

Why Are People Reluctant to Exchange Lottery Tickets?

Maya Bar-Hillel
The Hebrew University

Efrat Neter
Haifa University

Students were given lottery tickets and then were asked to exchange their ticket for another one, plus a small monetary incentive. Less than 50% agreed. In contrast, when given pens, and the same exchange offer, over 90% agreed. Experimental control rules out that the reluctance to exchange lottery tickets results (a) from overestimation of the winning probability of one's own ticket; (b) from a concern that the ticket, once exchanged, might win in the hands of another; (c) from an overly low transaction cost; (d) from "paranoia" due to the bizarreness of the social situation we created; (e) from "bonding" to the ticket. Rather, the possibility for *ex post* regret that exists when exchanging lottery tickets, but not pens, underlies this reluctance. The notion of regret is broader than previously supposed.

In a well-known experiment, Langer (1975) sold \$1 lottery tickets to 53 office workers. Each ticket came in a matched pair. One part was kept by the purchaser, and the matched part was deposited in a box, from which the winning ticket was later drawn. The prize was the collected amount of \$53. Almost all the office workers approached bought the tickets. Half the workers were handed a ticket by the experimenter, and half were allowed to choose their ticket themselves. A few days later, shortly before the lottery, the workers were approached again and on some pretext were asked how much they would require to give up their ticket. The average amount of money requested was over \$8 if they had chosen their tickets and \$2 if they had not. In addition, 10 of the choosers and 5 of the non-choosers initially said they wouldn't sell at all.

Langer (1975) focused on the large difference between the choosers and the non-choosers, attributing it to an "illusion of control . . . defined as an expectancy of a personal success probability inappropriately higher than the objective probability would warrant" (p. 313). When one chooses tomatoes in the market, one can choose them to be better than those the vendor might randomly pick. Likewise, hypothesized Langer, participants react to choosing lottery tickets as if they can choose them to beat the odds. The higher asking price for chosen tickets reflects a higher subjective probability of winning with a chosen ticket than with a random ticket. Little was made of the fact that non-choosers required, on average, double the buying price. Indeed, though it is irrational to value chosen tickets over random tickets if one believes that the lottery is governed by chance alone, there is nothing irrational in asking more to part with a

good (e.g., a lottery ticket) than one had paid for it, especially if the good is not readily replaceable, as was the case in Langer's study. Nonetheless, it seems that both groups were exhibiting some reluctance—albeit not the same amount of reluctance—to give up their lottery tickets.

Knetsch and Sinden (1984) reported another example of reluctance to trade lottery tickets. They gave some of their participants lottery tickets and others a few dollars in cash. Participants were then allowed to trade their lottery tickets for the cash, or vice versa: to use their cash to purchase a lottery ticket. A minority of the participants bought a lottery ticket when given the cash, whereas most held onto their lottery ticket when given such a ticket, thus exhibiting a relative reluctance to trade it for cash. It is reluctance to part with lottery tickets that is the focus of the present study.

Experiment 1

Reluctance to trade has previously been studied under the label of the *endowment effect* (Kahneman, Knetsch, & Thaler, 1990; Thaler, 1980), the *status quo bias* (Ritov & Baron, 1992; Samuelson & Zeckhauser, 1988), and *loss aversion* (Kahneman & Tversky, 1984). In those studies, however, trade was between a good and money, rather than between identical tokens of the same good. So too, in previous studies involving lottery tickets, trades of these tickets have been offered for money. The purpose of our first experiment was to see whether participants are reluctant to trade their own lottery ticket even in exchange for a replacement ticket rather than for money. We also were interested in how they would explain such reluctance and, in particular, whether it would involve a belief that their own lottery ticket is probabilistically superior, as suggested by Langer (1975).

Method

Participants. Participants were freshmen at the Israeli Technion in Haifa. The experimenter entered an engineering class at the end of a lesson and asked the 66 students present to voluntarily stay on for a few minutes to participate in a brief experiment. Sixty-one obliged.

Procedure. Participants were given numbered pieces of paper, la-

Maya Bar-Hillel, Department of Psychology, The Hebrew University, Jerusalem, Israel; Efrat Neter, Haifa University, Haifa, Israel.

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Correspondence concerning this article should be addressed to Maya Bar-Hillel, Center for the Study of Rationality, The Hebrew University, Jerusalem 91904, Israel. Electronic mail may be sent via the Internet to msmarty@pluto.mscc.huji.ac.il.

beled *lottery ticket number #*. On each ticket there was a place for participants to write their name, as well as their answers to three questions. Following Langer's (1975) procedure, we had another set of tickets in a bag, numbered in correspondence to the distributed set. After the participants wrote down their names, one of these tickets was drawn blindly by a volunteer student and handed over to the experimenter, who alone looked at the number on it and temporarily put it in the care of the volunteer student. The experimenter then asked three questions out loud. The first question was: "Would you be willing to exchange your ticket with someone else in this class? Anyone who exchanges their ticket will be given this sweet." (The sweet was a rather attractive and expensive truffle.) Participants wrote *willing* or *unwilling* in the first line. The second question was: "Are the chances for your ticket to win the lottery higher, lower, or equal to the chances of any other lottery ticket?" Participants wrote *higher*, *lower*, or *the same* on the second line. The final question was: "Why are you, or aren't you, willing to exchange your ticket?" Participants wrote a freestyle answer on the third line (there was room to write more than one line). After writing down their answers, participants who indicated a willingness to exchange their tickets handed them in, and the returned tickets were redistributed, along with the promised sweets. The winning number was then read out, and the holder of the corresponding number (irrespective of whose name was on the ticket) received the prize. The prize was a voucher worth 50 shekels (about \$17) for the Technion bookstore.

Results and Discussion

Table 1 shows the joint distribution of participants according to their answers to the first two questions. Although 36 participants were not willing to trade their ticket, only 5 of them attributed to their ticket a larger probability of winning than that of any other ticket—compared with 4 who thought the probability of their ticket's winning was actually smaller than any other ticket. To be sure, the normative answer to the question regarding the ticket's chances of winning was given relatively more frequently by participants who were willing to trade (88%) than by those reluctant to trade (75%), but the overall proportion of the normative answer to this question (80%) far outstripped the proportion willing to trade (41%). It seems that the reluctance to trade cannot be fully explained by an erroneous belief regarding one's winning chances.

To what did participants attribute their decision? Interestingly, sometimes the same reason was used by some participants to explain willingness to exchange and by others to explain reluctance to exchange. For example, the most commonly given reason ("All tickets are the same, so what difference does it make?") was given by 9 non-exchangers and 9 exchangers. Belief in fate was given by 3 people as reason for not changing ("I

must stick with what I got") and by 2 as reason for changing ("If I'm meant to win, I will"). Having a lucky number was given by 2 people as a reason for not changing ("7—lucky number!") and by 2 as a reason for changing ("I have lucky numbers, and the one I received is not one of them").

Experiment 2

The results of Experiment 1 extend previous findings. They show that people may require more than a replacement ticket and a small extra incentive to give up "their" lottery ticket, even though tickets in this experiment had not been chosen. In contrast to Langer's (1975) supposition, very few participants inflated their ticket's winning probability. Most of those reluctant to exchange their ticket acknowledged that the replacement ticket was not inferior to their own. In the circumstances of Experiment 1, this reluctance is irrational from the perspective of normative choice theory, because it amounts to the rejection of a dominant option (exchange one lottery ticket for an equivalent lottery ticket plus a small bonus).

What could bias one in favor of holding onto one's own ticket, if it isn't the notion that one's ticket has a higher probability of winning? One possibility is the anticipation of regret. Imagine if the ticket one gave up were to win in someone else's hands. Failing to win the lottery that way might feel so much worse than losing it with one's original ticket—even though both possibilities may be judged equiprobable—that one could "kick oneself" (Miller & Taylor, 1995). Indeed, some of the participants in Experiment 1 explained their reluctance to exchange by mentioning possible regret explicitly ("If I exchange and not win, I would be pissed. If I don't exchange and don't win, I'd know that I wouldn't necessarily have won had I exchanged").

Kahneman and Tversky (1982) described to participants two investors who had a choice between investing in Stock A or Stock B and ended up losing \$1,200. One investor incurred the loss as a consequence of owning A and switching, after deliberation, to B, and the other incurred the loss as a consequence of owning B and failing, after deliberation, to switch to A. Almost all participants believed that the first investor would experience more regret than the second one. When facing the decision whether or not to exchange their lottery ticket, our participants may ask themselves a similar question and respond similarly: "Chances are that I will not win this lottery. I could switch and not win, or I could not switch and not win. I think I would regret the first possibility more."

Losing a lottery with an exchanged ticket might be more painful than losing it with an original ticket, because of the possibility, attendant only on an exchange, of finding out that one's original ticket had won in another's hands. In a pertinent study, Ritov (1993) found that choice between pairs of binary gambles was affected by whether it was known to be followed by resolution of uncertainty for the rejected gamble (i.e., playing it out) in addition to the chosen one (e.g., participants in her complete-resolution condition chose a high-risk high-gain option significantly more often than participants in the other conditions). Would regret—and reluctance to exchange—still affect choice if this possibility were removed? In contrast, would its effect be intensified if knowledge of how one "blew it" were made public?

Table 1
Number of Participants Who Reported That Their Ticket Was More, Less, or as Likely to Win as any Other

Participant's report	Willing to exchange	Unwilling to exchange	Total
Think all tickets equiprobable	22 (45%)	27 (55%)	49
Think own ticket more likely	1	5	6
Think own ticket less likely	2	4	6
Total	25 (41%)	36 (59%)	61

In Experiment 2 we manipulated the regret opportunities through the extent of participants' uncertainty resolution. Participants were told either that they would, or that they would not, find out whether a ticket they had exchanged had then won. Moreover, they were told whether the other participants also would find out that the winning ticket had previously belonged to someone who had exchanged it. If the intensity of the anticipated regret is the driving force behind the reluctance to exchange, then we should find most exchanges where there is the least uncertainty resolution, and least where the uncertainty is publicly resolved.

Method

Participants. In Experiment 2, participants were undergraduate communications students at The Hebrew University. As before, they were approached at the end of a class and were asked to volunteer 10 min of their time for a brief experiment.

Procedure. The procedure was similar to that of Experiment 1, with the following differences. The bonus for trading in this experiment was 0.5 NS (note: although at official exchange rates this was about \$0.17, Israelis regard it more like \$0.50). Presumably, 0.5 NS is preferred to 0 NS by all participants, whereas chocolate might legitimately be regarded neutrally or even negatively by some. (Two participants in Experiment 1 explained their reluctance to trade tickets by reference to the sweet: "I am on a diet;" "I don't care for chocolate"). The prize to be won was set to be an integer multiple of 10 NS and such that the lottery's expected value (given the number of respondents in each class) would be approximately 2 NS. Participants answered a single question: whether they would exchange their lottery tickets. Most important, the design included three "regret" conditions, differing in the extent of the regret opportunities. Each condition was run in a separate class, under slightly different instructions.

In the no-regret condition, all participants wrote their names on their tickets, and those who were willing to exchange their tickets were instructed to cross out their name from the original ticket and add it onto the replacement ticket. The tickets were then collected into a transparent plastic bag, and the lottery was conducted by blindly drawing one of them. Participants were told that the winner would be publicly announced by the (most recent) name on the winning ticket, rather than by the number on it. This assured that (besides the experimenter) only the winner would know if the winning ticket were an exchanged one, but a previous owner would be unable to recognize the winning ticket as his or her original ticket.

In the private-regret condition, participants were told that the winner would be announced by the name of its most recent owner as well as by the number it bore. Thus, if that ticket had previously belonged to some other owner, that owner would be able to recognize it by its number

(which they had all been instructed to note). Because this was explained in advance, participants in this condition could anticipate uncertainty resolution, namely, they could anticipate that if "their" ticket were to win in someone else's hands, they would know about it.

Finally, in the public-regret condition, participants were told that the winning ticket would be publicly announced by its number, as well as by the names both of its most recent owner and the name of its previous owner, if there were one. In this condition, therefore, participants could expect that not only themselves, but also everyone else in the class, would find out that they had given up a winning ticket, if this should turn out to be the case.

Results and Discussion

The first row of Table 2 reports the results of Experiment 2. These results give only weak, if any, support to the intensity-of-anticipated-regret hypothesis: Although the most exchanges were noted in the no-regret group, as predicted, more exchanges were noted in the public than in the private-regret groups, counter to prediction.

Kahneman (1995, p. 392) asked readers to imagine a decisionmaker choosing between two gambles:

Both gambles will be played but the decision maker will know only the outcome of the gamble chosen. Will the effects of regret vanish completely? The answer to this question is not yet known, but I suspect that it will be negative. . . . An intriguing possibility is that the evaluation of options is not constrained by what the decision maker expects to know about counterfactual outcomes but about what the decision maker expects to be knowable. Thus, options may be avoided because their outcomes are likely to be regrettable even if they are not in fact likely to be regretted.

Our results can be interpreted in a manner that supports Kahneman's conjecture. A direct test of this conjecture, as well as a replication, seemed in order.

Experiment 3

In Experiment 3, we added a fourth condition to the three conditions of Experiment 2. In this fourth condition, lottery tickets that were given up did not participate in the lottery at all but rather were removed from the lottery altogether and were replaced by brand new tickets. In terms of uncertainty resolution, this condition, called *no participation*, goes even further than the no-regret condition of Experiment 2. It does not just guard one against finding out the fate of one's relinquished

Table 2
Percentage of Participants Willing to Exchange Tickets Under Different Conditions of Uncertainty Resolution

Experiment	Condition												Total	
	Public regret			Private regret			No regret			No participation				
	%	N	Prize	%	N	Prize	%	N	Prize	%	N	Prize	%	N
2	37	19	40 NS	27	26	60 NS	45	49	100 NS				38	94
3	74	43	80 NS	36	44	80 NS	42	33	60 NS	43	40	80 NS	49	160
Total	63	62		33	70		44	82		43	40		46	254

ticket but actually guarantees that one's exchanged ticket could not possibly win, because a ticket relinquished is a ticket removed. In Kahneman's language, the outcome of an exchanged lottery ticket in this condition is not only unknown but is also unknowable: There simply is nothing to know. An unplayed gamble has unknowable outcomes. If Kahneman's conjecture extends regret enough, the no-participation condition should yield higher exchange rates than all three previous conditions.

Participants in Experiment 3 were also administered a written questionnaire, which they completed after the ticket exchange had taken place but before the lottery results had been announced. The questionnaire consisted of seven questions (inspired by the results of Experiment 1), each stating a reason (a), its inverse (b), and its dismissal (c), as detailed in Table 3. Participants were requested to endorse one of the three possibilities for each of the seven questions. Then they were asked to guess the modal response given to these seven questions by their classmates. Thus, these seven questions were answered twice: once according to the participant's own views, and once according to the participant's assessment of his or her fellow participants.

Participants are unlikely to have an informed estimate of how their peers answer this particular kind of question, and normally we would assume that they would make use of what has been labeled the *false consensus effect* (Ross, Greene, & House, 1977)—namely, they would guess that the modal participants answer as they themselves do. In this case, however, participants whose sincere answer appears embarrassing or irrational to themselves (e.g., those reluctant to admit having a "lucky number") might feel more comfortable assigning this reason to others than to themselves.

Method

Participants. Participants were Hebrew University undergraduates in the School of Education. They were recruited in the same way as before.

Procedure In Experiment 3 we modified the lottery procedure somewhat, to include the no-participation condition. Instead of giving out numbered tickets and having correspondingly numbered tickets in the lottery bag, participants were given double tickets, identically numbered on both sides. In the no-regret, private-regret, and public-regret conditions, exchanged tickets were collected and redistributed, as in the previous experiments. Participants then tore their double ticket (whether original or exchanged) in half and deposited one half in the transparent lottery bag. In the no-participation condition, however, exchanged tickets were given up in their entirety and were exchanged for brand new tickets (rather than someone else's exchanged ticket). Therefore, exchanged tickets were not deposited in the bag and were not included in the lottery. The bonus for exchanging was doubled in this experiment from 0.5 NS to 1 NS.

Results and Discussion

The pattern of responses in Experiment 3 differs somewhat from that of Experiment 2, as shown in the second row of Table 2. First, the overall rate of exchange was higher, perhaps because the incentive for exchange was higher. More pertinent, the ranking of tasks by the exchange rates was different. The public-regret condition, which we expected to yield the lowest rate of exchange, yielded the highest rate, and the no-participation

condition, which we expected to yield the highest rate of exchange, yielded a rate of exchange similar to that obtained in the other two conditions.

Taken together, the results seem to show no systematic relationship between participants' reluctance to exchange their tickets and the degree of uncertainty resolution participants were led to anticipate. We expected the willingness to exchange to increase across the four conditions going from left to right. No such trend was found. In particular, the no-participation condition does not seem to diminish the reluctance to exchange lottery tickets. Is there any systematic relationship between the degree of uncertainty resolution and the potential for feeling regret?

Question 7 of the questionnaire asked directly about regret. We had intended this question as a kind of manipulation check for our regret manipulation, expecting participants to endorse "I don't see any possibility of feeling regret" in the no-regret and no-participation groups. However, the responses to Question 7 also failed to support the notion of regret as increasing with the expected amount of uncertainty resolution. The percentages of people who endorsed "I don't see any possibility of feeling regret" in the public-regret, private-regret, no-regret, and no-participation groups were 40%, 48%, 27%, and 53%, respectively. The rates of endorsement for the last two groups actually were somewhat lower than the rate for the first two groups.

The notion of regret we evoked in Experiment 2 involves unease at the possibility of finding out that one had given up a winning ticket, if that were to happen. Indeed, this is the way regret is conceptualized in most experimental studies of its effects. This notion cannot account for the rates of exchange that we found, nor for the answers to the regret-related question in the questionnaire. Rather, our participants seemed to be telling us simply that if they were to exchange their ticket, and then fail to win (a very likely possibility, under the conditions of our lottery), they might regret the very act of having exchanged their ticket, irrespective of the extent of uncertainty resolution. Indeed, in Experiment 1, 5 of 36 participants explicitly used a regret argument to explain why they would not exchange. Not one of them referred to how they would feel if their ticket won in another's hands, although in that experiment, because they would have found out about it, this could have been a legitimate concern. Rather, the participants referred only to how they would feel if they exchanged their ticket and then lost. A couple of participants went on to explicitly articulate their felt asymmetry between losing the lottery with an exchanged ticket and losing it with one's original ticket (see the quote in the introduction to Experiment 2).

If these results are taken seriously, they show that the counterfactuals with which actual outcomes are compared extend not only beyond the traditional notion of the known alternative outcomes but also beyond what even Kahneman (1995) conjectured, namely, unknown but existent alternative outcomes. Our participants seemed willing to entertain the tenuous counterfactual: "If only I hadn't exchanged my ticket, *maybe* it would have won," and even that vague possibility affected their decision. The subsequent experiments (5, 6, and 7) show in what ways these results should, indeed, be taken seriously. First, though, we continue our discussion of the results of the present experiment.

