# BRIEF REPORT

# Positive Consequences of Conflict on Decision Making: When a Conflict Mindset Facilitates Choice

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Much research has shown that conflict is aversive and leads to increased choice deferral. In contrast, we have proposed that conflict can be beneficial. Specifically, exposure to nonconscious goal conflict can activate a mindset (a set of cognitive procedures) that facilitates the systematic processing of information without triggering the associated costs, such as negative affect and stress. In a conflict mindset, people should be better able to make tradeoffs and resolve choice conflict. We tested this proposition in 4 experiments, and demonstrated that priming conflicting goals before a decision increases choice in domains unrelated to the primed conflict. We further demonstrated that increased choice occurs because people in a conflict mindset process choice information more systematically, and we rule out several alternative explanations for the results.

Keywords: conflict, choice, deferral, mindsets, goals

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Conflict is present in many choices, from the mundane morning debate between oatmeal and a chocolate chip muffin, to more important decisions that pit professional success against personal life. Conflict is generally thought of as aversive, associated with depression, neuroticism, and illness (Emmons & King, 1988), decreased task performance (Shah & Kruglanski, 2002), and impaired decision making (Iyengar & Lepper, 2000; Tversky & Shafir, 1992). In contrast to this modal and intuitive view, we propose that conflict can also be beneficial. Specifically, we propose that a prior exposure to conflict can activate a mindset (a set of cognitive procedures) that facilitates the systematic processing of information, and thus increases choice likelihood. As we will show, this conflict mindset brings with it the procedural benefits of coping with conflict without the associated costs such as negative affect (Luce, Payne, & Bettman, 1999).

We tested our proposal by examining the effects of the conflict mindset on individuals' willingness to make a decision. Extensive research on decision making has suggested that when individuals are conflicted among various options, they are less likely to make a choice (Iyengar & Lepper, 2000; Luce, 1998), a behavior known as choice deferral (Anderson, 2003; Dhar, 1997; Tversky & Shafir, 1992). Our main proposition is that priming conflicting goals activates a conflict mindset, which leads to more systematic processing of subsequent, unrelated choices. We further propose that, as a result of this increase in systematic processing of information, individuals in a conflict mindset are more likely to resolve tradeoffs and make choices.

We have based our predictions on two ideas. First, although decision researchers have generally documented an avoidant response to conflict, proactively confronting and attempting a systematic resolution is also an established response to conflict (Janis & Mann, 1977; Folkman & Lazarus, 1988). Prior research has associated conflict-confronting strategies with systematic processing, including the consideration of more of the available information (Janis & Mann, 1977) and taking more time when deciding (Bettman, Johnson, Luce, & Payne, 1993; Kleiman & Hassin, 2011).

Second, preexisting sets of cognitive procedures and patterns of reasoning (i.e., mindsets) can be stored in memory and activated by subtle cues (e.g., Bargh, Schwader, Hailey, Dyer, & Boothby, 2012; Galinsky & Moskowitz, 2000; Gollwitzer, 1990; Mussweiler, 2002; Xu & Wyer, 2008). Once a mindset is activated, the associated reasoning processes and cognitive procedures are more

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accessible, and more likely to be applied to a subsequent task, even in an unrelated domain.

Building on these two ideas, we propose that conflict activates a mindset that makes procedures related to systematic processing more accessible (see also Kleiman & Hassin, 2013). In turn, this systematic processing of choice information facilitates making tradeoffs and thus increases choice resolution (Dhar, 1997).

The strongest test of our mindset hypothesis would demonstrate that incidentally primed conflict facilitates choice by increasing systematic processing in domains unrelated to the primed conflict (Xu & Wyer, 2008). Moreover, subtly activating conflict, rather than consciously introducing it, has the advantage of activating the relevant procedural benefits without activating the negative affect traditionally associated with high conflict (Luce et al., 1999).

Accordingly, we activated a conflict outside of awareness by simultaneously priming two conflicting goals (Kleiman & Hassin, 2013), and examined whether there is an increase in systematic processing on choice in domains unrelated to the primed conflict. We demonstrated that nonconsciously activated goal conflict decreases the likelihood of selecting options associated with conflict avoidance (Experiments 1 and 4), due to a more systematic information processing associated with a conflict mindset (Experiment 2), and not to other factors (Experiment 3).

### **Experiment 1**

Experiment 1 tested our basic hypothesis that priming conflicting goals facilitates choice in subsequent, unrelated decisions.

#### Method

Two hundred three adults (83 males;  $M_{age} = 39.1$  years, SD =14.0) were recruited from an online panel for a series of ostensibly unrelated studies.<sup>1</sup> Participants were randomly assigned to either the control condition or to one of two nonconscious goal conflict conditions (henceforth, the conflict conditions). Two distinct conflict conditions were used to ensure that results could not be attributed to specific content used in the primes, but instead would be due to a general conflict mindset. Participants first completed a lexical decision task that served as the priming manipulation. Letter strings appeared on a screen and participants had to decide whether they formed a word (21 trials) or a nonword (14 trials). In each of the conflict conditions, seven words were related to one goal and another seven to a conflicting goal. Hence, in one conflict condition, participants saw seven words related to a career goal (e.g., promotion, raise) and seven words related to the conflicting socializing goal (e.g., party, drinks). The second conflict condition included words relating to a health goal (e.g., fitness, active) and the conflicting indulgence goal (e.g., decadent, indulge). Embedding words related to two goals that conflict<sup>2</sup> in a lexical decision task simultaneously primes both goals, and has been shown to activate a conflict mindset outside of participants' awareness (Kleiman & Hassin, 2013).

Following the priming task, participants completed a standard choice deferral task (Dhar, 1997), choosing between two apartments that differed on commute time and size, and between two cell phones that differed on price and model. Crucially, participants could either select one of the two options (i.e., resolve the conflict by making a choice), or not select either option (i.e., avoid

the choice). The modal finding in this paradigm is that highconflict decisions are associated with decreased choice resolution (Luce, 1998).

Finally, participants were asked a series of questions to assess whether the priming manipulation resulted in heightened conflict awareness. They indicated on a 1-9 scale the extent to which they felt conflicted, in a deliberative mindset, how committed they were to each of the primed goals, and their current mood (see supplemental materials for awareness and affect questions).

#### **Results and Discussion**

Our primary dependent measure was the aggregate number of times participants selected one of the available options, instead of deferring the choice. No difference emerged between the two conflict conditions (p = .68), so we collapsed them for the main analysis. A one-way analysis of variance (ANOVA) on choice incidence revealed that participants in the conflict conditions were significantly more likely to make a choice than those in the control condition ( $M_{conflict} = 73.0\%$ , SE = 3.0% vs.  $M_{control} = 60.5\%$ , SE = 4.8%), F(1, 201) = 5.3, p < .03,  $\eta^2 = .03$ . Planned contrasts comparing control with each separate conflict condition revealed similar results ( $M_{workvssocialize} = 74.3\%$ , SE = 4.3%), t(200) = 2.2, p < .03;  $M_{healthyvsindulge} = 71.8\%$ , SE = 4.1%, t(200) = 1.8, p = .07. We found equivalent results using a logistic regression with clustered standard errors (Nichols & Schaffer, 2007) and a mixed logit model (Baayen, Davidson, & Bates, 2008; Jaeger, 2008), described in detail in the supplemental materials.

Finally, no differences were found between the conflict and control conditions for any of the conflict awareness measures or self-reported mood (ps > .1). To further ensure that our manipulation did not directly affect mood or awareness of conflict, we recruited 900 online participants (557 males,  $M_{age} = 31.9$  years, SD = 11.1), and randomly assigned them to complete the control or conflict (career vs. socialize) priming manipulation described above in the Method section. Participants then responded to the conflict awareness and mood measures used in the main experiments. As expected, conflict primed participants reported the same mood, conflict awareness, and explicit goal commitment as control participants (ps > .5) (see supplemental materials for pretest methods and results).

These findings supported our hypothesis that priming a conflict mindset decreases choice deferral in domains unrelated to the primed conflict. Moreover, they suggest that the conflict prime increases choice incidence even though participants were not aware that they were in a conflict mindset.

<sup>&</sup>lt;sup>1</sup> Sample sizes for all experiments were determined in advance.

<sup>&</sup>lt;sup>2</sup> Priming two goals should activate a conflict mindset only if the goals conflict with one another. Accordingly, to ensure the goals were perceived as conflicting, we first selected goal pairs (i.e., "health vs. indulge") that have been used to elicit goal conflict (Gollwitzer, 1990; Fishbach & Dhar, 2005), and then conducted a pretest. Participants read a description of either a conflict goal pair ("career vs. socialize" or "health vs. indulge") or a nonconflict goal pair ("career vs. health" or "socialize vs. indulge"), and rated how it would feel to pursue both goals simultaneously. As predicted, the conflict pairs were perceived as more conflicting than the nonconflict pairs on three dependent measures (ps < .01). See the supplemental materials for pretest details.

#### **Experiment 2**

We hypothesized that the conflict mindset enhances choice resolution because it facilitates more systematic processing of the information related to the choice. Specifically, exposure to conflicting goals activates a conflict mindset in which the cognitive procedures associated with systematic processing become more accessible. These more accessible systematic procedures are then more likely to be used when making subsequent choices. Experiment 2 tested this hypothesis by measuring two markers of systematic processing: how much information participants search for, and how much time they spend making their choices. These process measures have been used in prior literature to infer decision strategy and demonstrate greater processing of choice information (Bettman et al., 1993; Payne, 1976). We employed a serial mediation model (Preacher & Hayes, 2008) to test whether these markers account for the effect of confronting conflict on choice likelihood. In addition, we have proposed that this process occurs nonconsciously, and thus we hypothesized that awareness of the conflict mindset should not mediate the effect of the conflict mindset on choice.

# Method

Seventy-nine students (28 males) were randomly assigned to either the conflict or the control conditions. Using the same task as in Experiment 1, conflict participants were primed with conflicting studying and socializing goals. Students then saw five choice problems similar to those used in Experiment 1 (partner, apartment, theater, album, cell phone<sup>3</sup>), in which they could either select one of two options presented or not select either option. To examine participants' decision-making process, we used an information display board analogous to MouseLab (Johnson, Payne, Schkade, & Bettman, 1989) in which the values for each attribute were hidden under a closed box, and participants had to hover the mouse over each box to see the information it contained. The computer program recorded the time participants spent on each choice and the amount of information viewed (i.e., number of boxes opened). After making their choices, participants were probed for conflict awareness and mood as in Experiment 1.

#### **Results and Discussion**

A one-way ANOVA with the number of times participants chose one of the options as the dependent variable revealed that participants in the conflict condition were more likely to make a choice than control participants ( $M_{\text{conflict}} = 82\%$ , SE = 2.4% vs.  $M_{\text{control}} = 71\%$ , SE = 4.0%), F(1, 77) = 5.0, p < .03,  $\eta^2 = .06$ . This replicates the results of Experiment 1 using a different goal conflict, a different population, and different decisions.

**Process measures.** We next examined the extent of systematic processing (see Table 1 for means and standard errors). Conflict participants viewed more information, F(1, 394) = 4.5, p < .04,  $\eta^2 = .01$ , and tended to take more time to make their decisions, F(1, 77) = 3.4, p = .06,  $\eta^2 = .04$ . As in Experiment 1, the control and conflict conditions did not differ on the awareness or mood measures (ps > .1).

To test our proposed process, measures of amount of information viewed, decision time, and conflict awareness were entered

#### Table 1

Means (Standard Errors) for Systematic Processing Measures in Experiment 2

Condition	Amount of information viewed	Decision time (seconds)	
Control	12.7 (0.57)	17.3 (1.1)	
Conflict	14.4 (0.56)	20.6 (1.4)	

into a serial bootstrap model for multiple mediators (Preacher & Hayes, 2008). As predicted, a significant indirect effect emerged,  $\beta = .23$  (.019), 95% confidence interval (CI) [.001, .088], indicating that conflict increased the amount of information viewed ( $\beta = 1.7$ , t(392) = 2.12, p = .03), which increased decision time ( $\beta = .38$ , t(390) = 8.53, p < .001) and led to more choice resolution ( $\beta = .03$ , t(386) = 4.33, p < .001) (see Figure 1). Importantly, as expected, conscious awareness of conflict did not mediate the effect of conflict on choice,  $\beta = -.029$  (.036), 95% CI [-.131, .027], and no indirect effects that included conflict awareness were significant.

The results of Experiment 2 were consistent with the notion that participants in a conflict mindset processed information more systematically than those who were not. They viewed more information and thus took longer to make their decisions. The shift to systematic information processing mediated the increase in choice likelihood.

#### **Experiment 3**

Experiment 3 was designed to test two suppositions central to the conflict mindset proposal. First, our theory predicts that activating a conflict mindset requires priming two goals that conflict with one another. Therefore priming only one goal should not lead to the increase in choice incidence observed in previous experiments. Second, we have posited that the conflict mindset increases the accessibility of cognitive procedures related to systematic processing, which facilitate confronting tradeoffs and making a choice. Accordingly, the conflict mindset should not be beneficial for tasks that do not involve tradeoffs, but simply require more persistence. Thus, in Experiment 3, we sought to replicate the results of the prior studies while (a) ensuring it is the conflict mindset, rather than priming a goal, that brought about our effects, and (b) testing whether the procedural benefits of the conflict mindset are specific to tasks that require confronting conflict.

#### Method

Three hundred nine adult participants (112 males;  $M_{age} = 35.7$  years, SD = 15.0) recruited from an online pool were randomly assigned to conditions in a  $3 \times 2$  (Control vs. Conflict vs. Single Goal × Conflict Task vs. No-Conflict Task) between-participants design. In the conflict and control conditions, primes were identical to those used in Experiment 1. Participants in the single goal condition were exposed to the same career goal words used in the conflict condition, but the words relating to socializing were re-

<sup>&</sup>lt;sup>3</sup> We used five choices in this experiment, to ensure sufficient power when analyzing process data.



*Figure 1.* Results of Experiment 2, showing that the amount of information viewed and decision time mediate the effect of conflict on choice. Point estimates of the indirect effects are reported. Values in parentheses are a bootstrap estimate of the standard error. \* Indicates the 95% bias-corrected confidence interval excluded 0.

placed with neutral fillers. Orthogonally, half the participants then saw two choices that would require making tradeoffs (the album and theater choices from Experiment 2), while the other half completed an evaluation task that did not involve conflict and thus did not require making tradeoffs. In the evaluation task, participants were simply asked to rate as many pictures as they wanted before choosing to stop (adapted from Vohs & Heatherton, 2000). Last, all participants were probed for awareness and mood as in the previous experiments.

# **Results and Discussion**

Replicating the results of Experiments 1 and 2, conflict participants were more likely to make choices than control participants  $(M_{\text{conflict}} = 86\%, SE = 3.2\% \text{ vs. } M_{\text{control}} = 75\%, SE = 4.7\%),$  $F(1, 99) = 4.0, p < .04, \eta^2 = .04$ . However, consistent with our conflict mindset theory, conflict and control participants did not differ in the number of pictures they rated  $(M_{\text{conflict}} = 14.1, SE =$  $1.9 \text{ vs. } M_{\text{control}} = 12.8, SE = 2.0), F(1, 101) = .26, p > .61, \eta^2 =$ .003. These results suggest that the benefits of a conflict mindset are specific to facilitating the resolution of choice conflict, and do not reflect a general increase in motivation on any task.

Next, we did not find evidence to support a single goal priming explanation for the change in choice incidence. Instead, conflict participants were more likely to make a choice than participants in control and the single goal conditions ( $M_{conflict} = 86\%$ , SE = 3.2%,  $M_{control} = 75\%$ , SE = 4.7%,  $M_{singlegoal} = 76\%$ , SE = 4.6%), t(154) = -2.04, p < .05,  $\eta^2 = .03$ . As in previous studies, there was no significant difference between conditions on the awareness and mood measures (ps > .1).

These results supported our propositions that a conflict mindset, and not the mere priming of a goal, leads to increased choice, and that the benefits of a conflict mindset are specific to tasks that require making tradeoffs and confronting conflict.

# **Experiment 4**

In Experiment 4, we sought to conceptually replicate our findings using another common choice scenario: preference for an extreme versus a compromise option. The compromise option is the alternative that has intermediate attribute values relative to the other, more extreme options in a choice set (Simonson, 1989). Similar to deferring choice, prior research has shown that selecting the compromise option is a form of conflict avoidance that occurs when people avoid the attribute tradeoffs required to choose between the extreme options (Dhar & Simonson, 2003). Because a conflict mindset increases the accessibility of cognitive procedures related to systematically processing choice tradeoffs, and increased processing of tradeoffs leads to greater choice resolution (Dhar, 1997), we hypothesized that a conflict mindset would attenuate the preference for the compromise option, indicating greater ability to resolve conflicts.

#### Method

One hundred fifty-nine adults (47 males;  $M_{age} = 37.9$  years, SD = 14.3) recruited from an online panel were assigned to either the conflict (career vs. socialize) or the control conditions and primed as in Experiment 1. Participants then chose between three hotels that varied on price and distance to the beach, and between three laptops that varied on weight and battery life. The attributes were negatively correlated, such that the alternative most attractive on one attribute was also least attractive on the other attribute (i.e., the extreme options). Participants were asked to choose among the three options. Finally, participants were asked about awareness and mood as in the previous experiments.

#### **Results and Discussion**

Our primary dependent measure was the aggregated number of times each participant resolved the choice by selecting an extreme option. A one-way ANOVA revealed that conflict participants were more likely to choose one of the two extreme options than those in the control condition ( $M_{\text{conflict}} = 55.1\%$ , SE = 3.90% vs.  $M_{\text{control}} = 41.1\%$ , SE = 3.85%), F(1, 157) = 6.4, p < .02,  $\eta^2 = .039$ . As in the previous experiments, no differences were found between the conflict and the control conditions on the awareness or mood measures (ps > .1).

Experiment			Condition	L	
	Control	Conflict	Single goal	Health vs. indulge	Career vs. socialize
Experiment 1	60.5% (4.8%)	73.0% (3.0%)	_	71.8% (4.1%)	74.3% (4.3%)
Experiment 2	71% (4.0%)	82% (2.4%)			
Experiment 3	75% (4.7%)	86% (3.2%)	76% (4.6%)		_
Experiment 4 (extreme option)	41.1% (3.9%)	55.1% (3.9%)		_	

 Table 2

 Percentage of Choices Resolved (Standard Errors) for All Experiments by Goal Prime Condition

These results provided converging evidence that the conflict mindset increases choice resolution, using a different choice measure.

## **General Discussion**

The negative consequences of conflict are well understood (Emmons & King, 1988; Shah & Kruglanski, 2002). This report has examined whether conflict can have positive consequences. In four experiments, we demonstrated that priming conflicting goals activates a set of cognitive procedures (i.e., mindset) that facilitate systematic processing and thus increase conflict resolution for unrelated choice tasks (see Table 2). We further demonstrated that these results occur because participants in a conflict mindset spend more time and consider more information (Experiment 2), and that the effect holds with multiple goal conflicts (Experiment 1) and different choice measures (Experiment 4). We also showed that the effect is specific to resolving conflict-orientated tasks, and cannot be explained by mere goal priming or general increase in motivation (Experiment 3).

In the current research, we tested two markers of systematic processing: information search and decision time. A third relevant marker of systematic processing is extent of compensatory processing (Bettman et al., 1993). Because the process tracing data we collected in Experiment 2 was for a binary choice, examining the pattern of information search for evidence of compensatory decision strategies is of uncertain value (Böckenholt & Hynan, 1994). Future research should employ choice scenarios with more options and attribute levels in order to investigate the specific decision strategies evoked by conflict mindset.

Another avenue for future research may be to examine the effects of different types of conflict. Recently, Lisjak, Molden, and Lee (2012) showed that priming participants with a temporary goal that is incongruent with their chronic motivational orientation can tax cognitive resources. Both the current findings and those reported in Lisjak et al. (2012) are consistent with the notion that goal structures exist in memory and can be primed. However, these studies differ in both the type of conflict activated and the type of outcomes tested. To better understand the effect of priming conflicting goals, future research could investigate the moderating effects of type of conflict (e.g., chronic vs. temporary compared with temporary vs. temporary) and type of consequence (e.g., depletion tasks compared with choice).

Our theory and findings contribute to two main areas of research. First, previous research in the domain of nonconscious goal pursuit has shown that nonconscious goal conflict can systematically affect the reasoning processes governing people's judgments (Kleiman & Hassin, 2013). However, no research to date has examined the effect of and the processes by which conflict mindsets may affect conflict resolution and choice. Because judgments and evaluations are known to often rely on mental processes other than choice (Einhorn & Hogarth, 1981; Kahneman, 2003), the current report takes this important next step. Second, within the decision making literature, ample research has shown that conflict can lead to costly choice deferral (Dhar, 1997; Iyengar & Lepper, 2000). This increased deferral has sometimes been explained by individuals' choice of an emotional coping strategy (Folkman & Lazarus, 1988; Luce et al., 1999), in which people cope with the negative affect generated by a conflict by fleeing the choice. This report suggests that exposure to conflicting goals can activate a conflict mindset and may have the opposite effect—causing individuals to adopt cognitive procedures that facilitate systematic decision processes and lead to increased choice.

#### Conclusion

The current findings shed light on the role of conflict in facilitating choice. Much attention has been focused on instances where conflict leads to avoiding choice. We suggest that the traditional view of conflict as causing a paralytic flight from choice may not tell the whole story.

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