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FlashReport

Personal conflict impairs performance on an unrelated self-control task: Lingering costs of uncertainty and conflict *



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ABSTRACT

People have the ability to make important choices in their lives, but deliberating about these choices can have costs. The present study was designed to test the hypothesis that writing about conflicted personal goals and values (conflict condition) would impair self-control on an unrelated subsequent task as compared to writing about clear personal goals and values (clarity condition). Personal conflict activates the behavioral inhibition system (BIS; Hirsh, Mar, & Peterson, 2012), which may make it harder for participants to successfully execute self-control. In this large (N = 337), pre-registered study participants in the conflict condition performed worse on anagrams than participants in the clarity condition, and the effect of condition on anagram performance was mediated by a subjective uncertainty measure of BIS activation. This suggests that BIS activation leads to poor self-control. Moreover, given that conflict is inherent in the exercise of self-control, results point to BIS activation as a mechanism for why initial acts of self-control impair self-control on subsequent, unrelated tasks.

1. Introduction

In many societies people have unprecedented freedom to make important choices about who they will be and what they will do (Baumeister & Muraven, 1996; Schwartz, 2000). Decisions that were once made by one's family, government, and religion are at times now solely the responsibility of the individual. Although there are certainly advantages to this degree of autonomy (Ryan & Deci, 2000) there may also be costs to the uncertainty that accompanies these decisions. The present research was designed to test the hypothesis that deliberating over important decisions in life will impair performance on unrelated

Although the potential outcomes one may obtain through unlimited choices may seem very appealing (though see Iyengar & Lepper, 2000; Sagi & Friedland, 2007 on how more options can reduce enjoyment of the chosen option), the acts of deliberating and choosing can have negative outcomes. Previous research has shown that assigning people to deliberate about a personal dilemma leads participants to feel anxious and adopt more extreme opinions than participants assigned to a control condition (McGregor, Zanna, Holmes, & Spencer, 2001). Making

choices even about relatively trivial topics has also been shown to impair performance on unrelated tasks, such as decreasing persistence on unsolvable puzzles or increasing time spent procrastinating studying for a test (Vohs et al., 2008). Being faced with choices affects opinions and performance on issues and tasks unrelated to the choice.

One of the ways making choices about a conflicted situation may reduce performance on unrelated tasks is by generalized activation of the Behavioral Inhibition System (BIS; Nash, McGregor, & Prentice, 2011), which is a motivational system that mediates systematic vigilance and disengagement from all goals when faced with conflict or uncertainty (Corr, DeYoung, & McNaughton, 2013; Gray & McNaughton, 2000; Hirsh & Kang, 2016; Hirsh, Mar, & Peterson, 2012). This disengagement allows the conflicted organism to step back and contemplate the options available in the situation, but its generalized activation may also decrease the likelihood of persistence and success at other unrelated tasks. According to Gray and McNaughton (2000), when conflicts are detected by the BIS there is a goal-system-wide muting of enthusiasm for all goals.

We chose to measure performance on a task that has been used to measure self-control in previous studies, solvable anagrams under time pressure (Muraven, Tice, & Baumeister, 1998). Self-control occurs when

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one overrides a prepotent or immediately-rewarding response that conflicts with a long-term goal or a situational constraint (Baumeister, Vohs, & Tice, 2007; Fujita, 2011). Working through a daunting task under the pressure of a deadline demands that people use self-control to focus their attention on the task. Although BIS activation may undermine performance on a variety of tasks via muted enthusiasm, we thought it might be particularly likely to reduce performance on tasks involving conflict, because the adaptive purpose of disengagement and vigilance of BIS activation is to identify and switch to less conflicted goals. Other tasks that involve conflict should accordingly be particularly likely to be eschewed after BIS activation. We accordingly predicted that considering a personal dilemma would impair persistence and performance on an unrelated task requiring self-control, and that this decrement would be mediated by BIS-specific affect.

In a large-N, pre-registered study (https://osf.io/num4y/) we tested whether randomly assigning participants to think about conflicted (vs. clear) priorities would heighten BIS-activation and thereby impair performance on an unrelated task. In past research the high conflict manipulation heightened BIS-related affect and the clarity manipulation reduced it to baseline levels, but not below (McGregor et al., 2001). Following McGregor et al., 2001, and Hayes, Ward, & McGregor, 2016, we used a subjective measure of anxious uncertainty that has been found to specifically follow after motivational conflict (see also Nash et al., 2011; McGregor, Prentice, & Nash, 2013 for additional evidence). We predicted that participants in the conflict condition would solve fewer anagrams than participants in the clarity condition and that anxious uncertainty would mediate the relationship between condition and anagrams solved.

2. Method

2.1. Participants

Three hundred thirty-seven participants (88 men, 157 women, 92 not reported; $M_{\rm age}=35$) were recruited through Amazon's Mechanical Turk. Based on a separate pilot study (N = 42), we expected a medium to large effect size. A power analysis indicated that we needed 292 participants to achieve 99% power with an effect size of d=.50. Additional participants were recruited to have a sample robust to attrition, and data were not analyzed until all data were collected.

2.2. Procedure

The only manipulation and dependent variable measured are reported below. Potential moderators were measured that are not in the manuscript (e.g. neuroticism; all available at https://osf.io/num4y/), but none were significant.

2.2.1. Conflict and clarity manipulation

Participants randomly assigned to the conflict condition wrote about an unresolved personal dilemma and the conflicting personal values that the horns of the dilemma implied (McGregor et al., 2001). In the clarity condition, participants wrote about a highly important personal value (McGregor et al., 2001). In both conditions, participants were asked to think about their important values, but in the conflict condition they were considering how those values apply to a personal conflict. In past research these manipulation have respectively increased and decreased anxious uncertainty (McGregor et al., 2001, Study 1), and related constructs (Creswell et al., 2005; Koole, Smeets, van Knippenberg, & Dijksterhuis, 1999; Taylor & Gollwitzer, 1995).

2.2.2. Performance

Participants were given a set of fifty five-letter anagrams and were asked to solve as many as possible in 7 min (Muraven et al., 1998).

2.2.3. BIS-related affect

Following the anagram task, participants completed McGregor et al.'s (2001) anxious uncertainty scale, which has been used in previous research to measure BIS-related affect (Hayes et al., 2016, Study 5; McGregor, 2006; see Hirsh et al., 2012 for centrality of uncertainty to BIS-activation). They rated the degree to which they currently felt nineteen uncertainty-related emotions, such as "uneasy" and "torn" on a scale from 1 (very slightly or not at all) to 5 (extremely).

3. Results

3.1. Anagram performance

Participants in the conflict condition solved significantly fewer anagrams (M=12.91, SD=14.19) than participants in the clarity condition (M=16.86, SD=13.40), F(1, 335)=6.83, p=.009, $\eta^2=.02$, 90% CI[.004, .06].

In addition to predicting performance on anagrams, condition also predicted whether participants dropped out of the study entirely at some point after the manipulation, $\chi^2(336)=22.82,\ p<.001.$ Participants in the conflict condition were 3.28 times more likely to drop out of the study after the manipulation than participants in the clarity condition. Although this effect was not predicted, it seems plausible that a participant with poor self-control following the conflict manipulation may be especially likely to disengage from an online study and pursue a more immediately rewarding activity.

3.2. BIS-related affect

Participants in the conflict condition (M=2.49, SD=.90) reported feeling more anxious uncertainty than participants in the clarity condition (M=2.18, SD=.86), $F(1, 254)=7.33, p=.007, \eta^2=.03, 90\%$ CI[.004, .07]. The difference in the dfs between these and previous analyses is because anxious uncertainty was measured after the anagram measure, and participants who quit the study entirely did not complete the anxious uncertainty measure.

3.3. Mediation

Anxious uncertainty was negatively correlated with the number of anagrams solved, r (255) = -.16, p = .01. The indirect effect (Preacher & Hayes, 2004) of condition through anxious uncertainty on anagrams solved was -.74, 95% CI [-1.80, -.15]. Because the confidence interval does not include zero, the indirect effect was significant.

4. Discussion

This pre-registered, large-N study provides evidence that considering a personal conflict leads to poor performance on solvable anagrams as compared to writing about a clear value. Participants who were assigned to write about a personal conflict reported greater anxious uncertainty than participants in the clarity condition, and anxious uncertainty mediated the effect of conflict condition on anagram performance.

The present research points to activation of the Behavioral Inhibition System as a potential mechanism for the effect of one act requiring self-control impairing a second act requiring self-control (ego-depletion). A large body of research has found that people perform less well on a second task requiring self-control after a first task requiring self-control (ego depletion; Baumeister, Bratslavsky, Muraven, & Tice, 1998; Muraven et al., 1998; see Hagger, Wood, Stiff, & Chatzisarantis, 2010 for a meta-analysis). However, it is currently unclear why this occurs, and recent replication failures have caused some to question the validity of the effect (Hagger et al., 2016). It is likely that tasks requiring self-control activate the behavioral inhibition system. The

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