Journal of Experimental Social Psychology 69 (2017) 172–177

Contents lists available at ScienceDirect

Journal of Experimental Social Psychology

journal homepage: www.elsevier.com/locate/jesp

Case Report

# The frame of the game: Loss-framing increases dishonest behavior

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ARTICLE INFO

*Article history:*
Received 9 June 2016
Revised 19 September 2016
Accepted 27 September 2016
Available online 8 October 2016

*Keywords:*
Dishonest behavior
Loss aversion
Framing
Gain

ABSTRACT

Occasionally, people trade monetary gains for moral costs and engage in dishonest behavior. Based on research showing that people react more sensitively toward a possible loss compared to a possible gain (i.e., loss aversion), the present contribution examines the idea that people will more likely engage in dishonest behavior to reduce the extent of a loss compared to increasing the extent of a gain. In the two experimental studies, participants could engage in dishonest behavior either to avoid a loss (loss condition) or to approach an equivalent gain (gain condition). To assess dishonest behavior, a die-under-the-cup paradigm (Study 1) and a coin-toss task (Study 2) was applied. Results of both studies demonstrated the predicted effect of framing, supporting the idea that people show more dishonest behavior to avoid a loss compared to approaching an equivalent gain.


> "Possession does not make us half as happy as loss makes us unhappy."
>
> [Jean Paul F. Richter]

Imagine the yearly tax declaration of an employee: Taxes have been paid in advance, and reporting the declaration offers the possibility to gain some money back. Now imagine the tax declaration of a self-employed person: not all taxes have been paid in advance, and releasing the declaration means that additional money has to be paid. Which of the two tax declarations is more likely to contain dishonest information (cf. Mazur & Plumley, 2007; Robben et al., 1990)? Previous research by Engström, Nordblom, Ohlsson, and Persson (2015) on taxpaying found that Swedish taxpayers react differently depending on the reference point: If the reference point indicates having to pay additional money (i.e., loss), taxpayers are more likely to claim deductions compared to when the reference point indicates getting money back (i.e., gain). Although Engström and colleagues assume that loss aversion is the driving force behind this effect, they are not able to present direct evidence for this claim. With the present work, we directly address the idea that people show more dishonest behavior to reduce a possible loss compared to increasing an equivalent gain.

## 1. Dishonest behavior and its incentives

Traditional economic models assume people to cheat according to expected utility, that is, a (monetary) cost-benefit calculation of expected punishment when getting caught versus the possible gain of cheating (e.g., Becker, 1968). Recent literature has extended this perspective, showing that costs of cheating also include the possible erosion of one's positive self-concept (Abeler, Becker, & Falk, 2014; Mazar, Amir, & Ariely, 2008; Mazar & Ariely, 2006; for a review see Rosenbaum, Billinger, & Stieglitz, 2014).

Surveys have indicated honesty to be one of the most important values in a person's life (e.g., Geißler, Schöpe, Klewes, Rauh, & von Alemann, 2013). Research further has shown that individuals have a strong general psychological motivation to comply with their value system to maintain a positive self-concept (e.g., Baumeister, 1998; Pyszczynksi, Greenberg, Solomon, Arndt, & Schimel, 2004). Thus, when people are tempted to engage in dishonest behavior, they are simultaneously confronted with personal costs of violating the rule of honesty (e.g., experience of negative emotions; Batigalli, Dufwenberg, & Charness, 2013). Consequently, people strive to find a balance between those opposing motivational forces. In line with this reasoning, research has provided strong empirical evidence that people do not simply cheat as much as they can, even if there is no possibility of getting caught (e.g., Abeler et al., 2014; Fischbacher & Föllmi-Heusi, 2013; Gneezy, 2005; Mazar et al., 2008; Shalvi, Dana, Handgraaf, & De Dreu, 2011; for a recent meta-analysis, see Abeler, Nosenzo, & Raymond, 2016). Moreover, dishonest behavior was found to depend on personality traits (e.g., honesty–humility; Hilbig & Zettler, 2015), as well as on

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http://dx.doi.org/10.1016/j.jesp.2016.09.009
0022-1031/

contextual cues, such as priming (Mazar et al., 2008) or being treated unfairly (Houser, Vetter, & Winter, 2012). Going back to the tax example above, it is unclear, however, whether people will cheat more to reduce a possible loss compared to increasing a gain.

## 2. Framing matters: the impact of loss aversion

It is a basic psychological principle that people perceive losses as more unattractive than they perceive gains as attractive. Evidence for this asymmetry is provided by psychological research on negativity bias (for reviews, see Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001; Rozin & Royzman, 2001; Vaish, Grossmann, & Woodward, 2008), and by economic research on framing, reference points and the endowment effect (e.g., Kahneman, Knetsch, & Thaler, 1991; Kahneman & Tversky, 1979, 1984).

Numerous studies, for example, evidenced higher risk seeking to be related to avoiding possible losses compared to increasing possible gains (e.g., Kahneman & Tversky, 1979; Tversky & Kahneman, 1992). Additionally, McGraw, Larsen, Kahneman, and Schkade (2010) found that participants reported increased distress while thinking about having lost an amount of money compared to the excitement about winning the same amount. The expected pain of losing something can therefore be assumed to surpass the enjoyment of gaining. Whether a situation is framed as involving either a potential loss or a potential gain was further found to affect decision making (Tversky & Kahneman, 1981; for reviews, see e.g., Kühberger, 1998; for a typology of framing effects, see Levin, Schneider, & Gaeth, 1998), supporting the general idea of loss aversion, meaning that people are more motivated to avoid losses than to approach equivalent potential gains.[1]

## 3. The current research

Research on cheating has mainly studied situations in which people can cheat to gain more money (e.g., Mazar et al., 2008). Some research, however, studied situations in which people can cheat to avoid losing money (e.g., Hilbig & Zettler, 2015, Study 1; Hershfield, Cohen, & Thompson, 2012, Study 4; Yaniv & Siniver, 2016). Based on the assumption that the loss frame induces higher motivation to reduce the loss than does the gain frame to increase the gain, we investigate the following hypothesis: If a situation is framed as one in which a participant is given the opportunity to reduce a possible loss by cheating, it is more likely that cheating will occur compared to a situation in which one is given the opportunity to increase a possible gain by cheating.

Regarding the question about how potential gains and losses affect dishonest behavior, several works are worth mentioning. In a series of three experiments, Kern and Chugh (2009) showed that unethical behavior is increased when outcomes are framed as possible losses compared to possible gains, especially under time pressure. However, these studies referred exclusively to hypothetical scenarios to assess unethical behavior. Further, unethical decisions were not monetarily incentivized and did not refer to actual cheating. These limitations are partly addressed by Cameron and Miller (2008, Study 2; also cited in Cameron & Miller, 2009). They found that in providing participants the opportunity to cheat (by allowing them to self-report their performance on an anagram task and to pay themselves accordingly), participants indicated a higher performance when that performance was linked to a reduction of the loss of the previously allotted ten dollars, compared to when performance was linked to a gain of money. To rule out the possibility that these effects are merely driven by higher effort in the loss-condition, Grolleau, Kocher, and Sutan (in press) investigated the effect of loss aversion on cheating, also by using a performance-based cheating paradigm (self-reported performance of solved matrix tasks); additionally, performance in the tasks was explicitly monitored or not. Participants were thus given the possibility to cheat only in the latter condition. In the condition in which participants were not monitored, they were more likely to cheat in the loss frame (compared to the gain frame). Performance between loss- and gain-conditions was not significantly different when performance was monitored, ruling out the possibility that these effects are driven merely by higher effort in the loss-condition.

So far, hypothetical scenarios (Kern & Chugh, 2009) as well as performance tasks (Cameron & Miller, 2008; Grolleau et al., in press) have been used for assessing effects of loss-framing on dishonesty. We extend this line of research in valuable ways. First, we investigate actual dishonest behavior instead of assessing hypothetical behavior. Further, we investigate cheating in a non-performance context. In this way, we can draw conclusions that do not apply only to cheating in performance situations. Additionally, research indicates dishonesty to be higher in a performance compared to a non-performance based cheating paradigm (Gravert, 2013). We extend this line of research showing that cheating even occurs in non-performance situations to a substantial degree, in particular when people can avoid losses. In fact, it is important to investigate the impact of loss-framing on cheating outside the performance context, given that other research shows effects of loss-framing on performance (e.g., Shah, Higgins, & Friedman, 1998). Thus, to further exclude the possibility that actual better performance in a loss frame explains the outlined results, we investigate cheating in a non-performance context. Finally, we consider conceptual replications having an important value in themselves (cf. Brandt et al., 2014; Crandall & Sherman, 2016), especially regarding the ongoing debate about replicability of psychological findings (e.g., Makel, Plucker, & Hegarty, 2012; Open Science Collaboration, 2015).

## 4. Study 1

To investigate our idea, in Study 1 we relied on a dice task paradigm (Fischbacher & Föllmi-Heusi, 2013). Dice tasks are commonly used in cheating research (Moshagen & Hilbig, in press). The advantage of these tasks is that the expected value serves as a statistical baseline for honest behavior. In most studies, a dice is rolled once. That is, the probability of rolling a certain number is 1/6. With this paradigm it is intended to detect dishonest behavior on the aggregate, because typically full anonymity is provided making it impossible to detect dishonest behavior on an individual level. For the current study, however, we used a multi-round task: participants should report the number of rolled '4s' after having rolled a fair, six-sided die 75 times.[2] By assuring full anonymity, they are given the opportunity to cheat by being able to report any number they want (i.e., a continuous cheating range). Due to the known probability of 1/6 to throw a '4,' the expected value of 12.5 (75*1/6) serves as the baseline. With this paradigm it is intended to detect dishonest behavior on the aggregate, that is, by comparing the group means of the reported number of '4s' (also regarding the statistical baseline). Given that in such a multi-round task each participant has the chance to cheat more than once, we suppose this assessment would provide a more reliable estimate of cheating compared to one-shot tasks.

[1] As there are several conceptualizations of framing (Levin et al., 1998), we want to note that by loss and gain framing we mean that the reference point (e.g., money provided ex ante vs. no money provided) either implies a potential loss or a potential gain (for this approach, see also Grolleau et al., in press). We thus refer to *two* different situations. As such, we deviate from the original work on framing effects (e.g., the classic study on the Asian disease problem; cf. Tversky & Kahneman, 1981), in which *one* situation is described either as in a positive way (e.g., 200 out of 600 people are saved) or in a negative way (e.g., 400 out of 600 people will die).

[2] In total, we used 18 dice in this experiment. For testing whether the dice were actually fair, six dice were randomly chosen. Each was then rolled a total of 1998 times. Thus, each outcome was expected to occur 333 times (16.67%). This total number of rolls provides optimal power ($1 - \beta > 0.95$) to detect even small ($w = 0.1$) deviations from an equal distribution (cf. Hilbig & Zettler, 2015). As suggested by non-significant $\chi^2$-tests ($ps > 0.305$), all dice used in the following experiments can be considered fair.