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Labovitz School of Business & Economics, University of Minnesota Duluth, 11 E. Superior Street, Suite 210, Duluth, MN 55802

Functional Regret: the Positive Effects of Regret on Learning From Negative Experiences

Noelle Nelson, University of Minnesota, USA

Selin Malkoc, Washington University in St. Louis, USA

Baba Shiv, Stanford University, USA

Consumers often experience regret, mainly after making decisions. Existing research on regret mainly examined its dysfunctional negative consequences. We propose that regret can be functional and guide decision making in a predictable manner. Examining real-life data (Study 1) and manipulating only the emotional component of experienced regret (Studies 2-4), we find that regret leads to differential performance depending on the similarity of the domain. Unlike the previous literature, we find that in domains they have failed before, regret helps consumers make better decisions. We also show that (aside from cognitive feedback) higher emotional intensity of regret is important for learning.

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Special Session Summary

The Rosy Side of Negative Emotions

Uzma Khan, Stanford University, USA

SESSION OVERVIEW

Recent decades have witnessed a burgeoning interest in the role of emotions in decision-making across several different fields including, marketing, psychology and economics (Pham 2007, Schwartz 2000; Vohs and Baumeister 2007). Conventional wisdom and most of past research suggests that emotions, especially negative ones, can adversely affect decision-making and can have both short and long-term consequences. For example, a study by Shiv, Loewenstein and Bechara (2005) showed that people who do not experience negative emotions after losses (due to brain damage) end-up making more money than those who do. The idea being that experiencing of negative emotions can guide bad decisions. Similarly, Tiedens and Linton (2001) showed that negative affect (e.g., anger) leads to impulsiveness and shallow-processing of information. Others have similarly documented detrimental effects of negative affect on performance (Zeelenberg and Beattie 1997), product evaluation and brand attitude (De Houwer, Thomas, and Baeyens 2001). Hence a picture that emerges from the above literature consistently portrays that negative emotions generally impair judgment and decision-making.

Papers in the present session take another in-depth look at the functioning of commonly experienced negative emotions and uncover how negative affect, despite its reputation, can help improve decision-making and wellbeing in certain contexts. The session includes three papers, which are all in advance stages of completion. Contrary to the established findings, the papers show positive effects of everyday negative emotions, such as anger, regret and sadness in several different domains including, product evaluations and choice satisfaction, self-control, learning, and judgment-biases.

In the first paper, Nelson, Malkoc and Shiv examine the upside of regret. They argue that, unlike past literature which has mainly focused on negative impact of regret, regret can play a functional role in learning from past mistakes. They show that manipulation of only the emotional component of experienced regret leads to better performance on decisions within the domain where regret is experienced, but not in dissimilar domains.

In the second paper, Khan, Maimaran and Dhar show positive influence of anger-an emotion generally perceived to have adverse effects-on choice behavior and satisfaction. For example, they find that angry people are less likely to defer choice and end up being more satisfied with their chosen options. They also demonstrate that anger decreases a bias to choose the compromise option and can induce more goal-consistent actions.

Finally, the third paper by Zemack-Rugar shows how negative emotions can improve self-control. She shows that sad individuals increase self-control as compared to a neutral baseline. These findings are contrary to existing research which argues that negative emotions are detrimental to self-control (Tice et al., 2001) and are explained by accounting for emotion-regulation goals and a new variable–emotion regulation cognitions.

Taken together, the papers in this session shed a new light on the functioning of common negative emotions and deepen our understanding of their role in judgment and decision-making with particular implications for choice satisfaction, learning, brand evaluations and self-control. Given the prevalence of negative emotions in everyday life, it is important to not only understand their detrimental effects but also to appreciate how they can improve decision-making.

EXTENDED ABSTRACTS

"Functional Regret: The Positive Effects of Regret on Learning from Negative Experiences"

Noelle Nelson, University of Minnesota, USA
Selin A. Malkoc, Washington University in St. Louis, USA
Baba Shiv, Stanford University, USA

Popular wisdom encourages people to "learn from experiences", but not regret past actions, implying that people can gain all necessary information from their mistakes without enduring the pain. Academic literature can also view regret and negative emotion as somewhat detrimental. For example, participants who lost money in a negotiation task lose even more money on a subsequent negotiation task when they anticipate regret (Zeelenberg and Beattie 1997). Also, Shiv, Loewenstein and Bechara (2005) showed that brain damaged patients who do not suffer negative emotional feedback after a financial loss end up making "better" decisions (i.e., stick to high-risk, high-return investments)..

Regret has both cognitive and emotional components (Zeelenberg 1999). Most work on regret deals with the cognitive feedback (i.e. correctness of decision) and finds that regret hurts later decisions or induces switching from a regretted choice (whether appropriate or not). To our knowledge, no research has examined the role of the emotional component. We attempt to fill this gap by taking the evolutionary perspective that regret is functional and necessary for learning from negative experience and that regret is useful beyond simply inducing switching behavior; it affects effort.

First, our research argues that feeling the negative emotion associated with an experience leads to learning in a subsequent situation. Second, regret will not always have a positive effect on learning. Some stimulus in the new environment must trigger the emotion associated with the initial event (Baumeister et. al. 2007) for it to be functional. The stronger the trigger (i.e. initial emotion) the more effective regret is for learning.

H1: Experiencing more emotional regret will demonstrate more learning in subsequent similar decisions.
H2: Experiencing more emotional regret will demonstrate no learning in subsequent dissimilar decisions.

To test our hypotheses, study 1 examined field data from the 2008 Olympics. We analyze swimmers who swim multiple final races of the same (similar domain) and different (dissimilar domain) strokes. The change in time from one race to another is our dependent variable. We operationalized regret based on prior research indicating that athletes who win silver medals (second place) experience greater negative emotion than people who win bronze medals (even though they perform objectively better; Medvec, Madey and Gilovich 1995). Therefore, swimmers who placed second (third) in their first race serve as our high (low) regret condition. We find that swimmers who come in second (third) in a previous race perform relatively better (worse) in a subsequent similar race. There is no effect for swimmers who competed in two dissimilar races. Because second place swimmers feel more regret, their performance is enhanced in a subsequent similar trial.

Study 2 tested whether the negative emotion experienced in an earlier web search task would carry over to affect subsequent search behavior. Participants searched the internet for the lowest price they could find for a blender (which they thought would win them a cash

prize). All participants "missed" the prize by a small amount. Regret was manipulated with the size of the prize ($5 vs. $50). After a filler task, participants searched for a knife set they would give as a gift. As expected, participants who missed $50 ($5) and felt high (low) regret put more (less) effort (i.e. time) into searching a gift.

Our third study manipulated the intensity of emotional regret felt, while keeping the experience (and cognitive feedback) constant. Sawyer et al (1992) demonstrated that caffeine heightens emotion. Accordingly, we manipulated regret with caffeinated or decaf coffee. After drinking coffee, subjects completed a yoked buying task where they were given 5 tokens. Participants were told that they would see a random number of products in a random order and that they should indicate whether or not they wanted to buy each product. The rigged task resulted in everyone buying the U of Minnesota decal for 2 tokens and ending up 1 token short when the more desirable electronic game was presented. Therefore, all subjects felt regret. Lastly, participants indicated their willingness to pay for a related item (U of M keychain; triggering the initial experience) and an unrelated item (notebook).

We analyzed only the infrequent coffee drinkers, as these participants were expected to display sensitivity to the manipulation. A significant interaction emerged between the product type and caffeine level. Participants who consumed caffeine (high regret) were willing to pay less for the U of M keychain than those drank the decaf (low regret). However, there was no effect of caffeine on WTP of the dissimilar product (notebook).

Study 4 was similar to study 3, but regret level was manipulated by the attractiveness of the product the participant "missed". Participants went through the rigged buying task, bought the car decal and were unable to buy either an electronic game (low regret) or an iPod (high regret). The resulting design was a 2 (felt-regret: high vs. low) x 2 (decision domain: similar vs. dissimilar). Participants then indicated WTP for the similar (U of M keychain) and dissimilar (Eiffel tower keychain) products. We found a significant interaction such that participants who had felt high (low) regret over buying the U of M decal were willing to pay significantly less (more) for the U of M keychain, but there were no differences in WTP for the Eiffel tower keychain.

Overall, we propose and demonstrate that regret is necessary for learning from mistakes and can be functional. Unlike previous literature, we examine experienced emotional regret and find that in domains they have failed before, regret actually helps consumers' make higher quality decisions.

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"Positive Upshots of Anger in Decision-Making"

Uzma Khan, Stanford University, USA
Michal Maimaran, Kellogg–Northwestern University, USA
Ravi Dhar, Yale University, USA

The role of emotions in decision-making is gaining increased attention (Schwartz 2000). Generally, emotions have been shown to have negative effects on decision quality (Shiv et al. 2005). For example, one of the most frequently encountered emotions, anger, is perceived as a negative affect that leads to impulsiveness and shallow-processing (Tiedens and Linton 2001), higher action tendencies against others (Frijda, Kuipers and Schure 1989), careless thought and increased risk-seeking (Lerner and Tiedens 2006). Hence, the conventional wisdom is that anger leads to hasty and inferior decisions. In the current research, we argue that negative emotions like anger can have positive effects on decision-making. Specifically, we suggest that in certain decision contexts anger can lead to better outcomes due to a less careful processing of local tradeoffs.

We examine this proposition for two well-established context effects—choice-deferral and compromise-effect. Tradeoff difficulty, resulting from effortful processing of available options and greater focus on local comparisons, has been implicated in both choice-deferral (e.g., when all options are highly attractive; Dhar 1997) and a tendency to choose the middle option (e.g., to avoid loss on either dimension; Simonson 1989). To the extent that angry individuals engage in less careful processing of local tradeoffs, we predict that they will be less susceptible to choice-deferral as well as a compromise-effect as both these biases arise due to in-depth processing of difficult tradeoffs. In summary, we predict that angry individuals are less likely to base their choice on in-depth processing of the local characteristics of the decision context. This in-turn reduces decision biases that results from a focus on the local context of the decision and hence increase long-term decision satisfaction. We tested these propositions in five studies.

In Study 1 participants were induced with anger or neutral emotion and asked to choose between two flight-tickets or defer the decision. Past research has shown that people often defer a choice when provided several attractive options even though each option by itself is seen as sufficiently attractive (Iyengar and Lepper 2000). We hypothesize that angry individuals are less likely to suffer from such decision-inertia. Consistent with our prediction significantly fewer participants deferred the decision to purchase the flight ticket in the anger condition as compared to the neutral-condition (17% vs. 42%).

In Study 2 we examined the effect of anger on choice of the compromised option. Participants chose from either a 2- or 3-options choice-sets in four product categories (laptops, binoculars, restaurants and flashlights). Collapsing across the categories we found the expected compromise effect among neutral-mood participants i.e., a 28% increase for neutral participants in the share when an alternative became a middle-option compared to only a 9% increase in its share among angry participants. We explain that since anger leads to shallower processing and lower risk-aversion, angry people are less likely to go for the middle option which is generally the result of trade-off difficulty and need-for-justification

We tested our prediction regarding reduced reliance on local tradeoffs in Studies 3 and 4 and found that 1) angry people reported fewer attribute-level tradeoffs in the explanations of their choice and 2) the decreased tendency to choose the compromise option observed among angry participants was mediated by the level of attribute-level tradeoffs.

Finally, Study 5 used real choices between two different packs of cookies and showed that angry participants were 1) more likely to choose a pack as opposed to taking the no-choice option and 2) reported greater satisfaction with their choice a week later than sad or neutral-mood participants. Besides illustrating the positive affect of anger on choice-satisfaction, the study also demonstrates that the affect of anger are unique and different from other negative emotions such as sadness.

These findings suggest that anger plays an important role in determining individuals' tendency to make a decision, the type of decisions they make, and how satisfied they are with their decisions in the long-run.

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"Negative Emotions Can Lead to Increases in Self Control: The Mediating Role of Emotion-Regulation Cognitions"

Yael Zemack-Rugar, Virginia Tech, USA

Negative emotions and self control are considered antithetical. Contrary to this view, this research shows that under certain conditions negative emotions can increase self-control.

Previous theory on an emotion-as-motivation framework. It argues that the goal to emotion-regulate (i.e., feel better in a negative emotion) is contrary to self control. We extend this theory by accounting for a heretofore unaccounted for variable–emotion-regulation cognitions. These cognitions refer to thoughts individuals have regarding what (self-control) behaviors they believe would make them feel better. We draw a more nuanced theoretical and empirical mapping of the relationship between negative emotions and self control.

We applying the two basic premises of goal theory: (1) that emotion-regulation cognitions (i.e., thoughts individuals have about what behaviors are useful for goal attainment) should affect emotion-regulation goal-related behavior, and (2) that these cognitions should only affect behavior when the goal is active. In three studies we demonstrate the centrality of emotion-regulation cognitions in predicting behavior and rule out alternative explanations.

In study 1 we manipulate emotion-regulation cognitions (ERC henceforth), making participants believe that reducing self-control will make them feel either better/worse. We expected an interaction of emotion by ERCs such that in a sad (negative) emotion condition, where the emotion-regulation goal (to feel better) is active, participants will increase/reduce self control in accordance with ERCs. We expected that in a neutral condition, where the emotion-regulation goal is inactive, ERCs will not affect behavior. These predictions were confirmed. Additionally, sad participants whose ERCs suggested reducing self-control was harmful for emotion-regulation showed an absolute increase self control.

These results are contrary to resource-depletion theory. Equally depleted (sad) individuals show different self-control levels; these levels occur despite equal activation of the emotion-regulation goal. Further, these differences emerge due to differences in ERCs and disappear when the emotion-regulation goal is inactive (neutral), lending initial support for our theory.

In study 2 we measure ERCs across two different negative emotions (sadness and guilt) in a pretest. The data shows that guilty individuals' ERCs indicate self-control is less useful for emotion regulation than sad individuals' ERCs. Given the hypothesized importance of ERCs, we predicted that guilty participants would show higher self control than sad participants.

Consistent with goal theory, this effect should disappear when the emotion-regulation goal is inactive. We deactivate this goal for half of our participants; when the emotion-regulation goal was inactive, no differences were expected. We also include a neutral condition as a baseline.

Our predictions were confirmed showing (a) guilty participants showed higher self control than sad and neutral ones, and (b) these effects disappeared when the emotion-regulation goal was deactivated. These findings show the importance of ERCs in predicting behavior and provide a second demonstration of absolute increases in self control in a negative emotion, even when the emotion-regulation goal is active.

In study 3 we seek to demonstrate the mediating role of ERCs and to rule out an alternative explanation based on appraisal theory. We also identify a moderator that helps in the prediction of ERCs.

We conducted a three-phase study (same participants in all phases) inducing sadness/guilt/neutral in each phase, and measuring ERCs, self-control behavior, and cognitive and appraisals and EPO. First, this design allows us to test the mediating role of ERCs in determining self-control behavior.

Second, this design allowed us to examine an alternative explanation based on cognitive appraisals. One might argue that the appraisal of control/responsibility (which differs between sad/guilty) leads to differences in self-control behavior. We argue that appraisals and ERCs are distinct theoretically; the former has to do with how we came to feel the way we do, and the latter has to do with how we can stop feeling the way we do. There is also empirical evidence for this distinction. In our study 1 appraisals were identical for all sad participants, but self-control behavior differed; this difference was based on ERCs. Given these empirical and theoretical points, we predicted appraisals would not predict behavior or ERCs.

Third, we examine in study three the actual relationship between ERCs and appraisals. We predicted this relationship was

moderated by a third variable—EPO. EPO is a measure of the degree to which consumers focus more on the negative vs. positive outcomes of self control. Those high in EPO, tend to focus more on the negative outcomes of reducing self control.

We predicted when control appraisal was low, consumers would feel that no effort would affect their emotional outcome. Thus, their ERCs would suggest that exerting self-control effort is useless for emotion-regulation. However, if control appraisal was high, consumers would consider whether exerting self-control effort was worthwhile based on whether they thought the outcome of that effort would be positive/negative; this is measured with EPO. Those consumers high on EPO (think the outcome of reducing self-control is relatively negative) would have ERCs suggesting reducing self control is hurtful for emotion-regulation; the opposite would be true of those low in EPO.

All of the predictions for study three were confirmed. Consistent with study 2, guilty participants' ERCs showed reducing self control was less useful for emotion regulation than sad and neutral ones; they, therefore showed higher levels of self control in choice. Importantly, ERCs mediated the effects of emotions on self-control behavior.

Appraisals did not predict ERCs directly, nor did they predict behavior. Instead, the predicted interaction of appraisals by EPO predicted ERCs. This interaction did not predict behavior. In models including all variables, ERCs was consistently the only significant predictor.

These findings together suggest the important role that ERCs play in the relationship between negative emotions and self control. They demonstrate that we should account for ERCs in order to create a more nuanced view of this relationship.