

Field Experiments in Charitable Contribution:  
The Impact of Social Influence on the Voluntary Provision of Public Goods

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**Abstract**

In this paper we study the effect of social influence in the voluntary provision of public goods in two field experiments. In the first field experiment we demonstrate the existence of a *social influence effect* on individual contributions. We explore the effectiveness of different levels of social information, and find the most influential to be information drawn from the 90<sup>th</sup> to 95<sup>th</sup> percentile of previous contributions. In our experiment, social influence increases contributions on average 12% (\$13) for all donors in the most effective condition. Further, these increased contributions do not crowd out future contributions. In our second field experiment we demonstrate the boundary conditions of the effect. The results highlight the social cause of our results rather than an alternative cognitive cause (anchoring-and-adjustment or reference points).

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Why individuals make charitable contributions and voluntarily provide public goods is an important question in modern society. Research on this question has been conducted by economists (for reviews see Davis and Holt, 1993 and Ledyard, 1995) and by psychologists (for a review see Dawes, 1980).

Many theories have been proposed to explain why individuals give (or cooperate) when it is in their own (financial) interest to free- or cheap-ride. Explanations include altruism (e.g. Becker, 1974), warm-glow and warm-glow altruism (e.g. Andreoni, 1989, 1990), conditional cooperation (e.g. Fischbacher, Gächter, and Fehr, 2001), and reciprocity (e.g. Sugden, 1984).

These motivations for cooperation have been studied using experimental data from the lab (e.g. Eckel and Grossman, 2003) and naturally-occurring (empirical) data (e.g. Andreoni, 2004). Only very recently, field experiments have been introduced as a research tool in studying public goods provision and charitable contributions in economics (e.g. List and Lucking-Reiley, 2002; Frey and Meier, 2004; Eckel and Grossman, 2005; Falk, 2005).<sup>1</sup> List and Lucking-Reiley (2002) study the effect of seed money and refunds in a university fund raising campaign. They find that increasing the proportion of seed money increases both participation rates and the average amount contributed while instituting a refund only increases the average contribution, but not the participation rate. Eckel and Grossman (2005) study the effect of rebates as compared with matching donations in a public radio fundraising campaign via mail. They find that matching and rebates solicit about the same number of contributions, but that matching

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<sup>1</sup>Research in psychology and marketing has long used field experiments in studying charitable giving (for a review, see Weyant, 1996). Influence techniques studied include foot-in-the-door, door-in-the-face, low-ball, and legitimization-of-small-donation.

generates higher amounts contributed. Note that both of these two experiments manipulate the payoff structure (or form of payoff) faced by individual donors.

Instead of manipulating the payoffs, our research follows Frey and Meier (2004) (reviewed in more detail below) by examining the influence of social information on behavior. Additionally, we examine the long-term impact of providing social information and identify the boundary conditions beyond which social information ceases to have an effect. While previous research has suggested that social information can have negative influences for efficiency and social welfare when there are negative externalities, for example, by leading individuals to overconsume (e.g. Frank 1985, 1999), this project identifies a positive influence of social information; it can be used to enhance contributions to public goods.

In this article, we report the results of two field experiments. In the first experiment social information is manipulated and shown to increase individual contributions. Further analysis reveals that the increased contributions do not crowd out future contribution in the following year; if anything receiving social information in year  $t$  increases expected revenue in year  $t+1$ . In the second experiment, we identify the boundary conditions of the social information effect. These results reinforce our claim that the effect is *social* in nature, rather than being strictly cognitive.

Our setting is an on-air fundraising campaign for a public radio station. We begin by introducing previous research on social influence and discussing how social information might influence contributions. In the next two sections, we describe our field experiments and their results. We conclude with a brief summary, and discuss implications for

understanding contributions toward funding public goods and economic behavior more generally.

### **I. Social Influence**

Experimental economics research has demonstrated the influence of social information in the laboratory situations that do not involve public good provision. For example, Cason and Mui (1998) use a sequential dictator game; individuals act as dictators, learn the dictator decision of another subject (or in the control condition, some irrelevant information about another subject), and then make a second dictator decision. They find that social information indeed influences the second dictator decision; learning what others had done significantly retarded the typical pattern of decreasing generosity relative to the control.

Bohnet and Zeckhauser (2004) examine the impact of social information in ultimatum games. They show that both the size of offer and the probability of rejections are influenced by whether responders are told the average offer received by others. The effect of this social information becomes stronger as the game is repeated. Both these laboratory studies appeal to social norms, and the desire for conformity to them, as an explanation for their results

A few field studies have also been conducted on the influence of social information on behavior. However, these studies typically focus on the content (facts) conveyed by social information, rather than the social influence component of the effect. For example, Duflo and Saez (2003) provided monetary incentives for a selected set of employees of a university to attend a benefits fair, describing the advantages of a particular retirement

plan. They find that the proportion of employees who enrolled in the plan was significantly higher in departments where individuals had been incentivized to attend than in those who received no incentives, even among those who did not attend themselves. They suggest that the information received at the fair was disseminated by those in attendance, which caused others in their department (but who did not attend) to enroll as well.

In the domain of charitable contributions, Frey and Meier (2004) use a mail fundraising campaign run by their university to show that social information influences participation rates. Students are asked to contribute, in addition to the tuition they pay, to one or two charitable funds. Students can make no contribution, simply sending in their tuition, or make contributions of CHF7 (about \$4.20) to one fund, CHF5 (about \$3.00) to another fund, or CHF12 (about \$7.20) to both funds. Some students receive a letter telling them that 64% of other students had previously contributed (this represents the proportion who actually contributed in a recent semester). Other students receive a letter telling them that 46% of other students had previously contributed (this represents the proportion of students who actually contributed over the last 10 years). 77% percent of students in the 64% treatment (high social comparison) contribute to at least one fund, while 74.7% of students in the 46% treatment (low social comparison) contribute to at least one fund. This absolute different of 2.3% between the two conditions is not significant, nor is it economically large. The authors hypothesize that this non-significant result may be due to the fact that some donors are resilient to the social comparison information; in particular students who have always or have never contributed may not be influenced by the social information. The authors then use a logit model controlling for

the previous contribution history of each respondent and find a statistically significant difference between the two treatments.

While Frey and Meier demonstrate a small but significant effect of social information on *participation*, we study the influence of social information on *contribution amount*. Psychological research (e.g. Ajzen, 1991) has shown that decisions about whether to act and about how much to act, although positively correlated, may be caused by different psychological motivations. In our studies we communicate to potential donors not *that* another donor has given, but *how much* another donor has given, and will examine the influence of this social information not on the *decision* to contribute but instead on the *amount* of contribution received.<sup>2</sup>

Some recent economic theories on why people might use social information have been developed to capture how and why social information might influence cooperation. The purpose of our experiment is not to distinguish between these theories, but rather to test their common predictions that social information influences not only the probability of contribution (as seen in Frey and Meier), but also the amount of contribution.

Bernheim's (1994) *conformity* model assumes that individuals care not only about their intrinsic preferences but also about status; how others perceive them. Individuals recognize that behavioral departures from the social norm will impair their status, thus

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<sup>2</sup>A few empirical studies have attempted to examine the question of social interdependence of giving using survey data. The domain of investigation of these papers differ from this one substantially. In both Feldstein and Clotfelter (1976) and Andreoni and Scholz (1998) the authors examine the impact of others' contributions on total charitable giving, rather than giving to a specific charity. They use self-reported survey data of charitable giving, and compare contributions to all charitable sources by individuals of similar income or socioeconomic strata. Feldstein and Clotfelter find no significant effect, while Andreoni and Scholz find a significant interdependent effect (about .2). However, there is little or no evidence that individuals know the (self-reported) charitable contributions of others. If this information were not known, one would expect no effect of interdependent giving. In this experiment, we examine contributions to one charitable cause, rather than aggregate giving, and we use an experimental design to ensure that donors know the contributions of others.

information about others' contributions can influence one's own decisions. Other models of conformity assume that deviations from social norms have direct utility consequences (e.g. Akerlof 1982, Jones 1984) and yield similar conformity results.

In Sugden's (1984) *reciprocity* model, individuals with the opportunity to voluntarily provide public goods optimize their individual utility subject to two constraints. First, they give at least as much as they internally want to give. Second, they give at least as much as the least-generous person is giving. When this second constraint binds, and the gift of the least-generous person is unknown, social information can affect individuals' beliefs of this amount, affecting own contributions.

In Vesterlund (2006), numerous related theories are reviewed which also predict positive relationships between others' contributions and one's own. These include giving to achieve social acclaim (Becker 1974), donors feeling they're "doing their share" (Sen 1977), donors making their "fair-share contribution" (Rose-Ackerman 1982), giving to gain social approval (Hollander 1990), giving to signal one's wealth (Glazer and Konrad 1996), receiving a warm glow from "doing one's bit" (Andreoni 1989, 1990) and giving to achieve prestige (Harbaugh 1998a, b). For all these models to predict the data we observe, however, we need to add that individuals use the contributions of others as a signal of the appropriate or necessary contribution level in order to achieve the named goals.

An additional model, Vesterlund (2003) posits that donors use others' contributions as a signal of the charity's quality. Like the others, this model predicts that the contributions of others will influence one's own contributions.

Although we will not differentiate between these theories, we are the first to test their common prediction that as others contribute more, a target individual will also contribute more.

We sought a naturally-occurring institution that captured the public good structure, where each individual has an incentive to free ride, but where the group as a whole is better off when everyone contributes. We identified public radio as one such setting. Each individual has an incentive to free ride, listen to the station, and not contribute to its continued functioning. However, the community as a whole is better off when the station is funded. This field setting also offers us the potential to offer social information to contributors in a natural way.

We collaborated with a public radio station to implement these experiments. This station has three on-air fund drives per year. During the drives, DJs on the air ask for donations and suggest particular contribution levels. Fifty dollars is the suggested level to become a basic member, listeners who give \$60 and \$75 receive additional gifts. Other gift levels kick in at \$120, \$180, \$240, \$360, \$600, \$840, \$1000 and \$2500. Listeners call into the station to make contributions in response to appeals.

According to social influence research in psychology, individuals are more likely to be influenced by social information when the following conditions hold. First, the situation is (seen as) ambiguous (Crutchfield, 1955); if there were an obvious (correct) thing to do then the social information of what others were doing would not influence one's own decision. Our environment satisfies the ambiguity condition; the multiplicity (and range) of recommended contribution levels means that callers have relatively little idea of what the "right" contribution might be.

Second, the social information must be perceived as relevant or appropriate. Cialdini (1998) summarized a variety of variables that influence this perception, including the appropriateness or reasonableness of the social information. In fact, Cason and Mui's (1998) laboratory experiment show that only similar/reasonable others' information has an influence on decisions in dictator games. In our setting, this relevancy can be operationalized as the similarity between the social information and participants' intended decision. In our second study we will reduce this perception of appropriateness and demonstrate that sensitivity to social information is significantly reduced.

To summarize, past experimental economics research has demonstrated the influence of social information in laboratory settings other than public goods provision. One previous field experiment has demonstrated the influence of social information on the probability of contribution in real world public goods provision. However, a number of economic theories also predict that contribution *levels* will be sensitive to the level of contribution of others. This paper is the first to provide evidence on the influence of social information on the amount of contribution. It thus provides complementary evidence to support the validity of this class of theories.

## **II. Experiment I**

This field experiment was conducted in an anonymous public radio station on the East coast in June and September 2003 during the station's on-air fund drive. We used a between-subject design with three social information conditions (\$75, \$180 and \$300) and a control condition. In the social information conditions, another member's

contribution was mentioned to participants before they made their own pledge; in the control condition no social information was provided.

During the on-air drive, the station DJs interspersed music with appeals for donations. Listeners responded to the on-air appeals during the drive and called the station to make a pledge. Experimenters answered the phone as volunteers for the station, asked the routine questions for the station and implemented the manipulation in the appropriate place in the conversation.

In particular, after answering the phone with the station's identifier: "Hello, STATION\_NAME member line," experimenters asked: "Are you a new member or a renewing member of STATION-NAME?" After the caller answered, experimenters read (or did not read in the control condition) the following sentence:

"We had another member, they contributed \$75 [\$180 or \$300]."<sup>3</sup>

The question asked right after the manipulation was: "How much would you like to pledge today?" The dependent measure, the pledge amount, was then collected. We recorded data only during the hours when the station did not give special discounts or premiums.<sup>4</sup>

We determined the levels of social information to use by analyzing past contribution data from the station, and considering gift levels and special challenges used by station

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<sup>3</sup>Although this phrase is not commonly used in fundraising, it was constructed to sound natural, as though the volunteer was communicating about what others had done. No caller objected to this statement.

<sup>4</sup>During special-discount hours for example, the station offered a discount on at least one gift level. For example, it could offer a \$10 discount for each \$120 contribution that is paid in full on a credit card. That means donors could contribute only \$110 to receive thank you gifts normally awarded only to those who contribute \$120. When such special discounts are offered, almost all contributions received during those hours are exactly \$110, and unlikely to be responsive to social (or any other) information. During special-premium hours, the station offered unique gifts like concert tickets donated by popular singers or albums signed by famous station DJs. Data from these hours are extremely noisy, so we did not collect any data during those hours either. Callers did not know of our experiment, nor the hours when data was collected, and thus could not select in or out of our treatments.

fundraisers. For this first experiment, we examined the distribution of contributions from the previous year's fund drives in June and October 2002 (2003 was the first year in which the station conducted its fall fund-drive in September instead of October, thus we used October 2002 data as the closest estimate).

We examined the distribution of the contributions. The mean contribution to the station in those two drives was \$135. The median contribution was \$75. As can be seen in Figure 1, the distribution is skewed. This figure also illustrates the "spiky-ness" of the data, with many contributions at \$50, \$60, \$75, \$120, \$240 and \$360. These spikes represent gift levels that the station uses; as a donor contributes at or above these thresholds (s)he receives additional thank-you gifts. It should be noted that these gifts levels were present, but remained consistent between our treatments.

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Insert Figure 1 about here  
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Next we identified the specific gifts offered for each level. For each level below \$360, donors receive only products as gifts, (e.g. CDs, mugs, T-shirts). Starting from \$360, donors are invited to social events organized by the station. The station had also started to use labels like "Music Lover Circle", "CD a Month Club", and "Special Producer" to categorize donors who contribute above \$360. Since we wanted to identify our effect independent of any additional status or prestige that may be carried by our social information manipulation, we concluded that the social information level should be lower than \$360. We thus used \$75 (the 50<sup>th</sup> percentile), \$180 (the 85<sup>th</sup> percentile) and \$300 (the 90<sup>th</sup> percentile) in our first experiment for the social information levels.

Other information collected by the station during the phone conversation included callers' name, phone number, email address, billing address, city, zip-code, credit card or check information, and the thank-you gifts they would like to receive. However, for confidentiality reasons and to conform to human subjects protocols, only research-related information was copied and kept by the researchers.

All experimental conditions were randomized within each experimenter and within each hour. An extra step was also taken to avoid any expectation effect or sales effect from the experimenters. The manipulation sentences were printed on labels, and then attached to each pledge form. These sentences were covered by post-it notes. The experimenter did not remove these covers until they asked the first key question, i.e. what kind of member the callers are. At this point, they removed the post-it note, read the manipulation sentence (or nothing if the control condition) and asked for the pledge amount. Experimenters were thus blind to which condition each caller was in before they read the manipulation, and the dependent measure of pledge was collected right after the manipulation.<sup>5</sup>

Finally we ensured that another member had indeed contributed the amount we suggested, namely \$75, \$180 and \$300, earlier in the fund drive, so that our statements would not constitute deception. Five hundred and thirty eight donors called into the station to make a contribution and randomly received one of the treatments.

### *Results*

Contribution distributions in the four treatments are shown in Figure 2, below.

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<sup>5</sup>This methodology prevents the phone-answersons from biasing the results, for example, being especially nice to the caller because they know that the caller is in a high-social-information treatment. This high level of control (having the experimenter blind to condition as long as is possible) is stronger than in most economics experiments, but is common in psychology experiments (Palmer, 1989a, 1989b).

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Insert Figure 2 about here  
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Our analysis of existing station data suggested that contributions can be dramatically different depending on the fund-raising theme used in each drive, the thank-you gifts offered each day and hour, whether donors are new or renewing donors, their gender, and whether they pay the entire pledge amount as one payment or as installments over a period of 12 months. Although not all of these factors significantly explain variance in our data, we include them in our regression analysis as controls, shown in Table 1.

Our primary result is that social information can influence contributions. The \$300 social information condition yields significantly higher contributions than the control condition (the omitted condition) while \$75 and \$180 are directional but not significant.<sup>6</sup> The average contribution is \$119.70 in the \$300 social information condition and \$106.72 in the control condition. This is a \$13 difference, and would translate into a 12% increase in revenue for the station had all callers been offered the \$300 social information.<sup>7</sup>

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Insert Table 1 about here  
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One further test we can offer investigating the impact of social information is the spread of contributions around the social information contribution amount. If social information matters, one might expect that contributions in the social information

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<sup>6</sup>Remember that treatments are randomized within experimenter. As predicted from this design, adding a control for the particular phone-answerer has no effect on the analysis or on any reported below.

<sup>7</sup>One concern could be that in our control condition callers neither knew of another member's contribution, nor how much they gave, while in the treatment conditions they knew both. Differences in contributions could be caused by the existence of another contributor, rather than by their actual contribution amount. However, the results reject this explanation, as only the \$300 condition is significantly different than the control. If simple knowledge of another's contribution were sufficient, we would have seen all three treatments being significantly different than the control.

condition would be closer to that information than contributions in the other conditions. To test this, we calculate, for each contribution, the absolute distance between it and the \$75, \$180 or \$300 social information levels in the appropriate treatment conditions. We then compare that distance with the distance between contributions and \$75, \$180 or \$300 respectively in the control condition. We find suggestive evidence in this analysis. The average of the absolute difference of contributions from \$75 are \$47 in the \$75 condition, and \$54 in the control condition. Similarly, the average of the absolute difference of contributions from \$180 are \$91 in the \$180 condition and \$104 in the control condition. The average of the absolute difference of contributions from \$300 are \$206 in the \$300 condition and \$215 in the control condition.

To show this result statistically, we calculate, for each donor, the absolute distance between their contribution and the social information levels of \$75, \$180 and \$300. We then regress this absolute distance on the controls from Table 1, and a dummy variable indicating whether an individual was in a treatment condition or not. We find a significant effect of this treatment variable ( $\beta=9.38$ ,  $se=3.72$ ,  $t=2.52$ ,  $p=0.012$ ) suggesting that, on average, contributions are \$9 closer to the social information level when it is suggested, than when it is not suggested.

### *Long Term Impacts*

One concern is whether this increased contribution comes at a cost. Are fundraisers simply “fooling” donors into giving more, and will this result in a backlash of lower giving in subsequent years? In economics language, do higher contributions this year crowd out future contributions? To investigate this question, we went back to the radio station and tracked the contributions one year later of participants in our study. We

examine three variables of interest; the renewal rate (the likelihood that the donor will renew their membership), the amount they contribute in the second year and the product of these two (the expected revenue from the donor one year hence). These are shown in Table 2, below.

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Insert Table 2 about here  
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As can be seen from Table 2, the renewal rate is higher in the three social information conditions (ranging from 23% to 32%) than in the control condition (12%). The difference in renewal rate is significant, according to a logit regression model. Donors who were given social information are significantly more likely to renew their membership the next year than those who were not given the information ( $z=2.85$ ,  $p=.004$ ,  $N=164$ ). We can conclude that providing social information significantly increases the renewal rate.

The contribution amount one year later is also higher in the social information conditions (ranging from \$93.97 to \$121.13) than in the control condition (\$86.11). While these dollar differences are directionally higher they are not statistically different. When we calculate the expected revenue from donors assigned to the various conditions (shown in Figure 3), again the social information conditions yield higher amounts (ranging from \$22.21 to \$30.28) than the control condition (\$10.62).

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Insert Figure 3 about here  
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A direct comparison of the \$300 social information and the control condition is of particular interest, as this social information was the most influential. We find a significantly higher probability of contributing one year hence (in \$300 32%, in control

12%;  $\chi^2=11.05$ ,  $p<.001$ ) and directionally higher amount contributed conditional on contribution (in \$300 \$93.97, in control \$86.11). This treatment thus generates higher expected revenue in the subsequent year (in \$300 \$29.95, in control \$10.62).

### *Discussion*

The results from Experiment I demonstrate the potential of social information to influence real-world decisions in the amount of voluntary contribution to public goods. Providing social information significantly increased contributions. Notice that the size and significance of this effect varied, with the most effective social information level representing the 90<sup>th</sup> percentile of the distribution of contributions. Furthermore, the increase in contributions due to social influence does not crowd out future contributions. In fact, it generates higher expected revenue than the control condition in the subsequent year.

This effect is large. The most effective social influence condition increased contributions by \$13 (12%). This effect is of comparable size as that of manipulating the payoff structure of contributing. List and Lucking-Reiley (2002) report an increase of about \$25. In Eckel and Grossman (2005), the increase in the amount of contribution is about \$13, from \$7.85 to \$20.55.

Our research is the first to identify longer-term impacts of social influence as well. We find that donors who were provided social information were around twice as likely to contribute again one year later (between 23% and 32% compared with 12% in the control condition), and, when they contributed, gave more (between \$93.97 and \$121.13 compared with \$86.11 in the control condition). The expected revenue from donors

provided with social information was 2 to 3 times that from donors who were not so provided (between \$22.21 and \$30.28 compared with \$10.62 in the control condition).

Experiment I we demonstrate the influence of social information in the field.

Providing social information of the 90<sup>th</sup> percentile increases contributions. Although the existence of the social information effect has been established, the mechanism behind the effect is not clear. Two alternatives suggest themselves; conformity to a social norm (as in the theories described above) and anchoring and adjustment (reference points). In the next experiment we describe these alternatives and provide some evidence in favor of the socially-oriented explanation.

### **III. Experiment II**

One question one may ask is whether the impact of social information is based on its social origin or if it is simply a reference point to which donors (cognitively) adjust their contributions.

The social influence research suggests that people rely on social information to infer what the appropriate behavior is in an ambiguous situation, and then conform to the norm. Social information influences belief about the norm, and thus influences behavior. However, when social information is no longer informative or relevant, the effect disappears (Cialdini 1998). In the lab, Cason and Mui (1998) showed that outlying social information does not influence decisions, while typical social information does. The social influence explanation predicts that unusual or outlying social information would not have an influence on contributions.

In contrast, one might imagine a more cognitive explanation for the results. Simply mentioning a number to callers might serve as an anchor point or reference point, and might influence their decisions in that way. There has indeed been a literature on the use of reference points to increase contributions. Reference points have typically been implemented using appraisal scales (contributions suggested by the nonprofit).<sup>8</sup> Unfortunately, no consensus has been reached on whether (or when) reference points affect either the participation rate or the amounts contributed, or why. Smith and Berger (1996) found that higher reference points lead to reduced participation rates but equivalent levels of contribution. In contrast, Fraser, Hite and Sauer (1988) found that a high (\$20) reference point increased contributions over the control, but lowered the participation rate. Most recently, Desmet and Feinberg (2003) show that high suggested donations do not affect participation rates but do increase contributions. However, if reference points were the explanation behind our results, higher reference points should be more effective.

One way to distinguish between the cognitive (reference point) and the social (conformity) explanation of our results is to identify a *boundary condition* for the influence of social information. We have shown that for social information to be influential, the level needs to be at least the 90<sup>th</sup> percentile of the contribution distribution; lower levels have directional but not significant impacts on contributions.

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<sup>8</sup>Note that this implementation is quite different from the traditional anchoring (and adjustment) effect initially discussed by Kahneman and Tversky (1974). In those original experiments, the anchor value is generated randomly (using a spinner or some other device) and is clearly unrelated to the task at hand (e.g. estimating the number of African nations). In these experiments, in contrast, the anchors are (represented to be) selected intentionally by an interested party; the nonprofit organizations who are trying to increase the individual provision of their public goods. Because of this difference, we refer to reference points rather than anchoring-and-adjustment in describing this cognitive theory.

However, consider what each theory would predict if the social information were substantially higher.

According to the cognitive reference-point theory, the higher the reference, the higher the contribution. Thus higher social information should be more effective.

In contrast, the social influence research suggests that individuals conform only to relevant (or appropriate) norms. A contribution that is too high might easily be seen as irrelevant or inappropriate. In our second experiment, we thus compare a control treatment with social information at around the 90<sup>th</sup> percentile and at the 99<sup>th</sup> percentile of contributions.

This experiment was conducted in the same anonymous public radio station in the East coast in February 2004 during the station's on-air fund drive. Two hundred and eighty one renewing donors received the experimental treatments. As before, we recorded data only during the hours when the station did not give special discounts or premiums. The procedure was identical to that of Experiment I. Our participants are all renewing members, and for those members the 94<sup>th</sup> percentile is \$600, while the 99<sup>th</sup> percentile is \$1000. We used a between-subject design with three conditions; a control, social information of \$600 and social information of \$1000.

As shown in Figure 4, the \$600 condition produced higher contributions than in both the control and in the \$1000 condition (\$121 in control, \$172 in \$600 condition and \$140 in \$1000 condition). These differences are statistically significant in the regression reported in Table 3.<sup>9</sup> In particular, the coefficient on the control condition is significantly negative, suggesting that contributions there are lower than those in the omitted (\$600)

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<sup>9</sup>Since only renewing members were tested and the experiment was conducted during a single fund drive, the member type and the drive variables are not included in this analysis.

condition. This result provides a replication of the social information effect. Similarly, the coefficient on the \$1000 condition is also significantly negative, suggesting that contributions in that treatment are lower than in the omitted (\$600) condition. This result shows the boundary conditions of the social information effect, and provides evidence in favor of our claim that the cause of the effect is indeed social and not simply cognitive.

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Insert Figure 4 and Table 3 about here  
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Thus in this experiment, we find evidence to support the social conformity explanation for the influence of social information, rather than the cognitive reference-point explanation. We do not consider this evidence conclusive. However, we do believe that the evidence is suggestive of a social rather than a cognitive explanation; a straightforward reference point mechanism cannot explain the observed negative effect of a high reference point.

#### **IV. Overall Discussion , Implications, Limitations and Future Research**

Field experiments offer a unique opportunity to study the influence of social psychological processes on the voluntary provision to public goods (and charitable contributions more generally) in a naturalistic environment. In our field experiments, we show that social information influences contributions, with information drawn from the 90<sup>th</sup> to 95<sup>th</sup> percentile of contributions being the most effective. This effect is long-lasting; contributions and the likelihood of renewal of membership remain higher after one year in the conditions where social information has been offered than in the control

condition. Lower social information has little or no influence, while higher social information actually *decreases* the level of contribution.

However, field experiments have limitations as well. While one can demonstrate that an effect exists, it is much harder to conclude why. We provide some evidence in Experiment II that the effect is social rather than cognitive, nonetheless, we are further examining this question in the lab using hypothetical scenario studies. Preliminary evidence supports the conformity to social norm explanation offered here. We found that social information changes people's perceptions of both what others give to the nonprofit organization and what the appropriate contribution is. These changed perceptions correlate at the individual level with self-reported contribution behavior; individuals whose perceptions change more, give more than individuals whose perceptions change less (Shang et al. 2006). However, more research needs to be done to determine why extremely high social information has a detrimental effect on cooperation (Festinger, 1954).

A second limitation of field experiments involves the generalizability of the results. It is possible that our conclusions are sensitive to the choice of this particular public radio station and this particular experimental implementation. For example, this manipulation was done via the phone; would the results generalize to mail solicitations? Shang and Croson (2006) examine this question in a renewal mail campaign of the same radio station. We find that renewing donors are influenced by social information presented in that setting. The fact that social information influences contributions in both situations suggests that the effect is at least reasonably general. That said, more work needs to be done to test the generality of the social information effect with different organizations

that provide public goods, different types of donors and different appeals. Conformity theory suggests that social information is most likely to be effective in ambiguous (or weak) situations. Future field experiments in domains like these could classify these situations and provide predictions of when social information is more (or less) likely to influence behavior.

We believe that social influence affects behavior in a wide variety of economic situations, even though we have demonstrated its effect only in the contribution setting. Others have suggested the importance of norms in actual (Akerlof, 1982) and experimental (Fehr, Kirchler, Weichbold and Gächter, 1998) labor markets, whether to work or live on welfare (Lindbeck, Nyberg and Weibull, 1999), saving and consumption (Lindbeck, 1997), and on profit seeking entitlements (Kahneman, Knetsch and Thaler, 1986). Our paper contributes to this literature by providing evidence that social influence is impactful in charitable contributions as well.

This impact is not only statistically significant, but also economically significant for public radio stations and similar nonprofit organizations. For a small radio station of 20,000 members, an average increase of \$13 contribution from each member yields a \$26,000 per year increase in funding. There are approximately 650 public radio stations in the US. Even if all were small (and many are large), this would yield an increase of at least sixteen million dollars in contributions.

In summary, this research demonstrates the influence of social information on contributions in field experiments using a public radio station's on-air campaign. Contemporary and future research explores the same effect in different domains, using different media and different social information levels. This stream of research provides

for a deeper understanding of what motivates individuals to contribute toward the funding of public goods and other charitable organizations, and provides a first step in understanding the domains in which social influence is likely to be an important factor to consider in our attempts to improve predictions (and explanations) of economic behavior.

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TABLE 1

The Social Information Effect

	estimate	SE	p
Constant	4.086	71.906	0.955
\$75	1.495	6.670	0.823
\$180	2.656	5.622	0.637
\$300	20.666	6.881	0.003
Renewing Members	18.600	4.284	0.000
Male	7.780	4.215	0.066
Installment	32.841	4.284	0.000
Drive dummies	-----yes-----		
Day dummies	-----yes-----		
Hour dummies	-----yes-----		
N	538		
R-Squared	0.180		

TABLE 2

Donors One Year Later

	Renewal Rate	Mean Contribution	Expected Revenue
Control	12%	\$86.11	\$10.62
\$75	23%	\$95.50	\$22.21
\$180	25%	\$121.13	\$30.28
\$300	32%	\$93.97	\$29.95

TABLE 3

Limits of the Social Information Effect: Renewing Members Only

	estimate	SE	p
Constant	35.530	36.315	0.329
Control	-52.247	21.108	0.014
\$1000	-32.916	21.108	0.038
Male	8.555	14.440	0.554
Installment	95.994	14.906	0.000
Day dummies	-----yes-----		
Hour dummies	-----yes-----		
N	333		
R-Squared	0.145		

FIGURE 1

Contribution History for June and October 2002 (by contribution amount)

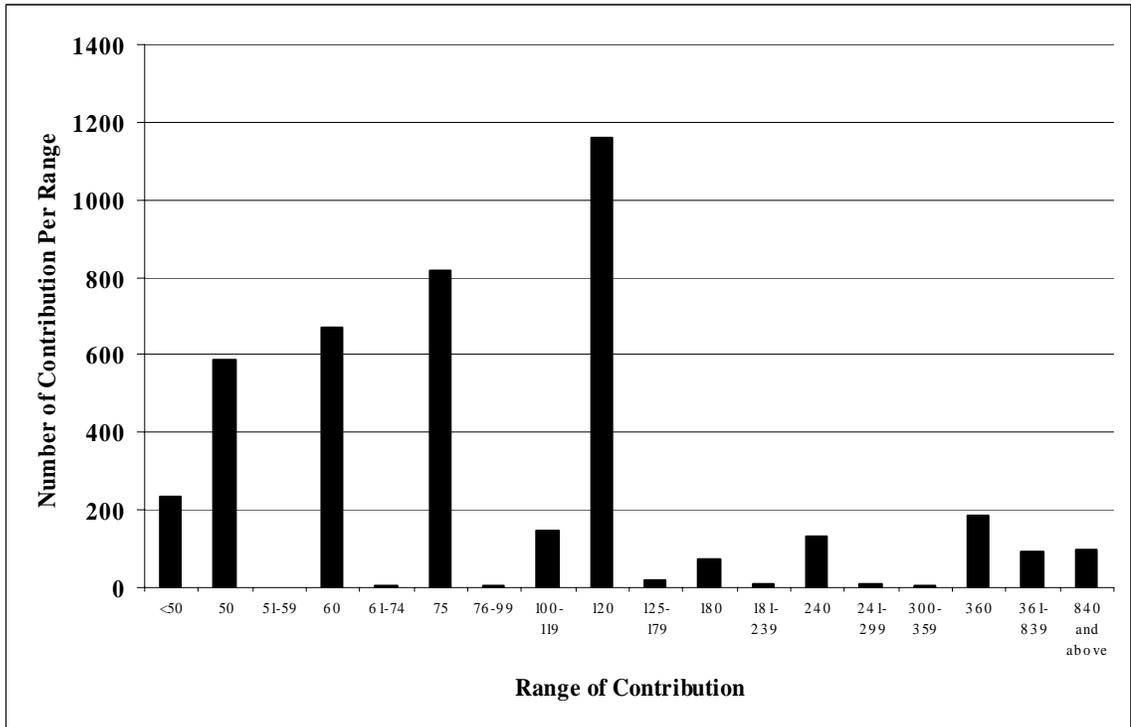


FIGURE 2

Experiment I: Distribution of Contributions

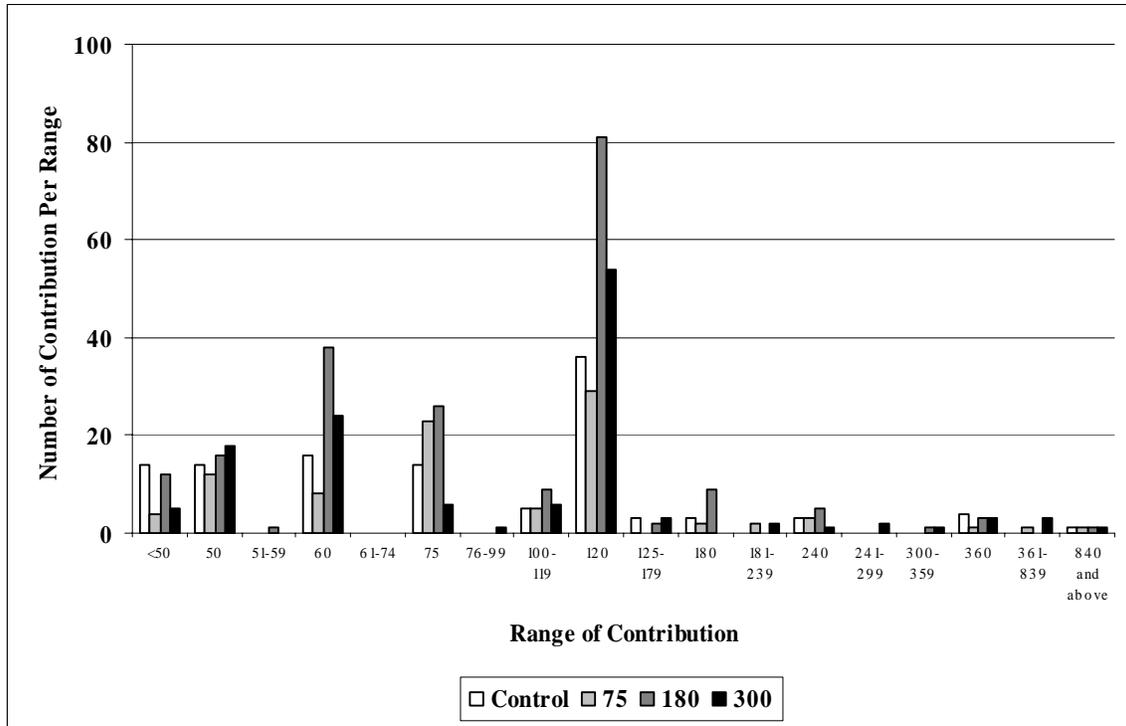


FIGURE 3

Expected Revenue One Year Later

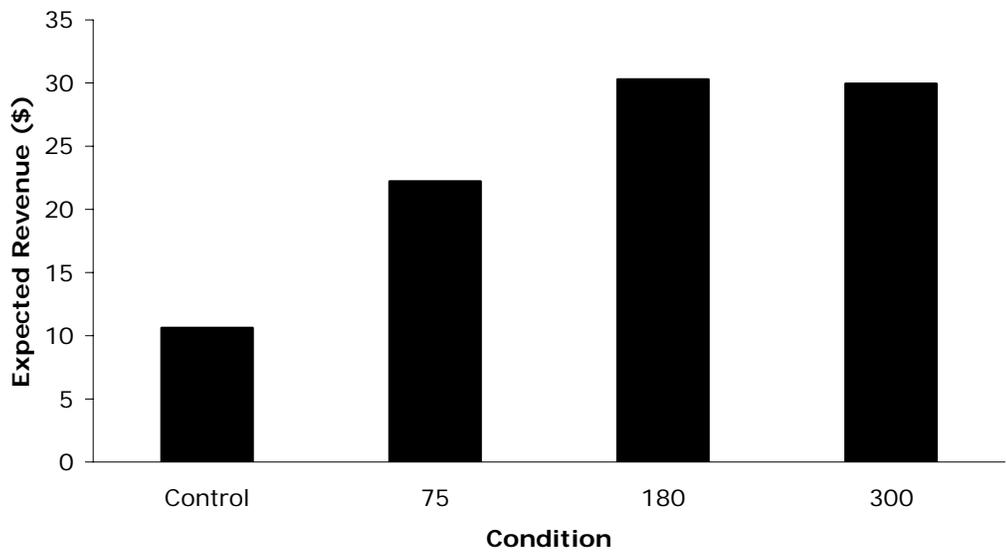


FIGURE 4

Experiment II: Boundary Conditions of the Social Information Effect

