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The wages of dishonesty: The supply of cheating under high-powered incentives

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ABSTRACT

We use a novel design to identify how dishonesty changes through a broad reward range that, at the high end, exceeds participants' average daily wages. Using a sample of online Indian workers who earn bonuses based on six simultaneous coin flips, we show that the relationship between dishonesty and financial rewards depends on the incentive range. We find two novel effects as incentives exceed those used in most prior research. First, dishonesty increases and reaches its maximum as rewards increase from $0.50 to $3 per reported head and as earnings reach $15, indicating that rewards can indeed motivate more cheating when large enough. More importantly, we show that dishonesty declines at the highest reward levels (up to $5 per head) as individuals appear to engage in lower magnitudes of dishonesty. We detail how our results could be explained by a reference-dependent utility with internal costs of dishonesty that are convex in the magnitude of the lie, and show survey and simulation-based evidence that support this explanation.

1. Introduction

One of the most important unanswered questions on dishonesty is how rewards shape decisions to cheat. Although traditional economic models predict that higher rewards from dishonesty should incentivize more cheating (Becker, 1968), more recent work has argued that the internal cost of dishonesty is sufficient to restrain this behavior. Psychologists (Mazar et al., 2008) and some economists (Fischbacher and Föllmi-Heusi, 2013) have argued that since the internal costs of dishonesty from guilt or self-image degradation rise with the magnitude of rewards, increased incentives produce little growth in dishonesty, and may even reduce dishonesty if the internal costs are high enough. This model of increasing internal costs is supported by several studies showing a preponderance of partial liars who restrict the magnitude of their dishonest earnings (Mazar et al., 2008), even with little risk of detection (Shalvi et al., 2012; Fischbacher and Föllmi-Heusi, 2013; Cohn et al., 2014).[1]

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[1] A closely related literature studies dishonesty using the deception game (Gneezy, 2005), where dishonesty affects the payoffs to another party. This research generally finds that dishonesty increases with financial incentives (Sutter, 2009; Dreber and Johannesson, 2008; Erat and Gneezy, 2012), although the third study in recent work by Wang and Murnighan (2016) shows no consistent relationship between incentives and lying. Related studies that examine how incentives impact selfishness similarly suggest that the range of incentives matters. Although early work typically finds financial stakes to have little

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Indeed, laboratory studies where participants can dishonestly increase their earnings have found no identifiable relationship between incentives and lying. Mazar et al. (2008) found no difference in self-reported matrix-task performance between two incentive conditions ($0.50/matrix and $2/matrix) in Study 2. They also report that an additional study found no identifiable cheating when incentives were extended to $5/matrix, although they do not report enough details to evaluate the incentive-dishonesty relationship. Similarly, Fischbacher and Föllmi-Heusi (2013) found no increase in dishonesty among students reporting a secret die roll when maximum rewards tripled from 5 to 15 Swiss Francs (approximately $5–$15).

In this paper, we argue that although these studies provide strong evidence for a low range of incentives, they do not allow for a more complex relationship between incentives and dishonesty that could be non-monotonic over a broader range of financial rewards. Prior work has used a limited number of incentive conditions, mapping a linear relationship within that range. Furthermore, the value range of these conditions is relatively low considering the high wealth levels of their Western participant populations, so we know little about dishonesty in higher incentive ranges. Mazar et al. (2008) use the highest incentives, with maximum earnings of $20 without substantial risk of detection.[2] Understanding how larger reward ranges shape dishonesty is particularly crucial because they more closely parallel organizational and other field settings, thereby improving the generalizability of this research stream. Managers, policy-makers, and societies primarily focus on dishonest behaviors that yield much larger rewards than existing studies represent.

Our focus on a broader incentive range is also motivated by several recent studies that suggest that cheating indeed occurs at high reward levels. Cohn et al. (2014), for example, found substantial cheating when using a single incentive level where participants could earn $200, although their study invoked competitive factors that are known to accelerate cheating (Bennett et al., 2013; Branco and Villas-Boas, 2015; Kilduff et al., 2016). Weisel and Shalvi (2015) also found more cheating in the higher of two incentive levels in a design that required collaborative deceit. Evidence from Swedish tax returns also shows increased dishonesty at higher reward levels (Engström et al., 2015).

More closely related to our work is Kajackaite and Gneezy (2017), who use four self-reported die-roll conditions with binary payoffs (rolling a 5 earns $1, $5, $20, or $50). Although they indeed find a non-monotonic relationship between rewards and dishonesty—cheating is highest at $20 and negligible at $50—they attribute the decreased dishonesty in the highest condition to the threat of detection. Four additional conditions, where participants self-reported whether their die roll matched a previously imagined number, showed increased dishonesty at the highest incentive levels. Although these "mind game" conditions could indeed reflect the impossibility of lie detection, they also could be explained by motivated forgetting (Shu et al., 2011) or the justification effect observed in Shalvi et al. (2011)—both of which would predict higher cheating levels.

We attempt to map and understand the relationship between rewards and dishonesty through two studies that manipulate a wide range of incentive levels in an online labor market with lower wealth levels than the standard U.S. and European experimental populations. In the first study, we employ Indian workers on Amazon's Mechanical Turk (MTurk) platform to complete common image recognition tasks, then pay them bonuses based on self-reported outcomes from six simultaneous coin flips on a third-party website (random.org). Our experimental design has three major advantages over prior work mapping rewards to dishonesty. First, our sample of Indian workers allows us to manipulate bonus rates in ten conditions from $0.50/head to $5/head, such that in the top condition workers who report 6 heads earn more than their average daily wage in a short period of time. The magnitude of the incentives, in terms of purchasing power, in our highest conditions is thereby similar in magnitude to the top $50 condition used in a concurrent working paper by Kajackaite and Gneezy (2017) with University of California students. Second, our use of six coin flips instead of the six-sided die in many prior studies allows us to detect dishonesty with fewer participants because of the binomial distribution's lower probability of honestly achieving an extreme outcome (e.g., six heads). Third, our use of ten conditions allows us to better map any non-linear relationship between rewards and dishonesty.

We find that although dishonesty is identifiable at every reward level, it is highest in the mid-level conditions of $2.50/head and $3/head with strong evidence of non-monotonicity. Reported head counts are lower in both the highest and lowest conditions due to decreases in both lying magnitude and frequency. Although we cannot directly measure the mechanism driving this non-monotonic relationship between rewards and dishonesty, we show that it could result from the reference-dependent utility associated with prospect theory (Kahneman and Tversky, 1979; Barberis, 2013), where reference points related to expected daily income might influence marginal decisions to cheat. Just as unexpectedly high earnings might lead to decreased effort (Köszegi and Rabin, 2006; Abeler et al., 2011) in taxi drivers (Camerer et al., 1997) or bike messengers (Fehr and Goette, 2007), so too might unexpectedly high earnings from both honesty and cheating (Dugar and Bhattacharya, 2017) allow individuals to curtail costly dishonesty. Recent evidence (Kern and Chugh, 2009; Engström et al., 2015; Grolleau et al., 2016; Rees-Jones, 2017; Garbarino et al., 2016) indeed shows that losses might motivate cheating more than gains, but this effect has not been mapped to income reference points. Also related is evidence that goals, which can function as reference points (Heath et al., 1999), can shift cheating decisions (Schweitzer et al., 2004).

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impact on selfish behavior in experiments (Camerer and Hogarth, 1999; Cherry et al., 2002), later work using higher incentive ranges suggests decreased transfers (Carpenter et al., 2005) and costly punishments (Andersen et al., 2011) as the stakes reach economically meaningful levels for participants.

[2] Although their task provides maximum earnings of $40 by reporting 20 successful matrices in 4 minutes, 10 of the matrices are unsolvable. This likely applies an additional constraint on the magnitude of lying—the threat of detection—even in their condition using a shredder.