

Identity in Charitable Giving

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ABSTRACT

How does priming identity affect charitable giving? We show that individuals are more likely to donate when a facet of their identity associated with a norm of generosity is primed in an appeal. In large charitable giving field experiments run by a large national charity, appeals that prime an individual's identity as a previous donor to the charity or as a member of a local community generate more donations. The primes are more effective when they highlight a facet of the potential donor's identity that we hypothesize to be more relevant to his sense of self: Priming identity as a previous donor is more effective for more regular donors and priming identity as a local community member is more effective for people in smaller communities. Together, these results elucidate the impact of identity on behavior and demonstrate how identity primes can be implemented in practice to encourage public good provision.

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I. Introduction

The role *identity* plays in decision making has begun to receive significant attention within Economics. Recent work has formalized the idea that there are *norms* or *prescriptions* associated with one's identity or "sense of self," and that people will adjust their behavior to more closely mirror these prescriptions, especially when reminded of their identity (Akerlof and Kranton 2000; Benjamin, Choi and Strickland 2010; Benjamin, Choi and Fisher 2013; Cohn, Fehr and Maréchal, 2014).¹ This work in Economics has built on a large literature in Psychology demonstrating that identity is a malleable construct (see James 1890; Turner 1985 on self-categorization theory). Specifically, past Psychology research has argued that remarkably small forces (e.g. environmental cues or "primes") can alter which facet of an individual's identity (e.g. as a professor, as a parent, as a Caucasian) is salient at a given point in time (Steele 1997; Steele and Aronson 1995; Shih, Pittinsky and Ambady 1999).² Further, priming identities that individuals perceive as more self-relevant has been shown in past laboratory research to be more impactful (LeBoeuf, Shafir and Bayuk, 2009). The malleability of identity, and the fact that different facets of identity can be brought to the surface by different cues, helps distinguish the effects of identity from underlying preferences.

¹ Psychologists have written extensively about the concept of self-identity, or the importance to a person's self-concept of belonging to a given social category (Hogg 2003; Reed 2004; Goldstein, Cialdini and Griskevicius 2008).

² For example, past research on stereotype threat has shown that the minimal racial identity prime of prompting students to indicate their race on a questionnaire before taking a test increases the White-Black test score gap by triggering an association with the stereotype that Blacks underperform academically (Steele and Aronson 1995). Similarly, Asian-American females perform better than usual on math tests when their identity as Asian (a group stereotyped as strong in math, Steen 1987) is primed but worse than usual when their identity as female (a group stereotyped as weak in math, Hedges and Nowell 1995) is primed (Shih, Pittinsky and Ambady 1999). Economists have demonstrated that similar racial identity primes can alter discount rates in stereotype-consistent directions (Benjamin, Choi and Strickland 2010).

While the concept of identity has begun to make its way into Economics, the role identity plays in a variety of economic domains is not yet well understood. In this paper, we work towards an understanding of how identity affects the private provision of public goods. We investigate identity primes outside of the laboratory, exploring whether such primes can be used as a lever to influence behavior in the field.³ We also analyze how the impact of priming varies as a function of the strength of an individual's identification with the identity invoked. In particular, we investigate how priming different facets of an individual's identity in a direct mail appeal for a charitable organization affects his or her decision to donate to the charity.⁴

Private provision of public goods is both important — allowing public goods to be provided without the efficiency costs of taxation — and prevalent. Just one form of public good provision, charitable giving from individuals and households in the United States (the focus of this paper), totaled \$242.2 billion in 2011 (Giving USA 2012). This giving is widespread, with approximately 90% of individuals in the U.S. making charitable donations. The scope of private provision of public goods cannot be explained by standard theories of selfishness and altruism alone (Becker 1974; see also Batson

³ Laboratory studies on identity generally use established priming manipulations like having subjects answer questions about themselves and their family (e.g. the language they speak at home, as in Shih, Pittinsky and Ambady 1999 and Benjamin, Choi and Strickland 2010 or their professional background, as in Cohn, Fehr and Maréchal, 2014), or by having subjects do an unrelated task that subtly primes identity (e.g. sentence unscrambling with or without religious words, as in Shariff and Norenzyan 2007 and Benjamin, Choi and Fisher 2013). These techniques are useful in the laboratory but unlikely to be implemented in the field, while the primes investigated in this paper were implemented naturally in the field by professional fundraisers.

⁴ Akerlof and Kranton (2000) discuss “Alumni Giving” as an example of how identity may influence charitable giving behavior, noting that “graduates give to *their own* alma matter” rather than the “organization with the highest return.” However, their discussion has caveats and does not provide empirical evidence on the role of identity in charitable giving (alumni or otherwise). Benjamin, Choi and Fisher (2013) investigate how priming religious identity affects a number of important economic behaviors, including public good provision.

1991).⁵ Consequently, charitable giving is frequently used as a setting for exploring how behavioral forces can impact individual decision-making.⁶

We analyze the results of two identity-priming field experiments run by a large national charity.⁷ Both experiments find that priming a facet of identity associated with a norm of increased generosity (either as a previous donor to the charity or as a member of a local community) increases the likelihood of a donation. Specifically, we observe higher donation rates when the charity reminds a prospective donor of her previous support by listing the date of her last donation on the current appeal. We also observe more giving when a donation request primes a potential donor's identity as part of a city community (even though the funds requested are clearly labeled as going to support national programs).

In addition, consistent with laboratory studies by LeBouef, Shafir and Bayuk 2006, we find that the efficacy of these identity primes depends on the strength of the group association triggered by the prime. The effect of the prime as a previous donor is more pronounced the more gifts an individual has made to the national charity in the past; and the effect of the prime as a member of a local community is strongest in small cities (where one's local community affiliation should be strongest),⁸ gets weaker in more

⁵ A popular alternative theory suggests that individuals get utility from making donations themselves (i.e. they get warm glow from giving, Andreoni 1989, 1990; see also Cialdini and Kenrick 1976).

⁶ Charitable giving has been used as a lens to understand persuasion (see for example Cialdini and Ascani 1976; Cialdini and Schroeder 1976) and marketing (Small and Loewenstein 2003; Small and Simonsohn 2008; Small 2011; Bendapudi, Singh and Bendapudi 1996).

⁷ The experiments are large, including approximately 10,000 appeals in each condition. Across the experiments, we analyze responses to a total of 60,000 direct mail appeals that generated over \$200,000 in donations.

⁸ Our use of city size as a proxy is supported by evidence from the General Social Surveys, as discussed in Section IV.

populous cities, and is non-existent when the donation request primes identity as part of a large city. We cannot explain our pattern of results with alternative (i.e. non-identity) hypotheses.⁹

In addition to contributing to a growing literature on identity, our results add to a rich experimental literature on charitable giving that has already yielded a number of important results. Field experiments on charitable giving have identified a variety of forces that influence behavior, including: the effect of social pressure (DellaVigna, List and Malmendier 2010; Landry et al. 2010; Meer 2011; Meer and Rosen 2011; Andreoni, Rao and Trachtman 2012; see also the related effect of attractive solicitors in Landry et al. 2006), the effect of information about the behavior of others (for results on seed money see List and Lucking-Reiley 2002; on previous donations of others see Frey and Meier 2004 and Shang and Croson 2009; on announcements of support see Kessler 2013), the effect of gift exchange (Falk 2007), the effect of lottery incentives (Landry et al. 2006), the effect of matching gifts (Karlan and List 2007), and the effect of shared social responsibility (Gneezy et al. 2010).

We add to this impressive literature by providing field evidence on the role played by identity in influencing charitable giving decisions. We also provide insight to policy makers about how to leverage identity primes to increase private contributions to public

⁹ Our results on community size are related to, but different from, previous Psychology research that finds people are more compelled to follow social norms established by members of identity groups they relate with more strongly (see Deshpande, Hoyer, and Donthu 1986; Stayman and Deshpande 1989; Kleine, Kleine, and Kernan 1993; Terry and Hogg 1996; Terry et al. 1999; and Reed 2004). In the charitable giving space, Shang, Reed and Croson (2008) show that prospective donors make larger donation to a public radio station when they learn that a donor of the same gender (rather than the opposite gender) recently made a large donation. In our setting, however, simply priming the individual as being part of an identity-relevant community — rather than emphasizing that many people from the local community have given — leads to more donations.

goods. Policy makers may want to remind previous donors of their support or invest in generating new donors with the plan to prime those donors' identities in later appeals.¹⁰ In addition, policy makers may find it easier to encourage private provision of public goods when they prime prospective donors' identities as members of a community, particularly when they target those appeals at individuals in small communities, even if the public good being funded benefits a broader group.

The paper proceeds as follows. Section II outlines our theoretical framework. Section III describes the setting in which the experiments were conducted as well as the experimental methods and data that we analyze. Section IV describes the results. Section V provides a summary and concludes.

II. Theoretical Framework

We present a toy model of the decision problem of the agent in a framework similar to that developed by Benjamin, Choi and Strickland (2010), making some simplifying assumptions motivated by psychological theory and supported by our results. We assume that an agent takes an action x to maximize

$$U(x) = -(1 - s \cdot 1_{a \in A})(x - x_0)^2 - (s \cdot 1_{a \in A})(x - x_C)^2$$

where x_0 is the agent's ideal "unmindful" action in the absence of an identity prime, and x_C is the prescribed behavior for those who belong to identity group C . At the time of making the decision, the agent finds himself in a decision frame a , which may or may not induce him to think about his identity as a member of identity group C . If $a \in A$, the frame is such that the decision maker will attend to his membership in group C ;

¹⁰ See Meer (2013) for evidence of individuals developing a habit for giving.

otherwise, the decision maker will ignore this component of his identity. Finally, s captures the strength of an individual's association with group C where $0 \leq s \leq 1$. The first order condition of this problem implies optimal action

$$x^* = \begin{cases} x_0 & \text{if } a \notin A \\ (1-s)x_0 + sx_c & \text{if } a \in A \end{cases}$$

If the individual makes the decision without considering his identity as a member of group C (i.e. if $a \notin A$) the individual will take his ideal “unmindful” action x_0 , which is independent of identity concerns. A prime that makes an agent think about his identity as a member of group C induces a decision frame $a \in A$, in which case the individual will maximize his utility by taking a weighted average of the preferred action in the absence of a prime and the prescribed behavior of the identity group. We argue that the weight s the agent places on the prescribed behavior is increasing in the extent to which the group C is identity-relevant to the agent.¹¹

We examine the impact of priming facets of an individual's identity that are associated with a norm of increased generosity on charitable giving such that x_c is assumed to be taking a generous action and in particular that $x_c \geq x_0$ and that $x_c > x_0$ for at least some subjects. Specifically, we investigate the impact of priming an individual's identity as: (i) a previous donor to a charity (for which the prescribed

¹¹ This formulation is similar to the model in Benjamin, Choi and Strickland (2010), henceforth BCS. We highlight the key differences here. First, we assume that identity as a member of a group is ignored unless it has been primed to be considered at the time of the decision. This limits the scope for identity to affect behavior. For example, even if women are supposed to be more generous than men, we assume this fact only affects women who are thinking about their gender when taking an action. In contrast, BCS assume the optimal action is a function of a baseline weight agents place on their identity group, denoted $w(s)$ in BCS, even in the absence of a prime. Second, we assume that the effect of a prime will be moderated by the extent to which an individual feels the group association in question defines his identity, s . In contrast, BCS assume the extent to which a prime affects an agent depends on the shape of the function $w(s)$.

behavior of the identity group is to donate again) and (ii) a member of a local community (for which the prescribed behavior is to be “community minded” and help others).¹²

These primes are achieved through content conveyed in the direct mail messages sent to prospective donors.^{13,14}

Further, we build on self-categorization theory and argue that s is larger for agents who care more about the given facet of their identity that is being primed.¹⁵ Call Δx the difference in optimal action x^* for $a \in A$ rather than $a \notin A$, that is $\Delta x = x^*(a \in A) - x^*(a \notin A)$. Simple algebra shows that $\Delta x = s(x_c - x_0)$. Since we have assumed $x_c \geq x_0$ and that $x_c > x_0$ for at least some subjects, the effect of priming identity gets larger as s increases, generating comparative static $\frac{\partial(\Delta x)}{\partial s} \geq 0$ and $\frac{\partial(\Delta x)}{\partial s} > 0$ for at least some subjects. Consequently, the effect of priming an individual’s identity as a previous donor to a charitable organization should affect behavior more for individuals who view being a donor as a more important feature of their identity (e.g. more regular donors). Similarly,

¹² Helping others is a common feature of a community (e.g. see the *Oxford English Dictionary* which has as a definition of community: “Social cohesion; mutual support and affinity such as is derived from living in a community”). In addition, previous research has shown that priming community-mindedness in a prisoner’s dilemma (by calling it “The Community Game” instead of “The Wall Street Game”) dramatically increases cooperation (Liberman, Samuels and Ross 2004).

¹³ As far as we know, this paper is the first to analyze the effect of priming facets of identity associated with giving money to charity, though a concurrent paper describing an artefactual field experiment explored what happened when participants’ identity as neighborhood residents was made salient before they participated in a charity donation game (Li, Oliveira and Eckel, 2013). Previous research has focused on priming race (e.g. Steele and Aronson 1995) as well as other facets of identity (e.g., scientist, student: Reicher and Levine 1994; socialite, scholar, family-member, professional: LeBoeuf, Shafir and Bayuk 2006; banker: Cohn, Fehr and Maréchal, 2014).

¹⁴ See Appendix A for a simple extension to binary decision problems that generates the same comparative statics.

¹⁵ This is consistent with past Psychology research in the laboratory showing that identity primes are more powerful when people more strongly identify with the evoked identity (e.g. LeBoeuf et al. 2006).

the effect of priming an individual's identity as a member of a local community should be larger for those who identify more strongly with their local communities (e.g. those who live in smaller towns).¹⁶ We test these predictions by looking for heterogeneous treatment effects of the identity primes in the experiments we analyze.

III. Experimental Setting and Methods

We analyze the results of two, large-scale, direct mail field experiments designed to solicit charitable donations that were conducted by a large national charity. The national charity was founded in 1881 and is one of the largest and most recognizable humanitarian charitable organizations in the world. The organization's mission is to support those in need through the help of volunteers and altruism.

The national charity shared data with us on all pieces of direct mail sent between January 2006 and October 2011 to individuals who were not regular donors to the national charity but had directed a donation to the charity's national headquarters following Hurricanes Katrina and Rita and the Southeast Asian Tsunami. We observe the responses by this population that to each mailing as well as all unsolicited donations received from this donor universe.¹⁷

¹⁶ Past Psychology research suggests that individuals identify more strongly with more "provincial" group associations, or smaller, more immediately relevant groups (Goldstein, Cialdini and Griskevicius 2008).

¹⁷ We received data on all appeals from the national charity received by these individuals and all donations these individuals made between 2006 and 2011, but we only saw creative materials for a subset of the appeals: those sent between 2009 and 2011. In particular, a total of 20,211,794 solicitation mailings were sent out to 1,261,980 unique prospective donors in the relevant population. These mailings generated a total of 819,444 donations from 366,469 unique donors, generating \$49,135,034 in funds for the national charity.

The two experiments that we analyze and report here are a subset of a larger group of experiments that the national charity shared with us. See Appendix B for details on how we selected these experiments to analyze. It is important to emphasize that the experiments selected for analysis and inclusion in this paper were chosen *before* any data analysis was conducted. The experiments were run on different populations on different dates: one on November 2, 2009 and one on January 4, 2010. They are described in detail below.¹⁸

Identity as a Previous Donor (Experiment 1)

On January 4, 2010, the national charity sent Solicitation mailings to 17,061 previous donors who were selected for the experiment due to their classification as “lapsed” givers who had donated previously to the national charity but not in the previous 24 months, and whose records indeed confirmed this classification (no donations in the last 24 months, but at least one donation since 2006).¹⁹ These donors were randomly assigned to one of two conditions: a *control* condition (N=8,528) or a *donor identity* condition (N=8,532). The mailings were identical to one another except that the *donor identity* mailing primed donor identity by reminded a donor of his or her most recent contribution to the national charity, while the control mailing included no such prime.

¹⁸ In describing the experiments, we provide names for each experimental condition that highlight the behavioral theory the experiment tests. These names are our creation (the national charity typically labels different experimental treatment groups with different letters).

¹⁹ Note that the national charity sent mailings to a total of 19,374 individuals as part of this experiment, but in our data 2,313 of these individuals had either donated in the 24 months leading up to the experiment or had not previously donated to the national charity (contrary to the national charity’s stated selection criteria), and we thus do not include these unintended mailing recipients in our analyses, focusing on the 17,061 participants in the intended target population. That said, repeating our analyses with these additional 2,313 observations produces nearly identical results, except when analyzing the frequency of past donations, which of course poses challenges for this small sub-population including those who have never given.

Specifically, one additional line of personalized text appeared atop the letterhead of the solicitation message in the *donor identity* condition that was absent from the *control* condition. In the space on the letterhead between the recipient's return address and the letter's greeting ("Dear Friend and Supporter"), a bolded line of text declared: "Previous Gift: <date>" (where the date of the recipient's last gift to the national charity replaced "<date>"). Figure 1 presents variable components of these solicitation materials.

Identity as a Community Member (Experiment 2)

On November 2, 2009, the national charity sent direct mail solicitations to a completely separate set of 41,104 prospective donors. Prospective donors were randomly assigned to one of four experimental conditions: the *annual drive* (N=10,355), the *winter drive* (N=10,373), the *state drive* (N=10,269), or the *city community drive* (N=10,404).²⁰ All mailings were identical except for the precise wording used to describe the fundraising drive referenced in the solicitation, which we refer to as the "fundraising drive title". The fundraising drive title varied in the extent to which it primed a donor's identity as a member of a community, and it appeared in three locations on each piece of direct mail: (1) above the return address printed on the mailing, (2) on the top, right-hand corner of the solicitation's letterhead, and (3) at the top of the enclosed solicitation card.

²⁰ Additional individuals were simultaneously assigned to two other experimental conditions of no theoretical interest, as described in Table A1. In these two additional conditions that we do not analyze, STAART prospects either received (a) a shortened version of the appeal letter or (b) a mailing in an envelope with a design that differed in several ways from other conditions, including revealing the recipient's address through a die-cut window (rather than printing it on the outer envelope). These two conditions had the *state drive condition* messaging and performed directionally or marginally statistically significantly worse than the *state drive condition*. All results are the same if we treat these recipients as being part of the *state drive condition* in the data analysis.

The fundraising drive titles were experimentally varied as follows: in the *annual drive*, the title was: “Annual Fund Drive”; in the *winter drive*, the title was: “Winter 2009 Drive”; in the *state drive*, the title was: “Winter 2009 <State> State Drive” (where the state of the recipient’s mailing address replaced “<State>”); and in the *city community drive*, the title was: “Winter 2009 <City> Community Drive” (where the city of the recipient’s mailing address replaced “<City>”). Figure 2 presents the variable components of these solicitation materials.

It is worth pointing out the subtlety of this treatment given that the letter emphasized that any donations received in response to this mailing would be used to fund the national charity’s general activities²¹ (rather than provide local services) and that the return address on the original mailing and the reply envelope for all donations corresponded to the address of the national charity office in Washington, D.C.

IV. Experimental Results

For each experiment, we are interested in the effect of the treatment on the charitable donation decisions. In particular, we investigate the probability that the recipient of an appeal made a gift to the national charity and the amount donated.

One issue with examining amount donated as a dependent variable is that a few outliers can move the average donation dramatically and increase the variance of donations. To address this issue (i.e. to mitigate the effect of outliers) we report results on log donations, namely $\log(1+\text{donation amount})$, which also allows treatment effects be

²¹ For example, the letter reads: “Please do your part by donating to the <Variable Text> Drive to sustain the [national charity] as America’s relief agency.”

interpreted as percentage changes in donation. All regressions and comparisons of means presented in this paper report robust standard errors.

Identity as a Previous Donor (Experiment 1) Results

As described above, the *identity as a previous donor* experiment randomized whether the date of a donor's most recent gift to the national charity was listed atop an appeal letter. Figure 3 shows the probability of donation by experimental condition. As hypothesized, priming identity as a previous donor to the national charity increased donations.

Specifically, priming donor identity by listing the date of a donor's most recent gift to the national charity on the appeal letter increased the probability of a donation to the national charity by 20 percent (6.33% in *control* condition vs. 7.59% in *donor identity* condition, N=17,061; test of proportions, p=0.001). In addition, the average donation collected per solicitation increases along with the donation rate. Specifically, the average donation received per solicitation increases by about 4.1 percent in the *donor identity* condition (logged: 0.228 in *control* condition vs. 0.269 in *donor identity* condition, N=17,601; t-test, p=0.004).²²

²² To interpret these changes in dollar terms while still controlling for outliers, we present average donations winsorized at the 99.9th percentile of all donations (including donations of zero dollars). In particular, for any donation amount above the 99.9th percentile of donations in a given experiment, we replace the donation amount with the donation corresponding to the 99.9th percentile in the relevant experiment. By this measure average donation per solicitation increased from \$3.41 in the *control* condition to \$3.83 in *donor identity* condition. (Note that we use the same standard for each experiment. For the *Identity as Previous Donor* experiment we winsorize at \$300, the 99.9th percentile of all donations in that experiment; and for the *Identity as Community Member* experiment, we winsorize at \$500, the 99.9th percentile of all donations in that experiment.)

Our data from the national charity includes information about the history of appeals sent to, and donations received from, each subject between 2006 and 2011. This allows us to estimate the comparative static of our model, which predicts that priming identity should be more effective when the prime is more relevant to the individual's sense of self. In this setting we predict that reminding a donor of the date of her last donation should generate a larger response from more regular donors, who are likely to consider their status as a donor to the national charity as a larger part of their identity.

Table 1 shows regression results examining the impact of the *donor identity* condition on the decision to donate and analyzing how the number of past gifts from a donor impacts the strength of this treatment. First, we see a significant impact of priming *donor identity* by listing the date of the previous gift (column 1) regardless of whether we control for individual-level characteristics pertaining to previous appeals received from the national charity and previous gifts made to the national charity (column 2). Further, as predicted, we observe a significant interaction effect such that individuals who have given more frequently to the national charity — and so are expected to treat being a donor to the national charity as a larger part of their identity — show a larger positive response to the *donor identity* treatment (column 3).²³

²³ Note that while not statistically significant, the comparable regression specification finds that the effect of the *donor identity* treatment is directionally larger for people whose last gift was given more recently. If the *donor identity* treatment was working by shaming people who had not given recently rather than through identity, we might expect larger treatment effects among those who had given less recently, which is the opposite of what we find.

Identity as a Community Member (Experiment 2) Results

The experiment examining the effect of priming a prospective donor's identity as a community member varied whether the donation drive referenced in the national charity solicitation mailing specified the donor's city community, state, merely indicated the season and year of the drive, or did none of the above. We observe a large, positive increase in the likelihood of donation when the appeal refers to a community drive in the donor's home city. Figure 4 shows the probability of donation across all four conditions. The *city community drive* generated a significantly higher donation rate than each of the other experimental conditions (5.51% for *city community drive* condition vs. 4.12% for *state drive* condition, 4.01% for *annual drive* condition, 3.82% for *winter drive* condition; tests of proportions: $p < 0.001$ for all two-way comparisons with the *city community drive* condition). Meanwhile, the probabilities of donation do not differ significantly in the other three experimental conditions.

Priming prospective donors' identity as part of a local community also affects the average donation collected per solicitation. Table 2 shows the average donation collected by the national charity in each experimental condition. The average amount donated per mailing in the *city community drive* condition is 4.8 percent larger than in the other three conditions (logged: 0.192 in *city community drive* condition vs. 0.144 in the other three, $N=41,401$; t-test, $p < 0.001$). The increase in the average donation produced by the *city community drive* mailing is not as dramatic as the increase in the rate of donation because the extra donations collected in the *city community drive* are relatively small. The average donation conditional on a gift is actually 13 percent lower in the *city community drive*

condition than in the other three conditions (logged: 3.48 in *city community drive* condition vs. 3.61 in the other three, N=1,807; t-test, p=0.003).

We argue that the *city community drive* condition increases a prospective donor's likelihood of donation by priming that donor's identity as a community-minded person rather than through some other channel.²⁴ To bolster our claim that the effect is working through our hypothesized channel, we first rule out a potential alternative mechanism for the effect of the *city community drive* condition on charitable giving and then emphasize the distinct impact of the word "community" in our treatment using donations from New York City as a special case.

A potential alternative mechanism through which the *city community drive* might have affected giving is worth addressing and dismissing here and is as follows. Prospective donors exposed to the *city community drive* condition might have incorrectly inferred that donations were going to fund local services rather than the national charity. While this incorrect inference could have generated more giving to the *city community drive* appeal (assuming subjects preferred to give funds to their local community than to broader priorities), there are a number of reasons why it is unlikely driving the observed effects.

²⁴ Unlike priming instruments in the laboratory (e.g. having subjects unscramble religious or non-religious sentences as in Shariff and Norenzayan 2007 or by having subjects complete a background questionnaire that includes or does not include questions about languages spoken at home as in Shih, Pittinsky and Ambady 1999), our community prime is implemented naturally through a slight change in a standard direct mail solicitation. While this allows us to study a priming implementation that is scalable and can be used in practice, our community prime is less "clean" in an experimental sense and it puts the onus on us to rule out the possibility that calling the drive a community drive affects behavior in some way other than through priming identity.

First, the appeal letters clearly state that all donations will go to support the large national charity rather than specifically to the local community.²⁵ This point is highlighted by the fact that the return address on the outside of the solicitation mailing, as well as the reply envelope for all donations, is the Washington D.C. address of the national charity headquarters. Second, local chapters are mentioned as potential recipients of some donated funds in all versions of the letter.²⁶ Third, if participants in the *city community drive* condition mistakenly believed that their money was being funneled back into their local community, we might expect an impact throughout the distribution of donations (i.e. if donations in the community drive generated a higher marginal utility per dollar, we should expect to observe more large donors in the *city community drive*). Instead, however, the *city community drive* induces more small gifts (of less than \$50) and *no change* in the distribution of gifts above \$50.²⁷ The identity model allows the most generous subjects (e.g. those with $x_0 = x_C$) to be unaffected by the priming treatment, which would result in exactly the pattern we observe; alternatively, if each dollar given generated higher marginal utility in the *city community drive*, we would expect to see larger donations throughout the distribution.

We can also use prospective donors from New York, NY (i.e. the borough of Manhattan) to show the special effect of the word “community”. For this set of mailing recipients, the city and state where they reside share the same name and so the *state drive*

²⁵ For example, the letter reads: “Please do your part by donating to the <Variable Text> Drive to sustain the [national charity] as America’s relief agency”.

²⁶ One paragraph that is common to all the letters reads: “You can trust the national charity to be a good steward of your money. An average of 90 cents of every dollar we spend is invested in humanitarian programs and services – including those in your local community – not fundraising and administration.”

²⁷ The CDF of gifts in the *city community drive* condition and the CDF of gifts in the other three conditions are shown in Figure A1 in the Appendix.

and *city community drive* appeals look identical except that “New York” is followed by the word “State” in the *state drive* condition and “Community” in the *city community drive* condition. Focusing on this sub-group allows us to examine the effect of switching the word “State” to “Community” in the appeal (albeit with a fairly small sample). We see a higher likelihood of contribution to the “New York Community Drive” than the “New York State Drive” (1.12% in *state drive* vs. 3.65% in *community drive*, 365 observations; t-test, $p=0.116$ without controls, $p=0.095$ controlling for number of previous appeals received and the number of previous gifts made).

We now turn to the comparative static of our model to see if the prime is again more effective when it is relevant to the individual’s sense of self. In this setting we predict that the *city community drive* should have a larger effect on the behavior of individuals whose local community membership is a larger part of their sense of self. Unfortunately, we do not have a direct measure of individuals’ attitudes towards community membership. However, we do have a proxy for the extent to which an individual’s community membership plays into his sense of self, namely the size of the individual’s community.

Using community size as a proxy for the importance of community to residents’ identities is supported by evidence from the General Social Survey, a multi-year survey about attitudes in American society.²⁸ In 1996 only, the survey asked respondents about the strength of their attachment to their neighborhood and willingness to leave it. In particular, it asked: “How close do you feel to... your neighborhood (or village)” on a 4-

²⁸ From the general social survey website: “The General Social Survey (GSS) conducts basic scientific research on the structure and development of American society with a data-collection program designed to both monitor societal change within the United States and to compare the United States to other nations.” <http://www3.norc.org/GSS+Website/> Accessed July 9, 2014.

point scale from “Very Close” to “Not Close at All”. It also asked: “If you could improve your work or living conditions, how willing or unwilling would you be to...move to another neighborhood (or village)” on a 5-point scale from “Very Willing” to “Very Unwilling”. The survey also measured the population of “the smallest civil division listed by the U.S. Census (city, town, other incorporated area over 1,000 in population, township, division, etc.)” where each respondent lived.

This survey provides evidence in line with our supposition that people from smaller cities feel closer to their community. We regress the neighborhood closeness measures described above on the log of city population (population is logged to reduce the scope of this wide-ranging variable) and find that individuals from smaller cities feel significantly closer to their neighborhoods — a one-logarithm increase in population is associated with subjects reporting they are 0.041 points less close on the 4-point scale (OLS with robust standard errors, $N=1,326$, $p<0.001$). And individuals from smaller cities are less willing to leave — a one-logarithm increase in population is associated with subjects reporting they are 0.073 points more willing to move on the 5-point scale (OLS with robust standard errors, $N=1,320$, $p<0.001$).

Consequently, we hypothesize that potential donors who live in smaller cities care more about their community membership and find it more identity-relevant. For example, we expect the effect of referencing a community city drive to be larger among individuals living in a small city (e.g. Clifton, TN, population 2,694) than among those living in a large city (e.g. Chicago, IL, population 2.696 million). To test this hypothesis, we collected city population data from the U.S. Census (17,348 cities), city-data.com (352

cities that were not in the U.S. Census data), and neighborhood population measures for New York and Los Angeles.²⁹

Table 3 presents the results of a regression analysis examining whether the *city community drive* treatment effect varies as a function of the log of a city's population.³⁰ As shown in Table 3, we find a significant interaction between the *city community drive* treatment and the log of a city's population ($p=0.035$). Specifically, for every one-logarithm decrease in the population of a prospective donor's home city, the *city community drive*'s effect on the likelihood of donation increases by 0.26 percentage points. This result is visually illustrated in Figure 5, which bins prospective donors by the size of their home city's population and highlights that the estimated treatment effect of the *city community drive* condition is larger in smaller cities. In short, we find that the positive effect of priming community membership on donations is larger among individuals from smaller cities who are more likely to treat being a member of a community as a substantive part of their identity.

V. Conclusion

By examining the results of two large field experiments conducted by a large national charity, we demonstrate the power of identity primes as motivators of public good provision. We build on a growing Economics literature highlighting the importance

²⁹ Both New York and Los Angeles are major metropolitan areas with city names that are actually neighborhood designations, so we gathered data on the populations of those neighborhoods (for New York: <https://data.cityofnewyork.us/City-Government/New-York-City-Population-By-Neighborhood-Tabulation/swpk-hqdp>; for Los Angeles: <http://www.laalmanac.com/population/po241a.htm> both accessed October 12, 2013).

³⁰ 2,590 non-donors and 117 donors from this experiment (approximately 6% of each) are not included in this analysis because they live in cities with populations that were not available from the U.S. Census Bureau or city-data.com.

of identity to preferences and choice (Akerlof and Kranton 2000; Benjamin, Choi and Strickland 2010; Benjamin, Choi and Fisher 2013; Cohn, Fehr and Maréchal, 2014) and demonstrate that strategically selected identity primes are capable of increasing public goods provision like giving to a charitable organization.

First, we find that priming a prospective donor's identity as a previous donor by reminding that prospective donor of her last donation to an organization increases giving. Consistent with the comparative static of our model, this effect is larger among individuals who historically have been more regular donors to the charity. Second, we find that providing fundraising campaigns with names that prime an aspect of a donor's identity associated with generosity (e.g. community membership) can increase donation rates. Again consistent with our comparative static, we find that this effect is particularly strong when the donor's identity group is likely to be personally relevant (i.e. when the donor lives in a smaller city). We rule out a number of alternative explanations for the results detected and conclude that the treatments we study affect giving by priming identity rather than through some other mechanism. Table 4 presents a comparison of the priming effect sizes detected across the two experiments.

The experiments were practitioner-inspired and were run without researcher intervention.³¹ A direct benefit of examining practitioner-inspired experiments is that the

³¹ See Elfenbein, Fisman and Mcmanus (2012) for an example of a similar approach using eBay sellers experimenting with donating money from products they sell. Focusing on practitioner-run experiments has costs as well. Many of the experiments that practitioners run are designed to answer very specific questions for the charity that are not of theoretical interest. For example, many of the experiments the national charity ran in the data we received were tests comparing completely different appeal letters to see which was most effective. Such an experiment may help the charity raise more money but is unlikely to provide deep insights to behavioral scientists. As is described in the Appendix, to conduct this research, we had to identify which the national charity solicitations were sent as part of experiments, and we then used the creative materials

results have clear policy relevance, since they explore approaches that a charity would (and did) implement in fundraising campaigns.³²

These results provide insights into individual motivations for charitable giving and private provision of public goods as well as the role that identity plays both in influencing economic choices including charitable giving.

from those experiments to determine whether each experiment conducted was of theoretical interest. We took both of these steps before looking at any data to avoid introducing bias into the reporting of results.

³² Consequently, results are useful for practitioners who can learn from these experiments run by the national charity to encourage giving to their own organizations.

REFERENCES

- Andreoni J (1989) Giving with Impure Altruism: Applications to Charity and Ricardian Equivalence. *Journal of Political Economy*. 97(6): 1447-1458.
- Andreoni J (1990) Impure Altruism and Donations to Public Goods: A Theory of Warm-Glow Giving?. *Economic Journal*. 100(401): 464-477.
- Andreoni J (2006) Philanthropy. Kolm SC, Mercier JM, eds. *Handbook of the Economics of Giving, Altruism and Reciprocity*. (Elsevier Press, North-Holland), 1201-1269.
- Andreoni J, Rao JM, Trachtman H (2012) Avoiding The Ask: A Field Experiment on Altruism, Empathy, and Charitable Giving. Working Paper, National Bureau of Economic Research.
- Ariely D, Bracha A, Meier S (2009) Doing Good or Doing Well? Image Motivation and Monetary Incentives in Behaving Prosocially. *American Economic Review*. 99(1): 1-12.
- Ariely D, Loewenstein G, Prelec D, (2003) Coherent Arbitrariness: Stable Demand Curves Without Stable Preferences. *The Quarterly Journal of Economics* 118(1): 73-106.
- Batson CD (1991) The altruism question: Toward a social-psychological answer. Hillsdale, NJ: Erlbaum.
- Becker GS (1974) A Theory of Social Interactions. *Journal of Political Economy*. 82(6): 1063-1093.
- Bem DJ (1972) Self-Perception Theory. Berkowitz L, ed. *Advances in Experimental Social Psychology*. Volume 6. (Academic Press, New York), 1-62.
- Bénabou R, Tirole J (2004) Willpower and personal rules. *Journal of Political Economy*. 112(4): 848-886.
- Bendapudi N, Singh SN, Bendapudi V (1996) Enhancing Helping Behavior: An Integrative Framework for Promotion Planning. *Journal of Marketing*. (1996): 33-49.
- Benjamin DT, Choi JJ, Strickland AJ (2010) Social Identity and Preferences. *American Economic Review*. 100(4): 1913-1928.
- Brockner J, Guzzi, B, Kane J, Levine E, Shaplen K (1984) Organizational fundraising: Further evidence on the effect of legitimizing small donations. *Journal of Consumer Research*. (1984): 611-614.
- Bucchianeri GW, Minson JA (2013) Home buyers are not a herd: Listing behaviors and housing market outcomes. *Journal of Economic Behavior and Organization*. In press.

- Chapman GB, Johnson EJ (1994) The limits of anchoring. *Journal of Behavioral Decision Making*. 7(4): 223-242.
- Chapman, GB, Johnson EJ (1999) Anchoring, activation and the construction of value. *Organizational Behavior and Human Decision Processes* 79(2): 115-153.
- Cialdini RB, Kendrick DT (1976) Altruism as hedonism: A social development perspective on the relationship of negative mood state and helping. *Journal of Personality and Social Psychology*. 34(5): 907-914.
- Cialdini, RB, Ascani K (1976) Test of a concession procedure for inducing verbal, behavioral, and further compliance with a request to give blood. *Journal of Applied Psychology*. 61(3): 295-300.
- Cialdini RB, Schroeder DA (1976) Increasing compliance by legitimizing paltry contributions: When even a penny helps. *Journal of Personality and Social Psychology*. 34(4): 599-604.
- Cohn A, Fehr E, Maréchal MA (2014) Business Culture and Dishonesty in the Banking Industry. *Nature*. doi:10.1038/nature13977.
- Coffman LC, Featherstone CR, Kessler JB (2014) Can Social Information Affect What Job You Choose and Keep? Working Paper.
- DellaVigna S, List JA, Malmendier U (2012) Testing for Altruism and Social Pressure in Charitable Giving. *The Quarterly Journal of Economics*. 127(1): 1-56.
- Deshpande' R, Hoyer WD, Donthu N (1986) The Intensity of Ethnic Affiliation: A Study of the Sociology of Hispanic Consumption. *Journal of Consumer Research*. 13(2): 214-220.
- Elfenbein DW, Fisman R, Mcmanus B (2012) Charity as a Substitute for Reputation: Evidence from an Online Marketplace. *Review of Economic Studies*. 79(4): 1441-1468.
- Falk A (2007) Gift-Exchange in the Field. *Econometrica*. 75(5): 1501-1511.
- Falk A, Zimmermann F (2011) Preferences for consistency. (No. 3528). CESifo Working Paper: Behavioral Economics.
- Festinger L (1962) A theory of cognitive dissonance. (Vol. 2). Stanford university press.
- Frey BS, Meier S (2004) Social Comparisons and Pro-Social Behavior: Testing 'Conditional Cooperation' in a Field Experiment. *The American Economic Review*. 94(5): 1717-1722.

Giving USA Foundation (2012) Giving USA 2012: The Annual Report on Philanthropy for the Year 2011. Indianapolis, IN: Giving USA Foundation, http://www.nxtbook.com/nxtbooks/galvin/givingusa_execsummary2012/

Gneezy A, Gneezy U, Nelson LD, Brown A (2010) Shared Social Responsibility: A Field Experiment in Pay-What-You-Want Pricing and Charitable Giving. *Science*. 329(5989): 325-327.

Gneezy U, Rustichini A (2000) Pay enough or don't pay at all. *The Quarterly Journal of Economics*. 115(3): 791-810.

Goldstein NJ, Cialdini RB, Griskevicius V (2008) A room with a viewpoint: Using social norms to motivate environmental conservation in hotels. *Journal of Consumer Research*. 35(3): 472-482.

Hedges LV, Nowell A (1995) Sex Differences in Mental Test Scores, Variability, and Numbers of High-Scoring Individuals. *Science*. 269(5220): 41-45.

Hogg MA (2003) Social Identity. Leary MR, Tangney JP, eds. *Handbook of Self and Identity*. (Guilford Press, New York), 462-479.

James W (1890) *The Principles of Psychology*. Henry Holt, New York.

Kahneman D, Tversky A (1974) Judgment under uncertainty: heuristics and biases. *Science*. 185(4157): 1124-1131.

Karlan D, List JA (2007) Does Price Matter in Charitable Giving? Evidence from a Large-Scale Natural Field Experiment. *American Economic Review*. 97(5): 1774-1793.

Kessler JB. (2013) Announcements of Support and Public Good Provision. Working Paper, University of Pennsylvania, Philadelphia.

Kleine RE, Kleine SS, Kernan JB (1993) Mundane Consumption and the Self: A Social Identity Perspective. *Journal of Consumer Psychology*. 2(3): 209-35.

Landry CE, Lange A, List JA, Price MK, Rupp NG (2006) Toward an Understanding of the Economics of Charity: Evidence from a Field Experiment. *Quarterly Journal of Economics*. 121(2): 747-782.

Landry CE, Lange A, List JA, Price MK, Rupp NG (2010) Is a Donor in Hand Better Than Two in the Bush? Evidence from a Natural Field Experiment. *American Economic Review*. 100(3): 958-983.

LeBoeuf RA, Shafir E, Bayuk JB (2006) The Conflicting Choices of Alternating Selves. *Organizational Behavior and Human Decision Processes*. 111(1): 48-61.

Li, SX, De Oliveira ACM, Eckel C (2013) Common Identity and the Voluntary Provision of Public Goods: An Experimental Investigation. Working paper, University of Texas at Dallas, Dallas.

Liberman V, Samuels SM, Ross L (2004) The name of the game: Predictive power of reputations versus situational labels in determining prisoner's dilemma game moves. *Personality and Social Psychology Bulletin*. 30(9): 1175–1185.

Lichtenstein S, Slovic P (1971) Reversals of preferences between bids and choices in gambling decisions. *Journal of Experimental Psychology*. 89(1): 46-55.

List JA, Lucking-Reiley D (2002) The Effects of Seed Money and Refunds on Charitable Giving: Experimental Evidence from a University Capital Campaign. *Journal of Political Economy*. 110(8): 215-233.

Mussweiler T, Strack F (1999) Hypothesis-consistent testing and semantic priming in the anchoring paradigm: A selective accessibility model. *Journal of Experimental Social Psychology*. 35(2): 136-164.

McKenzie CRM, Liersch MJ, Finkelstein SR (2006) Recommendations implicit in policy defaults. *Psychological Science*. 17(5): 414-420.

Meer, J (2013) The Habit of Giving. *Economic Inquiry*. 51(4): 2002–2017.

Meer J (2011) Brother, Can You Spare a Dime: Peer Pressure in Charitable Solicitation. *Journal of Public Economics*. 95(7-8): 926-941.

Meer J, Harvey SR. (2011) The ABCs of Charitable Solicitation. *Journal of Public Economics*. 95(5-6): 363-371.

Newman GE, Shen YJ (2012) The counterintuitive effects of thank-you gifts on charitable giving. *Journal of Economic Psychology*. 33(5): 973-983.

Northcraft GB, Neale MA (1987) Experts, amateurs, and real estate: An anchoring-and-adjustment perspective on property pricing decisions. *Organizational Behavior and Human Decision Processes*. 39(1): 84-97.

Reed II A (2004) Activating the Self-Importance of Consumer Selves: Exploring Identity Salience Effects on Judgments. *Journal of Consumer Research*. 31(2): 286–95.

Reicher S, Levine M (1994) Deindividuation, Power Relations Between Groups and the Expression of Social Identity: The Effects of Visibility to the Out-Group. *British Journal of Social Psychology*. 33(2): 145-163.

- Shariff AF, Norenzayan A (2007) God Is Watching You: Priming God Concepts Increases Prosocial Behavior in an Anonymous Economic Game. *Psychological Science*. 18(9): 803-809.
- Schibrowsky JA, Peltier JW (1995) Decision frames and direct marketing offers: A field study in a fundraising context. *Journal of Direct Marketing*. 9(1): 8-16.
- Shang J, Croson R (2009) A Field Experiment In Charitable Contribution: The Impact of Social Information on the voluntary provision of public goods. *The Economic Journal*. 119(540): 1422-1439.
- Shang J, Reed A, Croson R (2008) Identity congruency effects on donations. *Journal of Marketing Research*. 45(3): 351-361.
- Sherman, SJ (1980) On the Self-Erasing Nature of Errors of Prediction. *Journal of Personality and Social Psychology*. 39(21): 1-221.
- Shih M, Pittinsky TL, Ambady N (1999) Stereotype Susceptibility: Identity Salience and Shifts in Quantitative Performance. *Psychological Science*. 10(1): 80-83.
- Small DA, Simonsohn U (2008) Friends of victims: Personal experience and prosocial behavior. *Journal of Consumer Research* (Special Issue on Transformative Consumer Research), 35(3): 532-42.
- Small DA, Loewenstein G (2003) Helping “A” victim or helping “THE” victim: Altruism and identifiability. *Journal of Risk and Uncertainty*. 26(1): 5-16.
- Small DA (2011) Sympathy biases and sympathy appeals: Reducing social distance to boost charitable contributions. Oppenheimer, DM, Olivola, CY, eds. *Experimental approaches to the study of charity*. (Taylor & Francis Group, New York), 149-160.
- Smith GE, Berger PD (1996) The impact of direct marketing appeals on charitable marketing effectiveness. *Journal of the Academy of Marketing Science*. 24(3): 219-231.
- Smith TW, Marsden PV, Hout M, Kim J. *General Social Surveys, 1972-2012*. [machine-readable data file]. Principal Investigator, Tom W. Smith; Co-Principal Investigators, Peter V. Marsden and Michael Hout, NORC ed. Chicago: National Opinion Research Center, producer, 2005; Storrs, CT: The Roper Center for Public Opinion Research, University of Connecticut, distributor. 1 data file (57,061 logical records) and 1 codebook (3,422 pp).
- Stayman DM, Deshpande R (1989) Situational Ethnicity and Consumer Behavior. *Journal of Consumer Research*. 361-371.
- Steele CM, Aronson J (1995) Stereotype Threat and the Intellectual Test Performance of African Americans. *Journal of Personality and Social Psychology*. 69(5): 797-811.

Steele CM (1997) A Threat is in the Air: How Stereotypes Shape Intellectual Identity and Performance. *American Psychologist*. 52(6): 613-629.

Steen LA (1987) Mathematics Education: A Predictor of Scientific Competitiveness. *Science*. 237: 251–253.

Terry DJ, Hogg MA (1996) Group Norms and the Attitude-Behaviour Relationship: A Role for Group Identification. *Personality and Social Psychology Bulletin*. 22(8): 776–793.

Terry DJ, Hogg MA, White KM (1999) The Theory of Planned Behaviour: Self-Identity, Social Identity, and Group Norms. *British Journal of Social Psychology*. 38(3): 225–44.

Turner JC (1985) Social Categorization and the Self-Concept: A Social Cognitive Theory of Group Behavior. Lawler EJ, ed. *Advances in Group Processes*, Vol. 2. (JAI Press, Greenwich, CT), 77-121.

Vesterlund L (2006) Why do People Give? Steinberg R, Powell WW, eds. *The Nonprofit Sector*, 2nd edition. (Yale Press, New Haven, CT).

Websites listed but not cited:

<https://data.cityofnewyork.us/City-Government/New-York-City-Population-By-Neighborhood-Tabulation/swpk-hqdp> Accessed October 12, 2013.

<http://www.laalmanac.com/population/po24la.htm> Accessed October 12, 2013.

http://www2.census.gov/census_2010/03-Demographic_Profile/ Accessed April 18, 2013.

<http://www.city-data.com/> Accessed April 18, 2013.

<http://www.oed.com/> Accessed February 2, 2014.

Figure 1. Variable components of the *Identity as a Previous Donor* mailings (Experiment 1)

Top of Solicitation Letter	
Donor Identity Condition	<div style="border: 1px solid black; padding: 10px; margin-bottom: 20px;"> <p>Charity’s Logo Appeared Here</p> </div> <p><Name> <City, State Zip></p> <p>Previous Gift: <date></p> <p>Dear Friend and Supporter,</p>
Control Condition	<div style="border: 1px solid black; padding: 10px; margin-bottom: 20px;"> <p>Charity’s Logo Appeared Here</p> </div> <p><Name> <City, State Zip></p> <p>Dear Friend and Supporter,</p>

Figure 2. Variable components of the *Identity as a Community Member* mailings (Experiment 2)

Outer Envelope Return Address			
Annual Fund	Winter 2009	Winter 2009 <State> State	Winter 2009 <City> Community
National Charity 2025 E Street, NW Washington, DC 20006	National Charity 2025 E Street, NW Washington, DC 20006	National Charity <State> State Drive 2025 E Street, NW Washington, DC 20006	National Charity <City> Community Drive 2025 E Street, NW Washington, DC 20006
Headline Atop Reply Card			
Annual Fund	Annual Fund Drive for the National Charity		
Winter 2009	Winter 2009 Drive for the National Charity		
Winter 2009 <State> State	Winter 2009 <State> State Drive for the National Charity		
Winter 2009 <City> Community	Winter 2009 <City> Community Drive for the National Charity		
Return Address on Solicitation Letter Stationary			
Annual Fund	Charity's Logo Appeared Here	Annual Fund Drive	
Winter 2009	Charity's Logo Appeared Here	Winter 2009 Drive	
Winter 2009 <State> State	Charity's Logo Appeared Here	Winter 2009 <State> State Drive	
Winter 2009 <City> Community	Charity's Logo Appeared Here	Winter 2009 <City> Community Drive	
Statement Embedded in Solicitation Letter Text			
Annual Fund and Winter 2009	Right now people everywhere are banding together to support the National Charity. Won't you join them by sending your contribution today?		
Winter 2009 <State> State	Right now people throughout <State> are banding together in a statewide drive to support the National Charity. Won't you join them by sending your contribution today?		
Winter 2009 <City> Community	Right now people throughout <City> are banding together in a community drive to support the National Charity. Won't you join them by sending your contribution today?		

Figure 3. Probability of donation in each condition of the *Identity as a Previous Donor* experiment. Standard error bars are shown around each mean.

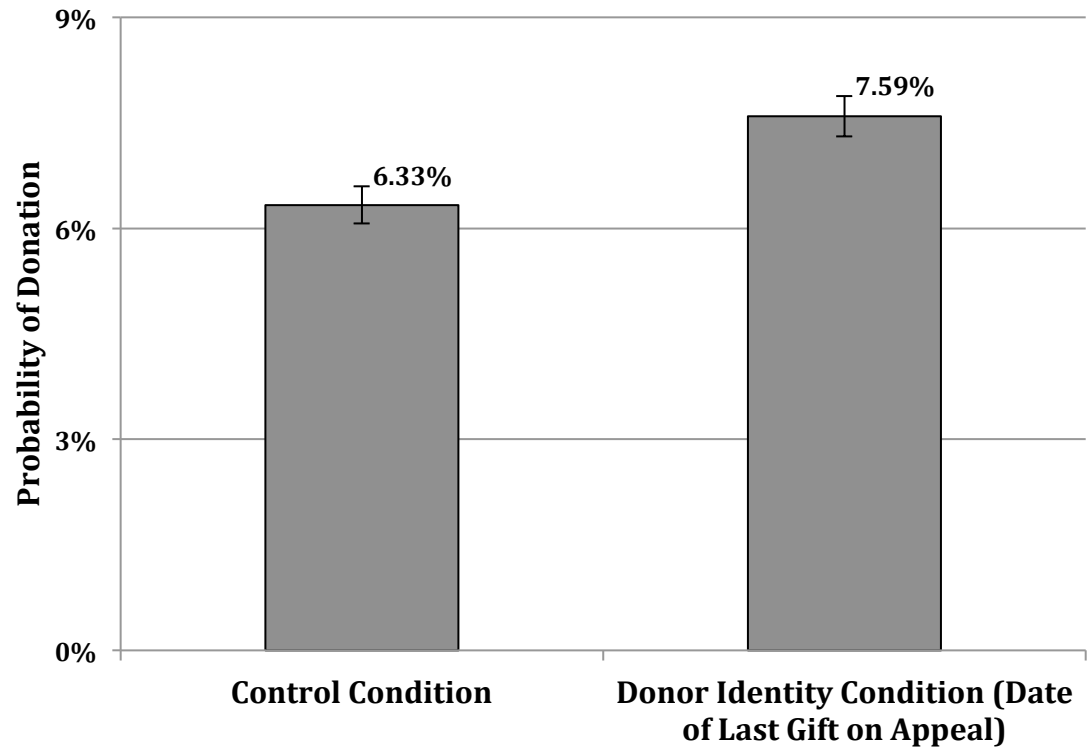


Figure 4. Probability of donation in each of the conditions of the *Identity as a Community Member* experiment. Standard error bars are shown around each mean.

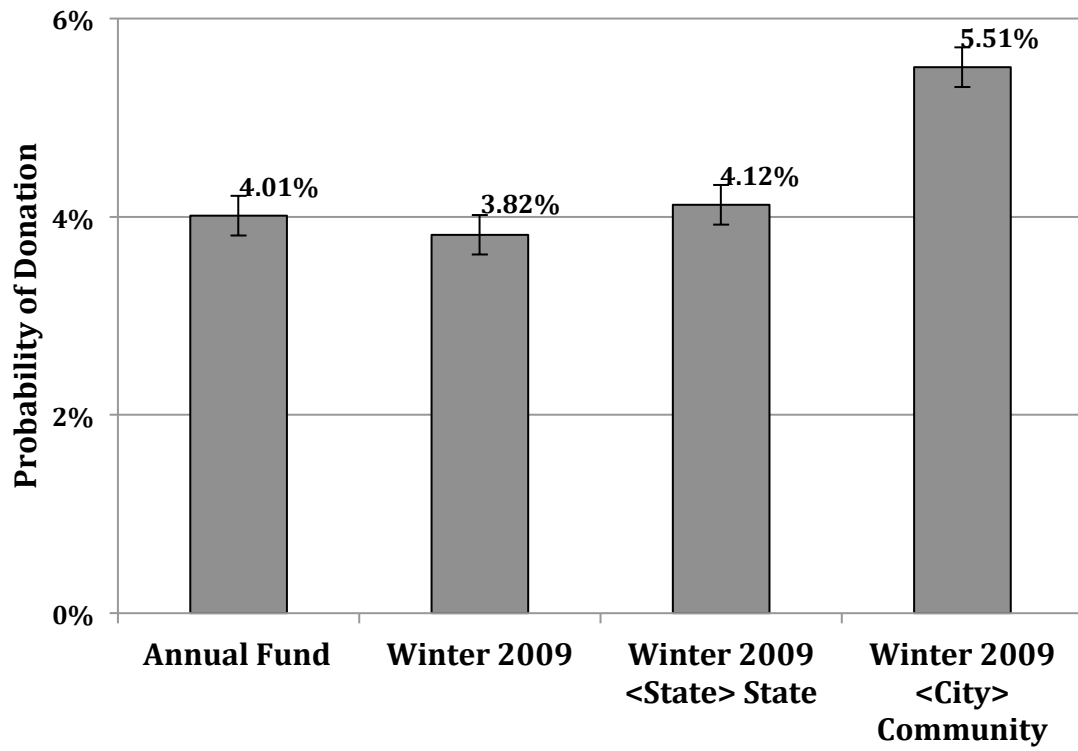


Figure 5. Estimated treatment effect of the city community drive condition as a function of the log(population) in a prospective donor's city in the *Identity as a Community Member* experiment. To produce regression estimates, donors are binned into cities with log populations within a one-unit range (e.g., 12 to 13, which corresponds to cities with a population of 162,755 to 442,413 people). Each bubble represents the treatment effect for one donor bin, and bubble sizes are proportional to the number of donors in a given bin. A linear trend line is plotted through the bubbles highlighting that as the city population increases, the estimated treatment effect of the city community drive condition declines.

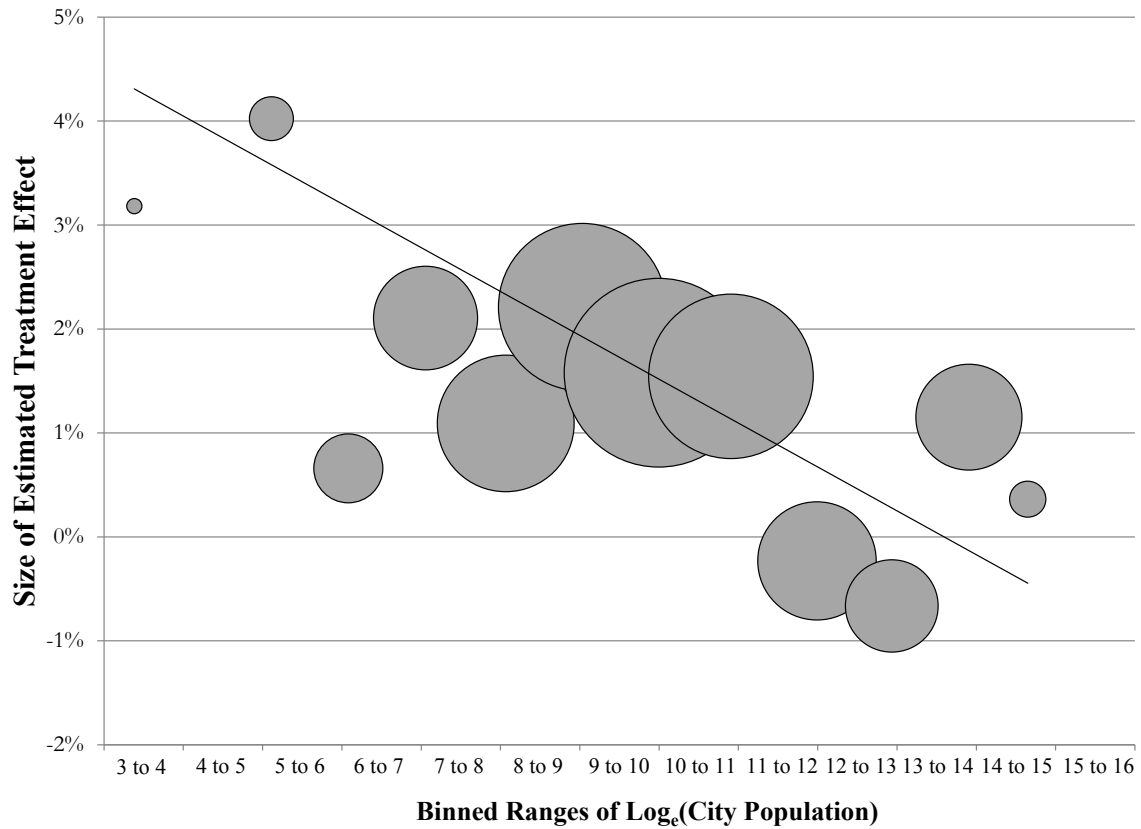


Table 1. Effect of *donor identity* treatment in the *Identity as a Previous Donor* experiment (Experiment 1).

	Donation to the National Charity = 1 (Linear Probability Model)		
	(1)	(2)	(3)
<i>Donor Identity</i>	0.013 (0.004)***	0.013 (0.004)***	-0.002 (0.010)
<i>Donor Identity*Previous Gifts</i>			0.013 (0.008)*
<i>Previous Gifts</i>		0.009 (0.004)**	0.002 (0.004)
<i>Previous Solicitations</i>		-0.001 (0.000)***	-0.001 (0.000)***
Constant	0.063 (0.003)***	0.074 (0.007)***	0.082 (0.008)***
Observations	17,061	17,061	17,061

Table shows Linear Probability Model (OLS) regression results showing whether subjects make a donation to the national charity as part of the appeal. Previous Gifts is the number of gifts the individual made to the national charity between 2006 and the time of the experiment. Previous Solicitations is the number of solicitations the individual received from the national charity between 2006 and the time of the experiment. Robust standard errors are in parentheses. *, **, *** indicate significance at 0.1, 0.05, and 0.01 respectively.

Table 2. Number of mailings, probability of donation, average donation, and average donation conditional on giving for the four treatments in the *Identity as a Community Member* experiment (Experiment 2). Donations are winsorized at \$500, the 99.9th percentile of donations made in response to this appeal (the cutoff used throughout this paper to address outliers).

Treatment	Number of Mailings	Donation Rate	Avg. Donation	Avg. Donation by Donors
<i>Annual Drive</i>	10,355	4.01%	\$2.23	\$55.73
<i>Winter Drive</i>	10,373	3.82%	\$2.02	\$52.82
<i>State Drive</i>	10,269	4.12%	\$2.08	\$50.60
<i>City Community Drive</i>	10,404	5.51%	\$2.48	\$44.79

Table 3. Effect of the *city community drive* condition in the *Identity as a Community Member* experiment (Experiment 2).

Donation to the National Charity = 1 (Linear Probability Model)						
	All Data		City Population Available			
	(1)	(2)	(3)	(4)	(5)	(6)
<i>City Community</i>	0.015 (0.002)***	0.014 (0.002)***	0.014 (0.002)***	0.013 (0.003)***	0.040 (0.013)***	0.039 (0.013)***
<i>Log(City Population)</i>					-0.001 (0.001)***	-0.002 (0.001)***
<i>City Community* Log(City Population)</i>					-0.003 (0.001)**	-0.002 (0.001)**
<i>Previous Gifts</i>		0.031 (0.009)***		0.031 (0.009)***		0.025 (0.009)***
<i>Previous Solicitations</i>		-0.006 (0.000)***		-0.006 (0.000)***		-0.006 (0.000)***
Constant	0.040 (0.001)***	0.100 (0.003)***	0.040 (0.001)***	0.100 (0.003)***	0.056 (0.007)***	0.117 (0.007)***
Clusters	7,185	7,185	6,199	6,199	6,199	6,199
Observations	41,401	41,401	38,811	38,811	38,811	38,811

Table shows Linear Probability Model (OLS) regression results showing whether subjects make a donation to the national charity as part of the appeal. “City Population Available” includes individuals for whom city population data is available. Previous Gifts is the number of gifts the individual made to the national charity between 2006 and the time of the experiment. Previous Solicitations is the number of solicitations the individual received from the national charity between 2006 and the time of the experiment. Robust standard errors clustered by city are in parentheses. *, **, *** indicate significance at 0.1, 0.05, and 0.01 respectively.

Table 4. Although the populations in the two direct mailing experiments described here differ, there is still value in comparing effect sizes across relatively similar groups treated with different behavioral messaging interventions. Below we compare the effect sizes across the two experiments analyzed in this paper. Donations are winsorized at \$300 (Experiment 1) and \$500 (Experiment 2), the 99.9th percentile of donations made in response to appeals in each experiment, respectively. The % change measures reflect the coefficient from a regression of treatment on log(1+donation). The stars reflect whether the difference between the groups is significantly different from 0, *p<0.10; **p<0.05; ***p<0.01.

Experiment	Condition	Obs.	Donor Rate	Avg. Don.	Avg. Don. By Donors	% change in Donor Rate	% change in Avg. Don.	% change in Avg. Don. by Donors
Identity as a Previous Donor (Experiment 1)	Donor Identity	8,532	7.59%	\$3.83	\$50.42	20.00%***	4.09%***	-6.06%
	Control	8,529	6.33%	\$3.41	\$53.92			
Identity as a Community Member (Experiment 2)	City Community Drive	10,404	5.51%	\$2.47	\$44.79	38.34%***	4.80%***	-12.97%***
	All Other Conditions	30,977	3.98%	\$2.11	\$53.04			

APPENDIX

Appendix A: Binary Decisions in the Toy Model

The decision under consideration might be binary with $x \in \{0,1\}$. This is the case when the decision is whether or not to make a donation (where $x = 1$ indicates making a donation), and so we can solve for the optimal action x^* by comparing utility when $x = 1$ to utility when $x = 0$. Given the utility function in the text, utility is weakly higher from donating when $x_0 \geq \frac{1}{2}$ if $a \notin A$. Alternatively, utility is weakly higher from donating if $x_0 \geq \frac{1}{2} \cdot \frac{1-(2x_C)s}{1-s}$ when $a \in A$. If $x_C > \frac{1}{2}$, so that if individuals who only cared about the prescribed behavior of identity group C would make a donation, then some individuals with $x_0 < \frac{1}{2}$ might still want to make donation when their identity is primed. In particular, we can define $\bar{x} = \frac{1}{2} \cdot \frac{1-(2x_C)s}{1-s}$ to be the smallest x_0 for which an individual prefers to donate when identity is primed. Taking the comparative static, we see that $\frac{\partial \bar{x}}{\partial s} = \frac{1-2x_C}{2(1-s)^2} < 0$ and so as s increases, individuals with smaller x_0 make a donation. If we assume $x_0 \sim F(x)$ and $F(x)$ is continuous, we get strictly more donors as s increases, just as in the case of continuous x .

Appendix B: Description of Data and Experiment Selection

The national charity refers to the population whose contacts were shared with us as “STAART Prospects” where STAART stands for “Strategy Through Applied Analytics, Research, and Testing”. Most of the batches of solicitations targeting the donor population of interest that were mailed out by the national charity during the period we study were not experimental but instead involved sending a single, identical solicitation to all prospective donors. Only 16% of the batches of the national charity

donation solicitation letters sent during this period were sent as part of an experiment. In total, there were 30 unique national charity experiments targeting different sub-populations of prospective donors during the period available for study.

For 20 of the 30 unique experiments conducted by the national charity, our research team was provided with complete color portable document format (PDF) copies of each unique mailing design (i.e. “the creatives”). Across the 20 experiments for which complete creatives were provided, there were 51 unique creatives developed by the national charity and shared with our team. Before analyzing any data on the effectiveness of different experimental mailings, both members of our research team viewed the creatives for each of these 20 experiments and rated each experiment together on a scale from 1-5 for theoretical interest where 1=no theoretical interest and 5=considerable theoretical interest. Most experiments received a rating of “1” or a “2”, as they involved entirely unrelated solicitation letters (e.g. sets of different holiday cards with entirely distinct covers and messages) making it impossible to assess the source of any differences in response rates and thus making comparisons of little to no theoretical interest. Four experiments received the highest rating of “5.” Two of these were replications of results previously identified in the literature.³³ The other two were of behavioral interventions both addressing the issue of identity that we study in this paper.

See Table A1 for a brief description of each direct mail experiment conducted by the national charity with STAART Prospects between January 2009 and October 2011 sorted by mail date with the associated ranking of theoretical interest assigned by the researchers.

³³ The results of these two experiments (which were on anchoring and extrinsic rewards for donation) replicated the previous results from the literature.

Figure A1. Distribution of gift amounts in the *city community drive* condition and the three other treatments in Experiment 2. The CDFs start at 0.94 since less than 6% of individuals make a donation in either group. For visual clarity we cap donation amounts at \$150. Notice the distribution of gift sizes differs drastically between \$0 and \$50 but does not differ above \$50.

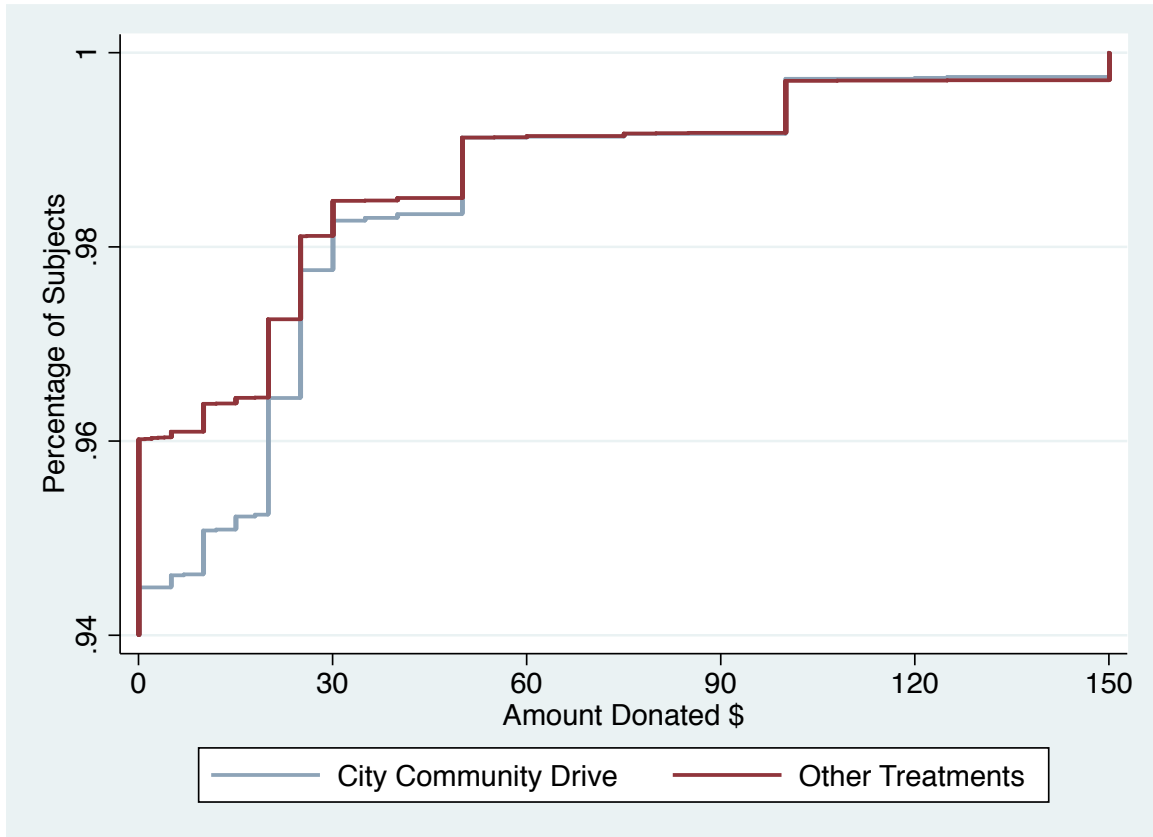


Table A1. Summary of all direct mail experiments conducted by the national charity between Jan 2009 and Oct 2011 with “STAART Prospects” sorted by mail date. Rows highlighted in grey received a rating of “5” for theoretical interest and were related to donor identity so are selected for analysis in this paper. Other rows rated 5 are analyzed elsewhere.

#	Mail Date	Number of Conditions	Description of Experiment	Researcher Interest Rating
1	1/5/09	2	Mailings either (a) list a description of what different donation amounts could buy for the national charity and place some reply card content on the back of the card or (b) do not list these descriptions and keep all reply card content on a single side of the card.	4
2	4/6/09	2	Mailings differ on numerous dimensions including text of the appeal letter and whether a supporter card was included.	1
3	5/4/09	2	Mailings differ on numerous dimensions including text of the appeal letter and whether a supporter card was included.	1
4	5/4/09	2	Mailings differ on numerous dimensions including text of the appeal letter, format of the appeal letter, format of the reply card, and text of the reply card.	1
5	8/24/09	2	Mailings include an address label gift and either also (a) include an emergency checklist for disaster preparedness, home safety, and an emergency supply kit or (b) do not include this checklist.	4
6	8/31/09	2	Mailings differ on numerous dimensions including text, length and format of the appeal letter as well as the header on the reply card.	1
7	9/21/09	2	Mailings either (a) offer to mail a glow stick worth \$4.95 to donors of \$20+ or (b) do not provide this offer.	5
8	10/26/09	2	Creatives not provided for one arm.	NA
9	11/2/09	6	Mailings vary the fundraising drive title, which appears in three locations on each mailing. The fundraising drive title is either (a) Annual Fund Drive, (b) Winter 2009 Drive, (c) Winter 2009 <State> State Drive, or (d) Winter 2009 <City> Community Drive. Two additional treatments include (e) a shortened version of the appeal letter and (f) a different and distinct outer envelope design, which also reveals the recipient's address in a die-cut window (rather than printing it on the outer envelope). [<i>Identity as a community member; Experiment 2</i>]	5
10	1/4/10	2	The mailings either include (a) one additional line of personalized text that appeared on the letterhead containing the date of the donor's last donation or (b) no additional line of text. [<i>Identity as a previous donor; Experiment 1</i>]	5
11	11/9/09	5	The mailings differ on several dimensions including which of four different card designs (complete with different cover art) are enclosed as well as the text that appears inside the card.	2
12	2/1/10	2	Reply cards vary whether default donation check-boxes are associated with (a) \$20, \$25, and \$30 gifts or (b) \$25, \$30 and \$40 gifts.	5

13	2/1/10	3	Envelope designs differ along numerous dimensions including the shape of the address label, whether the national charity return address is listed, whether there is a die-cut revealing the recipient's address, and whether the envelope says "Rapid Response Campaign".	1
14	4/5/10	3	Creatives not provided.	NA
15	4/5/10	4	Creatives not provided for two arms. Remaining arms include either (a) a white outer envelope or (b) a red outer envelope.	3
16	5/3/10	4	Mailings differ on numerous dimensions including the design of and text printed on the outer envelope, the design, content and length of the appeal letter, and the design of (and whether images are included on) the reply form.	1
17	7/12/10	3	Creatives not provided.	NA
18	8/9/10	3	Creatives not provided.	NA
19	8/23/10	4	Creatives not provided.	NA
20	9/7/10	2	Creatives not provided for one arm.	NA
21	10/4/10	2	Creatives not provided for one arm.	NA
22	10/4/10	2	Creatives not provided for one arm.	NA
23	10/11/10	3	Creatives not provided.	NA
24	11/1/10	2	Mailings either include (a) a free white notecard bearing the symbol of the national charity or (b) a free red notecard that says "Thank You" as well as listing the national charity's values.	2
25	11/15/10	2	Either (a) the recipient's address is printed on the outer envelope and the appeal letter font is large or (b) the recipient's address is printed atop the letter, shown through a die-cut window, and the appeal letter font is small.	1
26	2/1/11	2	Mailings differ on numerous dimensions including text of the appeal letter, format of the reply card, and format of the outer envelope.	1
27	2/15/11	3	Mailings differ on numerous dimensions including whether the outer envelope contains a full-envelope image or die-cut window and whether outer envelope references a state drive.	1
28	5/2/11	2	Mailings differ on numerous dimensions including text of the appeal letter, images on the envelope, and overall design of campaign.	1
29	8/15/11	2	Mailings differ on numerous dimensions including text of the appeal letter and whether address labels or a supporter card were included.	1
30	9/15/11	2	Addresses on outer envelope are either (a) revealed through two die cut windows or (b) printed directly on the envelope.	1