Journal of Economic Behavior & Organization 93 (2013) 328–336

Contents lists available at ScienceDirect

Journal of Economic Behavior & Organization

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

Cheating in mind games: The subtlety of rules matters

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ARTICLE INFO

Article history:
Received 3 April 2013
Accepted 4 April 2013
Available online 22 April 2013

JEL classification:
C91
D63
H26
K42

Keywords:
Cheating
Mind game
Rule design
Moral image
Decision time

ABSTRACT

This paper employs two variants of the "mind game" to show how a subtle variation in the game's rules affects cheating. In both variants of the game, cheating is invisible because subjects make their choices purely in their minds. The only difference stems from the ordering of steps that subjects are instructed to follow when playing the game. The order of play has a significant impact on cheating behavior, even though the rules cannot be enforced.

1. Introduction

Society needs rules, and these rules need to be enforced since there is often an incentive to break rules for monetary gains. The enforcement of rules, however, does not always require costly punishment mechanisms. Though motivated by economic incentives to cheat, people often refrain from cheating out of social and moral considerations. Sometimes all it takes is a little tinkering with the rules to curb cheating. By exploiting two variants of a simple cheating game, which I call the "mind game", I show in this paper how cheating behavior is significantly affected by the ordering of the instructed steps.

The mind game adds a choice made purely in the mind to the die-rolling task devised by Fischbacher and Heusi (2008). Instead of getting paid by the die outcome that turns up, subjects choose in advance which side of the die counts for their earnings: the side facing up or the side facing down. Since subjects self-report their choice after they see the die outcome, they can cheat by lying about the side chosen to get higher earnings. Thus, the three essential steps are: "choose a side", "throw a die online" and "write the chosen side on paper".

The experimental manipulation rests on the prescribed order of the last two steps. In the "Throw-first" treatment, subjects are supposed to first throw the die and then write the chosen side, "U" or "D". In "Write-first", subjects are supposed to write the chosen side prior to throwing the die, which would prevent them from cheating if the order of the steps is followed. Because the order of the steps are only prescribed and not enforced, subjects can still cheat in "Write-first", but with greater physical effort or psychological barrier. In order to cheat, they have to either overwrite the side they wrote down, which can leave a trace of cheating, or disregard the prescribed order of play and play the game like those in "Throw-first" are asked to.

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http://dx.doi.org/10.1016/j.jebo.2013.04.003

Table 1
Earning points corresponding to "Up" or "Down".

						
U	1	2	3	4	5	6
D	6	5	4	3	2	1

Note: Every point is equivalent to five Euro-cents.

Table 2
Steps of the two mind game variants.

	The order of the steps
Throw-first:	Choose → Throw → Write
Write-first:	Choose → Write → Throw

Cheating in both variants refers to lying about the side chosen that results in a higher payoff than that of the honest side. I use the term "cheating" to distinguish it from pure lying since subjects can also lie for earning less. Thus, the type of cheating studied here is similar to what Erat and Gneezy (2012) classify as "selfish black lies", lies which benefit self at the cost of others, except that here cheating is at expense of the experimenter instead of other experimental subjects.

The mind games used in this paper add to the recent experimental paradigms that utilize the known distributions of die or coin tosses to infer cheating (e.g., Bucciol and Piovesan, 2011; Fischbacher and Heusi, 2008; Greene and Paxton, 2009; Hao and Houser, 2010). In particular, the Throw-first variant resembles the coin-flip task by Greene and Paxton (2009). Subjects need not fear the exposure of their lying even under camera surveillance since the choice is made purely in the mind.[1] Nevertheless, using a six-sided die instead of a coin has the advantage that the cheating gain varies with die outcomes. Since the gain equals the difference between the points of the opposite sides, which always add up to 7, it ranges from five points of difference with die outcomes "6" and "1" (high), three points with "5" and "2" (medium), to one point with "4" and "3" (low).

The results show that while no one cheats 100% in both variants, subjects in Write-first cheat significantly less. Moreover, subjects in Write-first only cheat for low gains whereas those in Throw-first cheat the most for medium gains. There are mainly two potential explanations for the distinct cheating patterns. First, subjects may dislike rule-breaking per se, and they cheat less in Write-first because cheating implies not only lying, as in Throw-first, but also breaking the rule of following the prescribed order of play. This explanation however cannot easily explain the result that subjects in Write-first only cheat for low gains and forego the opportunities to cheat in the face of other gains after the rule of the prescribed order is already broken. Second, recent theories and findings suggest that people care about keeping a moral (self) image (e.g., Benabou and Tirole, 2002; Fischbacher and Heusi, 2008), and they only cheat to the extent that their moral image is maintained (Ariely, 2012; Mazar et al., 2008). For moral judgement, intentions matter (Charness and Dufwenberg, 2006; Falk et al., 2008). In Write-first, it is harder to keep a moral image because one's bad intent to cheat is harder to deny or ignore given the deliberate act of postponing writing in order to cheat. In Throw-first, cheating is less deliberate as it only requires an internal twist of the mind. One can more easily get away with excuses that the cheating outcomes are due to errors or "luck". Process can matter more than the mere outcome as it helps to discern the actor's good or bad moral disposition.

2. Experimental design

2.1. The mind game

The mind game consists of three steps: "choose a side", "throw a die online" and "write the chosen side on paper". Subjects choose purely in mind which side of the die counts for their final earnings, the side facing up (U) or the side facing down (D), and get paid based on the actual die outcomes and their self-reported choices of sides (see Table 1).

Subjects can cheat by writing down a different side than the one chosen on the paper outcome forms. Moreover, they can only cheat by misreporting the side, since they do not self-report the die outcomes that are randomly generated and recorded online. By repeating the game twenty times, cheating can be inferred both at the aggregate and at the individual level if the proportion of "lucky" choices reported is statistically improbable. The non-intrusive within-subject treatment of cheating gains 5 points (1 vs. 6), 3 points (2 vs. 5) and 1 point (3 vs. 4) enables further investigations on the more subtle and automatic cheating "strategies". To examine how the order of play affects cheating behavior, the two treatments differ only in the prescribed order of the last two steps (see Table 2):

[1] See also Shalvi et al. (2011) who try to eliminate fear of detection by letting subjects roll the die under a cup instead of in the open.