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How do Suggested Donations Affect Charitable Gifts? Evidence from a Field Experiment in Public Broadcasting

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Abstract

Direct-mail fundraisers commonly provide a set of suggested donation amounts to potential donors, in addition to the option of writing in an amount. Yet little systematic evidence exists about the causal effects of suggested donation amounts on giving behavior. To this end, we conducted a field experiment on a direct-mail solicitation to nearly 15,000 members of three public broadcasting stations. We varied (1) the vector of suggested amounts, and (2) whether the suggested amounts were fixed or varied as a proportion of the individual's previous donation. We find that increasing the vector of suggested amounts by about 20 percent statistically significantly reduces the overall probability of giving by about 15 percent. The overall impact on revenue is less clear, but appears to be somewhat negative. Higher suggested amounts also lead to write-in amounts representing a greater proportion of donations. We attribute our result to the apparent cognitive cost of writing in a preferred amount that differs from a suggested amount. A second field experiment, in which we alter only one of the suggested amounts, gives evidence consistent with that theory and with the idea that donors prefer to give round numbers, as we see donors significantly more likely to give amounts of $90 or higher when suggested $100 versus $95.

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1. Introduction

Charitable giving continues to increase in economic importance, with $358 billion – over 2% of U.S. GDP – contributed to charity in 2014 (Giving USA, 2014).[1] In an effort to attract dollars, charities spend a sizeable 15-35% of their total contributions on administration and fundraising, using mailings, phone-a-thons, and the like.[2] A growing literature has successfully used field experiments to explore the design features of a solicitation that affects giving behavior, which has provided insights into both fundraising practice and theories of public good provision.[3]

A very common practice in direct-mail fundraising is to provide a vector of suggested donation amounts to potential donors, in addition to the option of writing in an amount. In fact, informal observation of our mail has led us to conclude that almost all mail solicitations provide suggested contributions, usually with multiple checkboxes of different amounts (e.g., $25, $35, $50 and an 'other' box). While many charities make decisions about which suggested contribution amounts to display to potential donors in practice, little is known about the effect of this decision on donor behavior.

To investigate the role of the set of suggestions on donor behavior, we conducted a field experiment using a year-end fundraising campaign for three public broadcasting stations in Tucson, Arizona. A mailing went out to 14,421 current members of the stations, soliciting a year-end gift. Members were randomized to one of four treatments in a 2x2 experimental design. First, we varied the size of the suggested amounts, by shifting the vector of suggested amounts up by approximately 20% in two of the treatments. Second, we varied whether the vector of suggested amounts was fixed across individuals or was proportional to the individual's previous donation. Based on interesting findings from the first experiment, we also conducted a second field experiment in which we changed just one of the suggested amounts in the "ask string" vector from $100 to $95. A third treatment in the second experiment replicated our previous findings, showing that higher suggested donation amounts reduce the probability of giving.

We observe that suggested donation amounts do have a strong influence on donor behavior; overall, 60% of donors choose to give one of the suggested amounts. We find that the vector of 20% higher suggested donation amounts results in a likelihood of donating that is about 15% lower, with no significant effect on donation amounts. In addition, among those who give, the vector of higher suggested donation amounts leads to more write-in donations.

Our results cannot be easily explained by standard economic models of charitable fundraising as public-good provision, which model the gift amount as being optimized over a continuous set of choices. With a write-in option, suggested giving amounts are irrelevant in such models. By contrast, we provide strong evidence that donors incur a cognitive cost from writing in an

[1] As reported by Giving USA in their report, available at http://givingusa.org/.
[2] As reported by the Center on Nonprofits and Philanthropy, Urban Institute, Center on Philanthropy, Indiana University. Nonprofit Overhead Cost Project: Facts and Perspectives.
[3] See Jasper and Samek (2014) for a summary. Selected findings of that literature are that donations are increased through matches and seed grants (List and Lucking-Reiley, 2002; Karlan and List, 2011), donor gifts and lotteries (Landry et al., 2006), and recognition (Soetevent, 2005).

amount, as we show in several settings that the fundraiser's choice of suggested gift amount can have large effects on the probability of a gift. Further, we find that donors show preference for round numbers in their giving, as a treatment replacing a suggested amount of $100 with an amount of $95 (in the middle of an ask string) produces an economically and statistically significant reduction in the probability of contributing $90-$100.

Our findings also have broad implications for practice. Unlike more costly interventions often undertaken as part of fundraising campaigns(e.g., those that provide donor gifts or matching grants), a set of suggested amounts constitutes a minor framing change or 'nudge' (Thaler and Sunstein, 2008). Suggested amounts are costless to implement and provide no clear direct costs or benefits to potential donors; the costs are indirect and incurred through the effort of deciding on an appropriate donation amount. Moreover, suggested amounts do not affect the action set – potential donors are still free to write in any amount. We demonstrate that fundraisers need to think carefully about the choices of these amounts as they can affect the probability of donation. Fundraisers will do well to conduct additional experiments on the effects of ask strings, to develop a scientific body of knowledge on the right amounts to choose in a given setting.

The remainder of our paper is organized as follows. Section 2 summarizes the related literature. Section 3 presents the design of our main experiment. Section 4 contains the experimental results. Section 5 presents the design and results of our second experiment. Section 6 provides a discussion and concludes.

2. Related Literature

To our knowledge, our paper is the first to investigate the impact of a costless 'nudge' in which we vary the ask string slightly.[4] As we discuss below, related work has considered the impact of providing one suggested amount, or legitimizing small gifts by providing either very small or very high suggested ranges.

Our experiment is related to recent work by Edwards and List (2014), who conducted an alumni fundraising campaign via phone in collaboration with a university and found that suggesting a donation of approximately $20 increased the likelihood of donating and that donations tended to be in the amount of the suggestion. Edwards and List (2014) interpreted their results through the lens of their theoretical model, which suggests that individuals receive some utility from donating at least as much as the suggestion, but less utility from exceeding it. However, Edwards and List (2014) provided only one suggested amount to the donor and, therefore, could not speak to the optimal spread of suggested amounts.

Related work has also investigated the impact of social information – i.e., telling potential donors whether and what amount others have contributed. Shang and Croson (2009) find that giving potential donors information about past high donations (up to a point) increases donation amounts, while giving potential donors information about past low donations decreases donation amounts (Croson and Shang, 2008). Frey and Meier (2004) find that providing information about giving rates affects the rate of giving. Unlike social information, suggested amounts do not

[4]Weyant and Smith (1987) vary the ask string by an order of magnitude, as discussed below, in order to investigate the question of legitimizing smaller gifts.

convey explicit information about the giving of others, but may contain implicit information, since potential donors may believe that the fundraiser knows what is an 'appropriate donation amount.'

Our paper is also related to a strand of work in social psychology that investigated the impact of legitimizing small gift amounts (Cialdini and Schroeder, 1976; Reingen, 1978; Weyant, 1984; Weyant and Smith, 1987). One set of papers found that adding the language 'even a penny will help' to a solicitation increased the likelihood of giving (Cialdini and Schroeder, 1976; Reingen, 1978; Weyant, 1984). In another experiment, Weyant and Smith (1987) found that using very small suggested amounts ($5-$10-$25) increased the likelihood of receiving a gift relative to amounts that are ten times higher ($50-$100-$250). However, these studies were underpowered to detect effects on the intensive margin due to low sample sizes or response rates.

Our large sample size (nearly 15,000 solicitations and nearly 1,500 donations) differentiates our work from previous studies, as does the fact that we explore the optimal spread of suggested gift amounts. Rather than studying the effect of one suggested amount (as in Croson and Shang, 2008; Shang and Croson, 2009 and Edwards and List, 2014) or legitimizing a small gift (as in Cialdini and Schroeder, 1976; Reingen, 1978; Weyant, 1984 and Weyant and Smith, 1987), we consider the impact of a 'nudge' that changes the string of suggested amounts. In our second experiment, we also consider when and how different suggestion amounts are used by changing one of the asks in the ask string from $100 to $95.

We find direct mail to be the ideal place to investigate the causal effects of ask strings, as fundraising practice typically uses them in this context. Past research employing door-to-door visits or phone calls simplified the context by proposing only a single suggested donation amount, but the effects of such an amount in a personal appeal could be confounded with the effects of social pressure to comply with the suggestion.

3. Experimental Design

The experiment followed the Tucson TV and radio stations' normal year-end fundraising procedure. On November 10, 2003, mailings went out to 14,421 current members (individuals who had made "membership" donations that year) of Classical Radio, National Public Radio/Jazz and PBS Television stations.[5] Potential donors were randomized to one of four treatments, with approximately equal numbers of individuals in each treatment (see Table 1).[6]

[5] We designed the ask strings for these additional year-end gifts from current members. The radio station also chose to solicit 22,000 "lapsed" members using the same experimental design; these individuals had made donations in at least one of the previous three years but had not renewed their membership that year. Given that these individuals were being solicited for membership rather than for an additional year-end gift, we would have recommended higher ask amounts for these individuals had we known about them. Common practice is to ask for membership gifts at least as high as someone's previous gift. Lapsed member response rates were 10 times smaller than current member response rates, yielding low statistical power. Given the differences and the low statistical power, we have chosen to omit lapsed members from the analysis. Summary statistics on lapsed members are available from the authors upon request.

[6] Random numbers were generated for each person on the mailing list, assigning each person with equal probability to one of four treatments.

As was standard practice for the stations in the previous years, the mailing asked for an additional year-end gift from current members, not conferring any additional membership benefits.

Table 1: Summary of Treatments and Number of Individuals Solicited

Treatment	TV	Radio	Total
Fixed1	2,619	936	3,555
Fixed2	2,692	987	3,679
Variable1	2,604	951	3,555
Variable2	2,633	999	3,632
Total	10,548	3,873	14,421
*Note: This table displays the number of individuals solicited in total in each group. It turns out that 2,132 individuals appear on both TV and Radio lists, and therefore received both solicitations.			

The experiment consisted of four treatments: two with suggested donation amounts fixed across individuals (Fixed), and two with suggested donation amounts set as a fraction of the donor's previous membership gift to the station (Variable).[7] The first treatment (Fixed1) employed the same ask string that had been sent out to donors in the previous year-end mailing, while the second treatment (Fixed2) increased these across the board by approximately 20%. (See Table 2.) In the Variable treatments, each suggested amount was based on each individual's previous membership gift X, where X was the previous year's membership gift amount.[8] Each ask string contained five specific suggestions of dollar amounts, followed by a write-in box for those who wished to give an amount other than those suggested.

A research question of particular interest to the station (motivating them to work with us in the first place) was whether customizing the ask amounts for each donor might improve revenues from the campaign. In the absence of a clear theory about the correct proportions to use, we chose proportions that would hold each mean suggestion (across donors) to be roughly equal to the corresponding suggestions in the Fixed treatments. We chose the Variable proportions so that the mean of each suggestion (across donors) would be roughly equal to the corresponding suggestion for current donors in the Fixed1 and Fixed2 treatments.[9] Those proportions can be

[7] In the previous year's (non-experimental) year-end campaign, suggested amounts were between Fixed1 and Fixed2, with $35, $50, $75, $100, $150 and "other" write-in. The previous year's year-end campaign raised $113,581.18 in total.

[8] While the solicitation was for a year-end gift, the year-end gift from the previous year could not be used in the Variable treatments since few members give a year-end gift.

[9] In practice, given other constraints, the mean suggested amounts for the highest entries in the Variable ask strings ended up being lower than the corresponding amounts for the Fixed ask strings. We can see this in Table 2 from the fact that the highest ask amount in Fixed is more than six times the lowest ask amount, while the highest ask amount in Variable is only four times the lowest ask amount. However, the means match more closely at the low end, which is where the bulk of donations occur. The mean

seen in Table 2. Since these proportions could sometimes produce dollar amounts that might look very unconventional (such as non-integer dollar amounts), we rounded all amounts to the nearest five-dollar increment for both Variable1 and Variable2. Since small previous gift X could yield redundant suggested amounts (e.g., $5, $5, $10, $10, $15), we chose in those cases to increase suggested amounts by the minimum required so that each would differ from the last by at least five dollars (e.g., $5, $10, $15, $20, $25). With one television station but two radio stations, radio station members also had the option to select whether to donate to Classical Radio, National Public Radio/Jazz, or both.

Table 2: Ask Strings in the Experiment

	Ask 1	Ask 2	Ask 3	Ask 4	Ask 5	Ask 6
Fixed1	$30	$50	$75	$100	$200	$___ (write in)
Fixed2	$35	$60	$95	$120	$240	$___ (write in)
Variable 1	0.5X	0.75X	1X	1.5X	2X	$___ (write in)
Variable 2	0.6X	0.9X	1.2X	1.8X	2.4X	$___ (write in)

Note: X represents the previous year's membership gift amount. In Variable 1 and Variable2, the amounts were rounded to the nearest $5 increment, with an amount increased by $5 if it turned out to duplicate the next lower amount in the string.

Following its standard practice, the station sent an additional reminder mailing one month after the initial mailing. This mailing, with the same set of suggested amounts received by the donor in the original mailing, went to a subset of those in the original mailing: current members who had not yet given an additional year-end gift. Due to budget constraints, not all individuals in this group received a reminder; we mailed a total of 7,000 reminders, divided between radio and TV, and split equally between the four treatments. We consider our treatment to include the effects of both the initial and the reminder mailing.

Our data consist of gift amounts for each person who gave in response to the year-end additional-gift solicitation and reminder mailings. We also know the previous (membership) gift amount and ask string applied to each individual who gave during the experiment, but we were unable to obtain this information for those who who were solicited but chose not to give during the experiment. We know the total number of members who were solicited with each type of ask string (see Table 1), but we were not able to obtain any details about the past giving of those individuals who chose not to give in response to the experimental solicitations.

Note that a small subset of individuals in our sample were members of both the television and radio stations, in which case they would have received a solicitation from both stations. The station attempted to apply a consistent treatment in both solicitations to such individuals. Though we do not have detailed data on which accounts were solicited for each campaign, we

suggested amounts for those who responded with donations in Variable1 were $27.08, $41.32, $57.16, $84.50 and $114.41, while Variable2 resulted in mean suggested amounts of $34.52, $51.66, $69.89, $105.36 and $140.70.

do observe that 79 (5.6%) individuals who gave a gift gave both to television and to radio. Of these 79, most (70) received the same ask string in both campaigns while the remaining 9 received two different ask strings. In addition, 3 people responded to 2 different solicitations within the television group. These minor deviations from the experimental protocol were likely due to the station's inability to recognize and deduplicate multiple accounts belonging to the same household in advance of the fundraising campaign.

4. Results

4.1 Probability of Giving

Table 3 provides a summary of our results on the probability of a gift, also known as the extensive margin, in each of the treatments. Between 9% and 13% of TV and Radio members responded with a gift. We see response rates to be comparable between radio and TV.

Table 3: Response Rates, by Treatment

Treatment	TV N=10,548	Radio N=3,873	Overall N=14,421
Fixed1	11.65% (0.63)	10.47% (1.00)	11.33% (0.53)
Fixed2	8.99% (0.55)	10.84% (0.99)	9.49% (0.48)
Variable1	10.60% (0.60)	12.41% (1.07)	11.08% (0.53)
Variable2	9.15% (0.56)	10.11% (0.95)	9.42% (0.48)
Overall	10.09% (0.29)	10.95% (0.50)	10.32% (0.25)

Note: This table displays the response rate to the solicitation, by treatment. Standard errors in parentheses.

Our main finding is that the set of suggested amounts does significantly affect the probability of a gift. Despite the option to write in one's preferred amount, we observe downward-sloping demand: larger suggested donation amounts lead to fewer gifts received. Overall, as we see in the final column of the table, contributions decrease by 16.32% from Fixed1 to Fixed2, and by 15.00% from Variable1 to Variable2. For the TV station members, we observe an 11.65% contribution rate in Fixed1 relative to an 8.99% contribution rate in Fixed2 (Test of proportions z=3.18, p=0.002) and a 10.60% contribution rate in Variable1 relative to a 9.15% contribution rate in Variable2 (z=1.75, p=0.079). We see a similar pattern of results for radio station members when comparing Variable1 to Variable2, with a 12.41% contribution rate in Variable1 versus a 10.11% contribution rate in Variable2 (z=1.61, p=0.108). We do not see a significant difference when comparing Fixed1 and Fixed2 among radio station members (z=-0.26, p=0.79). One reason for the differences between effects of Fixed1 and Fixed2 on TV and radio station members could be that radio station members tend to have an underlying preference for giving higher amounts: for instance, the last average membership gift of TV members who gave in our sample this year was $54.12 (s.e.=$2.33) and of radio members was $57.86 (s.e.=$2.33).

We obtained a "downward-sloping demand curve" in three out of four opportunities (all but the Variable treatment for radio members). With our large sample sizes, we know that our test statistic under the null will be normally distributed in each of the four comparisons. We also know that because our mailings went to disjoint groups (with minor exceptions comprising 5% of the data), we can treat each of these test statistics as an independent standard-normal random variable. The most powerful test statistic we can construct (for the joint null hypothesis that the giving rates are equal between higher versus lower ask strings in each of the four independent settings) is therefore not merely to pool the data, but to add together these four test statistics to get a new, combined test statistic. Adding the four test statistics together and dividing the sum by its variance (equal to 2)[10], we obtain a joint test statistic of: z=3.66 (p<0.01).

This brings us to our first result:

Result 1: Increasing the suggested amounts from Variable1 to Variable2 and from Fixed1 to Fixed2 leads to a significant decrease in response rates.

4.2 Mean Amounts Contributed

We next turn to analyzing contribution amounts. Table 4 provides an overview, by treatment, of the average amount contributed among those who responded, also known as the intensive margin. We received 1,488 gifts in total. This number of gifts should give us enough statistical power, in a 5% significance test, to reject the null hypothesis 80% of the time when the truth is a difference of 0.2 standard deviations of the average gift amount (see discussion and formulas in Levitt *et al.* (2012)).

Table 4: Average Gift Size

Treatment	TV N=1,064	Radio N=424	Overall N=1,488
Fixed1	$47.62 (2.48)	$54.74 (3.83)	$49.35 (2.09)
Fixed2	$47.27 (2.08)	$54.21 (2.08)	$49.40 (2.08)
Variable1	$46.44 (4.46)	$58.31 (8.76)	$50.00 (4.08)
Variable2	$49.65 (3.80)	$54.16 (3.80)	$50.98 (3.80)
Overall	$47.69 (1.86)	$55.46 (2.92)	$49.91 (0.51)

*Note: This table provides the average size of gifts received, conditional on receiving a gift. Standard errors in parentheses.

[10] Since all four are distributed N(0,1), and the sum of independent normals is distributed normal with mean equal to the sum of the means and variance equal to the sum of the variances, we obtain a new test statistic distributed N(0,4). To normalize that sum to have a standard normal distribution, we divide it by 2 (the square root of the variance).

The average gift amount is around $50, with radio station members giving about $55 and TV station members giving $48. We do not find a systematic pattern in the treatment effect of increasing the ask string; the point estimates are negative but insignificant in three of the four comparisons (p=0.50 for Fixed1 versus Fixed2 in TV; p=0.33 for Variable1 versus Variable2 in TV; p=0.68 for Variable1 versus Variable2 in radio), and positive but insignificant (p=0.68 for Fixed1 versus Fixed2 in radio).

Table 5 provides an overview of the amounts contributed (average dollars received per solicitation sent). The pattern of results is similar to that of Result 1, in the sense that unconditional gift amounts decrease overall by 16.10% between Fixed1 and Fixed2, and by 13.36% between Variable1 and Variable2. For TV station members when comparing Fixed1 and Fixed2, there was a statistically significant difference (z=2.43, p=0.02). For TV station members when comparing Variable1 and Variable2, there was a decrease in unconditional gift amounts for Variable2, which was not statistically significant (z=0.49, p=0.62). For radio station members, Fixed1 and Fixed2 did not exhibit significant differences (t-stat=-0.15, p=0.88), while Variable2 is lower than Variable1 but not significantly (t-stat=1.26, p=0.21). Adding the four test statistics together and dividing by 2, we obtain a joint test statistic of: z=2.02 (p=0.04).

Table 5: Revenue per Solicitation

Treatment	TV N=10,548	Radio N=3,873	Overall N=14,421
Fixed1	$5.55 (0.41)	$5.73 (0.68)	$5.59 (0.35)
Fixed2	$4.25 (0.34)	$5.88 (0.69)	$4.69 (0.31)
Variable1	$4.92 (0.55)	$7.23 (1.25)	$5.54 (0.52)
Variable2	$4.54 (0.54)	$5.48 (0.66)	$4.80 (0.43)
Overall	$4.81 (0.23)	$6.07 (0.43)	$5.15 (0.21)

*Note: This table provides the average size of gifts received, not conditional on contributing. Standard errors in parentheses.

The primary practical question motivating this experiment for the radio station was whether they could increase revenue by using variable suggested amounts based on people's past gift amounts. For the parameters chosen in this experiment, the answer is inconclusive. Variable1 does worse than Fixed1 for TV, but better than Fixed1 for radio. Variable2 does better than Fixed2 for TV, but worse than Fixed2 for radio. None of these four differences are statistically significant at the 5% level. Likely, the optimal variable amounts differ from the ones we chose; we made our best guess at choosing good amounts, but further experimentation could certainly improve on them.

Changing the set of suggested amounts was costless to the station, yet the station raised 15% more (a $5,302 difference in revenues) when suggested amounts were lower. We already showed that this difference was statistically significant in our comparisons of revenue per solicitation, but we find it instructive to reiterate the differences after multiplying by the number

of solicitations to get total revenue for the station. The amount raised was higher for Fixed1 and Variable1 ($20,119 and $19,995, respectively) than for Fixed2 and Variable2 ($17,376 and $17,436, respectively). In summary, for the ask strings we chose to experiment with, the public broadcasting station receives more revenue per solicitation when asking for less, rather than more. This results from a combination of "downward-sloping demand" (lower probability of a gift when ask strings are higher) and mean gift amounts (conditional on giving) being relatively constant across treatments. We summarize this result as follows:

Result 2: Increasing the suggested amounts leads to a significant decrease in revenue per solicitation, overall.

4.3 Distribution of Gift Amounts

More interesting than the mean gift amounts is the shape of the distribution of gifts, particularly the utilization of the suggested gift amounts. Conditional on giving, we find that a large proportion – 60% of those who contributed – use the suggested amounts. This constitutes 6% of all solicitations.

Table 6 provides a summary of the fraction of gifts using the suggested amount divided by the total number of solicitations. Overall, suggested amount usage is 25% lower in Fixed2 relative to Fixed1 (23% lower for television station members and 31% lower for radio station members), and 46% lower in Variable2 relative to Variable1 (49% lower for television station members and 37% lower for radio station members). The difference is statistically significant when comparing Fixed1 and Fixed2 or Variable1 and Variable2 for television station members ($z=2.36$, $p=0.02$; $z=6.15$, $p<0.01$, respectively). The difference is also significant when comparing Fixed1 and Fixed2 or Variable1 and Variable2 for radio station members ($z=2.09$, $p=0.04$; $z=2.63$, $p=0.01$, respectively). Adding the four test statistics together and dividing by 2, we obtain a joint test statistic of $z=6.62$ ($p<0.01$), rejecting the joint null hypothesis (across all four contexts) that higher ask amounts yield the same probability of ask-string utilization as lower ask amounts.

Table 6: Proportion of Those Solicited who Utilize Suggested Amounts

Treatment	TV N=10,548	Radio N=3,873	Overall N=14,421
Fixed1	6.56% (0.48)	7.37% (0.85)	6.78% (0.42)
Fixed2	5.05% (0.69)	5.07% (0.69)	5.06% (0.36)
Variable1	8.49% (0.55)	7.96% (0.88)	8.35% (0.46)
Variable2	4.33% (0.39)	5.02% (0.69)	4.52% (0.34)
Average	6.32% (0.39)	6.10% (0.23)	6.16% (0.19)

*Note: This table shows the proportion of people giving any of the suggested amounts. The denominator in this table is the total number of people receiving a solicitation in that treatment group. Standard error of the mean is in parentheses.

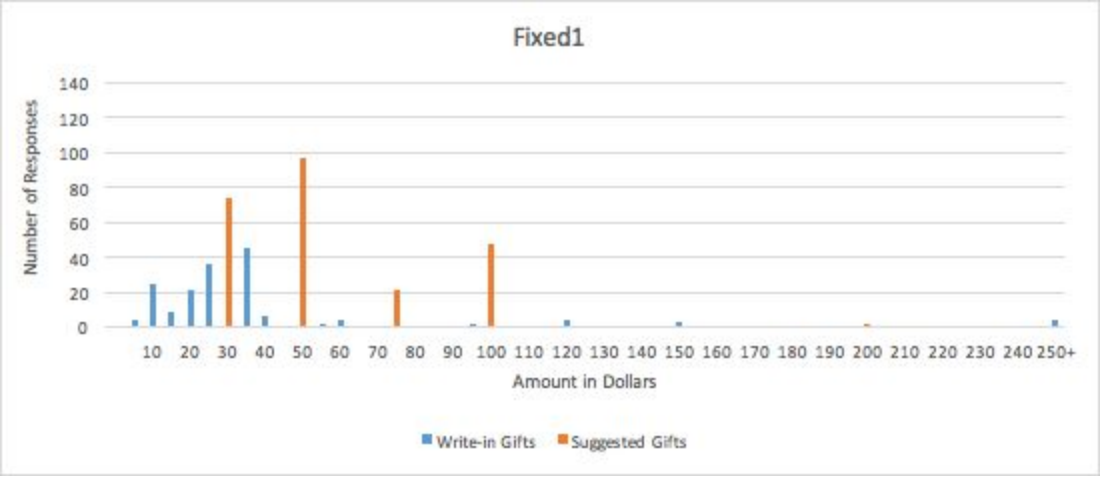
This brings us to our third result:

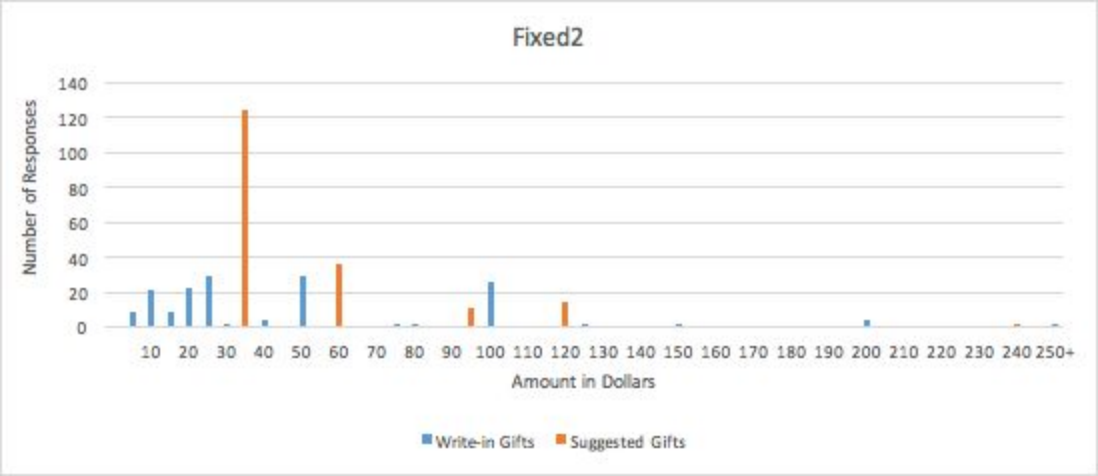
Result 3: On average, 60% of contributors (6% of those solicited) utilize the suggested amount, and the utilization of suggested amounts decreases significantly (by 23-49%) as the set of suggested amounts increases.

To give a more detailed picture of the amounts donated, Figure 1 provides histograms of gift amounts separately for Fixed1 and Fixed2, conditional on giving (pooling the television and radio groups). As evidenced by Figures 1 and 2, most write-in gifts fall below the lowest suggested gift (in fact, 58% of write-in gifts in Fixed1 and 56% of write-in gifts in Fixed2, conditional on contributing, are below the lowest suggested gift). Interestingly, we see a preference for giving the "round" numbers $50 and $100 in all treatments. Table 7 gives the numeric probabilities (per solicitation) of subjects choosing each of the eight suggested amounts in Fixed1 and Fixed2, separately by treatment. We see that the likelihood of giving any given amount is statistically significantly higher when that amount is suggested.

Moreover, utilization of suggested amounts is concentrated among the lowest two amounts in Fixed1 ($30 and $50) and lowest single amount in Fixed2 ($35). At the other end of the distribution, we see only two contributors in Fixed1 and one contributor in Fixed2 choosing the highest suggested amounts.

Figure 1: Histograms of Giving Amounts in Fixed1 and Fixed2





*Note: Orange bars represent giving at a suggested amount, blue bars represent giving a write-in amount.

Table 7: Probabilities of Giving Specific Suggested Amounts

	Fixed1 Suggestions				**Fixed2 Suggestions**			
	$30	$50	$75	$100	$35	$60	$95	$120
Fixed1	2.08%	2.73%	0.59%	1.32%	1.23%	0.11%	0.03%	0.11%
Fixed2	0.05%	0.79%	0.05%	0.74%	3.37%	0.98%	0.29%	0.38%
Diff	2.03%*** (0.24%)	1.94%*** (0.31%)	.54%*** (0.13%)	0.62%*** (0.24%)	-2.10%*** (0.35%)	-.87%*** (0.17%)	-.27%*** (0.09%)	-.27%** (0.12%)
Note: This table reports the proportion of gifts made at each of the suggested amounts, not conditional on giving. The highest suggested amount in each treatment is excluded because the likelihood of giving those amounts is extremely low. Diff reports the difference, with standard error of the difference in parentheses. *** indicates p<0.01, ** indicates p<0.05 and * indicates p<0.10.								

Figure 2 provides histograms of gift amounts separately for Variable1 and Variable2, conditional on giving (pooling the television and radio groups). Variable1 and Variable2 also both display a high likelihood of giving $100, whether that amount is suggested (Variable1) or not (Variable2). We see just over 30 gifts of $100 in Variable1, and just under 30 gifts of $100 in Variable2. A similar result occurs for gifts of $50: over 50 such gifts in Variable 1 (where they are mostly suggested) and almost 50 such gifts in Variable2 (where they are almost exclusively written in).

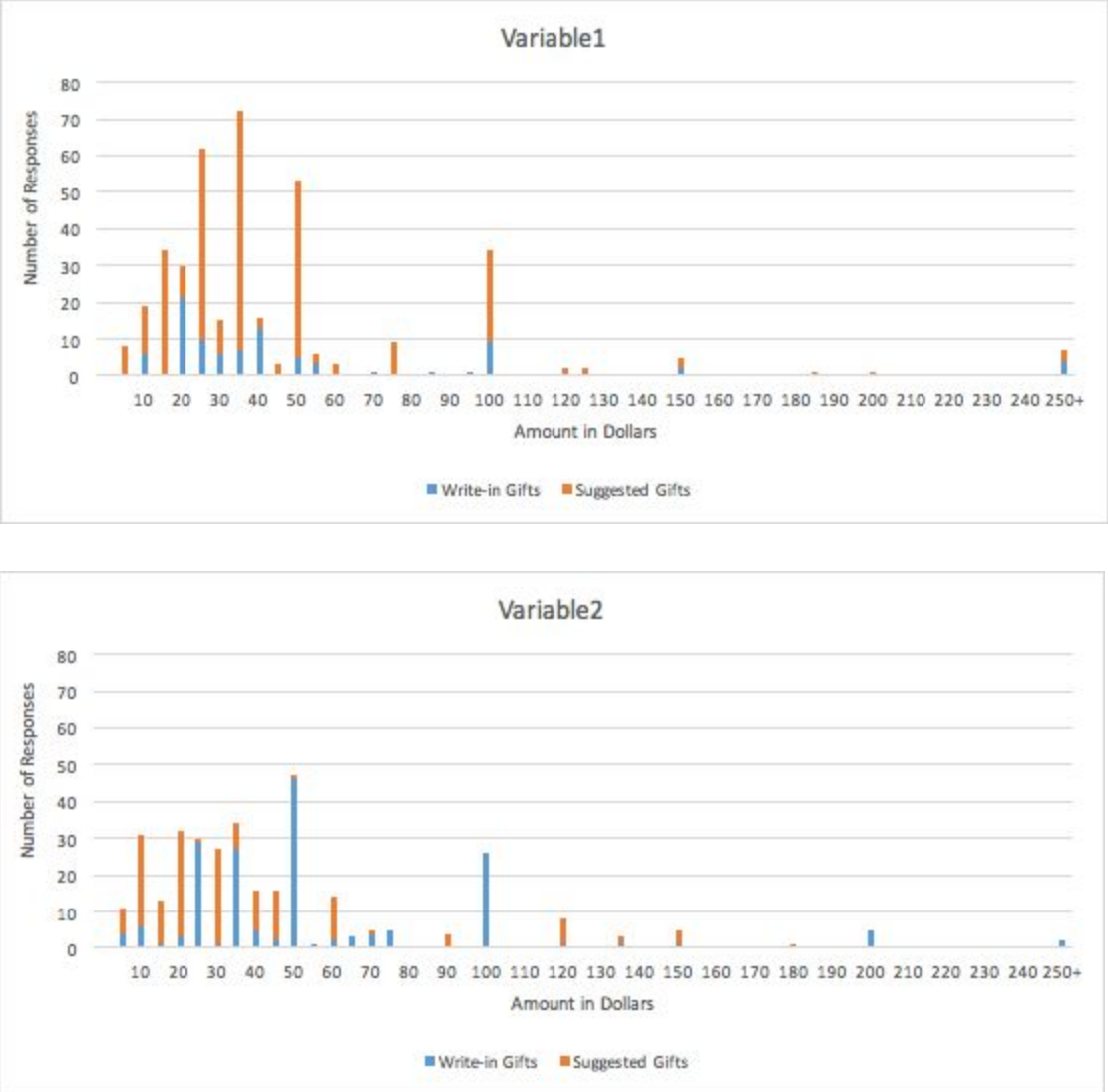
Note that Variable2 shows many more gifts at suggested donation amounts of $25, $50, $100, and $200 than Variable1 does. This is largely driven by the fact that we chose more unusual fractions of the previous membership gift for the suggested amount in Variable 1 than in Variable 2. While we did not manage to obtain data on the amounts suggested to members who did not donate in response to this solicitation, we know that a large number of gift amounts are round numbers like $50 and $100, so Variable1 resulted in more suggestions of round numbers

like $25, $50, and $100, while Variable2 resulted in more suggestions of amounts like $30, $60, and $90.

This brings us to the next result:

Result 4: Members are significantly more likely to give an amount when it is suggested.

Figure 2: Histograms of Giving Amounts in Variable1 and Variable2



Next, we compare the distributions of gift amounts by treatment, ignoring solicitations that generated no gift. Kolmogorov-Smirnov tests show statistically significant differences in conditional gift distributions when comparing Fixed1 and Fixed2 of television station members (D=0.19, p<0.01) and when comparing Variable1 and Variable2 of television station members (D=0.12, p=0.03). Differences are not significant for radio station members (D=0.12, p=0.44 for Fixed1 versus Fixed2, and D=0.15, p=0.16 for Variable1 versus Variable2). We note that the power is lower for testing the distributions of radio gifts because the sample size is much

smaller. The pooled TV/radio distributions in the figures show clear differences, particularly at the specific suggested donation amounts, as demonstrated above in Table 7.

While Table 7 investigates exact gift amounts, Table 8 examines differences in the distributions between treatments in broader bins, corresponding to gifts smaller than our smallest Fixed1 amount, and in the ranges of each of the five Fixed1/Fixed2 ask strings. Notably, the likelihood of giving $1-$29 is significantly higher in Variable1 than in Variable2 ($p<0.05$), and the likelihood of giving $50-$74 is significantly higher in Fixed1 relative to Fixed2 ($p<0.05$). The former result likely comes from giving small donors more opportunity to give smaller gifts, while the latter result appears to come from the strong preference of donors to give gifts of the round number $50 (by contrast with the $60 suggested in the Fixed2 treatment).

Table 8: Probability of a Gift within Each Range, Compared Across Treatments

	$1-$29	**$30-$49**	**$50-$74**	**$75-$99**	**$100-$199**	**$200+**
Fixed1	2.64%	3.52%	2.87%	0.62%	1.52%	0.17%
Fixed2	2.45%	3.53%	1.77%	0.38%	1.17%	0.19%
Fixed Diff	0.20% (0.37%)	-0.01% (0.43%)	1.10%** (0.35%)	0.23% (0.17%)	0.35% (0.27%)	-0.02% (0.09)
Variable1	4.36%	3.07%	1.86%	0.31%	1.27%	0.23%
Variable2	3.30%	2.53%	1.93%	0.25%	1.2%	0.19%
Variable Diff	1.06%** (0.45)	0.53% (0.39)	-0.07% (0.32)	0.06% (0.12)	0.05% (0.26)	0.03% (0.10)

Note: This table reports the proportion of gifts made in each of the above-mentioned bins, not conditional on giving. Fixed Diff and Variable Diff rows report the difference, with standard error of the difference in parentheses. *** indicates $p<0.01$, ** indicates $p<0.05$ and * indicates $p<0.10$.

We were intrigued by this preference for round numbers, so we designed Experiment 2 to focus on investigating the effect of changing just one suggested amount in an ask string. Notice that while $95 was a suggested amount in Fixed2, very few responders donated $95, and rather preferred to donate $100. We designed Experiment 2 to contain a treatment with just one ask in the ask string modified ($95 versus $100) to isolate this effect.

5. Experiment 2

5.1 Experiment 2 Design

One year after the first experiment, we had the opportunity to run a follow-up experiment as part of the public-broadcasting station's 2004 year-end gift campaign. In this experiment, we tested the three ask strings summarized in Table 9. The station wanted to explore the effects of a larger change in the ask string, so we created Treatment 2 with roughly double the amounts in

Treatment 1. As scientists, we wished to further explore donors' apparent preferences for round-number donations, so we convinced the station to implement Treatment 95 with the same ask string as in Treatment 1, except that the fourth suggestion was changed from $100 to $95. We are grateful that the station found our participation sufficiently valuable, that they were sufficiently curious about the round-number phenomenon, and that they were willing to execute this treatment despite our guess that it would likely bring in fewer donations than Treatment 1. Table 9 summarizes the design of this second experiment.

Table 9: Ask Strings in Experiment 2

	Ask 1	**Ask 2**	**Ask 3**	**Ask 4**	**Ask 5**	**Ask 6**
Treatment 1	$35	$50	$75	$100	$250	$___(write in)
Treatment 2	$50	$75	$100	$250	$500	$___(write in)
Treatment 95	$35	$50	$75	$95	$250	$___(write in)

5.2 Experiment 2 Results

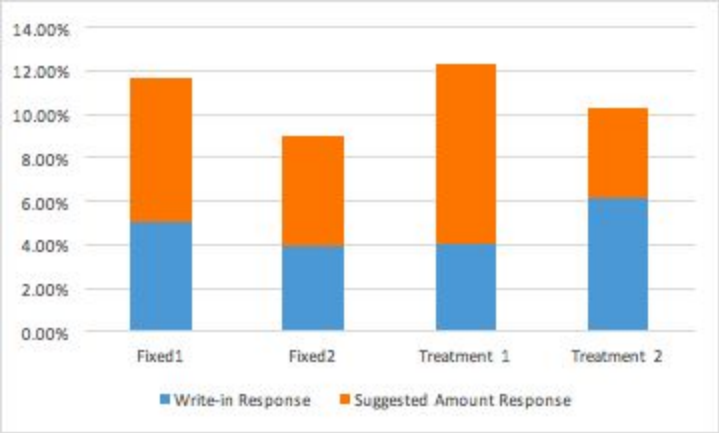
In total, 9,964 public television members received solicitations in this experiment, randomized with equal probability to one of the three ask strings.[11] As summarized in Table 10, we find giving rates of 12.32% in Treatment 1, 10.33% in Treatment 2 and 11.75% in Treatment 3.

Overall giving rates are about 7% lower when the amount of $95 is substituted for $100 in the ask string. This difference in response rates is not statistically significant (p=0.27), but we expect low statistical power here because the vast majority of gifts are at amounts less than $95. However, we do see a significant difference in the likelihood of contributing an amount at the high end of the distribution, where Ask 4 is varied. We examine this difference in more detail below.

Figure 3 provides a direct comparison of giving rates and giving using suggested amounts, between the Fixed1 and Fixed2 treatments in Experiment 1 as compared to Treatment 1 and Treatment 2 in Experiment 2. In line with Result 1 from Experiment 1, we find significant decreases in the probability of giving when shifting 'up' the suggested gift amounts from Treatment 1 to Treatment 2, a decrease of about 16% ($p<0.01$). The decrease in the probability of giving between Treatment 2 and Treatment 1 in Experiment 2 is similar to the difference of about 23% found in Experiment 1 when comparing Fixed1 and Fixed2. Just as in Experiment 1, there are no statistically significant differences in the gift size conditional on giving between Treatment 1 and Treatment 2 (p-value=0.27).

[11] This time, radio station members were not part of the experiment, in part because Experiment 1 suggested that ask strings for radio members should be different from ask strings for television members.

Figure 3: Comparison of Response Rates in Experiment 1 and Experiment 2



Note: Experiment 1 includes Fixed1 versus Fixed2, while Experiment 2 includes Treatment 1 versus Treatment 2.

Table 10: Summary Statistics for Experiment 2

Treatment	N	Response Rate	Average Gift Size	Revenue per Solicitation	Percent using Suggested
Treatment 1 ($100)	3,336	12.26% (0.56)	$53.58 ($5.11)	$6.61 (0.74)	8.24% (0.47)
Treatment 2 (Shift up)	3,282	10.29% (0.53)	$47.50 ($2.36)	$4.89 (0.36)	4.11% (0.35)
Treatment 95 ($95)	3,346	11.39% (0.55)	$44.78 ($3.03)	$5.11 (0.43)	6.75% (0.43)
Total/Average	9,964	11.32% (0.32)	$48.90 ($2.27)	$5.54 (0.31)	6.38% (0.22)
Note: This table displays the response rate, gift size and proportion using suggested amounts, by treatment. Standard error term in parentheses.					

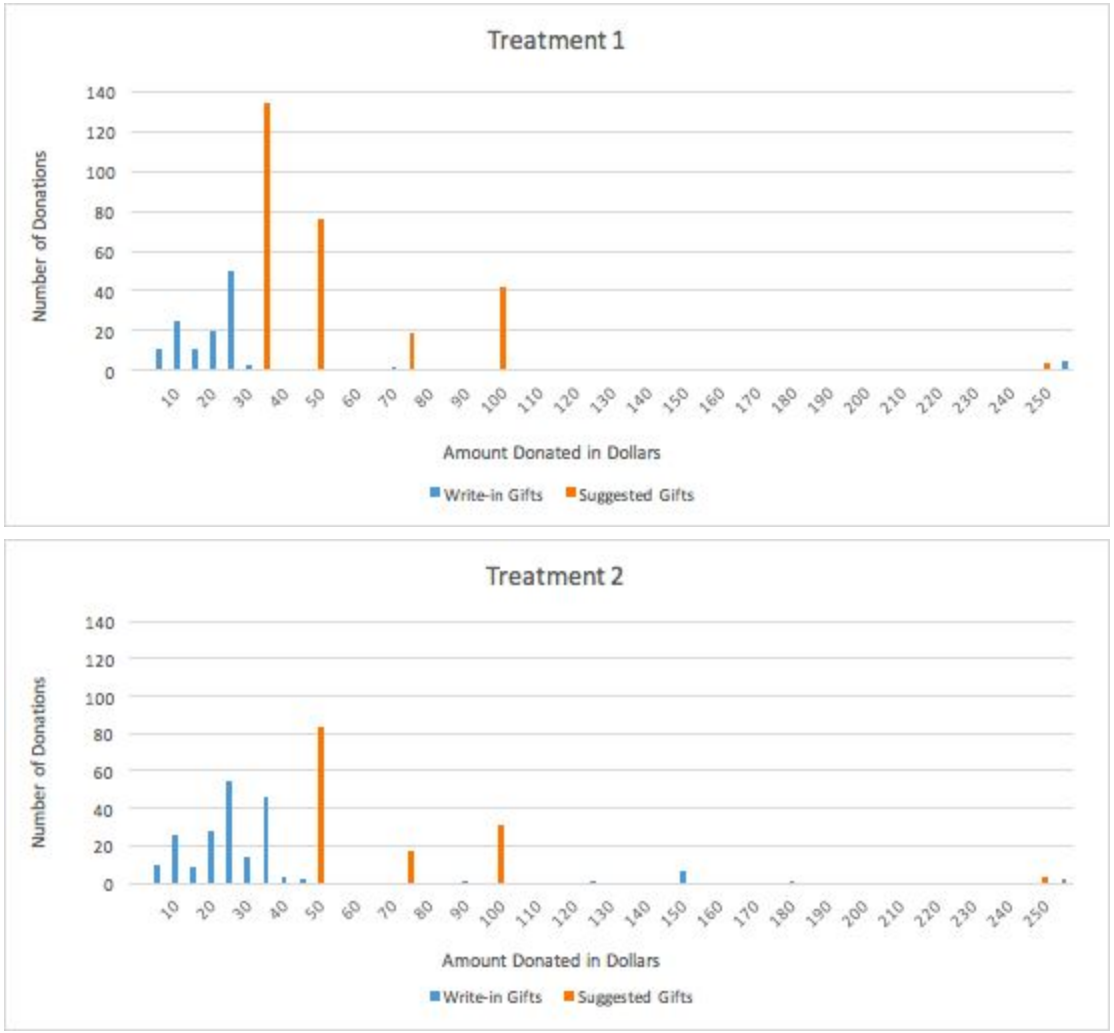
Finally, as reported in Table 10, we observe that usage of suggested amounts is highest in Treatment 1, and significantly lower in the other two treatments. Solicited donors accept suggested amounts 50% less often in Treatment 2 relative to Treatment 1 ($p<0.01$), and 18% less often in Treatment 95 relative to Treatment 1 ($p=0.02$). As can be seen in Figure 3, this difference in usage of suggested amounts is much greater in Experiment 2 (which increased all suggested amounts by ~50%) than in Experiment 1 (which increased all suggested amounts by ~20%). This gives additional support in favor of Result 3.

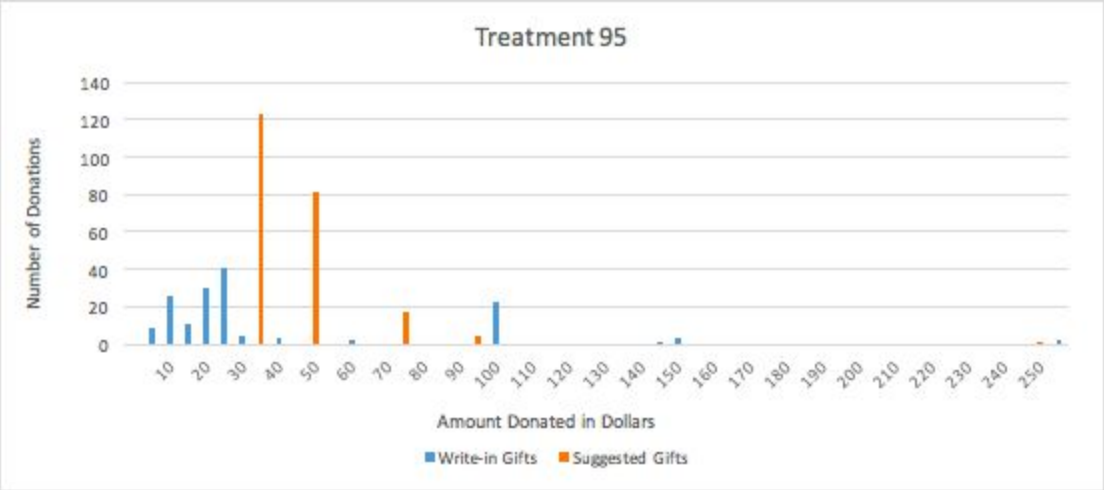
Figure 4 displays a histogram of average gift amounts in Experiment 2, by treatment. We find that far fewer people give $100 when the $100 gift amount is not present (out of all who gave in each experiment, the proportion who give $100 is 10% in Treatment 1, 9% in Treatment 2, and only 6% in Treatment 95). In addition, the likelihood of giving in the $90-$100 range (inclusive) is marginally significantly higher in Treatment 1 as compared to Treatment 95 ($p=0.053$).

Result 5: Potential donors are more likely to give a gift in response to round suggested donation amounts.

Related to our results on round numbers, Edwards and List (2014) report on treatments in which telephone solicitors ask alumni to pledge $20 versus an 'unusual' amount of $20.01 through $20.09. The authors find that the $20 suggested amount generates a 4.47% response rate, while the 'unusual' ask generates a 3.51% response rate (a difference that is marginally statistically significant, $p<0.10$). One confound when attempting to interpret this result is that the 'unusual' ask is both not a round number and always higher than the $20 ask.

Figure 4: Histogram of giving amounts in Experiment 2





6. Discussion and Conclusion

Direct-mail (and now online) fundraisers have commonly utilized "ask strings" of suggested donation amounts. Though this demonstrates that fundraisers believe in the importance of this practice, until now there has been little evidence demonstrating to what extent the choices of amounts matter to the behavior of donors. It is not obvious, from a purely theoretical point of view, that the choices of these amounts should have much impact on the average behavior of donors, as a donor who doesn't like one amount in the ask string always has the opportunity to switch to a different suggested amount or to write in a preferred amount of her own. The possibility that these amounts could influence donations is ignored by standard economic models of charitable giving, in which donors choose a continuous variable g as a gift amount to be removed from their private consumption and given instead to the charity.

In this paper, we have presented systematic evidence from the largest controlled experiments ever run on the topic to explore the effects of varying the ask string. Across two field experiments, we sent almost 25,000 solicitations to members of public-broadcasting stations, varying the ask string across treatments. In contrast to the simplifications of standard economic theory, we find that changes in the ask string have large effects on consumer behavior. Shifting all suggested donation amounts up by 20-50% produces a statistically significant reduction in the number donations received: in each of three independent comparisons we conducted (Fixed1-Fixed2, Variable1-Variable2, Treatment1-Treatment2), we find the reduction to be about 15% fewer gifts.[12] We were unable to find statistically significant effects on mean revenue per solicitation, in part because the individual gift sizes have high variance, which limits statistical power. Though the direction of movement of the mean was unclear, the shape of the distribution of gift amounts shifted significantly, favoring suggested amounts over write-in amounts, though the extent of this effect varied with the exact choice of the ask string.

We find that overall, 60% of contributors utilize the suggested donation amounts, even though a write-in option is always available. The probability of sending a gift that utilizes one of the

[12] One exception was radio station member giving when comparing Fixed1 and Fixed2.

suggested amounts significantly declines, by at least 20%, in the three different comparisons where we raise the ask string, indicating a form of "downward-sloping demand" even in a context where donors are not expecting a private good in return. When examining the magnitudes of the write-in amounts, we see a number of write-ins below the lowest suggested amount, but we also see a strong tendency to write in round numbers, such as $50, $100, and $200, even when those amounts are not suggested. After noticing this feature of the data in our first experiment, we designed a second experiment to test the effect of suggesting a donation of $95 versus a donation of $100. We found that we received significantly more donations in the $90-$100 range when we used the round number $100, with no change in the rest of the distribution of gifts. Interestingly, this is quite different from the consumer behavior sometimes expected in the market for private goods, where marketers often set prices with $0.99 and $0.95 endings rather than round number prices in an effort to entice consumers to purchase.[13]

Notably, our contribution differs from related work on "legitimizing small gifts" (e.g. Cialdini and Schroeder, 1976; Reingen, 1978; Weyant, 1984; Weyant and Smith, 1987) since the distribution of write-in amounts below $30 are nearly identical between Fixed1 and Fixed2, and between Treatment1 and Treatment2. This result indicates that there are a substantial number of people who are content to give small amounts in a way that is invariant to the size of the smallest amount in the ask string.

In working with us, the station had hoped to improve its fundraising by personalizing suggested donations based on past gift sizes. We did not manage to achieve this goal, because choosing optimal suggested amounts is a challenging problem. We made our best guesses at reasonable fractions of the previous membership gift to suggest for the year-end gift, but did not produce definitively better results relative to ask strings that were not personalized. We learned that choosing an attractively round number is likely more important than choosing the appropriate multiplier for the previous gift; the Variable treatments (particularly Variable2) may have been suboptimal because they often resulted in fewer round numbers being suggested.

Our purpose in this study was to collect empirical facts in an initial exploration of the effects of suggested donation amounts. Some of our facts are at odds with standard economic theories of charitable giving as a donor's choice of a continuous gift-amount variable to maximize her utility function. In particular, we see that despite the possibility of writing in an amount, changing the set of donation amounts not only makes each newly suggested amount more likely, but can also significantly change the probability of a gift in some broader range around that amount. Increasing the entire set of suggested donation amounts significantly reduces the probability of a gift, and donors show considerable preference for round numbers in their gift amounts. We now sketch some ideas for a theory that could explain our results.

Suppose that there is some cognitive cost of deciding on an amount and writing it in, which one does not incur if one merely chooses a suggested donation amount. Suppose further that each individual has an ideal gift amount they would prefer to give if selecting a gift amount were cognitively costless; this amount would differ across individuals, depending on factors such as the donor's wealth and income, altruistic warm-glow preferences, and so on. This bliss point could be thought of as the result of an idealized optimization problem, a problem that the

[13] For example, see Anderson and Simester (2003) for experimental research on mail-order catalogue prices, indicating higher quantity demanded for prices with a final digit of 9 than other final digits.

individual finds it cognitively costly to solve precisely. If her ideal gift amount is suggested, then the individual recognizes the amount as her ideal, so she chooses it. If her ideal amount is not included in the set of suggested amounts, but one of the suggested amounts is sufficiently close that she can recognize it as "almost ideal" and choose it without further introspection, she chooses that. However, if none of the suggested amounts look recognizably close to her ideal point, she then has to decide whether to introspect and decide on her ideal gift amount to write in, knowing that the cost of doing so may not exceed the increase in utility she gets from sending a donation relative to keeping the money for some other purpose.

In addition, suppose that individuals have a preference for round gift amounts like $50 and $100 over less round numbers like $60 and $95. This preference manifests itself either directly through the donor utility function (with spikes in the distribution of ideal gift amounts across potential donors), or indirectly in the optimization process because round numbers are intrinsically easier to choose in the pre-calculation process of merely "recognizing" that a suggested amount is close enough to ideal to generate positive net utility benefits. We might think of such a model as a way to implement Herbert Simon's idea of "satisficing" (Simon, 1955) in the charitable-donation context, in a manner that could provide practical benefits to fundraisers in designing their fundraising campaigns.

This idea is related to an existing literature on cognitive costs, in that providing suggested amounts may decrease the cost associated with writing in an amount. For instance, Iyengar and Lepper (2000) find that individuals are more likely to undertake activities with only a low number of choices, while Chuan and Samek (2014) find that individuals are less likely to give to a charity when provided the option of additionally writing a message in a holiday card.[14]

Another interesting feature of our observed "downward-sloping demand" appears to support this cognitive-cost theory. While our first experiment increased suggested donation amounts by approximately 20% (from Fixed1 to Fixed2), our second experiment increased donations by approximately 50% (from Treatment1 to Treatment2). Both of these increases produced very similar reductions in the probability of a donation, approximately 20%, even though the "price changes" were very different from each other. This is consistent with the idea that when there is no suggested donation amount particularly close to her ideal donation amount, the potential donor has some discrete probability of choosing not to donate at all, due to the cost of thinking about the correct amount to donate when the ideal or near-ideal amount is not right in front of her. By contrast, in a market for a private good, we would expect a larger price change to produce a larger decrease in the quantity demanded.

While we have seen that suggested amounts clearly have substantial effects on the behavior of donors, we have also learned the lesson that it is quite difficult to choose the optimal set of amounts for a fundraising campaign. For instance, optimal amounts vary across contexts, since

[14] One might also imagine the cost of deviating from a suggested donation amount to be social rather than cognitive in nature. Related work has proposed that suggested amounts provide additional information about social norms to the potential donor, and that individuals are influenced to move towards the suggested amount to conform to the social norm (Frey and Meier, 2004; Shang and Croson, 2009; Croson and Shang, 2008; Edwards and List, 2014). While this may be important in settings where each donor receives a single suggested amount, as in the experiments conducted via telephone or door-to-door solicitation, they seem less important in our setting with five different suggested amounts to choose from.

amounts that significantly increase revenue per solicitation from television station members do not appear to increase revenue per solicitation from radio station members. Note that for the radio members (but not the TV members), the point estimate of revenue per solicitation for Variable1 ($7.23) is substantially higher than the Fixed treatments ($5.81), indicating that there may well be some scope for improving revenues by customizing the suggested amounts based on an individual's giving history.[15] We attempted to choose reasonable amounts in conjunction with the station, but we suspect we did not manage to choose them optimally, particularly in the Variable treatments where the ask strings were proportional to people's previous membership gift amounts. We anticipated that suggested donations not evenly divisible by $5 would look strange to donors, so we rounded each amount to the nearest $5, but we did not anticipate that amounts like $55 and $60 might be relatively unattractive to donors. In future experiments, we would lean towards variable suggested amounts with more rounding, at least for those who have given round amounts in the past. Future experiments should test to what extent this preference for round numbers varies across individuals: Do individuals who gave round numbers in the past consistently have more preference for round numbers than those who wrote in non-round amounts in the past?

To help fundraisers better choose their ask strings, one might imagine implementing a structural empirical model, which would allow the researcher to make predictions about ask strings that hadn't been tried in the data. Our data are not suitable for such an exercise, for two reasons. First, this year-end-additional-gift campaign is much different from an annual membership campaign: only about 10% of members donate (which reduces our statistical power considerably), and they give relatively unpredictable amounts, smaller than their annual membership gifts. Second, we were unable to obtain historical giving data for people who were solicited but did not donate in this campaign. Such data could improve statistical power considerably, if a member's ideal gift amount this year is highly correlated with her observed gift amount the previous year. Without much ability to predict a given donor's bliss point, provided the amount of observed heterogeneity in our data, we think such an exercise would be hopeless. Future work should explore conducting experiments that generate substantial ask-string variation for an annual membership campaign (or all solicitations for a given charity in a given year), with historical data available on previous gifts by each person solicited, which will allow researchers to make significant progress on a structural model.

We imagine a structural empirical model with a latent distribution of bliss points across individuals and a quadratic loss function that describes the loss in utility from giving a gift that deviates from this bliss point. The distribution of bliss points would include spikes at round numbers like $50 and $100, and each person's bliss point would have a large probability of being the same as the previous gift. The loss function might include a linear term that causes losses to be steeper for too-large gifts than for too-small gifts, and the loss function's parameters should, in principle, vary across individuals. Finally, there would be a cost to thinking about the problem, which could in principle also vary across individuals. Estimating a set of parameters like these would enable the researcher to make predictions about the ask strings that would optimize expected revenue for the charity, and these predictions could be tested (relative to the status quo) in a subsequent experiment, to test the validity of the assumptions of the model.

[15] This point estimate is not statistically significant, perhaps because we only have 900 observations per treatment for radio members.

We believe suggested donations in charitable giving to be a rich domain for future research. The results of our experiments indicate this to be an area where 'nudges' have substantial impact on behavior, likely because of cognitive costs in choosing the right gift amount. We are particularly intrigued by donors' demonstrated preference for round-number donation amounts. We hope to investigate this behavior in a wider variety of contexts, with different charities, different groups of donors, and different fundraising channels (including online giving, where ask strings can more easily vary in both number and size of amounts suggested, compared with printed response cards as in this study). We hope that additional data eventually lead to a more fully specified behavioral theory, with the prospect to optimize suggested donation amounts for practitioners. Given the "downward-sloping demand" we observed, perhaps experiments and theory in this setting may eventually provide insights that extend beyond the domain of donation behavior and into consumer purchase behavior as well.

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