The Pledging Puzzle:
How Can Revocable Promises Increase Charitable Giving?*

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Abstract

What is the value of pledges if they are often reneged upon? In this paper we show – both theoretically and experimentally – that pledges can be used to screen donors and to better understand their motives for giving. In return, nonprofit managers can use the information they glean from pledges to better target future charitable giving appeals and interventions to donors, such as expressions of gratitude. In an experiment, we find that offering the option to pledge gifts induces self-selection. If expressions of gratitude are then targeted to individuals who select into pledges, reneging can be significantly reduced. Our findings provide an explanation for the potential usefulness of pledges.

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1 Introduction

Almost all charities accept some form of pledges, and some rely entirely on pledges. Consider a religious congregation in Massachusetts who recently switched to a system of only pledges. Every year they ask each congregant to make the pledge that will "tell the shul what value it has to their life." They go on to state that this model of fundraising has resulted in "increases in membership and overall revenue" to their religious community.[1] Pledges also include the millions of calls into National Public Radio fund drives, they include planned gifts written (not irrevocably) into a living person's will, and recurring monthly debits to a credit card or bank account that can be stopped at any time. And to be sure, charities see many pledges, both large and small, go unfulfilled.[2]

Pledges would seem to be a weaker tool for fundraising than simply requiring the full gift when it is declared. The fact that charities allow pledges, however, would suggest instead that pledges must, on the whole, increase the revenues of charitable organizations. But applying standard economic reasoning would suggest that pledges are at best benign and at worst a loophole for someone feeling pressured to give. We lack a theory of how pledging can increase giving. The prevalence of pledging, therefore, creates an interesting puzzle.

To see the puzzle, imagine an individual who, absent a pledging opportunity, would choose to give today. If the utility from giving occurs at the time the gift is *transacted*, then this person would gain the same positive net utility from pledging and giving later. Since the act of giving increases instantaneous utility by the same amount whenever the gift is made, a person who discounts the future would prefer to give today rather than to pledge.

Imagine instead that the person would, absent a pledging opportunity, choose not to give today. By the same reasoning as above, this person would choose neither to pledge nor give now. It may be possible, however, that the person is feeling some social pressure from a fundraiser to say yes to an ask to give (DellaVigna, List, and Malmendier, 2012). Pledging can become a way of postponing the awkward social situation of saying no. Thus, under this line of reasoning, pledges just give the charity a set of phantom donors who pledge now

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[1]See, for example, "The 'Pay What You Want' Experiment at Synagogues," *New York Times*, February 2, 2015.

[2]See, for example, "Making Donors Make Good on Their Pledges" in the *Chronicle of Philanthropy*, February 26, 1998.

with the full expectation of saying no later. Again, the charity is no better off from having pledges.

Let's try another line of thought. Assume some share of the positive feeling of giving occurs at the time of the giving *decision*, as in Andreoni & Serra-Garcia (2016). Then this could create a problem of time-inconsistent charitable giving. In the present, the person may make a sincere pledge to give later since the positive *decision-utility* is not discounted while the utility and cost of transacting the gift are. When the time comes to pay for the pledge, this person will find that the net utility is negative and will renege on the gift. Notice this time-inconsistency exists with any form of discounting, not just hyperbolic discontinuing.

This leaves one last place to look for a positive effect of pledges on giving: perhaps there are also utility consequences from having pledged and reneged. This cost would have to be big enough that at least some people who would have said no to a request to give today will instead pledge, either sincerely or with the (naïve) initial intent to renege, only to find at the time the gift is due to be paid, the utility costs of having a change of heart are now too high and a decision is instead made to complete the pledge.

To follow this line of reasoning it will be necessary to understand how utility can be attached to a decision to give or to a later decision to renege on that gift. Rather than simply assume these effects, it will be far more illustrative and useful to understand the process that can generate utility flows of this nature. The process we propose is self- and social-image signaling. Making a gift today may create the highest self- or social-image utility. Saying no today may have the lowest image utility. Pledging creates a web of possible outcomes. But it also creates an opportunity for the charity. By pledging, a potential donor reveals to the charity that they are motivated by image. Knowing this, the charity can apply other pressures on those pledging to increase the (opportunity) costs of reneging on a pledge.

There are two ways to test these ideas. First is to compare a situation with and without pledging to see if indeed pledging can increase donations. Our theory predicts pledging (without any further pressures to give) is only slightly better, if at all. This prediction, however, provides a poor test of our theory. The next way to test our theory is to introduce a manipulation that will potentially change the costs of reneging. For this we chose to randomly send a "thank you" email to people in our lab experiment who pledged to give.

The email arrived within an hour of completing the first part to the experiment where the initial giving decisions (pledge or give now) were made. A week later (to the hour) there was a second meeting where the pledgers either paid or reneged on their pledges (and non-pledgers answered survey questions). The hypothesis is that the thank-you email makes the subjects feel more social pressure to give, possibly by feeling more attached to the charity, or by a heightened sense of potential embarrassment or shame at the time of saying no. Thus, the model prediction is that the thank you note will increase donations by reducing the number of people who renege on their pledge. This is a more revealing test of our theory.

Our experimental findings support the logic and implications about pledges set out in this introduction, that is, pledges are a weak tool that, by themselves, have nearly imperceptible effects on giving. However, when seen as a device by which individuals can self-select according to their sensitivity to social pressure, then they become useful as a screening device. Charities can apply small bits of social pressure in the form of thank you notes to this group immediately after they pledge and boost giving. In our experiments, the effect of this is highly significant, both statistically and economically. This targeted social pressure causes a 15 percentage point increase in the likelihood of following through with their pledge, and provides a compelling solution to the puzzle of pledges.

The rest of the paper is organized as follows. In the next section, we will present a brief discussion of the related literature. Section 3 presents the theoretical framework that guides the experimental design presented in Section 4. The results are presented in Section 5 and Section 6 concludes.

2   Background

Andreoni and Serra-Garcia (2016) proposed that utility can be attached to the *decision* to give rather than just the *transaction* of a gift. This can be direct utility or utility provided through a concern for their self- or social-image for being charitable. Existing research has either assumed or shown that at least some individuals care about the social and self-image implied by their decisions to give to charity. Becker (1974) drew attention to giving as a social interaction with social payoffs which was the insight leading to models of warm-

glow giving (Andreoni, 1989,1990). Harbaugh (1998) modeled giving as providing prestige, which he demonstrated experimentally by announcing donation sizes. These effects were strengthened by Andreoni and Petrie (2004) who showed that showing photos and amounts donated provided a strong boost to giving. Bénabou and Tirole (2006) provided some of the first theoretical modeling of self-image, which was later demonstrated experimentally by Ariely, Bracha and Meier (2009). Andreoni and Bernheim (2009) constructed a model of social-image and used a simple experiment to show that people were very strategic in manipulating social-images. DellaVigna, List and Malmendier (2012) brought the issue of unpleasant social pressure to the table as a means a fundraising tactic. In related work, Andreoni, Rao, and Trachtmann (2017) showed that people would take extraordinary steps (literally) to avoid a fundraiser standing in the doorway of a supermarket. Adena and Huck (2019) show how overly aggressive fundraising can backfire on the charity.[3]

There has also been a small amount of research on the effects of gratitude in giving. Samek (2019) notes that expressing gratitude *after* a gift is made is common for many organizations and this is aimed at securing the donor's allegiance to the charity. We rely on the fact that a similar reasoning applies to a thank you note arriving directly after a pledge to give. We hypothesize our thank you note will add social pressure for the donor to give. Moreover, as we argue below, those choosing to pledge with the intention of reneging later, rather than simply saying no, are revealing themselves to be particularly susceptible to social pressure. This means the charity can treat pledging as a screening device that will identify those who are close to the boundary between confirming a pledge and reneging on it. As a result, targeted attention to this group can pay off in increased donations.

A small number of papers have used pledges to solicit donations, finding mixed evidence. Lacetera, Macis and Mele (2016) show that observable pledges are often fulfilled, though pledges are rare. Image concerns can increase pledging (Meyer and Tripodi, 2018), but a large majority of pledges are reneged upon (Fosgaard and Soetevent, 2018).[4] These patterns

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[3]See also, Dana, Cain and Dawes (2006), Dana, Weber and Kuang (2007), Haisley and Weber (2010), Andreoni and Rao (2011), Exley (2015, 2016), Exley and Naecker (2018), Exley and Petrie (2018), and Kessler (2017), among others.

[4]Also related is the study of repetition effects on generosity. For example, Kessler and Roth (2014) find that individuals are less likely to say no to organ donation when they make a second decision in the lab. This result is potentially consistent with social pressure, if subjects felt more pressure to give in the lab than in the DMV office. Pledging differs from these studies in that only one donation decision is made. Pledges

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are captured by our model.

Other research has also shown that understanding more about donor types could be useful fundraising due to the persistence of types who give to different organizations (de Oliveira, Croson and Eckel, 2011). Little is known thus far about the value of screening within an organization for donor types, and this paper suggests that carefully designing the options in the ask can provide highly useful information and increase giving.

3   The Model

We present a simple framework to examine the effect of adding the option to pledge on fundraising. In this model, an individual is asked to give a set amount to a charity, g, which we normalize to 1 so that $g = 0$ or 1 can be interpreted as both a quantity and an index of giving. If the individual decides to give, he gains value $v \geq 0$, but must pay 1 for the gift. We allow v to be distributed according to $f(v)$, where the cumulative distribution function is $F(v)$.

3.1   Transaction Utility without Social Payoffs

Transaction utility means the utility from a choice depends on when that choice results in a transaction that changes consumption. First, consider the market that only allows people to give now or say no. We assume the utility from saying no is 0 so that a person will give now if

$$v - 1 \geq 0 \tag{1}$$

and say no otherwise.

Suppose we offered a third option to pledge. Would anyone choose it? The utility from pledging is $\delta(v - 1)$. If $v - 1 < 0$ then the person will neither give now nor pledge. If $v - 1 \geq 0$, then $v - 1 > \delta(v - 1) > 0$, implying giving now dominates pledging. Overall, this approach to the utility of giving produces no role for pledges.

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are clearly framed as intentions to give, and not as final decisions about giving.

3.2 Decision Utility without Social Payoffs

Repeat the analysis above but now assume that the utility of giving is experienced in the period the donor makes the (sincere) *decision* to give. Then the analysis of the decision to give now or say no is unchanged from above. Deciding now to give later, however, has utility $v - \delta$ since only the cost of the gift is discounted. This means that if a person who prefers to give now is offered the option to pledge and give later, the donor will surely prefer the pledge since if $v - 1 \geq 0$, then $v - \delta \geq 0$. In fact, if pledging is possible, no one in this model will give now—all giving will come from pledges. In addition, there will be those with $1 > v \geq \delta$ who would say no to giving now but will agree to pledge and give later. So adding a pledge can increase giving, but only with decision utility. This may be a small victory for pledging, however. If δ is a number close to 1, there may be only a small number of people who fall into the range $1 > v \geq \delta$.

3.3 Decision Utility with Social Pressure Costs

Suppose we bring in social pressure to give (DellaVigna, List, Malmendier, 2012). We adopt the view that social pressure is a particular kind of social payoff that is felt at the time of saying no to a request to give (Andreoni & Rao, 2011; Andreoni, Rao, and Trachtman, 2017). While social pressure could be a kind of social image utility, we separate social pressure payoffs from social image. We instead think of them as costs resulting from guilt, embarrassment, shame and similar emotions unique to saying no. In this respect, from the point of view of an observer, social pressure costs can be seen as a random variable. Define $\tilde{s} > 0$ as the social utility cost a person would feel from saying no. Assume these costs can be treated as *i.i.d.* random variables with probability distribution function $h(\tilde{s})$, $\tilde{s}_{\ell} \leq \tilde{s} \leq \tilde{s}_h$.

As in the prior subsection, giving now yields net utility $v - 1$, while saying no means suffering a social pressure cost $-\tilde{s}$. Given a choice to give now or say no, a person will give now if

$$v - 1 \geq -\tilde{s},$$

which rearranges to

$$v - 1 + \tilde{s} \geq 0.$$

Thus, higher social pressure costs are more likely to result in donations.

What about pledges? As in the prior model, the cost of the gift can be discounted, and since $v - \delta + \tilde{s} \geq 0$ whenever $v - 1 + \tilde{s} > 0$, then anyone who would give now will strictly prefer to pledge and confirm. Again as above, there will be those for whom $v - \delta + \tilde{s} > 0$ but $v - 1 + \tilde{s} < 0$, meaning they will pledge and confirm, but say no to giving now. This group satisfies the condition $1 > v + \tilde{s} > \delta$. If δ is close to 1, then, as in the prior model, we may expect only a small uptick in giving when pledges are added.

What about pledging and reneging? In this simple model, reneging allows a donor to postpone the cost of saying no, yielding utility $-\delta\tilde{s}$. Since $-\delta\tilde{s} > -\tilde{s}$, anyone who wishes to say no will first pledge and later renege. This model predicts, therefore, that all potential donors will first pledge, many will renege, and the outcome will be a (perhaps imperceptible) increase in giving.

The important thing to notice in this model is that social pressure costs finally give us a theoretical rationale for pledging with the intent to renege. Because of the stark simplicity of the model, however, it also makes extreme predictions about a world that are clearly false. In particular, it predicts there will be *only* pledges.

To understand the full complexity of donors' and fundraisers' choices, including the puzzle of pledging, we want to provide a rationale for pledges that exists within a model that can capture the broad patterns of giving seen in the world. A more realistic model will provide a role for giving now and saying no now, as well as pledging and reneging. As a result, it will make sharper predictions about the uses of pledging. Those who self-select into pledging are revealing valuable information about themselves that can be valuable to managers of the charity. We present this model next.

3.4 Decision Utility, Social Pressure, & Image Concerns

Social-image relies on an audience. For instance, other donors or the experimenter can play the role of the audience. Self-image relies on the donor managing their own opinion about their own character. This means that a donor can be their own audience. In equilibrium, the audience forms an expectation about the value v of each individual. The higher the expected value of v, the grander social image the donor has in the eyes of the audience. The better the donor looks to the audience, the more utility the donor derives from this. Use μ_a for the expected v given actions a, and use M_a to represent the donor's utility from image following from the action a. Possible actions are to give now (GN), pledge (P), later confirm the pledge (PC), later renege on the pledge (PR), or say no now (NN). We use these abbreviations in our notation below.

For example, consider a person who wants to give. The utility from giving now is

$$U_{GN} = v - 1 + M_{GN}, \tag{2}$$

or from pledging and confirming is

$$U_{PC} = v - \delta + M_P + \delta M_{PC}. \tag{3}$$

Likewise, for a person wishing to say no, the utility from pledging and reneging is

$$U_{PR} = M_P + \delta M_{PR} - \delta \tilde{s}, \tag{4}$$

while the utility for simply saying no in period 1 is

$$U_{NN} = M_{NN} - \tilde{s}. \tag{5}$$

The equilibrium of a game in which all four possible actions are allowed will consist of two critical values of v, v_{GN}^* and v_{PC}^*, and values of $M_{GN}, M_P, M_{PC}, M_{PR}$, and M_{NN} (which are all functions of v_{GN}^* and v_{PC}^*), such that the individual will give now if $v \geq v_{GN}^*$, and will pledge and confirm if $v_{GN}^* > v \geq v_{PC}^*$. If $v_{PC}^* > v$, the person will not give.

The equilibrium values of v_{GN}^* and v_{PC}^* will solve the restrictions that $U_{GN} = U_{PC}$ and $U_{PC} = EU_{PR}$, where the expectation is taken over $\tilde{s}$. In particular, define the expected value of v for those who give now as

$$\mu_{GN} = \int_{v_{GN}^*}^{\bar{v}} vf(v)dv,$$

for those who pledge and confirm as

$$\mu_{PC} = \int_{v_{PC}^*}^{v_{GN}^*} vf(v)dv,$$

and for those who don't give as

$$\mu_N = \int_0^{v_{PC}^*} vf(v)dv,$$

where $0 \leq v \leq \bar{v}$.

Defining $\tilde{s}$ as an independent random variable with probability distribution function $h(\tilde{s})$, $\tilde{s}_\ell \leq \tilde{s} \leq \tilde{s}_h$, then the equilibrium satisfies these conditions

$$U_{GN}(v_{GN}^*, \mu_{GN}) = U_{PC}(v_{GN}^*, \mu_{PC}) \tag{6}$$

$$U_{PC}(v_{PC}^*, \mu_{PC}) = \int_{\tilde{s}_\ell}^{\tilde{s}_h} U_{PR}(v_{PC}^*, \mu_N, \tilde{s})h(\tilde{s})d\tilde{s} \tag{7}$$

$$\int_{\tilde{s}_\ell}^{\tilde{s}_h} U_{PR}(\mu_N, \tilde{s})h(\tilde{s})d\tilde{s} = \int_{\tilde{s}_\ell}^{\tilde{s}_h} U_{NN}(\mu_N, \tilde{s})h(\tilde{s})d\tilde{s} \tag{8}$$

Equation (6) requires there to be a critical v_{GN}^* such that all those with $\bar{v} \geq v \geq v_{GN}^*$ will prefer to give now. Equation (7) requires there to be a critical v_{PC}^* such that all those with $v_{GN}^* \geq v \geq v_{PC}^*$ will prefer to pledge and confirm. Finally, equation (8) notes that v is not an element of the utility of those who do not give, regardless of whether they pledge and renege or say no immediately. Since social image is defined in terms of the expected value of v, it must be that the utility from social image is identical in the two versions of saying no. And since susceptibility to social pressure is not a sign of good character, it has been integrated out of the equations used to define the equilibrium.

3.4.1 The Role of Thank You Messages

We have now reached the point where we have a predictive model of the effect of thank you notes. Those subjects who are most sensitive to the social pressure from being asked will now have revealed themselves in the first period by choosing to pledge with the plan of reneging. Assume that a donor reacts to a thank you note for a pledge by making them more committed to the charity, and helping them maintain an identity as a contributor. In our model we can represent this as an exogenous and unanticipated increase in social pressure.

Look at equation (7) above, and their supporting equations (3) and (4). Imagine that the thank you note increases $\tilde{s}$. This affects equation (4), which is on the right hand side of (7). This will have the effect of lowering the value of v_{PC}^*, which means that the thank you notes will encourage more people to choose to confirm their pledge.

This now provides an even stronger rationale for pledges. Those who self-select into pledging with the intention of reneging are revealing to the charity that they are burdened with high social pressure costs and slightly more pressure could convert these people into donors. And since not all potential donors are choosing to pledge, there is a smaller and more productive population for the charity to target with social pressure such as thank you notes.[5]

4 Experimental Design

In our experiment, individuals participated in a two-week study, with two sessions spread exactly one week apart from each other, to the hour. Participation in both session was required, and independent of decisions. As we show below, attrition rates were very low and over 90% of participants participated in both sessions.

At the beginning of the week-1 session individuals were offered the opportunity to donate $5 to GiveDirectly, a charity that gives direct cash grants to poor households in Kenya and other African nations. In presenting the charity, we emphasized that one of the co-founders and current officers of GiveDirectly is Professor Paul Niehaus of the Department of Economics

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[5]It is worth noting that our assumption of $i.i.d.$ $\tilde{s}$ was made for convenience and a similar, but even stronger, case for pledges could be made if we assumed a positive correlation between v and $\tilde{s}$. With a positive correlation, pledging would be an even stronger signal of both high v and high $\tilde{s}$.

at the University of California, San Diego, where the study was conducted. This, we expect, added confidence to both our claims about the quality and efficacy of the charity and our (true) promises that the donations would indeed go to GiveDirectly. The presentation ended with an ask to give $5.

Giving decisions in three treatments are compared. In the Pledge-or-Give-Now treatment individuals could pledge in week 1 to give $5 to charity in week 2, or decide to give the $5 immediately, in week 1. In the Pledge treatment individuals could only pledge to give in week 2. In both treatments, we formulated the decision to pledge as "Yes, I'd like to donate $5 next week. Ask me again next week and I will make my final decision." We chose this wording for several reasons. First, the meaning of pledges varies strongly across the solicitations of different charitable organizations. Sometimes pledges are interpreted as enforceable commitments to give, while other times they are not. To ensure common understanding across all individuals, we avoided using the word pledge. Second, to ensure individuals understood what their decision implied, we solicited an initial statement of an intention to give, which would be confirmed later. This may have been viewed by subjects as a promise (e.g., see Hanfling, 2008, for a philosophical argument, and Charness and Dufwenberg, 2006, 2010, and Serra-Garcia et al., 2013, for experimental evidence), which is our intention. In the Give-Now treatment individuals could only give in week 1, or say no.[6]

In all treatments, at the beginning of the week-2 session, individuals were reminded of their giving decision in week 1. If they had pledged, they were asked to either confirm or renege on their pledge, by making their decision to give final, or selecting "no" if they wanted to change their decision.

4.1 Thank You Messages

Existing research in psychology suggests that expressions of gratitude can facilitate interpersonal relationships and lead to more positive emotions if evaluated as authentic, but not if they are thought of as strategic or manipulative (Algoe, 2012; Dwyer, 2015; Algoe et al., 2016). Thus far, little is known about the effect of gratitude on charitable contributions. Samek (2019) does not find evidence of a positive effect of thanking donors on subsequent

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[6]The instructions are presented in Appendix B.

donations. We test whether thanking donors for their pledges, and before they make a donation decision, can increase giving. In the Pledge and Pledge-or-Give-Now treatments we sent thank-you notes via email to a randomly chosen subset of subjects who pledged to give in the first week of the experiment. The e-mail was delivered by 5:00 p.m. on the same day of the session in week 1, seven days prior to having to confirm their pledges.[7]

To examine how thank-you notes may affect the utility of reneging and giving, we designed both a "strong" and a "weak" version of the thank-you note. The weak thank-you note emphasized the importance of the pledge and thanked individuals for pledging. The strong thank-you note included two manipulations shown elsewhere to enhance giving: the identifiable victim effect and identity as a donor.[8] We do not find a difference between the weak versus strong thank-you note in the Pledge-or-Give-Now treatment, and hence pool them together for the analyses. In the Pledge treatment, only weak thank-you notes were sent.

Since we hypothesized that thank-you notes could affect how the fundraiser's expectations are perceived, we elicited individual's feelings regarding pressure to donate and regret of their donation decision, at the end of the week-2 session of the experiment. At that point, we also elicited liking of the charity, to examine the effects of thank-you notes on the enjoyment of giving per se.

4.2   Procedures

The experiment was conducted at the UC San Diego Economics Laboratory. There were 215 participants in the Pledge-or-Give-Now treatment, 118 in the Pledge treatment and 179 in

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[7]All subjects received an email 24 hours prior to their week 2 session simply reminding them to attend.

[8]Specifically, in the weak thank-you note subjects were thanked for their participation and their decision to pledge. They were told that their contribution would make an important difference in the life of the recipient family. The note closed by stating that we looked forward to seeing them in a week when they could confirm their pledge. The strong thank-you note had the same opening sentence. Instead of telling subjects about the general importance of their donation, the text emphasized that the donation would go to a family in Kenya "like this one," and a picture of a family was shown. This reflects the importance of the identifiable victim, as shown by Small & Loewenstein (2003). In addition, the weak note thanked them for their pledge, while the strong note thanked them for "being a donor," to increase the appeal to an individual's identity as a donor and thereby increase behavior in line with this identity, as used by Bryan, Adams & Monin (2013), Walton & Banaji (2004) and Kessler and Milkman (2016), among others.

the Give-Now treatment.[9] We purposely recruited more subjects in the Pledge-or-Give-Now treatment to have enough observations when examining the effect of the thank-you note on giving.

Eighteen of 215 participants in the Pledge-or-Give-Now treatment, eight of 118 in the Pledge treatment and fourteen of 179 in the Give-Now treatment failed to participate in the week-2 session. The average attrition rate was 7.8% and did not vary with the treatment, the decision subjects made in week 1, or their individual characteristics. A detailed analysis of attrition is shown in Appendix A.

To address concerns of attrition, the first four of sessions in the Give-Now treatment, and all sessions in the Pledge and Pledge-or-Give-Now treatments had a higher show-up fee in week 2 than in week 1 ($6 in week 1 and $20 in week 2). We later added four sessions to the Give-Now treatment offering equal show-up fees of $15 each week, and find the time structure of show-up fees has no effect on giving decisions.[10]

5   Results

In what follows we provide an analysis of the experimental results. We start with decisions in week 1 of the experiment, and then turn to week-2 decisions. We then examine the effect of pledging on giving, and also examine the effects of expressions of gratitude on self-reported pressure to donate.
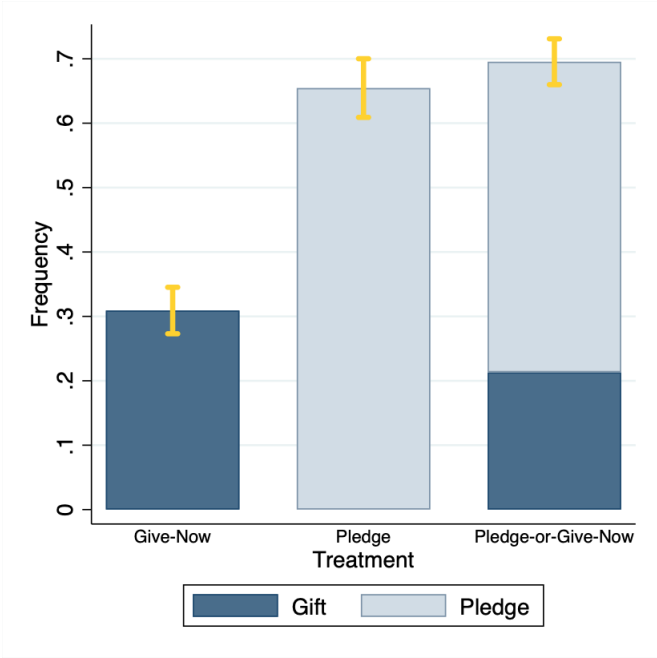
5.1   Week-1 Decisions

Figure 1 presents the giving decisions made in week 1. In the Give-Now treatment, 30.9% of the subjects choose to give now. When subjects can only pledge, we observe that the share of those who say no is 34%, while 66% of subjects pledge, leading to a higher frequency of 'yes' initially than in Give-Now ($\chi^2 = 31.860$, $p < 0.01$).

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[9]The data from the Give-Now treatment are part of the control treatment in Experiment 1 of Andreoni and Serra-Garcia (2016), who study time-inconsistency in charitable giving using a dynamic model of social image, and three different experiments.

[10]Attrition was not significantly different by show-up fee ($\chi^2 = 0.8440$, $p = 0.358$). Donation rates were 32.5% and 29.4% in Give-Now ($\chi^2 = 0.184$, $p = 0.668$), in the first and second set of sessions, respectively.

In the Pledge-or-Give-Now treatment, the percentage of subjects who give immediately is 21.3%. The percentage who pledge is 48.2% and the percentage who say no is 30.5%. Hence, 69.5% of subjects either pledge or give immediately, which implies that the frequency with which individuals make a 'yes' decision remains largely unchanged when the option to give now is added to the option of pledging ($\chi^2 = 0.543$, $p = 0.461$). The fact that there is neither all giving nor all pledging in the Pledge-or-give-now is consistent with the presence of social signaling and/or social pressure.

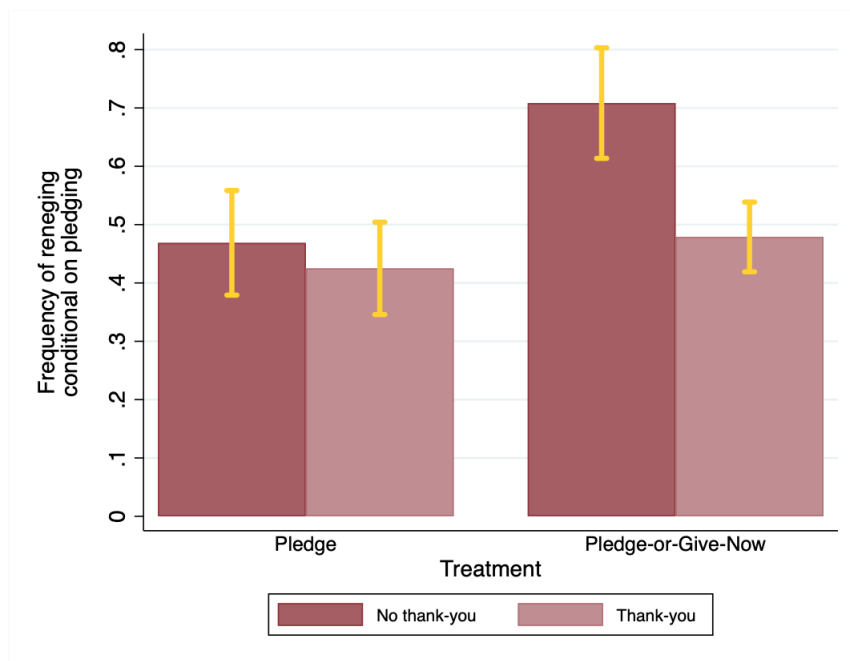*Note:* Error bars denote $\pm$ 1 S.E.

Figure 1: Giving and Pledging in week 1

Overall, week-1 decisions reveal self-selection occurs in the Pledge-or-Give-Now treatment, whereby a fraction of individuals give immediately, while another chooses to pledge to give later. An important question is what their decisions look like in week 2.

5.2   Week-2 Decisions

Individuals who pledged in week 1 were asked in week 2 to confirm their donations or to renege. Figure 2 shows the frequency with which individuals who pledged renege on their pledges.[11]

Consider first the case without thank-you notes. In the Pledge treatment, 46.9% of individuals renege on their pledge. This fraction increases by more than 20 percentage points, to 70.8% in the Pledge-or-Give-Now treatment treatment ($\chi^2 = 3.214$, $p = 0.073$). In both cases, there is substantial reneging, suggesting that individuals care about social pressure. In line with this, individuals self-select into pledging and reneging, when that option is added to the option to Give-Now.

Note: Error bars denote $\pm$ 1 S.E.

Figure 2: Reneging in week 2

What happens when a thank-you note follows a pledge? In the Pledge-or-Give-Now treatment, the thank-you note reduces reneging by more than 20 percentage points ($\chi^2 = $

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[11]In the Pledge treatment 72 subjects pledged to give in week 2. Among pledgers, approximately half (55.6%) received the weak version of the thank-you note. In the Pledge-or-Give-Now treatment 95 subjects pledged to give in week 2. Among them, 27.4% received the weak version of the thank-you note and 47.4% received the strong version.

3.798, $p = 0.051$). This effect is especially striking in light of the fact that the thank-you note came within a few hours of their pledges and a full seven days before subjects returned to confirm them or renege.

In the Pledge treatment, individuals receiving a thank-you note renege in 42.5% of the cases, compared to 46.9% when they do not receive a thank-you note. This drop in reneging is small and not significant ($\chi^2 = 0.138$, $p = 0.710$). Those who pledge and confirm in the Pledge treatment are in a larger pool, so the marginal social image impact is smaller.[12]

5.3 Ultimate giving

Figure 3 presents the rate of giving by treatment, which combines week-1 and week-2 decisions. Without thank-you notes, 34.8% of individuals in the Pledge treatment ultimately make a donation, while 35.4% of individuals give in the Pledge-or-Give-Now treatment. Compared to Give-Now, where 30.9% of individuals give, the increase in giving in the Pledge and Pledge-or-Give-Now treatment is also moderate and not significant. Hence, without further intervention, introducing the option to pledge has a small effect on giving, in line with social image and social pressure.

The key difference between the Pledge-or-Give-Now treatments and the Pledge and Give-Now treatment is the self-selection into pledging or giving immediately that occurs in Week 1. This provides information to the fundraising manager, to target interventions such as the thank-you notes, as we do. To examine the effect of thank-you notes, we conduct a placebo test by first assigning those who did not pledge to a thank-you condition with a probability equal to that of their counterparts who did pledge. We then examine the effect of the thank-you conditions using a weighted probit regression.[13]

Table 1 presents the results of the regression analysis of the treatment effects.[14] As shown in columns (1)-(2), pooling the individuals that received a thank-you note and those who did

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[12]A regression analysis of reneging as a function of the option to only pledge, relative to having the option to give now, and thank-you notes is presented in Appendix A.

[13]An alternative approach is to randomly assign a share of the individuals who did not pledge to each thank-you condition, and use bootstrapping. Results remain qualitatively similar with this approach.

[14]Our analysis of the treatment effects in Table 1 reports p-values that are uncorrected for multiple hypothesis testing (e.g., List et al., 2016). However, since all p-values for significant differences are below 0.001, correcting p-values leaves our conclusions unchanged.
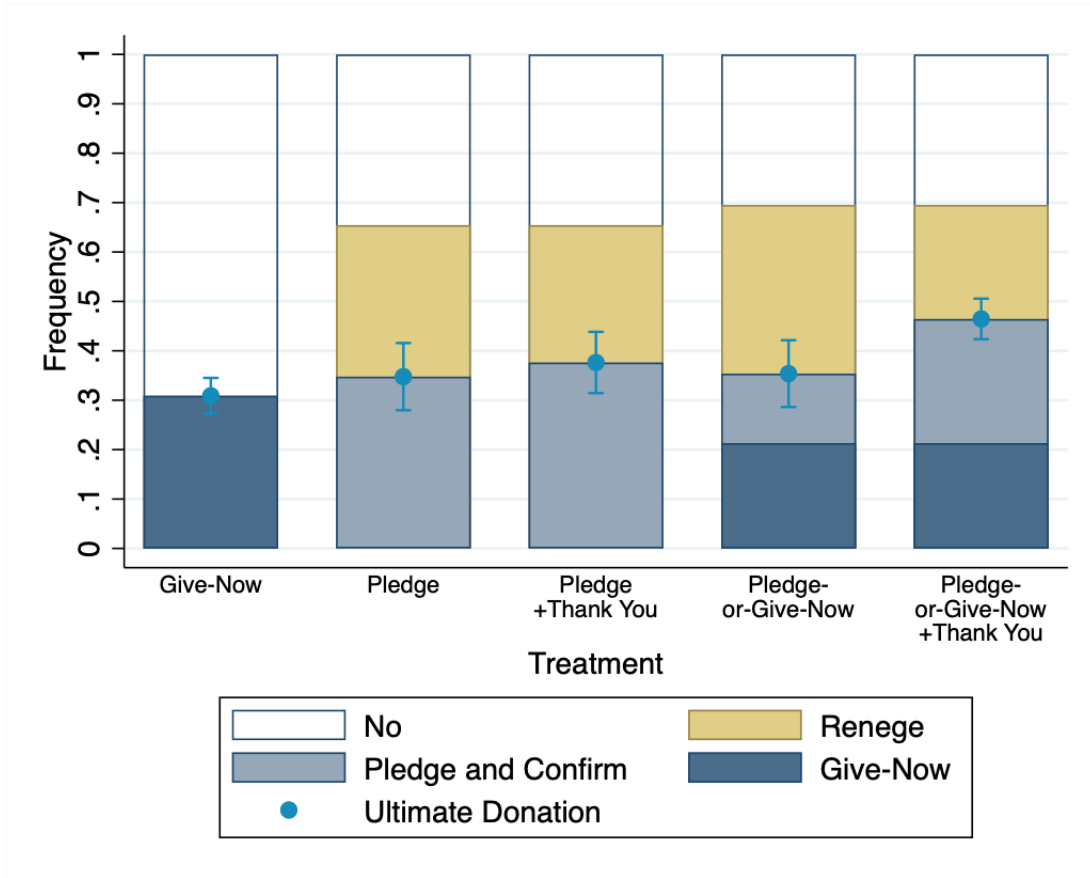
Figure 3: Ultimate Donations: Week-1 and Week-2 Decisions Combined

not, we observe an average increase in ultimate giving in the Pledge-or-Give-Now treatment.

Columns (3)-(4) of Table 1 show that this increase in giving is driven by thank-you notes. These notes increase giving in the Pledge-or-Give-Now treatment by 15 percentage points, compare to the Give-Now treatment. There is a positive directional effect in the Pledge treatment, though it is much smaller. As predicted, pledges do not affect giving per se, but they provide an opening for intervening between the time a pledge is made and the time it is confirmed. If used in this way, adding thank-you notes, we observe an increase giving.

Table 1: Determinants of ultimate giving

	(1)	(2)	(3)	(4)
	Ultimate Donation (=1)			
	Probit		Weighted Probit	
Pledge – with & without thank-you	-0.073	-0.074		
	(0.051)	(0.051)		
Pledge-or-Give-Now – with & without thank-you	0.127***	0.127***		
	(0.028)	(0.027)		
Pledge-or-Give-Now – without thank-you			0.046	0.048
			(0.058)	(0.058)
Pledge-or-Give-Now – with thank-you			0.153***	0.153***
			(0.025)	(0.023)
Pledge – without thank-you			0.041	0.038
			(0.056)	(0.052)
Pledge – with thank-you			0.068	0.068
			(0.066)	(0.061)
Individual controls	No	Yes	No	Yes
Observations	472	472	472	472

Note: This table presents the average marginal effects (calculated at the means of all variables) from probit regressions on ultimate giving decisions. Columns (1)-(2) presents the marginal effect from simple probit regressions on the treatment Pledge, pooling all thank you conditions together. Columns (3)-(4) present results from weighted probit regressions, whereby individuals who did not pledge in Pledge and Pledge-or-Give-Now are assigned to both the no thank-you and the thank-you conditions, and weighted correspondingly. Robust standard errors, clustered at the session level, were used in each regression. ***,**,* indicates significance at the 1%, 5%, and 10% levels, respectively.

5.4 Pressure to Donate and Interest in the Charity

In discussing different frameworks, we argue that the effects of thank-you notes come via an increased "pressure" to donate, potentially through higher perceived observability of the pledger's behavior, or due to a higher guilt from reneging on the pledge. To examine whether this mechanism is a driver of individuals' decisions to confirm pledges, we elicited several measures of subjects' perceptions their donation decisions and also of the charity at the end of the week-2 session. Naturally, since these were elicited after all decisions had been made, they should be interpreted with caution.

To measure pressure (and more broadly negative feelings towards the charity) we used two statements: "I felt pressured to donate" and "I regret my donation decisions." The standardized average response to these questions is the dependent variable used in Table 2. The results in Table 2 reveal that indeed those subjects who pledged in the Pledge-or-Give-

Table 2: Effects of Gratitude on Pressure to Donate

	(1)	(2)
	Pressure index	
Thank you	0.470**	0.412**
	(0.189)	(0.176)
Pledge Treatment	-0.624*	-0.604**
	(0.328)	(0.279)
Pledge Treatment X Thank you	-0.453*	-0.082
	(0.237)	(0.280)
Confirm pledge		-0.137
		(0.296)
Confirm pledge X Thank you		0.172
		(0.364)
Confirm pledge X Pledge Treatment		0.021
		(0.464)
Confirm pledge X Thank you X Pledge Treatment		-0.704
		(0.476)
Constant	0.172	0.212
	(0.221)	(0.181)
Observations	166	166
R-squared	0.274	0.302

Note: This table presents the coefficients from OLS regressions on self-reported pressure to donate and liking of the charity. Column (1) presents the coefficients from simple regressions including dummies for assignment to the thank-you condition and the Pledge Treatment, relative to Pledge-or-Give-Now. Column (2) includes the decision to give (confirm a pledge) as well as an interaction term with the thank-you note and Pledge treatment assignment. Robust standard errors, clustered at the session level, were used in each individual regression. ***,**,* indicates significance at the 1%, 5%, and 10% levels, respectively.

Now treatment and received thank-you notes felt more pressure to donate. The thank-you notes acted in a way that appears consistent with social pressure.

When designing such interventions, an important question is the potential effects on future interactions with the charitable organization (Meier, 2007; Adena and Huck, 2019). As shown by Huck and Adena (2019), the long-run effects of an ask could be negative and large in size. In our experiment, we target interventions to individuals who are highly likely to renege. If this is the case, there is less concern that these individuals will not give in the future, because they were unlikely to give in the first place.

To measure potential long-term effects of gratitude expression, at the end of the longitudinal experiment, we measured individuals' liking of the charity. We used two measures. First, participants in the experiment were given the opportunity to receive a newsletter about the charity, by email, during the week-2 session. Second, we asked participants to express their

feelings and perceptions about the charity and their donations. We elicited agreement to the following statements on 5-item Likert scales: "I am happy about my donation decision", "I liked having the opportunity to donate to GiveDirectly", "I like the work of GiveDirectly" and "I plan to donate to GiveDirectly in the future". We find small positive effect of gratitude on newsletter demand in the Pledge-or-Give-Now treatment, but no effect on liking of the charity, as we show in Appendix A.

6 Conclusion

If charities have the option of accepting pledges for future gifts or of requiring all gifts to be made upon their declaration, simple consumer theory would suggest that pledges would be of no benefit to the charity. Pledging would only seem to increase the number of insincere pledges that people use to escape the immediate pain of saying no to the request to give. That is, any increase in stated intentions to give by pledging will be matched dollar-for-dollar with reneging on those same pledges. Why then are pledges so ubiquitous in fundraising? The task of this paper is to offer a resolution of the puzzle of pledging with the hope that this will deepen our understanding of the subtle decision process surrounding charitable giving.

Our solution revolves around the utility derived from the social interaction between the giver and the fundraiser. Imagine people are heterogeneous in how they experience the social pressure of an ask to give – some have little problem saying no or yes to giving today, while others who are closer to indifferent may be struggling with their reply. They are, one the one hand, sympathetic to the cause and hate to disappoint, perhaps for issues related to self-identity or social image. On the other hand, they may recognize that one simply cannot afford to give to every socially beneficial cause that asks for money and must, perhaps somewhat arbitrarily, select some requests to decline.

What can make pledges work for the charity is in identifying people in this uncomfortable position – they want to give but know they should not. If the charity can show even a small bit extra appreciation to these people, perhaps they can flip them into becoming givers. A person who is close to indifferent may be looking for a way to postpone that uncomfortable feeling of saying no. A pledge with the intent to renege provides such a way. In a situation

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where those with strong feelings can easily give now or say no now, the charity can identify the more indecisive prospects by allowing pledges. We hypothesize that something as simple as sending an email thanking the people for their pledges can be enough to make givers out of some who had intended to renege on their pledges.

We find strong evidence for this explanation in our experiment, both by observing behavior and through an attitudinal survey about the emotional reactions to the thank-you email. Both suggest that the thank-you note, while very passive, added enough extra pressure to those most in need of it to convert a "renege" to a "yes."

This is, of course, just one possible explanation for pledges, and may be the explanation most suited to the setting under study. There is still more to this puzzle that deserves study. Are there better ways than the thank-you note for charities to approach this self-selected group of persuadable potential donors? Will those persuaded become returning givers, or will they avoid future solicitations? A particularly important question is how do we understand those organizations who have opted for only pledges? For instance, what about the example in the introduction about the synagogue that switched from pre-set membership dues to voluntary pledges? Why did they find this a successful strategy? Was it succeeding because of the intensive margin—the existing congregation is giving more—or the extensive margin—new members switch synagogues in response to, among other things, a potentially lower price?

Finally, this paper raises the potentially valuable opportunity of managers of charities and other types of organizations of using pledges as tools to identify the "middle" or "indecisive" group between the clear "yes" and "no" groups. Knowing who is closer to indifferent could be valuable in defining further interventions that will better manage and motive such people.

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Appendix A. Additional Data Analyses

A.1. Show-up rates

A.1. Determinants of no-show in week 2

	(1)	(2)	(3)
	No-show in week 2		
Pledge Treatment	-0.016	-0.044	-0.045
	(0.025)	(0.045)	(0.048)
Give-Now Treatment	-0.006	-0.039	-0.031
	(0.026)	(0.041)	(0.042)
Give Now in Pledge-or-Give-Now Treatment		-0.051	-0.052
		(0.032)	(0.032)
Pledge in Pledge-or-Give-Now Treatment		-0.049	-0.046
		(0.048)	(0.048)
Pledge in Pledge Treatment		0.041	0.036
		(0.059)	(0.060)
Female			-0.020
			(0.020)
Economics major			-0.019
			(0.026)
Cognitive Reflection Test Score			-0.016
			(0.013)
Constant	0.084***	0.118***	0.153***
	(0.020)	(0.038)	(0.050)
Observations	512	512	511
R-squared	0.001	0.004	0.010

Notes: This table presents the linear probability model results on the likelihood of a no-show in week 2. Column (1) presents the effect of the Pledge and Give-Now treatments. Column (2) adds interactions with the decision made in week 1. Column (3) adds individual characteristics: female, which takes value one if the subject is a woman, zero otherwise; Economics major, which takes value one if the subject is majoring in economics, zero otherwise; and Cognitive Reflection Test score, which indicates the number of correct questions in the Cognitive Reflection Test (Frederick, 2002). Robust standard errors, clustered at the session level, were used in each individual regression. ***,**,* indicates significance at the 1%, 5% and 10% levels, respectively.

A.2. Reneging rates

Table A.2. Determinants of reneging

	(1)	(2)	(3)	(4)	(5)	(6)
	Likelihood of reneging					
Treatment:	Pledge-or-Give-Now		Pledge		Both	
Thank you	-0.231*	-0.270**	-0.044	-0.012	-0.234*	-0.232*
	(0.121)	(0.126)	(0.120)	(0.145)	(0.124)	(0.129)
Pledge					-0.244*	-0.244*
					(0.137)	(0.142)
Thank you X Pledge					0.191	0.192
					(0.167)	(0.174)
Individual controls	No	Yes	No	Yes	No	Yes
Observations	95	95	72	72	167	167
R-squared	0.0298	0.0456	0.0014	0.0901	0.0235	0.0288

Notes: This table presents marginal effects from probit regressions on the likelihood of reneging on a pledge in week 2. Columns (1)-(2) examine the effect of thank-you notes in the Pledge-or-Give-Now treatment, and columns (3)-(4) test the effect of thank-you notes in the Pledge treatment. Columns (5)-(6) pool both treatments and examine the effect of the Pledge treatment on reneging, as well as the effect of thank-you notes. Individual characteristics (female, economics major and Cognitive Reflection Test Score) are added as controls in columns (2), (4) and (6). ***,**,* indicates significance at the 1%, 5% and 10% levels, respectively.

A.3. Liking of the Charity

Table A.3. Effects of Gratitude on Liking of the Charity

	(1)	(2)	(3)	(4)
	Newsletter		Like charity index	
Thank you	0.086	0.147**	-0.082	-0.140
	(0.059)	(0.065)	(0.149)	(0.196)
Pledge Treatment	0.175	0.333	0.654**	0.713***
	(0.126)	(0.191)	(0.275)	(0.187)
Pledge Treatment X Thank you	-0.244**	-0.363**	0.017	-0.124
	(0.110)	(0.161)	(0.240)	(0.251)
Confirm pledge		0.286		0.140
		(0.259)		(0.731)
Confirm pledge X Thank you		-0.244		0.050
		(0.302)		(0.807)
Confirm pledge X Pledge Treatment		-0.432		-0.176
		(0.338)		(0.775)
Confirm pledge X Thank you X Pledge Treatment		0.359		0.299
		(0.348)		(0.835)
Constant	0.083	-0.000	-0.269	-0.310**
	(0.079)	(0.000)	(0.219)	(0.140)
Observations	166	166	166	166
R-squared	0.027	0.055	0.144	0.157

Note: This table presents the coefficients from OLS regressions on self-reported pressure to donate and liking of the charity. Columns (1) and (3) present the coefficients from regressions including dummies for assignment to the thank-you conditions and the Pledge Treatment, relative to the Pledge-or-Give-Now treatment. Columns (2) and (4) include the decision to give (confirm a pledge) as well as an interaction term with the thank-you note and Pledge treatment assignment. Robust standard errors, clustered at the session level, were used in each individual regression. ***,**,* indicates significance at the 1%, 5%, and 10% levels, respectively.

Appendix B. Instructions

Note: Below we present first the Welcome sheet, which was shown to participants and read aloud upon arrival. Afterwards, the GiveDirectly pitch was made, at the end of which the experimenter read aloud the text shown in brackets. Participants entered their decisions on the computers. The decision screens are shown below.

[Welcome Sheet]

Welcome

Thank you for participating in this experiment. During the experiment you and the other participants are asked to answer a series of questions. Please do not communicate with other participants. If you have any questions please raise your hand and an experimenter will approach you and answer your question in private.

This experiment consists of two parts.

- Part 1: Today we will ask you to answer a series of questionnaires.

- Part 2: A follow up survey that you will be asked to fill out a week from today.

Payment

You receive for the participation in this experiment $26. Please note that in order to obtain you all payments you need to answer both parts of the experiment.

- Today you receive $6 for showing up to the experiment and answering the first part of the experiment. You can collect the $6 from the experimenter after the session is finished.

- The remaining $20 you will receive at the end of the next week's session.

[GiveDirectly Pitch (by the experimenter)

Slides of GiveDirectly are shown on the screen. Experimenter reads the slides]

[At the end of the pitch:]

- [Treatment Give-Now]: We would like to ask you whether you would like to donate $5 of your show up fee for today's session to GiveDirectly. You will be asked to answer this question on your screens in a minute. If you answer "YES, I'd like to donate $5 today," $5 of your show up fee today will be donated. If you say "NO," no donation will be made. Your decisions are final today.

- [Treatment Pledge-or-Give-Now]: We would like to ask you whether you would like to donate $5 of your show up fee to GiveDirectly. You will be asked to answer this question on your screens in a minute. If you answer "YES, I'd like to donate $5 today," $5 of your show up fee today will be donated. This decision will be final. If you answer "YES, I'd like to donate $5 next week," we will ask you again next week and you can make your decision final at that time, then $5 of your show up fee next week will be donated. If you say "NO," no donation will be made, and that decision will be final today.

- [Treatment Pledge]: We would like to ask you whether you would like to donate $5 of your show up fee for next week's session to GiveDirectly. You will be asked to answer this question on your screens in a minute. If you answer "YES, I'd like to donate $5 next week," we will ask you again next week and you can make your decision final at that time, then $5 of your show up fee next week will be donated. If you say "NO," no donation will be made, and that decision will be final today.

Week-1 Decision Screens

Give-Now:

GiveDirectly

As we mentioned, in this study we are giving you the opportunity to support an exciting new charity, called GiveDirectly.

Would you like to donate to GiveDirectly?

○ YES, I'd like to donate $5 today.

○ NO

Pledge-or-Give-Now:

Would you like to donate to GiveDirectly?

○ YES, I'd like to donate $5 today.

○ YES, I'd like to donate $5 next week.

   Ask me again next week and I'll make my final decision.

○ NO

Pledge:

Would you like to donate to GiveDirectly?

○ YES, I'd like to donate $5 next week.

   Ask me again next week and I'll make my final decision.

○ NO