



Endogenous Context In A Dictator Game

By: Linda Thunström, **Todd L. Cherry**, **David M. McEvoy**, & Jason F. Shogren

Abstract

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Endogenous context in a dictator game

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a b s t r a c t

The early characterization of humans as narrowly self-interested agents has unraveled in recent decades due to advances in the behavioral sciences. There is convincing evidence that peoples' preferences and decisions are shaped by their relationship with others and the context of their interactions. While previous studies have demonstrated that context can shape preferences, we consider whether people endogenously shape their own preferences by choosing their context. Using a one-shot game, we explore whether dictators actively seek or avoid information regarding the deservingness of their recipient. We find that four out of five dictators endogenously choose to close the social distance gap by finding out the deservingness level of their recipients, and they act on that frame – the deserving get more, the undeserving get less. We further show that the decision to seek more information about the recipient is systematic, explained by the cultural worldviews of the dictator.

Keywords:

Dictator game
Context, Deservingness
Preference shaping
Endogenous information

Be careful the environment you choose for it will shape you.

–D. Clement Stone

1. Introduction

John Stuart Mill's early characterization of humans as narrowly self-interested agents is a valuable precept of neoclassical economic theory, a simplifying starting point that has served economists well when modeling individual behavior (Persky, 1995). Research from the behavioral sciences however has provided considerable evidence that our interests are more nuanced than the presumption, with preferences being shaped by our relationship with others and the context of our interactions (e.g., see Tversky and Simonson, 1993). How context shapes preferences matters because it follows that standard welfare measures used in policy analyses are transient artifacts contingent on context. The efficacy of policy analysis therefore can benefit from a better understanding of the interplay between context and preferences. Herein we contribute to this effort by exploring the notion that context and social preferences are endogenous choices rather than exogenous determinants. While previous studies find that context can shape

preferences, we consider whether people endogenously shape their own preferences by choosing their context.¹

Following the literature, we use a variant of the dictator game to show that context about the recipient deservingness affects dictator behavior (e.g., Engel, 2011; Cherry and Shogren, 2008). We extend this finding to explore whether dictators actively seek or avoid a richer context about recipient deservingness—context that may be costly to the dictator. If they choose to avoid knowing about recipient deservingness, dictators are choosing to maintain social distance—hiding from the more demanding context. But if dictators choose to know recipient deservingness, they act to close the social distance gap. They want to draw upon the more personal context, be less *homo economicus* and more human.

Our study connects two strands of the dictator game literature. First, to identify a robust non-material context that shapes other-regarding behavior, we draw from the deservingness literature that shows dictators show more generosity to more deserving recipients (e.g., Engel, 2011; Cherry and Shogren, 2008). And second, we introduce endogeneity by following the strategic or willful ignorance literature that shows dictators often justify maximizing their own payoffs by avoiding information about how their actions may

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¹ We note that other studies have considered the endogenous selection of policies, institutions and group membership (e.g., Kosfeld et al. 2009; Sutter et al., 2010; Cherry et al., 2014; Gülerk, 2014).

lower the payoffs of recipients (e.g., [Dana et al., 2007](#); [Feiler, 2014](#)). The resulting framework allows us to examine whether dictators choose to maintain or reduce the social distance of recipients, and therefore choose the context that shapes their social preferences.

Our results reveal that 4 of 5 dictators choose to close the social distance gap—they choose to be more human, though not always more humane. The majority chose to know about the deservingness of the recipient, and they acted on that frame—the deserving get more, the undeserving get less. We verify the decision to close the social distance gap is systematic, explained by the cultural worldviews of the dictator.

2. The experiment

The experimental design is based on a one-shot anonymous dictator game. The absence of strategic concerns makes the dictator game a useful framework to examine other-regarding behavior (see, e.g., [Hoffman et al., 1996](#)). When recruited, subjects were assigned to group A (dictators) or B (recipients). The two groups did not have any contact before, during, or after the session. Subjects were randomly matched across groups to form pairs. The dictators decided how to split \$10 with their randomly matched recipient. To make an offer, dictators had three minutes to open a sealed envelope, fill out the enclosed decision card, and place the completed decision card back in the envelope. Dictators were called one by one to exit the room, taking their envelope to a station outside the room to receive their payment (\$10 minus the offer). Administrators delivered the offers along with a copy of the instructions to the recipient (available on request).²

Our 3×2 design varies two treatment variables in the basic dictator game framework—*recipient deservingness* (high, low or uncertain) and *information origin* (exogenous or endogenous).

2.1. Recipient deservingness

To vary recipient deservingness in the eyes of dictators, we exploit differences in the investment that recipients make in participating in the study. Prior to making offers, dictators knew they were matched with a recipient that either: accepted the invitation to participate and showed up to different rooms at different times (*high*), rejected the invitation to participate but were identified from those individuals in the recruiting database that received an invitation but did not attempt to register for the experiment (*low*), or was equally likely to have accepted or rejected the invitation to participate (*uncertain*). Similar information about recipients is used in [Cherry and Shogren \(2008\)](#) and they find that this measure of deservingness significantly influences dictators' behavior. Note that we are drawing from this literature to replicate a context that has previously established the importance of other-regarding preferences in decision making. From this, we construct a setting that allows dictators the choice of their context and therefore their social preferences.³

Note that all dictators were informed that the distribution of recipients were equally split between high and low types, but only dictators in the high and low treatments knew the deservingness of their recipient. Deservingness levels were not revealed to dictators in the uncertain treatment.

² In [Grossman \(2014\)](#) and [Dana et al. \(2007\)](#), dictators choose between two options that split different or uncertain total amounts.

³ Other social distance contexts from the literature would be plausible, such as reducing anonymity by revealing a person's family name ([Charness and Gneezy, 2008](#)).

2.2. Information origin

Recipient deservingness was revealed to dictators in one of two ways—*exogenous* or *endogenous*. In the exogenous treatments, the instructions informed dictators about the deservingness of their recipient. In one treatment dictators were informed that the Player B they were matched with accepted the invitation to participate and showed up (in another room) on time (*exogenous-high*). In another treatment, the dictators were informed that their recipient was invited to participate but rejected the invitation (*exogenous-low*), and in a third treatment the dictators were uncertain about the participation decision of the recipients but, like in all treatments, knew the distribution was equally split (*exogenous-uncertain*). This created three treatments which correspond to [Cherry and Shogren \(2008\)](#). We extend this design to allow dictators the choice to know or avoid information about recipient deservingness.

In the endogenous treatment, dictators made an active decision whether to learn about the participation decision of their recipients. To facilitate this, in each endogenous information session, dictators were provided with two envelopes. An envelope labeled "INFO" contained a decision card that included information on the recipient's participation decision, while the decision card in the envelope marked "NO INFO" did not reveal the recipient's participation decision. Specifically, the dictators' instructions stated:

- If you want to learn about Player B, open the envelope labeled INFO. Fill out the decision card and place it back in the envelope.
- If you do not want to learn about Player B, you must open the envelope labeled NO INFO. Fill out the decision card and place it back in the envelope.

Dictators could only open one envelope to make an offer.⁴ If dictators chose to learn recipient deservingness, the split was categorized as either *endogenous-high* or *endogenous-low*, each with a 50-50 likelihood. If dictators chose to not learn about the recipient deservingness, the split was placed in the *endogenous-uncertain* case. The exogenous treatments replicate previous studies that show recipient deservingness influences dictator offers (e.g., [Cherry and Shogren 2008](#)). The endogenous treatments extend the design to consider whether dictators choose to be ignorant about recipient deservingness.

2.3. Worldviews

To explore whether dictator behavior is random or systematic, we elicit the individual worldviews of dictators as possible determinants of seeking or avoiding additional context. After the split, dictators completed a survey that elicited their cultural worldviews. We follow the literature by using the short-form instrument from [Kahan et al. \(2011\)](#). Dictators used a six-level Likert scale to indicate their (dis)agreement to two sets of six statements (1=strongly disagree to 6=strongly agree). One set of statements captures hierarchy-egalitarianism worldviews: "attitudes toward social orderings that connect authority to stratified social roles based on highly conspicuous and largely fixed characteristics such as gender, race, and class" (p. 51, [Kahan et al., 2011](#)). Another set of statements captures individualism-communitarianism worldviews: "attitudes toward social orderings that expect individuals to secure their own well-being without assistance or interference from society versus those that assign society the obligation to secure collective welfare and the power to override competing individual interests" (p. 51, [Kahan et al., 2011](#)). The sum of scores for each set of

⁴ This no-default design feature follows [Larson and Capra \(2009\)](#) and [Grossman \(2014\)](#), which show that default settings to show that default options on information significantly affect dictator behavior.

Table 1
Summary statistics by deservingness and origin of information.

Information source	Chose information?	Recipient deservingness	Mean offer	N
Exogenous	n.a.	High	\$3.17	45
		Low	\$1.14	44
	n.a.	Uncertain	\$2.75	45
		Total	\$2.36	134
Endogenous	Yes 79%	High	\$4.47	51
		Low	\$0.74	62
	No 21%	Uncertain	\$2.03	30
		Total	\$2.34	143
Pooled			\$2.38	277

statements, which can range from 6 to 36, places the individual's views along the spectrum of the corresponding worldviews. Higher *hierarchy* scores indicate worldviews that are more hierarchal (less egalitarian), while higher *individualism* scores indicate worldviews that are more individualistic (less communitarian).

2.4. Protocol

The experimental sessions were conducted at the Appalachian Experimental Economics Laboratory at Appalachian State University. Participants were recruited from the general undergraduate and graduate student population using the Online Recruiting System for Experimental Economics (ORSEE). In total, 554 people participated in one of 16 sessions, generating 277 independent splits. The experimental sessions lasted about 25 minutes.⁵

We note that the results from laboratory experiments sometimes come with questions of external validity (e.g., Sear, 1986). However, considerable evidence indicates that behavior, and in particular comparative static results, is quite consistent across the lab and field (e.g., Chermak et al., 2013; Alm et al., 2015). In particular, Exadaktylos et al. (2013) find subject behavior in economic games, such as the dictator game, corresponds closely to the general population.

3. Results

3.1. Deservingness

We first confirm that recipient deservingness matters to dictators' social preferences. From Table 1, results from the exogenous treatments reveal that deservingness significantly influences dictator behavior. Compared to the exogenous-uncertain treatment, dictators make significantly higher average offers to high deserving recipients and significantly lower offers to low deserving recipients (\$3.17 vs. \$2.75, $p < 0.01$; \$1.14 vs. \$2.75, $p < 0.01$).⁶ Our results closely match those reported in Cherry and Shogren (2008). In their three treatments with \$10 windfall endowments, they find that on average the high deserving receive \$3.47, the low deserving \$1.12 and the uncertain \$2.41. Our result is also qualitatively consistent with Eckel and Grossman's (1996) finding that dictators offer higher amounts to established charities (the more deserving) compared to anonymous students (the less deserving).

3.2. Ignorance

We now examine whether dictators will actively seek or avoid the potentially costly context of deservingness. Results from the

endogenous treatments show that, when given the chance to opt out, only about 1 in 5 dictators do so. Most dictators, about 4 in 5, choose to know about recipient deservingness—they choose to close social distance and have their social preferences shaped by the more personal context. This finding suggests that context is not necessarily an exogenous determinant of social preferences; rather it is a systematic choice that endogenously shapes social preferences.⁷

Note, from Table 1, dictator offers are consistent across endogenous and exogenous treatments. In aggregate, there is no significant difference in the mean offer: \$2.36 vs. \$2.34 ($p = 0.934$), and similar patterns emerge when stratifying by deservingness treatments.

3.3. Worldviews

To verify that dictator behavior is not random, we consider how individual worldviews systematically explain the choice to close social distance. We estimate two linear probability models that regress the two dictator decisions—to know the recipient's deservingness (*opt-in*) and the amount offered (*offer*)—on the two worldview measures (*hierarchy* and *individualism*). Estimating the opt-in model (first column in Table 2) reveals that worldviews significantly affects this choice—the likelihood of choosing to know the deservingness of the recipient is significantly higher among dictators with more egalitarian (less hierarchal) or more communitarian (less individualistic) worldviews or both.

An additional set of models reveals that worldviews have no significant influence on the amount offered by the dictator. This finding is robust for the pooled model and when estimating the model using data stratified by treatment variables and dictator opt-in choice (Table 2). While worldviews affect dictators' decision to know about the recipient's condition, it is what they learn about deservingness rather than their worldviews that affects the offer.

4. Concluding remarks

Do dictators choose to learn more about the context implied by the deservingness of their recipients? Yes—we find 4 of 5 dictators want more context, not less. They actively chose to know the deservingness of the recipient, and they acted on it—giving more

⁷ Despite differences in the content and cost of the information, Grossman (2014) finds a similar rate (75%) of dictators opting for information about recipient payoffs. Unlike Grossman (2014) and this study, Dana et al. (2007) sets no information as the default option and finds fewer dictators opting for information (56%).

⁸ The endogenous choice of context introduces additional nuances for our understanding of moral self-regulation, which considers moral licensing and moral cleansing (see Brañas-Garza et al. 2013, Sachdeva et al., 2009). In choosing context, people are more capable of justifying future actions.

⁵ Instructions are available upon request.

⁶ The p -values reported are from two sample t tests.

Table 2
Dictator behavior and cultural worldviews.

	Opt-in	Offer				
		Pooled	No option	Option		
				Opt-out	Opt-in-high	Opt-in-low
Intercept	1.429 (0.000)	3.372 (0.000)	3.155 (0.000)	-1.698 (0.484)	4.210 (0.000)	1.720 (0.124)
Hierarchy	-0.029 (0.014)	-0.031 (0.557)	-0.039 (0.608)	0.269 (0.081)	0.077 (0.278)	-0.030 (0.733)
Individualism	-0.025 (0.010)	-0.062 (0.143)	-0.030 (0.614)	-0.010 (0.937)	-0.069 (0.238)	-0.059 (0.390)
F	9.78 (0.000)	1.62 (0.000)	0.32 (0.724)	1.69 (0.203)	1.11 (0.339)	0.61 (0.545)
N	143	277	134	30	51	62

Notes: *p*-values in parentheses.

money to the deserving, and less to the underserving. Choosing the richer context was systematic, explained by the dictators' cultural worldviews. Rather than hiding from potentially taxing context, these dictators choose to close the social distance—they choose to let their preferences be shaped by the human condition of the recipient. They choose to be more human and less *homo economicus*.

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