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Regret aversion and the reluctance to exchange lottery tickets

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ABSTRACT

The current research finds that people are willing to forego a direct material gain, if that protects them from future regrets. In two experiments participants endowed with a lottery ticket were offered to exchange their ticket for another ticket from the same lottery. Even though they could receive a bonus for exchanging, many participants chose not to do so. Experiment 1 finds that a manipulation that prevented the anticipation of regret by offering the ticket in a sealed envelope made more participants exchange their ticket. Experiment 2 finds that an increased potential of regret over not-exchanging made more participants exchange as well. In both experiments the effect of the manipulation on choices is mediated by anticipated regret. The experiments show that people are willing to forego a material gain to prevent future regrets and that the reluctance to exchange lottery tickets is (partly) caused by regret aversion.

1. Introduction

Regret arises when one realizes that the present situation would have been better, had another choice been made. Ample research provided support for the idea that decision makers may anticipate regret before a decision is made and that their decisions are influenced by this (for a review see Zeelenberg & Pieters, 2007). Research is sparse, however, with respect to the question whether the motivation to prevent regret can be strong enough for people to forego a direct material gain if that helps to prevent experiencing regret. We are not aware of any publication that reports on experiments that used real incentives and in which regret aversion results in suboptimal choices from a rational, utility-maximizing viewpoint. Research has either been correlational or has been limited to hypothetical situations (regret studies using real incentives were later discarded due to a confound in the design, Starmer & Sugden, 1993).

Our experiments set out to test whether people would knowingly forego a material gain, if that could lessen the possibility of later regret. This critically tests regret theory (Bell, 1983; Loomes & Sugden 1982, see also Humphrey, 2004). In

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addition, we explicitly assessed anticipated regret, both as a manipulation check and to see whether it mediates choice. Such evidence for mediation would not only be new, but also provide direct support for the role of regret in decision making.

The paradigm we used to study regret aversion is based upon the well-established reluctance to trade lottery tickets. Ample research (e.g., Knetsch & Sinden, 1984; Langer, 1975; Risen & Gilovich, 2007) found that people do not like to exchange one lottery ticket for another, even if they get a bonus for doing so. Bar-Hillel and Neter (1996) already discussed the possible role of anticipated regret as a cause of this reluctance. However, they did not find systematic effects of regret in the lotteries they conducted. The second main goal of this manuscript is therefore to test the hypothesis of Bar-Hillel and Neter that anticipated regret (partly) causes the reluctance to trade lottery tickets.

The paradigm makes use of the importance of expected feedback for anticipated regret. Bell (1983) suggested that the anticipation of certain feedback is necessary for anticipated regret to influence decisions. Zeelenberg, Beattie, Van der Pligt, and De Vries (1996) showed in choices between gambles that decision makers indeed shield themselves from regret-inducing feedback. Neuropsychological research found that adding feedback over non-chosen outcomes activates brain regions associated with regret (Coricelli et al., 2005). The reluctance to exchange lottery tickets might stem from asymmetry in feedback, which makes regret aversion a likely explanation. Imagine a person who has to decide whether or not to exchange a lottery ticket. The person knows that if he chooses to exchange the ticket for another one, he could later find out that his old ticket was the winning one. He also knows that with a decision not to exchange, he will only know whether his existing ticket wins or not, not what would have happened if he had decided to exchange. He might therefore only anticipate experiencing regret over this decision, and therefore this asymmetry in feedback is important for the reluctance to exchange lottery tickets.

In the present research we investigated whether decision makers would forego a material gain to prevent the possibility of future regrets. In two experiments the participants received a lottery ticket that could be exchanged for another ticket in the same lottery (with an equal probability of winning). If they exchanged they would receive a bonus: a ballpoint imprinted with the university logo. In Experiment 1 we decreased potential regret over exchanging by putting the originally owned ticket in a sealed envelope, thereby preventing its number being known. This resolved the asymmetry in feedback, because now neither after exchanging, nor after not-exchanging feedback is present on the outcome of the alternative option. In Experiment 2 we did the opposite; we increased potential regret over *not*-exchanging. We did this by announcing the number of the lottery ticket the participant could exchange the originally owned ticket for. This resolved the asymmetry in feedback, because now after both exchanging and not-exchanging feedback is present on the outcome of the alternative option. Both manipulations were predicted to increase the rate of ticket exchange relative to a standard control (in which the originally received ticket's number is known whether replaced or not, and the replacement ticket is unknown unless accepted). The first manipulation did so by preventing regret over exchanging, the second by adding regret over not-exchanging.

1.1. Experiment 1

1.1.1. Method

A total of 230 psychology students (189 females, M_{age} = 20 years) took part in this experiment, in seven groups of 21–39 students. Students were approached at the beginning of a seminar, and asked whether they would be willing to participate in a lottery study. In this lottery one of the participants in each seminar group would win a €15 book voucher (worth approximately $25 in 2003 when we ran this study). All students (except one) were willing to participate.

Each seminar group was randomly assigned to one of the two conditions (Baseline vs. Sealed Envelope). The Baseline condition (106 participants from 3 seminar groups,) was as follows: After being endowed with their numbered lottery tickets, participants were offered the opportunity to exchange their lottery ticket for another ticket from the same lottery. Those who did would receive a ballpoint imprinted with the university logo (retail value = €1).[2] The Sealed Envelope condition (124 participants from 4 seminar groups) was similar to the baseline, but participants received their lottery ticket in a sealed envelope so they could not see the number. The rationale was that if they did not know their number, they could not later find out that their old ticket had won and therefore anticipated regret is unlikely. After all, in order to feel regret one should be able to compare what is to what might have been, and not knowing the ticket number prevents this. All instructions were provided in writing and read aloud to the participants.

After receiving the instructions both orally and on paper, participants indicated individually on a single page questionnaire whether they wanted to exchange their lottery ticket or not. They were instructed to only turn the page after they had made their choice whether or not to exchange, and all participants followed this instruction. Then, on the reverse side of the page the participants responded to the question "I took the possible regret that I might feel if I would exchange the lottery ticket into account when making the decision" (on a 7-point scale, ranging from 1 = did not take into account 7 = did take into account). After this, those who wanted to exchange put their ticket back into the ticket box, and when all had done so, the tickets were randomly redistributed and those who exchanged received a new ticket and a pen.[3] Finally, a winning number was drawn and one person in each group won the book voucher.

[2] The value of the bonus for exchanging was higher than the expected value of the lottery, which ranged from €0.38 (€15/39) to €0.71 (€15/21) depending on group size. Although group size did influence the expected value of a lottery ticket, it had no influence on the choice to exchange.

[3] A total of 40 lottery tickets was used in this experiment, therefore the total number of lottery tickets was always higher than the number of people that took part in the lottery. If we had used the exact number of tickets as there were participants present, it could have been the case that if only one participant wanted to exchange no other tickets were available to exchange it with. Because more tickets were present than there were participants, it could happen that during the drawing of the winning number we had to draw multiple numbers before we had a winner. Participants knew this in advance.