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Value From Adversity:

How We Deal With Adversity Matters

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Abstract

Participants in our study worked on an anagram task to win a prize while aversive noise played in the background. They were instructed to deal with the noise either by "opposing" it as an interference or by "coping" with the unpleasant feelings it created. The strength of attention to the opposing or coping response to adversity was measured by poorer recognition of the content of the background noise. For the "opposing" participants, it was predicted that the more they attended to opposing the interference, they stronger they would engage in solving the anagrams to win the prize, which would increase the prize's value. For the "coping" participants, it was predicted that the more they attended to coping with their unpleasant feelings, the weaker they would engage in solving the anagrams to win the prize, which would decrease the prize's value. The results supported both predictions.

Keywords: motivation, value, engagement, difficulty, adversity, regulatory engagement theory

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It is common for people to confront difficulties while they pursue their goals. Obstacles in the path toward a goal have to be removed. Forces pushing back from the goal have to be resisted. Aversive background conditions must be dealt with. But does the value of the object of the goal pursuit vary depending on *how* we deal with the adversity? If so, this suggests new ways to think about how obstacles in goal pursuit affect goal engagement and value.

There are different perspectives regarding the impact of adversity on value. One perspective is that aversiveness could decrease the value of the goal object by associating that object with the unpleasant experience produced by the situation (e.g., Eagly & Chiaken, 1993; Kimble, 1961). Alternatively, from a dissonance perspective, if individuals freely choose to deal with a difficulty, the value of the goal object could be increased to justify having chosen an aversive situation (e.g., Aronson & Mills, 1959; Festinger, 1957). A third motivational intensity perspective proposes that the high anticipated difficulty of succeeding on a task under adverse conditions mobilizes energy for task engagement and this in turn increases the attractiveness of the goal object (e.g., Brehm & Self, 1989; Brehm, Wright, Solomon, Silka, & Greenberg, 1983).

Our research complements these other perspectives by considering the impact on goal value from *how* the adversity is managed during goal pursuit. When people encounter adversity in goal pursuit, they can either redouble their focus on the task at hand (e.g., the kind of response to difficulty that Woodworth (1940) described as resistance, as illustrated by leaning into a wind that is impeding one's progress) or they can direct their attention away from the task at hand and attend instead to something else, such as their unpleasant feelings. When people focus their

attention on the task at hand, the more engaged they will be in focal goal pursuit, whereas when people attend to their feelings, the less engaged they will be in focal goal pursuit.

We suggest that regulatory engagement theory (Higgins, 2006; Higgins & Scholer, 2009) can provide one answer as to how this differential engagement affects goal value. This theory proposes that value is not just an experience of pleasure or pain but an experience of the motivational force of attraction toward or repulsion away from something (cf. Idson, Liberman, & Higgins, 2000). Because it is a *motivational force experience* and not only a hedonic experience, there can be contributions to the overall experience of value intensity other than hedonic experience.

One of the contributors to value intensity specified by regulatory engagement theory is how strongly people are engaged (i.e., involved, occupied, and absorbed) in goal pursuit. Engagement strength contributes to the *intensity* of the motivational force experience and thus to the experience of attraction or repulsion. When working toward a positive reward attained from successful goal pursuit, such as a prize, stronger engagement in the goal pursuit activity will increase (i.e., intensify) attraction toward the reward while weaker engagement will decrease (i.e., de-intensify) attraction. We propose that when individuals handle adversity by opposing it and increasing attention to the focal task, this will increase engagement in the goal pursuit, increasing goal value. However, when individuals handle adversity by turning their attention away from the focal task in order to cope with their negative feelings, this will decrease engagement in the goal pursuit, decreasing goal value.

To test these predictions, the current study investigated how different kinds of instructions about how to handle an aversive force (an interfering background noise) influenced goal value (a prize associated with completing a set of anagrams) to the extent that participants

handle the aversive force as instructed. While working on an anagram task, participants were instructed to either *oppose* the background noise as an interfering force or to *cope* with the unpleasant feelings it created. What is critical to test our predictions is that participants do, in fact, respond to the adversity of the background noise as instructed—either by paying attention to opposing the noise as an interfering force or by paying attention to coping with the unpleasant feelings it creates. Importantly, both paying attention to opposing an interference and paying attention to coping with unpleasant feelings means paying attention to *something other than the background noise itself*. Therefore, increased attention to dealing with the adversity as instructed, i.e., *for both* opposing and coping responses, should result in *poorer* memory for the specific contents of the noise.

It was predicted that poorer memory for the noise content in the "opposing" condition would reflect a stronger response of opposing the interference as instructed, strengthening engagement in the focal task and thereby intensifying attraction to the prize (i.e., increasing goal value). In contrast, poorer memory for the noise content in the "coping" condition would reflect a stronger response of coping with unpleasant feelings as instructed, weakening engagement in the focal task and thereby de-intensifying attraction to the prize (i.e., decreasing goal value). Importantly, we are not predicting a main effect of instructions (opposing *vs*. coping) because a weak opposing response and a weak coping response would have opposite effects on engagement in the focal task and opposite effects on memory for the noise content, i.e., free up attention for the noise content resulting in better rather than poorer memory. What we are predicting, as described above, is an interaction for intensity of attraction to the prize between Response Type (opposing *vs*. coping) and Response Strength (poorer memory for the noise content indicating stronger opposing or stronger coping response).

Method

Participants. Sixty-nine (48 females, mean age 22 years) students from the University of Amsterdam were recruited to participate in a one-hour battery of unrelated studies. They received €7 ($11) or course credit for their participation. (There were no gender effects.)

Procedure. The experiment was introduced as a study of performance under auditory distraction for problems that require verbal fluency. Participants were seated in separate cubicles, were asked to put on headphones, and were told that they would complete a verbal anagram task in the presence of different background noises in order to simulate real-world conditions in which ambient noises are sometimes present in people's working environments. They were further told that if they performed well, they could earn a lottery ticket with a 10% chance of winning a $10 prize certificate to a bookstore or a movie theater close by (type of prize was counterbalanced). Participants were given practice anagrams to ensure they understood the task. They were encouraged to work quickly and accurately to solve as many anagrams as possible during an eight-minute period.

The participants were randomly assigned to one of two instructions for how they should deal with the background noise they would hear while working on the task. Participants in the "opposing" condition were told, "the background noise is something you will have to overcome in order to attend to the task", and "to do well on the task, you will need to overcome the distraction and oppose its interference." Participants in the "coping" condition were told, "the background noise is a bit of a nuisance to cope with. It is something that may cause you to feel a bit unpleasant—a feeling that you'll need to cope with." The noise was the same for everyone. It was a series of different animal sounds (e.g., birds, sheep, horse, bear). There were twelve

different sounds, each of which was played either six or seven times until the time limit for solving the anagrams had passed (8 minutes).

After ostensibly checking their solutions, the experimenter told all participants they had won the lottery ticket for the prize. Participants indicated how much they valued this prize on a 9-point scale ranging from 1 (not at all) to 9 (very much)—the "value of the prize" primary dependent measure. At the end of the study, there was a surprise recognition task for the content of the background noise that served as our measure of attention to dealing with adversity as instructed. In this task, participants were presented with each of the twelve animal sounds that had been played during the anagram task and an equal number of animal sounds that had not been played before. These sounds were presented one at a time in random order. For each sound, participants indicated whether or not they had heard it before.

Results

Pilot study check of aversiveness of background noise. Twenty-five participants were randomly assigned to the two frame conditions and were asked to rate how pleasant and how unpleasant the background noise was, each on a 9-point scale ranging from 1 (not at all) to 9 (very much). There were no differences in the ratings of how pleasant or how unpleasant the noise was based on framing. In both framing conditions, the noise was rated low in pleasantness ($M_{Opposing}$ = 2.58, SD =1.78; M_{Coping} = 2.85, SD = 2.23), $F(1,23) < 1$, and moderately unpleasant ($M_{Opposing}$ = 5.50, SD = 2.54; M_{Coping} = 6.54, SD = 2.30), $F(1,23) = 1.15$, $p > .25$. We also created an unpleasant minus pleasant difference score. This score was significantly greater than zero in both the "opposing" condition (M = 2.92, SD = 3.48), $t(11) = 2.91$, $p = .01$, and in the "coping" condition (M = 3.69, SD = 3.43), $t(12) = 3.89$, $p = .002$, and it did not vary significantly between

framing conditions, $F < 1$. Thus, the background noise, as intended, was clearly experienced as unpleasant in both framing conditions.

Memory for the background noise content to measure attention to dealing with adversity. The proportion of hits (correct identification of old items) and false alarms (failure to reject new items) from the recognition memory task were used to compute non-parametric measures of recognition accuracy, A′ (Grier, 1971). This index reflects the degree that each participant correctly discriminated correct old items from new foil items (A′), such that higher A′ scores reveal greater sensitivity. We reasoned that participants who paid more attention to either opposing or coping with the noise adversity as instructed would pay less attention to the content of the background noise, and this would be reflected in their having *lower* A' scores, i.e., lower recognition memory for the background information.

Notably, there was no significant difference between conditions in the number of anagrams solved correctly ($M_{Opposing}$ = 12.46, SD = 4.83; M_{Coping} = 10.94, SD = 5.09; $F(1,67)$ = 1.61, p = .21). Anagram performance was not a significant predictor of A′, $F(1,66) < 1$. There was also no significant difference on A′ as a function of framing condition, $F(1,67) = 2.33$, p = .13 (M_{Opposing} = .76; SD = .11; M_{Coping} = .80, SD = .10). However, there were individual differences in where attention was directed within the opposing and coping conditions that, as predicted, influenced the value of the prize.

Value of the prize. There were no significant main effects of either condition framing (i.e., response type) or A′ (i.e., response strength) on perceived prize value. However, as predicted, there was a significant Response Type X Response Strength interaction on value of the prize, B = 8.58, SE = 2.72, $t(65) = 3.16$, p = .002. In the "opposing" condition where they

were instructed to pay attention to opposing the adversity, as attention to the background noise decreased (i.e., poorer recognition memory A′ as a measure of a stronger opposing response), the value of the prize *increased*, $B = 7.33$, $SE = 3.63$, $t(65) = 2.02$, $p < .05$. In contrast, in the "coping" condition where they were instructed to pay attention to coping with their unpleasant feelings, as attention to the background noise decreased (i.e., poorer recognition memory A′ as a measure of a stronger coping response), the value of the prize *decreased*, $B = -9.83$, $SE = 4.04$, $t(65) = -2.43$, $p = .02$ (see Figure 1). Including performance on the task as a covariate, the Response Type X Response Strength interaction remained significant, $B = 8.36$, $SE = 2.72$, $t(64) = 3.08$, $p = .003$.

General Discussion

The results of our study supported our predictions. We found a Response Type x Response Strength interaction on the value of the prize. Specifically, for participants instructed to deal with the adverse background noise as an interference to be opposed, it was predicted that poorer memory for the noise content would reflect a stronger response of opposing interference as instructed, i.e., concentrating harder on the given task, which would *strengthen* engagement in solving the anagrams to win the prize and thereby intensify attraction toward the prize. The results supported this prediction. In contrast, for participants instructed to deal with the adverse background noise by coping with the unpleasant feelings it created, it was predicted that poorer memory for the noise content would reflect a stronger response of coping with unpleasant feelings as instructed, which would *weaken* engagement in solving the anagrams to win the prize and thereby de-intensify attraction toward the prize. The results also supported this prediction. Our findings extend current models of how obstacles affect goal value by providing evidence that *how* adversity is dealt with plays a critical role in whether adversity increases or decreases

value. According to some psychological perspectives, such as the classical conditioning perspective (e.g., for reviews, see Eagly & Chiaken, 1993; Kimble, 1961), adversity associated with the pursuit of a positive goal object can decrease its value. According to other psychological perspectives, such as cognitive dissonance theory (e.g., Aronson & Mills, 1959; Festinger, 1957), reactance theory (e.g., Brehm, 1966; Brehm & Brehm, 1981; Wicklund, 1974), or motivational intensity theory (e.g., Brehm & Self, 1989; Brehm et al., 1983), adversity associated with the pursuit of a positive goal object can increase its value. Our findings complement these perspectives by applying regulatory engagement theory (Higgins, 2006; Higgins & Scholer, 2009) to predict that dealing with adversity by opposing it as an interference versus coping with the unpleasant feelings it created can have opposite effects, with the former increasing value and the latter decreasing value. Moreover, our results show that these opposite effects on value from *how* adversity is dealt with become stronger as more attention is paid to opposing and more attention is paid to coping.

Practically, this means that one could decrease the attractiveness of cigarettes by instructing quitting smokers to focus strongly on coping with the negative feelings associated with the urge to smoke, whereas one could increase the attractiveness of healthy food by instructing dieters to focus strongly on opposing the temptation to eat fatty snacks. Future research that examines how these different mechanisms (e.g., regulatory engagement, reactance, cognitive dissonance) could be combined to maximally increase attraction toward adaptive positive objects (e.g., healthy foods) or to maximally decrease attraction toward maladaptive positive objects (e.g., cigarettes) will be important both conceptually and in practice.

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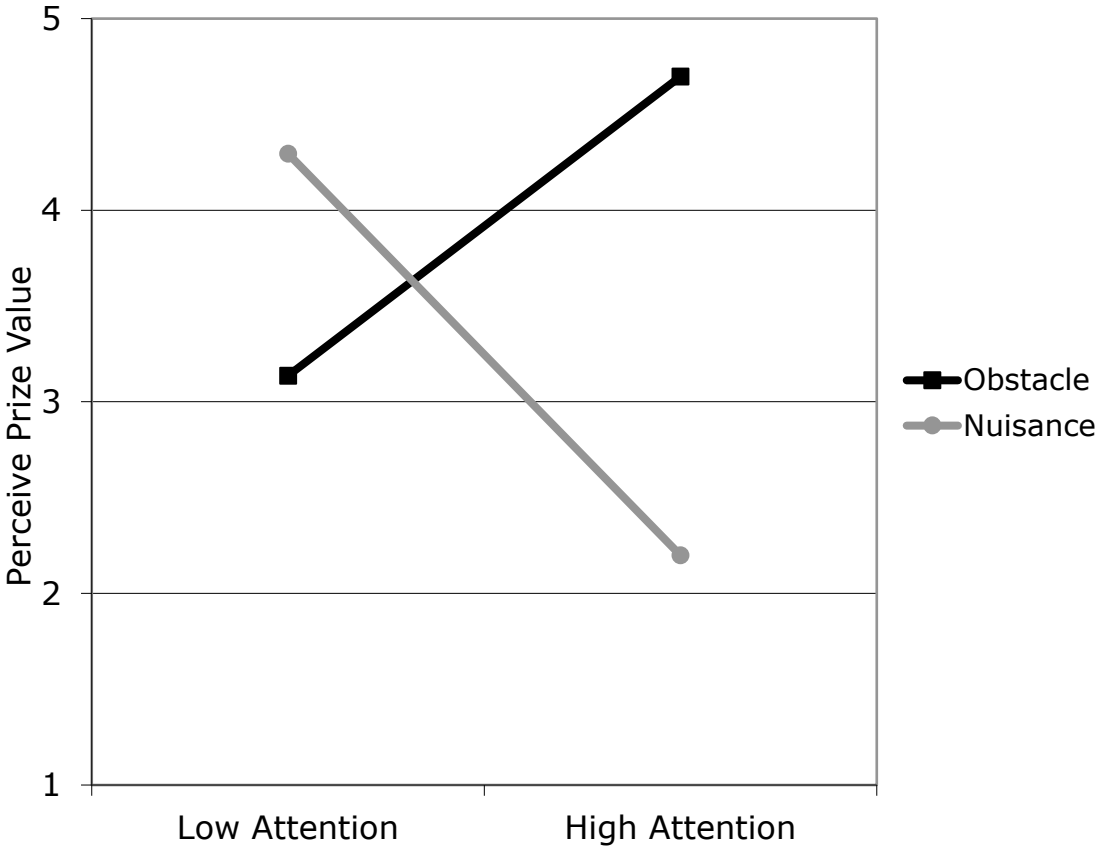

Figure 1. Effects of attention to dealing with adversity (high; low) and way of dealing with adversity (opposing interference; coping with unpleasantness) on value of prize. Predicted value for low attention is 1 *SD* above the mean for A′; high attention is 1 *SD* below the mean for A′.