimensional perfectionism and counterfactual thinking: Some think upward, others downward

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ABSTRACT

Perfectionism is a personality disposition that can be expected to explain individual differences in counterfactual thinking. Yet, research on perfectionism and counterfactual thinking is very limited, and findings are mixed. The present study ($N = 175$ university students) investigated the relationships between perfectionism and counterfactual thinking after imagining a negative outcome (i.e., receiving a bad grade). Self-oriented perfectionism showed positive relationships with upward counterfactuals (imagining better outcomes) and negative relationships with downward counterfactuals (imagining worse outcomes). In contrast, socially prescribed perfectionism showed positive relationships with downward counterfactuals. The findings suggest that counterfactual thinking in self-oriented perfectionism aims at self-improvement and motivates for future better outcomes—at the cost of increased negative affect—whereas counterfactual thinking in socially prescribed perfectionism aims at mood repair.

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1. Introduction

Counterfactual thinking is an important cognitive activity which involves imagining different actions and circumstances producing different outcomes ("what might have been, if…") to those that actually happened (Byrne, 2016). Counterfactual thinking may follow all outcomes, but people tend to generate more counterfactuals following negative outcomes than positive outcomes (Roese, 1997). In counterfactual thinking, it is useful to differentiate two directions: Upward counterfactuals imagine a more positive outcome, and downward counterfactuals a more negative outcome. According to the functional theory of counterfactual thinking (Roese & Epstude, in press), upward and downward counterfactuals following negative outcomes have different effects and functions. Upward counterfactuals enhance negative affect, but also enhance motivation for self-improvement. Thinking about what might have produced a better outcome makes people feel worse, but also helps them think about how to avoid the same negative outcome in the future. In contrast, downward counterfactuals decrease negative affect (mood repair), but lack the motivation and preparatory function of upward counterfactuals. Thinking about how things could have been even worse makes people feel better, but does not help them avoid the same negative outcome in the future.

Research has found individual differences in counterfactual thinking, and people's personality can explain why some people are more likely to engage in counterfactual thinking than others (Kasimatis & Wells, 1995). One personality disposition that should explain individual differences in counterfactual thinking is perfectionism. The reason is that perfectionism is characterized by exceedingly high standards of performance accompanied by overly critical self- and social evaluations (Stoeber, 2018). Perfectionists expect everything to be perfect. Consequently, negative outcomes should trigger counterfactual thinking to a greater extent in perfectionists than nonperfectionists.

There are, however, two problems. The first is that perfectionism is best conceptualized as a multidimensional disposition (Frost, Marten, Lahart, & Rosenblate, 1990; Hewitt & Flett, 1991), and different dimensions of perfectionism have shown different, sometimes opposing associations (Stoeber, 2018). The second problem is that research on perfectionism and counterfactual thinking is very limited.

To our knowledge, only three studies have investigated multidimensional perfectionism and counterfactual thinking, and findings are mixed. The first two studies (Sirois, Monforton, & Simpson, 2010) asked university students to write about a recent assignment/exam in which they did not perform as well as expected, and afterwards generate upward and downward counterfactuals. A counterfactual index was created by calculating the difference between the number of upward and downward counterfactuals with higher values indicating more upward than downward counterfactuals. Multidimensional perfectionism was measured with the revised Almost Perfect Scale (APS-R; Slaney, Rice, Mobley, Trippi, & Ashby, 2001) differentiating high standards

and discrepancy. Whereas high standards showed no significant correlations with the counterfactual index, discrepancy showed significant positive correlations across both studies. Because discrepancy captures negative feelings and disappointment from personal performances that are below expectations, the findings suggest that failing to meet one's perfectionistic expectations triggers more upward than downward counterfactuals.

The third study (Monforton, Vickers, & Antony, 2012) presented university students with a scenario in which a class presentation did not go well. Afterwards students were asked to generate upward and downward counterfactuals, and the same counterfactual index as in Sirois et al. (2010) was created. Multidimensional perfectionism was measured with the Frost Multidimensional Perfectionism Scale (Frost et al., 1990) differentiating personal standards, concern over mistakes, doubts about actions, parental expectations, parental criticism, and organization. Unfortunately, the study did not examine the correlations of the individual dimensions, but computed an overall perfectionism score (aggregating all dimensions) which showed no significant correlation with the counterfactual index.

The three studies have a number of limitations. Sirois et al. (2010) used the APS-R which has been criticized because the high standards subscale contains no items making reference to "perfection." Consequently, APS-R high standards may not capture *perfectionistic* expectations (Blasberg, Hewitt, Flett, Sherry, & Chen, 2016), which could explain why the counterfactual index showed positive correlations only with discrepancy, but not with high standards. Furthermore, the APS-R exclusively focuses on self-aspects of perfectionism, ignoring social aspects (cf. Hewitt & Flett, 1991). Monforton et al. (2012) only examined overall perfectionism and consequently may have missed significant correlations of individual perfectionism dimensions with the counterfactual index. Finally, and perhaps most importantly, the counterfactual index used in all three studies combined upward and downward counterfactuals and therefore did not allow to examine the two counterfactual directions separately.

Against this background, the aim of our study was to further investigate the relationships of perfectionism and counterfactual thinking using a measure of multidimensional perfectionism differentiating self and social aspects: self-oriented, other-oriented, and socially prescribed perfectionism (Hewitt & Flett, 2004). Self-oriented perfectionism reflects beliefs that striving for perfection and being perfect are important. Self-oriented perfectionists expect to be perfect. In contrast, other-oriented perfectionism reflects beliefs that it is important for others to strive for perfection and be perfect. Other-oriented perfectionists expect others to be perfect. Finally, socially prescribed perfectionism reflects beliefs that striving for perfection and being perfect are important to others. Socially prescribed perfectionists believe that others expect them to be perfect (Hewitt & Flett, 1991). Furthermore, our study used a measure of counterfactual thinking separating upward and downward counterfactuals (Rye, Cahoon, Ali, & Daftary, 2008). Because of the previous studies' limitations and mixed findings and because no previous study on counterfactual thinking differentiated self and social aspects of perfectionism and separated upward and downward counterfactuals, we did not have any specific expectations (except that perfectionism explains variance in counterfactual thinking) and the study was largely exploratory.

2. Method

2.1. Participants

A sample of 175 students (32 male, 142 female, 1 transgender) at the University of Kent was recruited via the School of Psychology's Research Participation Scheme. Students (mean age 19.9 years, $SD = 2.9$ years) volunteered to participate for extra course credit and completed all measures online using the School's Qualtrics® platform.

2.2. Procedure

Participants first completed the perfectionism measure (see Section 2.3.1) and then were randomly assigned to read either Scenario 1 ($n = 87$) or Scenario 2 ($n = 88$). Scenario 1 was the academic failure scenario from Roese and Olson (1993, p. 200) except that we used "Sam" instead of "Pat" (in the UK, Sam is equally used for males and females) and the grade the students received was 52 instead of a "D."[1] Scenario 2 was the same as Scenario 1 except that who did what—or failed to do what—was reversed (see Supplementary Material A), so our design counterbalanced the specific roles that the participant and Sam played in the failure. After reading the scenario, participants completed the counterfactual thinking measure (see Section 2.3.2).

2.3. Measures

2.3.1. Perfectionism

To measure perfectionism, we used the Multidimensional Perfectionism Scale (MPS; Hewitt & Flett, 2004) capturing, with 15 items each, self-oriented perfectionism (e.g., "I demand nothing less than perfection of myself"), other-oriented perfectionism ("If I ask someone to do something, I expect it to be done flawlessly"), and socially prescribed perfectionism ("People expect nothing less than perfection from me"). Items were presented with the MPS's standard instruction ("Listed below are a number of statements concerning personal characteristics and traits…"), and participants responded on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). The MPS is a widely used measure of multidimensional perfectionism that has demonstrated reliability and validity in numerous studies (e.g., Hewitt & Flett, 1991, 2004).

2.3.2. Counterfactual thinking

To measure counterfactual thinking in response to the scenario, we adapted 12 items from the Counterfactual Thinking for Negative Events Scale (CTNES; Rye et al., 2008) capturing downward and upward counterfactuals. Following Rye et al., we created items capturing nonreferential counterfactuals (what could have been), self-referential counterfactuals (what could have been if I had acted differently), and other-referential counterfactuals (what could have been if Sam had acted differently; see Supplementary Material B for all items). Participants were instructed that the items related to the scenario they just read, and responded on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). The CTNES is a measure of counterfactual thinking that has demonstrated reliability and validity in previous studies (e.g., Barnett & Martinez, 2015; Rye et al., 2008).

2.4. Preliminary analyses

An exploratory factor analysis of the 12 counterfactual thinking items (maximum likelihood extraction, parallel analysis, oblique rotation; Preacher & MacCallum, 2003) found three eigenvalues > 1 (4.30, 3.35, 1.04), but parallel analysis retained only the first two factors (explaining 63.7% of variance in the items) that, once rotated, clearly separated upward and downward counterfactuals (see Supplementary Material B). Consequently, the six upward items were combined to an upward counterfactuals score, and the six downward items to a downward counterfactuals score. As with the MPS, all scores were computed by averaging across items (item mean scores) and showed satisfactory reliability (Cronbach's alphas > 0.70; see Table 1).

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[1] At the University of Kent, students' work is marked on a scale from 0 to 100, and 52 represents a mark that is significantly below average.