Economics Letters 101 (2008) 69–72

Contents lists available at ScienceDirect

Economics Letters

journal homepage: www.elsevier.com/locate/econbase

# Self-interest, sympathy and the origin of endowments ☆

Todd L. Cherry [a,*], Jason F. Shogren [b,1]

[a] Department of Economics, Appalachian State University, Boone NC 28608-2051, United States
[b] Department of Economics and Finance, University of Wyoming, Laramie WY 82071-3985, United States

ARTICLE INFO

*Article history:*
Received 10 July 2007
Received in revised form 29 March 2008
Accepted 3 April 2008
Available online 11 April 2008

*Keywords:*
Bargaining
Experiments
Mental accounting

*JEL classifications:*
C9
C7
D0

ABSTRACT

We explore whether the recent laboratory findings that suggest the origin of endowment matters in simple bargaining games are actually due to contextual shifts of relative effort and deservingness. Results support previous findings of endowment origin yielding more self-interested behavior.



## 1. Introduction

During the last decade, economists have explored the nature of *social preferences*—self-interested people who are also concerned about the payoffs and intentions of others (see for example Charness and Rabin, 2002; Camerer and Fehr, 2004). Such "other-regarding behavior" is observed in many bargaining games such as the *Anonymous Dictator* game (see Hoffman et al., 1994). This game explores the nature of self-interested strategic behavior by giving a person complete control over the distribution of endowed money, and complete anonymity from all others including the experimenter. Theory predicts rational dictators with complete control and complete anonymity will offer up nothing to others; evidence suggests otherwise—dictators frequently share the endowment. These social preferences illustrate how a person's behavior differs from that predicted by rational choice, and supports the call for a new behavioral game theory based on a broader set of social preferences such as aversion to unequal distributions of wealth (e.g., Camerer, 2003).

In response, Cherry et al. (2002) extended the Anonymous Dictator game to create an institutional context in which nearly all dictators were *hardnosed* rational game-theorists—9.5 of every 10 dictators gave nothing to their subordinates. Their straightforward adjustment to the experimental design had dictators make offers based on *earned* endowments rather than *windfall* endowments.[2] Legitimizing money with effort, along with social isolation, appears to close the gap between observation and standard game theory.[3]

But dictators earning the endowments inherently alters the symmetry of effort and possibly the perceived relative deservingness of the players, which previous work argues may influence dictator offers (Eckel and Grossman, 1996; Charness and Rabin, 2002). So one may suggest the observed earned endowment effect is really due to changes in relative deservingness, not legitimizing the endowment with effort. Herein we disentangle these two factors by testing the effect of earning endowments across three contexts that alter the deservingness of the recipient. Results provide evidence that recipient deservingness matters, though it does not explain the previously

☆ We thank Bart Wilson and his students at George Mason University for motivating this study. Timothy Perri, Mark Strazicich and Stephan Kroll provided helpful comments. Support from the Walker College of Business at Appalachian State University is greatly appreciated.

* Corresponding author. Tel.: +1 828 262 6081; fax: +1 828 262 6105.
*E-mail addresses:* cherrytl@appstate.edu (T.L. Cherry), jramses@uwyo.edu (J.F. Shogren).
[1] Tel.: +1 307 766 5430; fax: +1 307 766 5090.

[2] Oxoby and Spraggon (2008) report even stronger results in a subsequent study. In their experiments, dictators that earned their endowment offered nothing to their subordinates in all cases.

[3] This finding follows previous work that indicated effort and deservingness matter in simple bargaining games; see for example Kahneman et al. (1986), Shogren (1989), Ruffle (1998) and Konow (2000).

0165-1765/$ – see front matter © 2008 Elsevier B.V. All rights reserved.
doi:10.1016/j.econlet.2008.04.007

**Table 1**
Summary statistics

| | Windfall endowment | | | Earned endowment | | |
|---|---|---|---|---|---|---|
| | No opportunity | Neutral | Opted out of opportunity | No opportunity | Neutral | Opted out of opportunity |
| Mean offer | | | | | | |
| Endow=$10 | $3.47 | $2.41 | $1.12 | $2.41 | $0.77 | $0.00 |
| | (34.7%) | (24.1%) | (11.1%) | (24.1%) | (7.7%) | (0.0%) |
| Endow=$20 | $7.18 | $6.18 | $2.41 | $6.65 | $1.00 | $0.12 |
| | (35.9%) | (30.9%) | (12.1%) | (33.2%) | (5.0%) | (0.6%) |
| Positive offers | | | | | | |
| Endow=$10 | 14 | 12 | 8 | 12 | 5 | 0 |
| | (88.2%) | (70.6%) | (47.1%) | (79.4%) | (26.5%) | (0.0%) |
| Endow=$20 | 16 | 14 | 7 | 15 | 4 | 2 |
| | (88.2%) | (82.45%) | (41.2%) | (79.4%) | (26.5%) | (11.8%) |
| Equal splits | | | | | | |
| Endow=$10 | 7 | 3 | 1 | 4 | 1 | 0 |
| | (35.3%) | (17.7%) | (5.9%) | (23.5%) | (2.9%) | (0.0%) |
| Endow=$20 | 5 | 4 | 2 | 4 | 0 | 0 |
| | (35.3%) | (23.5%) | (5.9%) | (23.5%) | (2.9%) | (0.0%) |
| *N* | 34 | 34 | 34 | 34 | 34 | 34 |

Notes: Figures in parentheses are the percentages of total endowment or total bargains.

reported earn endowment effect. Dictators can be sympathetic, but less so with earned money.

## 2. The experiment

The basic experimental design follows previous work (Oxoby and Spraggon, 2008 and Cherry et al., 2002).[4] When recruited, subjects were assigned to group A or B, with each group meeting in separate rooms at separate times. The two groups did not have any contact before, during, or after the session. Subjects were randomly matched across groups to form bargaining pairs. Instructions for the dictator game were read aloud to both groups, and all questions were addressed. Person A was the first mover (i.e., the dictator) and dictated a split of his or her endowment with Person B (i.e., the recipient). Administrators delivered the offers to recipients. All bargains were one-shot, and players had complete information. Final earnings were determined, and subjects departed individually with cash payment.

Our experiment follows a 2×3 design that varies two factors of the basic framework: endowment origin; (1) *earned* or (2) *windfall*, and recipient opportunity; (a) had *no opportunity* to earn or receive any money, (b) had an opportunity, but *opted out*, or (c) *neutral*—the classic treatment in which no information is disclosed about recipient's opportunity.[5] Two hundred and eight students from the undergraduate student body at Appalachian State University participated in the six sessions, each session having 34 independent bargaining pairs.[6]

### 2.1. Endowment

In the earned endowment treatments, dictators earned money by answering 17 questions taken from the Graduate Management Admissions Test (GMAT). We ranked people based on the number of correct answers; ties were broken by the amount of time taken to answer the questions. Those performing in the top half of the group earned $20, while those in the bottom half earned $10. Dictators acted over their earnings in the bargain.

The windfall treatments followed the standard protocol of the experimenter allocating money to the dictators. To mimic the earned endowment treatment, half of the dictators were randomly selected to receive $10, with the other half receiving $20. Dictators subsequently acted over their allocated endowments in the bargain.[7]

### 2.2. Knowledge of recipient opportunity

We considered three contextual variations of recipient opportunities to earn or receive endowments themselves: *no opportunity*, *opted out of opportunity*, and *neutral*. In the no opportunity treatment, dictators were informed the recipient in Room B had no opportunity to earn or receive money. The recipient only received what the dictator offered. In the opted out of opportunity treatment, dictators knew recipients had an opportunity to earn or receive money, but choose not to participate. Dictators were randomly assigned to people that were recruited for the experiment but chose not to participate. Therefore, unlike other treatments, recipients in the 'opted out' treatment were not in Room B and received their payoffs (if any) at a later date.[8] The neutral treatment did not provide the dictators any information about the recipient's opportunity to earn or receive money—neither having nor not having an opportunity.

## 3. Experimental results

Table 1 reports the aggregate results by treatment and endowment level. Results confirm previous reports that dictators make significantly lower offers when acting over earned rather than windfall endowment (e.g., Oxoby and Spraggon, 2008; Cherry et al., 2002). Across the treatments, dictators acting over earned endowments offered less than those acting over windfall endowments in all cases. In the low endowment bargains, dictators that earned their endowment offered $1.06 (31%) less in the no opportunity treatment, $1.64 (68%) less in the neutral treatment, and $1.12 (100%) less in the opted out treatment. Dictators that earned high endowments offered $0.53 (7%)

[4] The protocol for subject anonymity follows Oxoby and Spraggon (2008), which is a weaker form of the double-blind protocol demonstrated in Hoffman et al. (1996) and Cherry et al. (2002).

[5] Our primary focus is on the *no opportunity* versus *opted out of opportunity* conditions. But additional categories of deservingness exist and are worth exploring in future research, e.g., recipient who was given an opportunity to earn wealth and actually took the opportunity.

[6] Sessions followed a written protocol to ensure consistency.

[7] The selection of high and low endowment dictators in the earned and windfall treatments differ (exam score versus random), which may raise questions of sample selection, but previous research using this selection method has found this is not a significant concern.

[8] The instructions stated the recipient "decided not to participate" in the session. Instructions are available upon request.