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Gender- and frame-specific audience effects in dictator games

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HIGHLIGHTS

- The impact of an audience on dictator decisions is studied in give and take frames.
- Treatments allow for inference on self-signaling and other motivations for giving.
- Audience effects vary by both frame and gender.

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ABSTRACT

We study dictator allocations using a 2 × 2 experimental design that varies the level of anonymity and the choice set, allowing observation of audience effects in both give and take frames. Changes in the distribution of responses across treatment cells allow us to distinguish among alternative motives as elaborated in recent theory. We observe significant audience effects that vary by both frame and gender. The pattern of responses suggests that heterogeneous concerns for reputation and self-signaling across gender give rise to the contextual effects associated with the give and take frames that have previously been observed in the literature.

1. Introduction

Evidence of the propensity to give in dictator games is widespread and well known, but still incompletely understood.[1] Contributions that explain behavior entirely through distributional preferences, such as those by Fehr and Schmidt (1999) and Bolton and Ockenfels (2000) have been challenged, both by protocols that allow for taking from the passive player and by theory and experiment that demonstrate the importance of audience effects. List (2007), Bardsley (2008), and Cappelen et al. (2013) all find giving is diminished in treatments in which both giving and taking are permitted, indicating that "dictator giving … is not explained by unselfishness towards others that exists independently of the experimental context" (Bardsley, 2008). Consistent with this conclusion, List (2007) argues that "a more appropriate theoretical framework must be advanced and subsequently tested in order for the meaning of giving to be more fully understood".

One candidate framework is Andreoni and Bernheim's (2009) model of audience effects. Similar in aim to more general theories that admit intrinsic, extrinsic, and image-related motivations Benabou and Tirole (2006), Andreoni and Bernheim (2009) focus specifically on dictator giving and argue that a preference for fairness must be augmented by a concern for reputation and self-image to account for experimental findings. Support for the theory is found in experimental results that vary the social distance between the dictator and recipient, and in some cases the experimental monitor (Andreoni and Bernheim, 2009; Dufwenberg and Muren, 2006; Hoffman et al., 1994, 1996; Koch and Normann, 2008), as well as in protocols where dictators sacrifice monetary returns to avoid participation and observation (Dana et al., 2006; Broberg et al., 2007).

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[1] Camerer (2003) and Engel (2011) document the extent of giving. Engel reports that across more than 600 treatments about 64% of subjects give to the passive player. On average, 28% of the available surplus is transferred. Conditional on giving, equal division is the modal choice.

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Table 1
Player A payoffs descriptive statistics, by treatment and gender.

Panel A	Aggregate			Conditional on giving			Conditional on taking		
Treatment	*n*	Mean	S.D.	*n*	Mean	S.D.	*N*	Mean	S.D.
GA	51	16.94	4.31	25	13.76	4.24	–	–	–
TA	66	21.59	6.20	27	15.19	2.29	32	27.34	2.40
GO	50	16.44	3.91	34	14.76	3.69	–	–	–
TO	61	19.77	6.65	27	14.04	1.44	21	27.00	2.76
Total	228	18.93	5.88	113	14.47	3.73	53	27.21	2.53

Panel B	Aggregate: female			Aggregate: male		
Treatment	*n*	Mean	S.D.	*n*	Mean	S.D.
GA	21	15.57	3.92	29	17.83	4.25
TA	32	22.63	5.91	32	20.56	6.54
GO	26	17.19	2.62	20	15.50	5.26
TO	31	18.71	6.11	28	21.04	7.31
Total	110	18.89	5.61	109	19.03	6.33

Mean values are player A payoffs in US Dollars. Panel A presents values for the entire sample and Panel B presents values by gender.

The examination of audience effects in dictator games has, to date, been limited to the give frame and in this study we present results from a two-by-two experimental design – varying both observability and the action space. Consistent with existing results, we hypothesize that taking imposes a cost – but one that varies with the level of observability. Thus, our analysis focuses primarily on treatments within either the give or take frame, and only secondarily on differences across frames. In this respect our protocols are most closely related to treatments of List (2007) who explores the structure of the 'moral cost function' within the take space. While varying the maximum amount that dictators can take, List observes coherence in the moral cost function on both the extensive and intensive margins; more dictators take and more is taken when the permitted amount is increased from 20% to 100% of the endowment. Our protocols explore the moral cost function from a complementary perspective, by varying costs associated with public observability, rather than the available benefits.[2]

2. Design

Two-player dictator games were conducted, between subjects, using a 2×2 factorial design varying the choice set and the observability of dictators' choices. Provisional endowments of \$20 (\$10) for Player A (Player B) were given to Player A in two envelopes containing \$1 bills (US). Each envelope was labeled by player type (A or B) and a common numeric identifier for the subject pair. In the give frame (G), Player A was instructed that they could transfer to Player B any amount from \$0 to their entire endowment of \$20 in one dollar increments, by transferring bills from the A envelope to the B envelope. In the take frame (T) the set of possible transfers is expanded to range from −\$10 to \$20, allowing transfers from B to A of amounts up to and including B's entire endowment.

Variation in the observability of Player A's behavior is created by implementing both an anonymity preserving double-blind protocol (A), and a public protocol in which each dictator's decision is observed by all others in the experimental lab (O). In both observable and anonymous conditions, each Player A dropped their B envelope into a sealed box individually after allocation decisions were made. In the observable condition, all envelopes were first collected by the monitor. Each Player A was then called individually to the front of the room, where the amount in Player B's envelope was counted by the experimental monitor and made public by entering the dollar value into a spreadsheet projected at the front of the room. All monies were returned to the B envelope and Player A then dropped the envelope into the sealed box before returning to their seat and rejoining the audience. As in List (2007), Player A and Player B "did not have any contact before, during, or after the session". The audience effects we examine are therefore associated with the observation of dictator decisions by the experimental monitor and the other A players. Three distinct monitors were used, all with extensive previous experience in the conduct of laboratory experiments.

Experimental sessions were conducted at the University of Alaska Anchorage Experimental Economics Laboratory with graduate and undergraduate students. The lab infrastructure includes shielded workstations so that actions were not observed while subjects were tasked with determining the final contents of the envelopes. A total of 228 dictator decisions were observed with the allocation across treatments as noted in Table 1. Treatments are indicated by the combination of letters associated with each factor: GA, TA, GO, and TO. Sessions were conducted between June, 2012 and April, 2013. An additional protocol implemented during these sessions is unrelated to the questions addressed in this paper. The order of implementation of the dictator protocol was counterbalanced with the other protocol across sessions.

3. Results

Continuous and dichotomous descriptors of the data are used to examine the salience of the audience on the dictators' decisions. The continuous descriptor is the final payoff to the dictator, the content of envelope A (*aenve*). Indicators of giving (taking) are coded one if *aenve* is less than (greater than) Player A's endowment (\$20) and zero otherwise.

Table 1 presents the main results for the payoff variable for both the entire sample (Panel A) and disaggregated by gender (Panel B). Within treatments, the mean value of *aenve* ranges from 16.44 (GO), to 21.59 (TA). A Kruskal–Wallis test rejects the hypothesis that *aenve* is drawn from the same population across the four treatments ($p = 0.0001$). Conditional on giving, however, the pattern is quite similar, with the mean of *aenve* equal to 14.47, very close to what would be predicted by the 50–50 norm. The Kruskal–Wallis tests fails to reject the null of no difference across treatments for this measure ($p = 0.398$).

Table 2 presents the proportion of the sample in each subset of the action space (give, take, and no change) by treatment. Testing for differences in the proportion of givers across all treatments the Kruskal–Wallis test rejects homogeneity ($p = 0.0241$). Further examination of the differences yields a first result on the impact of observability on behavior.

[2] List (2007) also explores the moral cost function by varying the "deservingness" of the passive player through earned endowments (see also Cherry et al. (2002)). Cappelen et al. (2013) extend research on this topic in the take frame.