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Lies in disguise – A theoretical analysis of cheating ☆

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Abstract

We perform a (psychological) game-theoretic analysis of cheating in the setting proposed by Fischbacher and Föllmi-Heusi (2013). The key assumption, referred to as *perceived cheating aversion*, is that the decision maker derives disutility in proportion to the amount in which he is perceived to cheat. A particular equilibrium, characterized by three intuitive properties, captures the stylized facts from many experiments (in particular the co-presence of selfish, honest, and partial-lie choices) well.
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1. Introduction

Situations are aplenty where cheating may be materially lucrative. Examples involve tax evasion, embezzlement of foreign aid, or scientific misconduct to increase likelihood of a good publication. However, aspects of social rewards or personal integrity may mitigate opportunistic behavior.[1]

Researchers grapple with how to disentangle the impact of morale or honesty from that of formal sanctions (e.g. fines). In this connection lab experiments, which can control, and rule out, formal sanctions may be helpful. A recent literature, pioneered by Mazar, Amir & Ariely (2008) (MA&A) and Fischbacher & Föllmi-Heusi (F&FH) (2013, but written much earlier), that uses such methods has developed rapidly. Most studies build on F&FH's design: Subjects roll a die (or flip a coin), self-report the outcome, and get paid based on the report. Although it is impossible to detect lying on an individual level, cheating across the sample population can be quantified as the experimenters know the underlying distribution. F&FH report that 20% of people lie to the fullest extent, 39% choose as if honest, and a sizeable proportion cheat a bit. Others report similar findings. Various explanations have been proposed – F&FH themselves consider lying aversion, caring about lie-credibility, and MA&A's notion of self-concept maintenance.[2]

We propose a new model and explore cheating in settings close to F&FH's (and to signal that link, our paper's title parallels theirs). We imagine a scenario where an audience (e.g. a tax authority, a granting agency, an editor, or an experimenter) observes the report a decision maker ("DM") issues regarding a random outcome that only DM observes. By issuing a false report DM can mislead with impunity and gain financially. Our central assumption is that DM feels bad to the extent that the audience believes he cheats, a sentiment we refer to as *perceived cheating aversion*. Therefore reporting the outcome that brings DM the highest profit may not necessarily yield the greatest utility. DM will cheat and lie if he can do so undetected, but the audience is smart and draws inferences based on an understanding of DM's incentives, which may make DM less inclined to cheat.

Perceived cheating aversion makes DM's utility belief-dependent in the sense of psychological game theory (Geanakoplos, Pearce & Stacchetti 1989 (GP&S); Battigalli & Dufwenberg (B&D) 2009). As it turns out, a particular equilibrium, which we show can be characterized by three intuitive properties, allows us to capture the central tendencies of F&FH data remarkably well. There are caveats and twists to that conclusion, including considerations regarding how our theory relates to MA&A's notion of self-concept maintenance. We postpone a discussion until we have introduced our assumptions formally and derived our results.

Section 2 presents the game forms we consider, and some background results. Section 3 introduces our psychological assumption, derives our main prediction, and compares it to F&FH's data. Section 4 contains further analysis. Section 5 discusses testable implications. Section 6

[1] For related commentary, see e.g. Luttmer and Singhal (2014) on tax morale and Olken (2015, p. 76) on honesty in research.

[2] For more, see Abeler et al.'s (2016) survey, meta-study (based on 72 studies), summary of explanations, and new experimental tests. A sample of studies that use F&FH's paradigm include Abe and Greene (2014), Abeler et al. (2014, 2016), Arbel et al. (2014), Bucciol and Piovesan (2011), Cohn et al. (2014, 2015), Conrads et al. (2013), Conrads and Lotz (2015), Dai et al. (2017), Dieckmann et al. (2015), Diekmann et al. (2015), Fosgaard et al. (2013), Garbarino et al. (2016), Gächter and Schulz (2016), Gneezy et al. (2018), Greene and Paxton (2009), Houser et al. (2012, 2016), Kajackaite and Gneezy (2017), Kocher et al. (2016), Kroher and Wolbring (2015), Muehlheusser et al. (2015), Pascual-Ezama et al. (2014), Piff et al. (2012; "game of chance"), Shalvi et al. (2010, 2011, 2012), Utikal and Fischbacher (2013).

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