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Natural-field dictator game shows no altruistic giving ☆

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ABSTRACT

Economic experiments are increasingly being used in a number of research areas and are a major source of data guiding the debate surrounding the nature of human prosociality. The degree to which experiment behavior accurately reflects external behavior, however, has long been debated. A number of recent studies have revealed just how remarkably sensitive participants are to cues of a lack of anonymity. Similarly, others have suggested that the very structure of the experimental context induces participants to choose prosocial options. In order to truly create anonymous conditions and to eliminate the effects of experimental contexts, participants must not be aware of their participation. Here, I present the results of a natural-field Dictator Game in which participants are presented with a believable endowment and provided an opportunity to divide the endowment with a stranger without knowing that they are taking part in an experiment. No participants gave any portion of the endowment to the stranger. Baseline frequencies of prosocial behaviors exhibited under experimental contexts might therefore be substantially inflated compared to those exhibited under natural contexts.

1. Introduction

Humans are remarkable in the extent to which they engage in cooperation, altruism and other forms of prosocial behavior with non-kin and even perfect strangers. There remains great debate concerning the nature and proximate motivations of human prosociality, as well as the ultimate origins and maintenance of such behavior (Burnham & Johnson, 2005; Gintis, 2000; Guala, 2012; Henrich, 2004). Researchers have long relied on economic experiments to inform this debate, as such methods allow for the level of control necessary to test the nuanced predictions of competing models. A number of researchers, however, have questioned the degree to which the prosocial behaviors exhibited under experimental contexts reflect behavioral patterns outside the lab (i.e. their external validity) (Burnham & Johnson, 2005; Guala, 2012; Gurven & Winking, 2008; Haley & Fessler, 2005; Levitt & List, 2007; List, 2009). Paramount among the concerns is the possibility that participants in anonymous experiments continue to behave as if they are being observed because of elements of the experimental context (e.g. recording one's decisions, the presence of researchers, etc.) (Fessler, 2009; Gigerenzer & Gigerenzer, 2005; Hagen & Hammerstein, 2006; Haley & Fessler, 2005). We explore the impact of the experimental context by comparing the results of a traditional Dictator Game including a strong form of anonymity to a natural-field Dictator Game in which participants are unaware they taking part in an experiment. Under the experimental context, donations were comparable to those reported in previous studies. However, no participants gave any money under the natural-field condition, suggesting the experimental context is positively influencing prosocial behavior.

1.1. External validity

The degree to which results obtained under experimental contexts can be generalized to other settings, including natural or real-world settings, is often referred to as "external validity" (Campbell & Stanley, 1963). While few question whether the results of physics experiments conducted in a lab fail to illustrate how bodies behave in nature, there are a number of reasons why human behavior might be influenced by the artificial and observed circumstances of experimental protocols (Levitt & List, 2007). While some studies have revealed positive associations between laboratory and real-world behavior (e.g., Englmaier & Gebhardt, 2010; Fehr & Leibbrandt, 2008; Franzen & Pointner, 2012b), others report only weak associations if any at all (e.g., Barr & Zeitlin, 2010; Benz & Meier, 2005; Gurven & Winking, 2008; Hill & Gurven, 2004).

Zizzo (2010) suggested that participants in economic experiments might be influenced by "cognitive experimenter demand effects" (CEDEs), which result from the actual nature of the artificial task and how it creates certain expectations about appropriate behaviors. Numerous factors can contribute to cognitive CEDEs, such as the establishment of the option set available to participants,

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emphasizing contextual variables of interest, or the particular research instruments used. For instance, in the Dictator Game (DG), participants are given an endowment and then provided an option set with a single active choice: to give however much of the endowment they would like to a random recipient. This might influence beliefs concerning how the game is "supposed" to be played. It undoubtedly causes them to consider this prosocial option more than if they had not been told of it (Bardsley, 2008; List, 2007; Pedersen, Kurzban, & McCullough, 2013). If the task is evident and does not require instruction, the experimental context itself does not appear to influence participant behavior (e.g., Fessler, 2009), but few experiments meet these criteria. Reducing CEDEs often presents a challenge, as they are established by the volunteering of the participant, the establishing of the research setting and the creating of the research task itself. Research that is completely free of CEDEs must therefore take the form of natural observation.

Another factor that might lead to differences between real world and laboratory behavior is the salience of the anonymity that is offered (Franzen & Pointner, 2012a; Haley & Fessler, 2005). Researchers frequently offer participants some level of anonymity in economic games in order to eliminate reputation-mediated effects. Anonymity typically refers to a mutual lack of awareness between interacting participants, but can also include anonymity between participant and experimenter (Levitt & List, 2007). The impact of anonymity is particularly important as different models concerning the proximate nature and evolutionary origins of human prosociality place different weights on the importance of reputation maintenance as a motivating factor (Haley & Fessler, 2005; Nowak & Sigmund, 1998). It is clear that participants are sensitive to reputational effects —the presence of observers increases prosocial behaviors (Andreoni & Bernheim, 2009; Kurzban, DeScioli, & O'Brien, 2007; Milinski, Semmann, & Krambeck, 2002), while stronger forms of anonymity decrease prosocial behaviors (Dana, Weber, & Kuang, 2007; Franzen & Pointner, 2012a; Hoffman, McCabe, Shachat, & Smith, 1994). Yet, even under the strongest forms of anonymity, prosocial behaviors are not entirely eliminated.

A number of recent studies, however, have revealed just how sensitive participants are to the possibility of being observed (Bateson, Nettle, & Roberts, 2006; Haley & Fessler, 2005; Nettle et al., 2013; Rigdon, Ishii, Watabe, & Kitayama, 2009; although see Lamba & Mace, 2010). Very subtle cues, such as an image of observing eyes or even dots arranged to vaguely resemble a face, increase the frequency (although not the amounts) of prosocial donations (Nettle et al., 2013). Despite assurances of anonymity, participants must still somehow record their decision with the knowledge that it will be reviewed and analyzed. The anonymity that is offered might therefore fail to meet the contextual requirements to be psychologically salient to all participants. Thus, the question remains: are these baseline levels of prosocial behaviors under anonymous experimental conditions the result of evolved predispositions to behave prosocially or follow internalized norms, or are they result of some reputation-concerned individuals still perceiving the experimental context as being non-anonymous?

1.2. Natural-field experiments

In order to provide absolute anonymity and eliminate the impacts of the experimental context, participants must be unaware that they are taking part in an experiment and made to believe that no one else is aware of their decision. This type of field experiment is often referred to as a natural-field experiment (Harrison & List, 2004). For such experiments, some level of engagement is often necessary in order to implement a treatment, initiate the task or establish appropriate controls. In some instances, researchers are able to very accurately recreate common laboratory experiments under natural-field settings, providing insight into, among other things, the impact of the laboratory conditions on player behavior (e.g., Camerer, 1998; List, 2006). The ability to recreate such experiments is often determined by the complexity of the task as well as sheer serendipity. While other forms of field experiments (more representative sample pool, natural currency, etc.) might improve the salience of certain tasks to participants, only the natural-field form allows for an exploration of how individuals behave in these tasks when they believe to be free from scrutinizing observation (Harrison & List, 2004).

The DG is a prime candidate for a natural-field study—it is one of the simplest games and one of the most widely used. As described above, a participant is given a windfall endowment and told that they can distribute the endowment between themselves and an anonymous recipient however they choose. Starting with Kahneman, Knetch, and Thaler (1986), at least 129 studies have since been published involving the use of the DG, including a combined 20,813 observations (Engel, 2010). Although there exists substantial cross-cultural variation, with participants from non-Western societies tending to be more generous, the vast majority of these studies involve Western populations. The mean offer from the meta-sample is 28% of the endowment with nearly two-thirds of participants offering a non-zero amount (Engel, 2010). The fact that participants tend to offer some amount, when the offering of nothing unambiguously maximizes their returns, has been presented as evidence that humans do not behave in ways that maximize wealth and have the capacity to act altruistically (Camerer, 2003; Henrich et al., 2004).

To date, only one other method has been employed (in two separate studies) to recreate the DG as a natural-field experiment (Franzen & Pointner, 2012b; Stoop, 2012). Natural-field experiments rarely replicate all aspects of their laboratory analogs; thus, different natural-field methods can capture different elements of the original protocol. In Stoop's well-controlled study, for instance, participants received an ostensibly misdirected envelope in the mail. The envelopes were transparent and included a conspicuous thank you note and a cash prize addressed to and intended for someone else who had volunteered. The task was therefore to decide whether to keep the money or go to some effort to mail the letter to the intended recipient. Participants in the natural-field design behaved similarly to those who were given the same task but aware that it was an experiment. In such a design, much of the DG is captured, except that the recipient has strong property rights to the endowment and the decision is largely dichotomous. Previous studies have shown that strong recipient property rights can lead to very different outcomes, sometimes achieving 100% non-zero donations (Carlsson, He, & Martinsson, 2010; Cherry, Frykblom, & Shogren, 2002; Oxoby & Spraggon, 2008). Thus, Stoop's study suggests that participants' motivation to follow strong social norms (e.g. do not steal others' property) is unaffected by the experimental context. However, most Dictator Game studies utilize windfall endowments, for which property rights are weak and social norms ambiguous. Yet approximately two-thirds of participants continue to donate non-zero sums under such conditions. If the costs of failing to uphold social norms are lower when the norms are ambiguous, participants under such conditions might be more willing to reduce prosocial behaviors upon greater assurances of anonymity. Thus, a traditional windfall endowment might provide for a more sensitive test for the effects of experimental context. Here, we attempt a natural-field DG that utilizes a windfall endowment similar to most DG studies.

2. Methods

2.1. The dictator game

The study consisted of three DG Conditions carried out over three two-week trips to Las Vegas, Nevada over the summer of 2012. Participants included 90 individuals (30 per condition) waiting alone