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Social Distance and Other-Regarding Behavior in Dictator Games: Comment

By IRIS BOHNET AND BRUNO S. FREY *

A surprisingly large amount of other-regarding behavior is the common finding of experiments on bargaining, public goods, and trust. Elizabeth Hoffman et al. (hereafter, HMS) (1996) have provided an insightful analysis of why experimental results deviate from game theoretic predictions in dictator games.¹ The authors conclude that individuals' dispositional knowledge about social norms and reciprocity is activated by decreasing social distance even though the dictator game explicitly excludes reciprocal sanctioning possibilities by experimental design. We challenge this conclusion.

While HMS (p. 654) define social distance to be "the degree of reciprocity that subjects believe exist within a social interaction," we argue that social distance influences other-regardness independent of any norms of social exchange. When social distance decreases, the "other" is no longer some unknown individual from some anonymous crowd but becomes an "identifiable victim" (Thomas C. Schelling 1968).² In order to discriminate between reciprocity-based and identifiability-based other-regardness, we also used the dictator game and varied the degree of social distance. An anonymous treatment is com-

pared with one-way identification where dictators can identify their respective recipients, and with two-way identification where both, dictators and recipients, visually identify one another.

As we agree with HMS that decreasing social distance increases other-regarding behavior and as no game theoretic predictions about the (functionals of the) distributions exist, our first null hypothesis is that the distribution of offers is the same in the anonymous game and in games where social distance is decreased (H1). All (mean) offers should be concentrated at a single point, namely CHF 0, leading to our second null hypothesis that average offers are the same for all treatment conditions (H2). If H1 and H2 are rejected, we can start differentiating between the HMS and our explanation. In order for reciprocity to be a meaningful concept, people must have some idea about how kind or mean a certain behavior is. The fairness reference point in dictator games seems to be an equal division of the pie.³ We thus expect more dictators' offers to be concentrated at equal division if their behavior is driven by reciprocity while identifiability induces a larger spread of the distribution of offers. Our third null hypothesis is that the percentage of dictators choosing an equal division is the same in all social distance treatment conditions which significantly differ from anonymity (H3).

I. Method

The experiments reported here were part of an experimental series on the role of social

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¹ The dictator game models the interaction of two players, the dictator and the recipient. The dictator is asked to allocate a fixed amount of money previously received from the experimenter between himself and the recipient, deciding unilaterally about the allocation of the money.

² The "identifiable victim effect" has recently been studied by Karen E. Jenni and George Loewenstein (1997), who stress a "reference group effect" and argue that a victim becomes identifiable if a high proportion of those at risk can be saved. This dimension is kept constant in our study as the "victims," the recipients in the experiment, always comprise 100 percent.

³ Students from the same subject pool as used in our experiments (who had never participated in a dictator game experiment before) were asked in a questionnaire what they considered to be a fair choice in a dictator game such as ours. An equal split was the modal response (Reiner Eichenberger and Felix Oberholzer-Gee, 1998).

interaction in prisoner's dilemma, dictator, and ultimatum games conducted at the University of Zurich during the winter semesters 93/94 and 95/96 with first-semester economics students (Frey and Bohnet, 1995; Bohnet and Frey, 1999). Subjects were recruited during their second week at the university. Therefore, most students did not know each other before the experiment. Experiments were run in class;⁴ participation, however, was voluntary. Subjects participated in only one of the treatments and were randomly assigned to groups of two. While anonymous subjects did not know who their counterpart was, subjects in the two-way identification treatment were asked to stand up and look at each other in silence for a couple of seconds. In the one-way identification treatment, identified recipients had a number in their hands by which dictators could identify them. While recipients would silently show their numbers in the first one-way treatment, in the second one, they were asked to also tell the audience their name, where they came from, what major they planned to study, and what their hobbies were.

Subjects were paid CHF7 (approximately \$5) for participating in the experiment and were told that they could earn up to an additional CHF13 (approximately \$10) in this experiment. Participants were then given a written instruction⁵ and an unmarked, sealed envelope containing a decision sheet as well as a small envelope, both marked with the identification number. Instructions were repeated orally, allowing subjects to ask questions and to control that everybody faced the same decision task. Dictators were randomly

assigned and given CHF13 in pieces of 50 cents of Swiss currency.⁶

They were asked to put the money that they wanted to offer their recipients (possibly zero) into the small marked envelope and put it into a box. After everybody had deposited their envelope, recipients could take the envelope marked with their number. The dictator's decision was secret, i.e., could neither be observed by other test subjects nor by the experimenters. The experiments were conducted by an experimenter who did not have any contact with the students before or after the experiment and not by the participants' tutor. Subjects were identified by numbers, no names being revealed at any time. Experimenter-subject and between-subject anonymity was thus guaranteed. Compared to HMS, our procedures resemble their double blind 2 treatment (which does not significantly differ from double blind 1) as we took precaution that no one, including the experimenter, could ever know any subject's decision, without, however, using blank envelopes or a monitor. No monitors were required to ensure credibility, as all subjects were present during the whole experiment, being able to monitor procedural correctness at all times.⁷

II. Results

Hypothesis 1 that the distribution of offers is the same in the anonymous game and in games where social distance is decreased is rejected with a Kolmogorov-Smirnov test for one-way identification with information ($Z = 1.52$, $p = 0.02$) and two-way identification ($Z = 2.40$, $p < 0.01$). It is not rejected for pure one-way identification ($Z = 0.87$, $p =$

⁴ For the advantages of classroom dictator game experiments, see Norman Frohlich and Joe Oppenheimer (1997). Due to our subject-pool selection process we expect slightly more other-regardness under anonymous conditions than in the HMS treatment while the differential effects of our treatment conditions should not be affected.

⁵ The instructions may be provided upon request. The following language was used for dictators: "In this experiment you are randomly matched with another person present in this room. You will receive the sum of CHF13 which you may allocate between yourself and the other person *as you wish*."

⁶ Our experimental design allows for a more comprehensive set of allocations to choose from than the HMS design as in the latter, choices were restricted to allocations expressible in whole dollars, only. This difference is not expected to influence results (see Gary Bolton et al., 1998).

⁷ However, the relevance of experimenter-subject anonymity is not corroborated by the dictator game results reported in Bolton et al., who argue that differences in written instructions are the main cause for differences across dictator game studies.

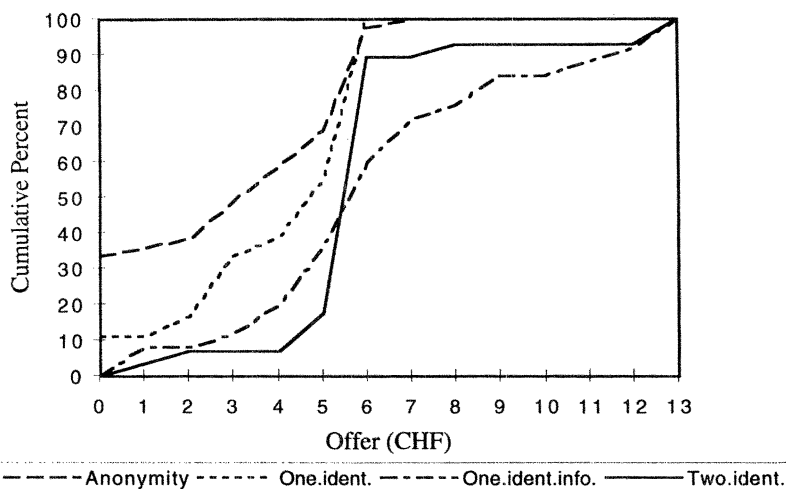


FIGURE 1. CUMULATIVE DISTRIBUTIONS OF OFFERS IN THE DICTATOR GAMES

Note: Each category but 13 consists of two offers, e.g., 0 includes 0 and 0.5 offers, 1 includes 1 and 1.5 offers, etc.

0.44). Under anonymous conditions, 28 percent of the dictators ($N = 39$) did not offer any money to their recipient. In the double blind HMS treatment, 62 percent of the subjects kept all the money for themselves, and in the anonymous \$10 dictator game by Robert Forsythe et al. (hereafter, FHSS) (1994), 21 percent did. Nobody chose the subgame-perfect Nash equilibrium with one-way identification with information ($N = 25$) and with mutual identification ($N = 18$). The share of dictators who chose the dominant strategy is thus significantly larger with anonymity than when social distance is decreased (Fisher's Exact test, $p < 0.01$) in all but one case. With pure one-way identification, 11 percent of the dictators ($N = 18$) offer 0 to their recipient which is not significantly different from anonymity (Fisher's Exact test, $p = 0.16$). Figure 1 shows the cumulative distributions for the four treatments.

On average, dictators offer 26 percent of the CHF13 in the anonymous game, 35 percent with one-way identification, 52 percent with one-way identification with information, and 50 percent with two-way identification. An analysis of variance (Kruskal-Wallis test) suggests that mean offer rates are not the same for all four treatment conditions ($\chi^2 = 27.6$,

$p < 0.01$) (hypothesis 2). A Wilcoxon test again reveals significant differences between the mean fractions of CHF13 offered in anonymity and in two-way identification ($W = 1296.0$, $p < 0.01$) as well as in anonymity and in one-way identification with information ($W = 1087.5$, $p < 0.01$), while the pure one-way identification setting does not yield significant differences when compared with anonymity ($W = 604.50$, $p = 0.15$). The latter result indicates that a little bit more is required to increase offers than one-way identification. The data for the two significantly different social distance treatments suggest that dictators offer half the pie in both cases. However, Table 1 indicates that dictators did not choose

TABLE 1—CHOICES OF EQUAL DIVISION IN THE DICTATOR GAMES

Treatment condition	Percent choosing equal division	Standard deviation
Anonymity	25	2.75
One-way identification	39	2.23
One-way identification with information	16	3.15
Two-way identification	71	2.43

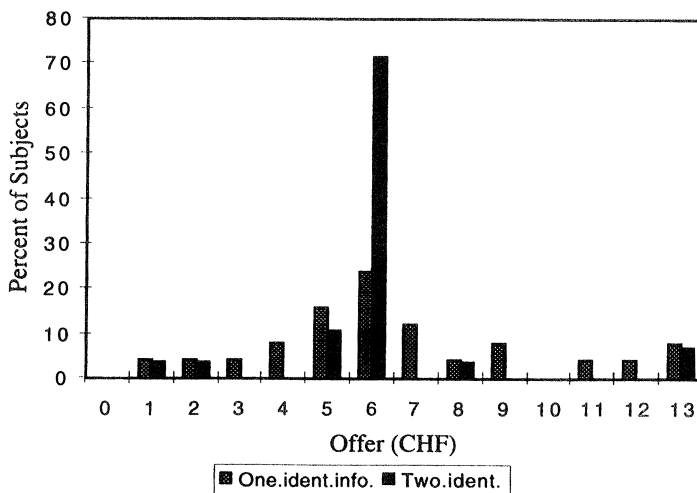


FIGURE 2. DISTRIBUTIONS OF OFFERS IN TWO DICTATOR GAMES

equal division to the same degree in the two treatment conditions.

For the anonymous treatment, we get similar results as FHSS who report that in their anonymous \$10 dictator game, 21 percent of dictators offered half the pie while HMS do not indicate how many dictators chose an equal division in their treatments. Hypothesis 3, proposing that the percentage of dictators choosing equal division is the same when social distance is significantly increased, is not supported. A χ^2 -test rejects the probability that the share of subjects who chose equal division is independent of the treatment conditions, two-way identification and one-way identification with information ($\chi^2 = 16.38$, $p < 0.01$). Figure 2 compares these two treatments which yield approximately a 50:50 split on average and shows that only the offers in the two-way identification treatment are concentrated at CHF 6.50. Dictators' choices thus converge to the fairness reference point where both, dictators and recipients, can identify one another. On the other hand, only 16 percent of the dictators offered exactly CHF 6.50 (and 24 percent offered between CHF 6 and CHF 6.90, as shown in Figure 2) where *ex post* sanctions are excluded by only allowing one-way identification.

III. Discussion and Conclusions

Reciprocity is an important motivational factor and has been shown to increase efficiency in many instances (Ernst Fehr et al., 1997). However, a decrease in social distance need not increase the strength of reciprocal motivations. Even if people "have unconscious, preprogrammed rules of social exchange behavior that suit them well in the repeated game of life's interaction with other people," the conclusion that "these patterns are imported into the laboratory" (HMS, 1996 p. 659) to the extent that subjects behave as if they could be sanctioned by others, even in the absence of any sanctioning possibilities, is challenged in this Comment. Reciprocity is too broadly applied.

We vary social distance by allowing for different degrees of identification between dictators and their respective recipients. To our knowledge no study has tested for the identification effect so far. Two-way identification allows for reciprocity and fairness reference points to become relevant, or as Alvin E. Roth (1995 p. 295) puts it, "face-to-face interactions call into play all of the social training we are endowed with." As one-way identification excludes the potential for future social sanc-

tions, no convergence to the reference point is induced. Rather, it transforms anonymous, faceless entities into visible, specified human beings, i.e., identifiable victims. With one-sided visual identification, other-regarding behavior is more pronounced if dictators are provided with some information on who their respective recipient is, supporting Schelling's (1968) claim that "the more we know, the more we care." Our findings are in line with the results reported by Catherine C. Eckel and Philip J. Grossman (1996) who compared an anonymous student with an established charity as recipients in a dictator game. They observe an increase in mean offers from 10.6 percent to 31.0 percent when the recipient is the "deserving" Red Cross.

Charities have long recognized the importance of a victim's identifiability and offer sponsorships for specific recipients, e.g., a child in a third-world country. The different treatment of identifiable victims and statistical lives is also discussed in health care. Critics point out that too few resources are allocated to preventive measures such as hygiene, nutrition, inoculations, mammographies, etc., because victims have not been identified yet (Milton C. Weinstein and Robert J. Quinn, 1983). In law, jury research found a decrease in social distance to result in judgments not based on fact but on sympathy (Walter F. Abbott et al., 1993). In neither of these cases expectations of reciprocity seem to influence behavior but rather the identifiability of the individuals involved.

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