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Gender differences in beliefs and actions in a framed corruption experiment

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ABSTRACT

We elicit actions and beliefs in a framed corruption experiment enabling us to investigate how gender differences in corrupt behaviour relate to gender differences in both beliefs about the behaviour of others and the relationship between those beliefs and actions. We find that women are less likely to engage in costly punishment of corruption, and believe corruption to be more prevalent than men. Differences between the genders in the relationship between beliefs and actions provides evidence that men experience a greater psychological cost as a result of social sanctions. Controlling for beliefs and gender differences in sensitivity to beliefs we find that males are, in many instances, more likely to offer bribes, while females are less likely to conform to a norm of bribe-giving. This result was not apparent in the raw data, and highlights the importance of considering beliefs in corruption experiments.

1. Introduction

Corruption has been found to negatively affect the functionality of markets, economic growth, and social development.[1] It is therefore of great importance to understand the factors underlying individual corrupt behaviour. Beliefs play a number of important roles in the domain of corruption. On a practical level, corrupt behaviour is beset by risk and strategic uncertainty, and beliefs about the prevalence of corruption will be an important factor in shaping people's perceptions of, for example, the probability of bribery being detected or a corrupt official making good on a promise. Such beliefs will also interact with people's decisions on a social or moral level: the belief that corruption is pervasive may encourage corrupt acts as people conform to their perception of the social norm.[2]

Studying both beliefs and the relationship between beliefs and actions can also shed light on the mechanisms underlying patterns in corrupt behaviour, such as gender effects, which have been frequently identified in both empirical and experimental corruption studies (Chaudhuri, 2012). Alatas et al. (2009) points out that the different social roles played by different genders may lead to different experiences of corruption, resulting in different attitudes towards corruption and thus different propensities to act corruptly. However, different experiences will also lead to different beliefs about the prevalence of corruption, which could equally affect behaviour. Additionally, there is evidence of gender differences in the experience of both formal and social sanctions, which would cause even identical beliefs regarding the probability that an action is a norm violation or is likely to be punished to result in different levels of deterrence in men and women.

In the experiment reported in this paper, we elicit both actions and beliefs about the behaviour of others in a simple framed corruption game. We find that the decision to engage in corruption is strongly associated with beliefs that others in an identical role will do likewise, consistent with subjects conforming to perceived normative behaviour. Regarding gender differences, we find that

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[1] See, for example, Mauro (1995); Méon and Sekkat (2005); Fisman and Svensson (2009); Jong-Sung and Khagram (2005).

[2] There are two types of social norms: injunctive (what people *should* do), and descriptive (what people *actually* do). In this paper our data is on beliefs about actual behaviour, thus when we refer to social norms we are talking about descriptive norms.

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females are less likely to engage in costly punishment of corruption, and believe corruption to be more prevalent than males. However we also find that the decision of males to act corruptly is more robustly related to their belief that a bribe will be accepted, and the probability they will be reported. Taking this into account we show that, given a belief that a bribe is likely to be accepted or unlikely to be reported, males are more likely than females to make an offer. Given that in our game a corrupt act can never reduce a subject's monetary payoff, we interpret this as evidence that, in our context, males are more sensitive than females to social concerns. Controlling for beliefs in a model which allows for gender differences in sensitivities to beliefs reveals that males are, *ceteris paribus*, typically more likely to offer bribes, and that females are less likely to conform to a culture of bribe giving.

In addition to our results on corruption, we also provide some results on two outstanding questions regarding the experimental elicitation of beliefs. We find that correcting our elicited beliefs for risk aversion has a minimal impact on the results of our subsequent analysis and no statistical evidence that the order in which beliefs and actions affected subjects' decisions.

The paper proceeds as follows: section 2 reviews the related literature; Sections 3 and 4 describe our experimental design and results; and section 5 provides a discussion of our contributions to the literature and concludes.

2. Related literature

Our experiment is related to several disparate strands of the behavioural science literature. We begin with a brief summary of the findings of corruption experiments that have looked for gender differences in behaviour.[3] We then review studies that identify links between behaviour and beliefs, and in particular, perceptions of social norms. Finally, we review relevent papers on the methodology of belief elicitation and describe two existing papers that have elicited beliefs in corruption experiments.

One of the earliest experimental designs for laboratory experiments on corruption was introduced by Abbink et al. (2002) where a firm and official could engage in corruption, but faced an exogenous risk of punishment if they did so. Rivas (2013) implemented a close variant of this game, varying the genders of the subjects in each role, and found that females were less likely to offer, accept, and reciprocate bribes. Our design is based on that of Cameron et al. (2009) which endogenizes punishment by introducing a third player who is harmed by corruption and may respond by punishing the corrupt at some personal cost. Using this game, Alatas et al. (2009) find no gender differences in behaviour in New Delhi, Jakarta, or Singapore, however females in Melbourne were found to be less likely to offer and accept bribes, and more likely to punish corruption than their male counterparts. Waithima (2011) repeats the design in Kenya and finds no gender differences in any role. Banuri and Eckel (2012) implements a similar three-player game and finds that gender effects are in the direction of females acting less corruptly but are not statistically significant.

As will be explained in detail in the following section, our design differs from the aforementioned experiments in that the threat of punishment does not provide any pecuniary deterrence to engaging in corruption. We therefore interpret any negative relationship in the propensity to offer bribes with beliefs about the probability of acceptance or being reported as reflecting social concerns. The role of social sanctions in reducing corruption has been considered in Salmon and Serra (2014), which finds that purely social sanctions can reduce rule-breaking in subjects who identify with high rule of law countries.

Conformism, i.e., people changing their behaviour to match how they believe others behave, is a well-established phenomenon in social psychology (Asch, 1952). In the economics literature, conformism has been modelled formally by Sliwka (2007), and supportive experimental evidence has been found by Thöni and Gächter (2014) and Rauhut (2013). Another explanation for the fact that people who take an action tend believe that action to be more common than those who take an alternative action is the so-called "false consensus effect" (Ross et al., 1977). One explanation proposed for this effect is a need to provide support or justification for one's behaviour (e.g., Messé and Sivacek, 1979; Sherman et al., 1984). However, Engelmann and Strobel (2000); 2012) find that the epithet "false" is unwarranted: the correlation between decisions and beliefs can be explained as a rational updating of beliefs based on information provided by one's own decision, and when relevant information is readily available, a subjects' own decisions are in fact underweighted relative to information about the decisions of others.

The impact of social sanctions has long been considered to differ between genders. Early work suggested that women were more sensitive to shame (e.g., Finley and Grasmick, 1985; Simpson, 1989); however, as with many other gender differences (Croson and Gneezy, 2009), the difference between how men and women respond to social rewards and sanctions is highly context specific. For example, Blackwell (2000) finds that, for those from less patriarchal families, men are more threatened by embarrassment, Prentice and Miller (1993) finds that, over time, men adjust their attitudes towards alcohol use in accordance with the perceived norm, whereas women do not, and Boyes et al. (2004) concludes that social approval is a greater motivator of tipping in restaurants for men than for women. Meier (2007) concludes that *"men tend to align their behavior with the average behavior of the group, whereas women seem to be insensitive to information about group behavior."*

Eliciting subjects' beliefs poses a number of challenges. As with other tasks in economic experiments, it is generally held that the elicitation should be incentivised to encourage considered and truthful responses. However, many incentivised methods are complex and require familiarity with numerical probabilities, and some commonly used techniques are only incentive compatible for risk-neutral subjects (Schlag et al., 2013). Our method, described in detail in Section 3.2, is carefully designed to address these concerns.

Eliciting both actions and beliefs from the same subjects raises further questions, as the decision or decision process in one task may affect behaviour in the other. This could occur for a number of reasons, such as belief elicitation deepening understanding of the game or beliefs being altered to justify to oneself an earlier decision.

The existing literature on whether or not eliciting beliefs from subjects affects subsequent decisions is small and inconclusive. In public goods experiments, Croson (2000) finds that belief elicitation decreases contributions, while Wilcox and Feltovich (2000) and Gächter and Renner (2010) find no effect and a positive effect, respectively. The results of Rutström and Wilcox (2009) contradict the earlier findings of Nyarko and Schotter (2002) that belief elicitation has no impact on the predictive power of fictitious play-type models in a matching pennies game. Finally, Koessler et al. (2012) find that, when bettors' beliefs are elicited, the information aggregation of parimutuel betting markets is improved.

The literature on the impact of decisions on beliefs is also small and contradictory. Offerman et al. (1996) finds no systematic differences between players and paired observers in distributions of beliefs elicited using a quadratic scoring rule in a step-level public

[3] For a more detailed review, see Chaudhuri (2012).