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The Impact of Social Information on the Voluntary Provision of Public Goods: A Replication Study

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Abstract:
Shang and Croson (2009) found that providing information about the donation decisions of others can have a positive impact on individual donations to public radio. In this study, we attempted to replicate their results, however, we found no evidence of that social comparisons affected donation decisions. Most of our donors were renewing members, a group which Shang and Croson also found were not influenced by social information.

1. Introduction

The desire to conform to social norms can be a strong influence on human behavior (Bernheim, 1994; Festinger, 1954). Failure to adhere to these norms can lead to moral costs (Levitt and List, 2007), and possibly monetary (Ostrom et al., 1992; Yamagishi, 1986) or nonmonetary sanctions (Masclet et al., 2003). Conformity can also arise as a means of acquiring information by observing and imitating the behavior of others. Models of conformity can explain cooperation in laboratory and field environments, including social dilemmas (e.g., Carpenter, 2004; Bardsley and Sausgruber, 2005; Velez et al., 2009), employee recognition (Bradler et al., 2014), information cascades (Goeree and Yariv, 2015) and pressing a "Like" button on Facebook (Egebark and Ekström, 2011). Social comparisons may lead to conformity if the behavior of others serves as a reference point for individual decisions (Zafar, 2011), and it has been used effectively to influence behavior in a number of domains, including energy conservation (Allcott, 2011), water conservation (Ferraro and Price, 2013; Ferraro et al., 2011), hotel towel use (Goldstein et al., 2008; Schultz et al., 2008), and preferences for environmental goods (Carlsson et al., 2010).

With the rapid growth in charitable giving (List, 2011), there has been an increase in attention to mechanisms that are effective at fundraising, including public revelation of decisions and the use of social comparisons. In laboratory public goods experiments, public revelation of individual decisions tends to increase cooperation (Andreoni and Petrie, 2004; List et al., 2004; Rege and Telle, 2004; Lopez et al., 2012; Spraggon et al., 2015), and observability of donations by third parties has also yielded higher donations in field experiments (Soetevent, 2005; Alpízar and Martinsson, 2013). Providing social information about the behavior of others has improved cooperation in laboratory public goods games (Zafar, 2011), dictator games (Cason and Mui, 1998) and ultimatum games (Bohnet and Zeckhauser, 2004). In a mail fundraising campaign at a Swiss university, Frey and Meier (2004) found a small positive effect of social information on the decision to donate. Similarly, in a field experiment soliciting donations for a Costa Rican national park, Alpízar and Martinsson (2010) found that informing visitors about common donation amounts led to conformity with the social reference.

The focus of this paper is an attempt to replicate the results of Shang and Croson (2009) who found that some social comparisons can be effective in increasing donations to public radio. During the June and September 2013 on-air fundraising campaign for an anonymous public radio station, Rachel Croson and Jen Shang incorporated a series of social comparison treatments that

are described in three papers. Since the studies were all part of the same pair of pledge drives, the procedures are identical. The key differences among the papers are the subsets of data used and the focus of the analysis. Individuals who called to make a donation were randomly assigned to either a social information condition or a control group. When volunteers answered phones to accept the donation, they read the following script: "Hello, STATION_NAME member line. Are you a new member or a renewing member of STATION_NAME? We had another member, they contributed $X. How much would you like to pledge today?" where $X was the social information provided to the caller. To determine the values of $X, they reviewed the donations from the previous year's campaign. Shang and Croson (2009) reported the results from using the 50th ($75), 85th ($180) and 90th ($300) percentiles; Croson and Shang (2013) used the 95th ($600) and 99th ($1000) percentiles. The combined results of these two papers suggested that social comparisons for public radio donations were most effective at increasing donations when drawn from the 90th to 95th percentiles. At the 99th percentile, presumably the comparison was perceived as unrealistic and was therefore too high to be effective.

Croson and Shang (2008) used the phone campaign data for only the renewing members and combined it with additional data from a mail campaign. They tested whether the difference between the social information condition ($X) and the individual's most recent donation affected the change in the current donation. They found that the change in donations moved in the direction of the social information. Those individuals for whom the social information was greater than their previous donation averaged a $12 increase in giving, whereas those with a lower social information averaged a $24 reduction in contributions.

2. Experimental Design

To the extent possible, we followed the procedures described in Shang and Croson (2009). Our field experiment was conducted during the Fall pledge drive (October 15-24, 2014) for Alaska Public Media, based in Anchorage. During the pledge drive, radio listeners were encouraged to call and make a donation. As in their study, we had three social information treatments using the 50th, 85th and 90th percentiles from the previous two Fall pledge drives ($120, $240, and $360, respectively); there was also a no information control. That these amounts occurred in $120 increments was convenient because the station was making an effort to encourage listeners to

become "sustaining members" with regular monthly payments. To avoid deception, we ensured that another member had actually donated these amounts.

Phones were answered by volunteers who used the following script: "Thank you for calling Alaska Public Media. Would you like to become a sustainer?" Depending upon the response and treatment, the volunteer read (or omitted in the control): "Another member donated [$120, $240, or $360]. How much would you like to donate?"[1] The pledge drive did not include any thank you gifts or incentives that were based on the amount donated. Unlike Shang and Croson, our volunteers were not blind to the treatment when answering the phone. The scripts were read from proprietary software that had limited customization options. As each call was answered, the software immediately presented the volunteer with a new script that included a randomly assigned treatment.

3. Results

This pledge drive received substantially fewer phone donations than the two previous Fall pledge drives, which averaged about 1500 individual phone donations per campaign. This was the result of two primary factors: (1) a large shift away from phone to online donations and (2) a substantial increase in the number of "sustaining members" who automatically donate by credit card every month and no longer need to call during the pledge drive. Of the 628 donations received, 287 were online and therefore could not be included in the analysis. We also excluded 24 donations of $1000 or more that were made by phone (Table 1). These were all renewing members who had made similar large donations in the past. For the 317 observations that were included in the analysis, donations averaged about $150 with little difference among the treatments. Pairwise comparisons of treatments using nonparametric Wilcoxon rank-sum tests confirmed this conclusion: all tests failed to reject the hypothesis that the treatments and the control were drawn from populations with the same distribution.

Table 2 presents two regression models that used the same approach as Shang and Croson (their Table 2). The first is a standard OLS regression, and the second is a robust regression which controls for outliers. The models included dummy variables for the three social information treatments. We also controlled for sustaining members (same as the instalment variable in Shang

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[1] Our script closely followed that of Shang and Croson, except that our station wanted to also include the offer to become a sustainer.

and Croson) and for renewing members. The models also included fixed effects for the date of the transaction. For confidentiality reasons, we did not have access to any personal information other than an individual's donation history and cannot control for gender.

For both of our models, none of the coefficients for the social information treatments were statistically significant. A test of the hypothesis that all three social information coefficients were jointly equal to zero cannot be rejected (p=0.654). Consistent with Shang and Croson, the 50th percentile was not expected to be significant; since this is an upward comparison for half the callers and downward for the other half, the two effects should cancel out. However, the absence of a social information effect for the 90th percentile differs from Shang and Croson.

To reconcile the contrasting results, we note that a large majority of our phone pledges were from renewing members (85%). Only 49 of the 317 donations in our analysis were from new members. This was substantially different from Shang and Croson who reported about 40% of donations from renewing members. They suggested that social information is more likely to have an effect in ambiguous circumstances, which would be more germane to new donors. With a roughly even split of new and renewing members, they were able to test this conjecture by rerunning their regression models using only new donors and again using only renewing members (their Table 3). They found that, as conjectured, the social information effect was limited to new donors. Social information at the median value had no effect on new donations, but it was significant at the 85th and 90th percentiles. Their renewing members, on the other hand, were not influenced by the comparisons; none of the social information conditions were statistically significant for this group.

Following Shang and Croson's approach, we re-ran our regressions separately for new and renewing members (Table 3). Consistent with Shang and Croson, we do not observe a treatment effect for renewing donors. However, we also do not observe a treatment effect for new donors which is contrary to Shang and Croson. This could be due to the relatively small number of new donors (n=49) in our data. Therefore, our results are consistent with one of Shang and Croson's results. Renewing members' donation decisions do not appear to be influenced by social information. However, the lack of new donors in our data prevents us from testing whether this group is affected.

4. Conclusions

In many domains, providing information about the behavior of others has been effective at affecting individual decisions. In a series of papers, Shang and Croson draw on this research and provide social information in an attempt to increase donations for a public radio station. They found that social information can be effective, but only over a limited range. Specifically, their results suggested that social information was most effective for new donors when the social comparison is drawn from the 90th to 95th percentile of previous donations. This study attempted to replicate their results. We found no evidence that donations were responsive to comparison amounts. This could be because most of our donors were renewing members, who Shang and Croson also found are not responsive to social comparisons.

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Table 1. Distribution of Member Types

Treatment	Pledge < $1000			Pledge ≥ $1000		
	Renewal	**New**	**Total**	**Renew**	**New**	**Total**
Control	119	17	136	10	0	10
$120	46	14	60	6	0	6
$240	56	7	63	4	0	4
$360	47	11	58	4	0	4
Online	220	51	271	15	1	16
Total	488	100	588	39	1	40

Table 2. Pledge Amounts

	(1) OLS	(2) Robust
Constant	97.647***	67.521***
	(30.98)	(19.52)
$120 (50th percentile)	2.832	5.660
	(19.03)	(11.99)
$240 (85th percentile)	-8.578	-8.360
	(19.21)	(12.10)
$360 (90th percentile)	0.680	7.754
	(19.49)	(12.28)
Renewing	35.352*	37.492***
	(18.99)	(11.96)
Sustainer (Instalment)	90.835***	98.418***
	(18.77)	(11.82)
N	317	317

Models includes fixed effects for date.

Table 3. Pledge Amounts by New and by Renewing Members

	(1) OLS-new	(2) Robust-new	(3) OLS-renewing	(4) Robust-renewing
Constant	242.602***	100.000*	123.676***	102.905***
	(84.73)	(52.65)	(26.89)	(17.33)
$120 (50th percentile)	11.558	-5.415	-3.723	4.154
	(44.28)	(27.51)	(21.42)	(13.81)
$240 (85th percentile)	23.737	-37.370	-15.689	-8.293
	(53.28)	(33.11)	(20.78)	(13.39)
$360 (90th percentile)	-14.439	-44.186	-4.917	12.326
	(47.48)	(29.50)	(21.95)	(14.15)
Sustainer (Instalment)	71.059*	84.649***	97.655***	111.237***
	(37.22)	(23.12)	(22.01)	(14.19)
N	49	49	268	268

Models includes fixed effects for date.