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When curiosity killed regret: Avoiding or seeking the unknown in decision-making under uncertainty

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Abstract

In two experimental studies we investigated how curiosity and regret aversion affect decision-making under uncertainty. Building on insights derived from information-gap theory [Loewenstein, G. (1994). The psychology of curiosity: a review and reinterpretation. *Psychological Bulletin, 116*, 75–98], we demonstrate that curiosity may overcome regret aversion. In Experiment 1, we concentrate on the reluctance to opt for alternatives with uncertain outcomes and demonstrate that curiosity about the uncertain outcomes may override regret aversion. In Experiment 2, we focus on reluctance to expose oneself to potential regret-inducing information and demonstrate that curiosity may overcome this reluctance.

Keywords: Curiosity; Regret; Decision-making

Decision-making can be highly emotional. The process of choosing and the subsequent decision outcome may make us happy or sad. The emotion most studied in this respect is regret, and a basic finding is that people make regret-averse decisions that shield themselves from the possibility of regret. Consider, for example, a decision-maker who can choose between (a) receiving $100 and (b) flipping a coin that will yield $200 or nothing. If the decision-maker decides to flip the coin and loses, she may regret not taking the $100. This possibility of regret may be avoided by opting for the safe $100 and not flipping the coin (for a review, see Zeelenberg, 1999).

Other research has indicated that when people have already made a decision, they shield themselves from subsequent information that might indicate that they would have obtained higher outcomes had they decided differently. In particular, post-decisional information search tends to be biased in favor of information that supports the decision (Festinger, 1957, 1964; Frey, 1986). And when people are uncertain about whether feedback will be supportive, they prefer to avoid it completely (Northcraft & Ashford, 1990).

Thus, there are two main strategies to avoid regret: (1) people may prefer choosing alternatives that shield them from feedback on rejected alternatives, and (2) after decisions are made, they may avoid information that might indicate that they would have obtained higher outcomes if only they had decided differently. Note, however, that the disadvantage of these strategies is that one will have to go through life without having an answer to questions like: 'What would have happened if I would have flipped the coin?' and 'Would the information have revealed that I would have obtained worse outcomes if I had decided differently, or would outcomes have been better?'. That is, decisions that may shield us from regret may at the same time leave *curiosity* unsatisfied.

To our knowledge, research on regret avoidance has not addressed the possibility that strategies that on the one hand are attractive because they may reduce regret, may on the other hand have the disadvantage that they leave the

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decision-maker with unsatisfied curiosity. Curiosity and regret aversion may constitute two opposing forces in decision-making under uncertainty. Whereas regret aversion may induce decision-makers to avoid uncertain information, curiosity essentially entails attraction to uncertain situations. How do curiosity and regret concerns jointly affect decision-making? We will answer this question by examining the effects of curiosity in the domain of decision-making under uncertainty.

Experiment 1: The more I know, the more I want to know

Some time ago, one of the authors of this article witnessed an intriguing scene at the local market. A merchant was selling wrapped packages to a crowd of people who anxiously waved their Euros. What was the content of the package? Nobody knew! As the merchant said, the only way to know the content was to buy the package. He only gave some vague hints about the content, such as "it's a useful item" and "it's handy." Apparently, this knowledge was sufficient to induce curiosity and a willingness to buy. This experience suggests that curiosity may induce people to choose for uncertain options that they might regret, and thus appears to be in conflict with the documented reluctance to avoid decisions that might yield regret (e.g., Larrick & Boles, 1995; Ritov, 1996; Zeelenberg, Beattie, van der Pligt, & de Vries, 1996). It also suggests that the provision of information may help to elicit curiosity.

Curiosity can be defined as "the desire to know." As others before us have argued, this desire may induce people to engage in behaviors that go against their best interests (Loewenstein, 1994). In agreement with this notion, curiosity is often associated with impulsive behavior (e.g., Hartig & Kanfer, 1973). Felcher, Petrison and Wang (1983, cited in Loewenstein) investigated how people respond to the daily mail delivery, and found that whereas most respondents were very curious about the daily mail, they also reported that they were almost always disappointed by the actual mail they received. This suggests that negative feelings such as disappointment, and regret, may not be a strong determinant of behavior if curiosity comes into play. But what determines whether curiosity comes into play?

Loewenstein's (1994) "information-gap theory" views curiosity as resulting from a gap in one's knowledge. There are many things we do not know, and these outnumber the things we do know by far. Does this mean that we are indiscriminately curious about all the things we do not know? As Loewenstein argued, situational determinants may intensify curiosity. First of all, curiosity may be positively related to the knowledge we already have. Loewenstein argued that the more we know, the more curious we are about what we do not know. To illustrate, he described an individual only knowing three of the 50 US state capitals, and one knowing 47 of them. He argued that the latter individual would more likely focus on the knowledge gap than the former individual, and therefore be more curious to learn the capitals of the other states. First empirical evidence came from unpublished research by Loewenstein, Adler, Behrens, and Gillis (1992, cited in Loewenstein, 1994) who showed participants zero to three pictures of different body parts (hand, feet, and torso) of a man or woman, and then asked how curious they were to see the picture of the whole person. Participants were more curious the more parts they had seen.

Information-gap theory thus assigns a central role to the knowledge people have. These insights help to understand the market scene: By informing the potential buyers about some, but not all, aspects of the content, the merchant increased their knowledge and thus their curiosity. In the following, we will use these insights to investigate the relation between curiosity and regret aversion in decision-making under uncertainty. To study the consequences of increased knowledge for decision-making we developed the "sealed-package paradigm". We presented participants a decision scenario in which they could either receive 15 euros (the certain option), or a sealed package with unknown content (the uncertain option). For one-third of our participants this was all information they had about the package. The others received some additional information. One-third learned that the content was round, and one-third learned that the content was not round. (We used a 'round' and a 'not-round' condition because we wanted to ensure that preferences would not be dependent on the specifics of the added information.)

Based on information-gap theory, we reasoned that additional knowledge about the content should increase curiosity. As a consequence, we expected that additional knowledge would increase the willingness to opt for the package with the uncertain outcome rather than for the safe 15 Euros (Hypothesis 1).

Feedback, regret and curiosity

In the typical decision-making study participants choose between a certain and an uncertain option, knowing that if they choose the certain option, they will never learn the outcome of the uncertain option. Feedback on the outcome of the uncertain option is thus *conditional* on choosing it. Participants may therefore protect themselves from regret by choosing the certain alternative. Often, however, we eventually learn the outcomes of uncertain alternatives even if we opt for certain alternatives. For example, even if you do not invest your money in stocks, you are bound to find out whether or not stocks went up. Hence, you may often experience regret even 'if you don't play the game.' What would happen in our sealed-package paradigm if participants know that they will eventually learn the content of the package, even if they don't choose it? To answer this question, it is instructive to separately elaborate on what effect such *unconditional feedback* would have if the main motivation would be to minimize regret, and what if the main motivation was to satisfy curiosity.

First suppose that people's sole interest would be to avoid *regret*. What difference would it make whether they