

To feel, or not to feel, is it a question of time? The influence of feedback availability on the magnitude of anticipated regret

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Anticipated regret refers to the main psychological effects of the various worries that beset a decision maker before any losses actually materialize (Janis & Mann, 1977). There has been ample research on how anticipated regret might influence people's subsequent behaviors (e.g., Zeelenberg, 1999), but little work has examined what might affect the magnitude of anticipated regret. The present study aims to investigate the role of availability of outcome. Specifically, whether the outcome is immediately available or not might influence how much anticipated regret decision makers experience. The result reveals that people indeed experience greater anticipated regret when the outcome is immediately available. The finding contributes to our understanding of anticipated regret by illustrating possible influences posed by temporal distance of feedback. Furthermore, the finding offers implications for decision-making process.

Introduction

Many Americans spend their hard-earned dollars wagering on NCAA March Madness tournament brackets each year. Once they place their bets, following the games turns into an exciting, but also agonizing, experience. As some people might have experienced, the unsettling anxiety caused by the fact they might be wrong is often stronger than the sting of finding out that they actually are wrong. Regret is often defined as an aversive emotion a decision-maker experiences upon the discovery that she could have gained a higher level of utility if she had taken a different choice in the past (Humphrey, 2004). However, as regret theory posits, anticipation of future regret can play an important role in decision making process (Loomes and Sugden, 1982; Savage, 1951). People not only experience regret afterwards, but also experience anticipated regret before the actual turnouts. Janis

and Mann (1977) elegantly conceptualized the role played by regret before the decision outcomes become available: "Anticipatory regret is a convenient generic term to refer to the main psychological effects of the various worries that beset a decision maker before any losses actually materialize . . . Such worries, which include anticipatory guilt and shame, provoke hesitation and doubt, making salient the realization that even the most attractive of the available choices might turn out badly" (p. 222). There has been ample research on how anticipated regret might influence people's subsequent behaviors (e.g., Zeelenberg, 1999), but little work has examined what might affect the magnitude of anticipated regret. It is reasonable to suspect that the availability of outcome may play a role. At the time of decision, whether the outcome is immediately available or not might influence how much anticipated regret decision makers experience.

How does time change our perception?

Research on intertemporal decisions has shown that people are heavily biased toward the present (e.g., Thaler 1981; Zauberman 2003). It has been shown that immediate affective rewards and punishments are weighted much more heavily than delayed affective consequences (Loewenstein, 1996). Loewenstein (1996) argued that the different weighting of immediate and delayed affective consequences results from the differential accessibility of current and delayed affective responses. For example, most people prefer getting \$10 dollars tomorrow than getting \$10 two months later. Although the objective value (i.e., \$10) remains the same, the temporal difference determines people's preferences. The psychological mechanism behind such effect, as suggested by Loewenstein (1996), is that it is generally easy to imagine immediate emotional response, whereas it is much more difficult if the event takes place in the distant future. This argument is further supported by recent brain imaging studies revealing that preferences for immediate rewards are associated with greater activation in parts of the limbic system associated with affect (McClure, Laibson, Loewenstein, & Cohen, 2004). An immediate deprivation is much more painful than a delayed deprivation. When people imagine finding out that the laptop they brought earlier at \$600 went on sale the next day for \$400, the pain should to be greater than that felt when they find out three months later. Kassam, Gilbert, Boston and Wilson (2008) recently proposed that people do not simply underweight future affective responses; they actually do not know how they will feel in the future. "Future anhedonia" (Kassam et al., 2008) refers to the phenomenon that people mistakenly believe that they will experience less intense affect when an event happens in the future than when the same event happens in the present. In one study, researchers showed that people believed that a monetary gain would bring them less happiness when it happened in the future than when it happened in the present. As the authors argued, "the standard account of temporal discounting suggests that there is something wrong with people's decisions about the future but nothing wrong with their perceptions of it" (Kassam et al., 2008, p. 1536). The result of this study (Kassam et al., 2008) suggest that people do not know how they will feel when they are confronted by the changed price tag on the laptop three month later, as they cannot gauge the pain the newly presented fact will cause them, thus they report less anticipated regret than they do for an easily imaginable, immediately accessible outcome.

The Current Study

The authors hypothesize that people will report greater anticipated regret when the outcomes are immediately available; whereas they will report less anticipated regret when the outcomes are delayed and psychologically distant. To investigate the validity of this prediction, the authors designed a paradigm which involves five hypothetical decisions. Participants were instructed to rate their anticipated regret with regard to various decision outcomes. In the immediate feedback condition, the consequences of the choices were delivered right afterwards or in a day, whereas in the delayed feedback condition the consequences were delivered three months after the decisions were made. It was predicted that participants in the immediate feedback condition will rate (on a 1-5 scale, 1 being not at all regretful and 5 being extremely regretful) their anticipated regret to be greater than those in the delayed feedback condition.

Method

Participants

Sixty-eight participants enrolled in various classes at the Ohio State University volunteered to fill out the questionnaire designed to measure anticipated regret in either immediate or delayed outcome conditions. The age of participants ranges from 18 to 30, with mean of 21.38 (SD = 1.8). Among sixty-eight participants, twenty-six were male, and forty-one were female, with one participant's gender unspecified.

Procedure

One experimenter announced before the start of the class that students were welcome to stay after the class was over to fill out a questionnaire on people's anticipated regret. Participants filled out and returned the questionnaires anonymously. They were asked to imagine themselves in five hypothetical situations in which they had made various decisions (e.g., purchased a laptop, violated certain traffic regulations, invested in a certain stock) and rate their anticipated regret (How much regret do you feel about your decision) on a 5-point scale ranging from 1 (not at all) to 5 (an extreme amount). Participants were presented with five hypothetical situations very similar to the following one:

You are a contestant on the game show "Let's Make a Deal" and Wayne Brady offers you two backpacks; one contains cash and the other just old newspaper. You must choose which backpack you want. As soon as you choose he gives you the backpack right then/ three months from now. You decide to choose

the one on the left. Imagine you receive the backpack and find out it only contains newspaper, **how much regret** do you feel?

There were two versions of the questionnaires, differed by conditions. In one, participants were told to imagine the outcome was immediately available (e.g., they went to the mall the next day and saw the laptop on sale at a much lower price) and rate their anticipated regret; in the other one, participants were asked to imagine that the outcomes were delivered three months later (e.g., they went to the mall three months later and saw the laptop was on sale) and rate their anticipated regret accordingly. They were also asked to rate their expected happiness for the opposite, positive outcome (e.g., they went to the mall the next day/three months later and find out they had purchased the laptop at a discount price; the product was now priced at \$800).

Participants were also asked to fill out some basic demographic information (e.g., age, gender, year in school) at the end of the questionnaire. Participants were also asked to complete a measure of their risk taking tendency (i.e., general attitude towards risk taking) in which they indicated to what extent they agreed with the statement “I tend to take a lot of risks in life” on a 5-point scale. All participants were given a debriefing form after they handed in the questionnaires.

Results

One participant (in the immediate feedback condition)’s score was not included because of extremely low rating on seriousness (1 on a 1-5 scale), which left us with sixty-six participants in total in the final analysis. A reliability analysis revealed that the item consistency between five measurements of anticipated regret was satisfactory with Cronbach’s $\alpha = .64$. Temporal distance condition and gender were contrast coded (-1 for the delayed condition and 1 for the immediate condition; -1 for male and 1 for female). The temporal distance of the availability of outcomes (i.e., whether the outcomes are immediately or distantly available) significantly affected the magnitude of anticipated regret reported by participants, $t(65) = 2.29$, $p < .05$. Participants in the immediate outcome condition reported greater anticipated regret ($M = 18.75$, $SD = 3.62$) than participants in the delayed outcome condition ($M = 16.86$, $SD = 3.14$), Cohen’s $d = 0.56$. Preliminary analysis revealed huge difference in anticipated regret score for different genders. Therefore, subsequent analyses include an ANOVA and a multiple regression were conducted. ANOVA predicting total regret from gender and temporal distance condition revealed significant influence of both gender and condition; for gender, $F(1, 62) = 6.15$, p

$< .05$, $\eta^2 = 0.12$; for temporal distance condition, $F(1, 62) = 9.27$, $p < .01$, $\eta^2 = 0.08$. There is no interaction between gender and condition, $F(1, 62) = 1.17$, $p = .28$. Multiple regression predicting total regret from risk tendency, temporal distance, and interaction between risk tendency and temporal distance revealed that risk taking tendency significantly affected the magnitude of anticipated regret : $b = -1.15$, $t(63) = -2.40$, $p < .05$. In order words, as risk tendency increases, feelings of anticipated regret decreases. Temporal distance was shown to have a marginally significant influence of the magnitude of anticipated regret, $b = .78$, $t(63) = 1.96$, $p = .06$. The influence of interaction was shown to be nonsignificant, $b = -.67$, $t(63) = -1.43$, $p = .16$.

General Discussion

The current study reveals that people experience greater anticipated regret when the outcome is immediately available. The finding contributes to our understanding of anticipated regret by illustrating possible influences posed by temporal distance of feedback. Furthermore, the finding offers implications for decision-making process.

To feel, or not to feel, is it a question of time?

As the current study demonstrated, people experience more anticipated regret when they expect an immediate negative outcome. As regret theory (Bell, 1982) postulates, anticipated regret plays an essential role in determining the kinds of decisions people make, and the kinds of actions they are likely to take. If people were to send a love letter to declare their love for a secret crush, they might wish to do it over the summer when their heartthrob is out on vacation, since the pain of potential rejection would be so much more tangibly excruciating if it is delivered immediately. Imagine that person gets the letter the second day and mercilessly tears apart the sender’s heart either by gently letting them down or throwing the letter back at their face. Before mailing out that letter, they might as well remind themselves of the possible consequence and gauge the regret they might experience. If that person will not get the letter until two or three months later, however, the pain of rejection is far ahead in the future, and thus less tangible. People might not be able to access how much pain they would feel and the picture seems a lot more blurry in their head. The regret they might experience now seems trivial, and they drive to the postal office with full-blown pride that they are such a bold romantic person. As Loewenstein (1996) argue, immediate

affective responses are much more powerful determinants of people’s cognition and decision because they are so easily accessible than possible emotional responses in the far future. Research on affective forecasting suggests that people are extremely poor at predicting how they will feel in the future (Kassam et al., 2008). It is left to further research to test the accuracy of the forecasting of anticipated regret people reported in our study. Nonetheless, people might be less likely to take actions when the consequences of their actions are made salient and accessible to them.

Why more anticipated regret now? Implications for future studies.

As discussed, several processes may account for the effect found in the present research (time discounting and future anhedonia); it would be interesting to further investigate if any one of these accounts has a larger role in determining the observed effect. For example, it is possible to ask people to indicate the estimated magnitude of anticipated regret for a certain action and how much they care (to what extent does the anticipated regret influence their decisions) for events happen either in the proximal or distant future. According to the time discounting paradigm, people will be able to recognize that the magnitude of anticipated regret for near and distant future to be approximately the same, but they discount the importance of the anticipated regret for the distant future. According to the future anhedonia explanation, on the other hand, people should rate anticipated regret for future events to be much smaller (as demonstrated in the present study); smaller magnitude of anticipated regret will be given smaller weight or consideration in decisions, and vice versa (therefore, no discounting pattern will be observed). The current study also demonstrated the influence of importance of individual differences in determining the magnitude of anticipated regret. People who demonstrated greater risk taking tendency reported less anticipated regret for negative outcomes; and male reported less anticipated regret than female. The significant gender difference is consistent with prior research. As a meta-analysis by Byrnes et al. (1999) reveals, males generally exhibit a stronger risk-taking tendency than females. The current study provides further insight into this robust pattern: the observed difference might very likely result from the greater magnitude of anticipated regret experienced by females. According to regret theory, anticipated regret plays an important role in decision under uncertainty (Bell, 1982;

Loomes and Sugden, 1982; Savage, 1954). Generally, people tend to be more risk-averse when they perceive greater anticipated regret (Richard et al., 1996; Zeelenberg, 1999, 1996). Generally, anticipated regret leads to less risky choices when participants are accessible to full-knowledge feedbacks (Humphrey, 2004; Zeelenberg, 1996). Will people take less risk when the outcomes are available in the near future? Will they spend less money on their bets, knowing the game will be played tomorrow versus a month later? Will people unwisely squander their money gambling on some distant future outcomes? Will people spend less money if they are told to bet on the next year’s March Madness bracket? Additionally, in the current study, participants were recruited on campus; therefore it is hard to generalize the result to broader populations. It would be worthwhile to investigate a more diverse population and see if differences in life experiences would make a difference in the degree of anticipated regret people experience. No effect of age in the current study, but it might be due to the lack of age variance in our sample. It would be interesting to see if, for instance, older adults respond to these situations any differently than younger people. The measurement is newly devised and therefore may be improved in future studies to increase its validity. The wording of the questions could be adjusted to avoid misinterpretations and therefore increase inter-item consistency of the questionnaire. It would also be interesting to see if the strength of manipulation has influence on the observed pattern (e.g., will two-month or one-year delay generates different results?). With further testing and adjustment, the current measure may greatly improve in its measurement accuracy.

Conclusion

As the results indicate, people experience different level of anticipated regret depending on whether the outcome is immediately available. As argued, the shortened temporal distance is accountable for the observed pattern. The tangibility and accessibility of outcomes lead people to perceive the anticipated regret as greater. This is why those who bet on March Madness experience increasing uneasiness when the game gets nearer. As the results indicate, people experience different level of anticipated regret depending on whether the outcome is immediately available. As predicted, the shortened temporal distance is accountable for the observed pattern. This work has theoretical implications for work on regret theory and decision making research in general, and practical implications for improving people’s decision quality in everyday life.

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