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I swear, I would like to donate later

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Abstract
Pledges are ubiquitous in charitable giving, but they are often reneged upon. To investigate whether adding the phrase "I swear" to pledge language can reduce pledge reneging, we conduct a series of experiments in the context of online fundraising. We find that including "I swear" at the beginning of the pledge language significantly increases immediate giving and pledge fulfillment, with more individuals switching from pledging to giving immediately. We also observe individual heterogeneity in moral identity: Our findings are present among individuals with low moral identity, but not among those with high moral identity. Our paper presents a simple and no-cost strategy for increasing the effectiveness of pledges in online fundraising.

Keywords Charitable giving · Pledge · I swear · Online fundraising

JEL Classification C93 · D64 · D91

1 Introduction

Pledges are widely used by charitable organizations, some of which rely solely on them. For example, a nonprofit organization called One for the World operates by encouraging individuals to pledge 1% of their income to charity (Castillo & Petrie, 2023). Other nonprofits that rely heavily on pledges in their fundraising efforts

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include the Public Broadcasting Service and National Public Radio.[1] Given their prevalence, it is commonly assumed that pledges can increase charities' revenues. However, the existing literature challenges this assumption. Consistent evidence from economic experiments suggests that pledges (i.e., statements of intent to donate later) are often reneged upon and have little impact on ultimate donations, including cash donations (Andreoni & Serra-Garcia, 2021; Fosgaard & Soetevent, 2022; Sutan et al., 2018), blood donations (Meyer & Tripodi, 2021), and effort donations (Capra et al., 2022).[2] Therefore, it is crucial for charities to develop an effective strategy to improve pledge fulfillment.

In this paper, we propose a simple and no-cost strategy for doing so: adding the phrase "I swear" to the pledge language. The phrase "I swear" is commonly used to emphasize the truthfulness or sincerity of a statement, to make a solemn promise, or to express strong feelings of determination or conviction (Blok, 2013).[3] "I swear" is a ubiquitous phrase in everyday conversation and modern written English. Moreover, the phrase "I swear" is an integral part of taking an oath. Like a pledge, an oath is a type of promise, but it has its own characteristics.[4] Taking an oath begins with the phrase "I swear", requires accompanying gestures, and must be done in public (de Bruin, 2016; Sulmasy, 1999). These characteristics make the oath a special kind of promise with great binding power (Sulmasy, 1999).

In the field of charitable giving, a pledge is a promise that represents a statement of an intent or willingness to give at a later date; given the low cost of reneging on a pledge, potential donors often do not fulfill their pledges, making pledges ineffective in increasing cash donations (Andreoni & Serra-Garcia, 2021; Fosgaard & Soetevent, 2022).Intuitively, adding the phrase "I swear" to the pledge wording would lead to the perception that the intention or willingness to give later comes from the heart and is sincere. This may strengthen the commitment to give and increase the cost of reneging on a pledge. Thus, adding "I swear" to the pledge wording may increase pledge fulfillment and ultimate donation.

To test the effect of the phrase "I swear" on pledges, we conduct four experiments with over 1500 subjects. The context of our experiments is online fundraising. The experiment consists of two parts, 1 week apart. In week 1, subjects are offered the opportunity to donate money. They have the option to give now (e.g., "Yes, I would like to donate 5 RMB today", RMB denotes Chinese yuan), pledge (e.g., "Yes, I would like to donate 5 RMB next week. Ask me again next week

[1] See https://www.pbs.org/ and https://www.npr.org/stations/.

[2] Essentially, a pledge is a promise. According to the Merriam-Webster Dictionary, a promise is defined as "a declaration that one will do or refrain from doing something specified." For the sake of clarity, we will use the terms "pledge" and "promise" interchangeably throughout this paper.

[3] According to the Merriam-Webster Dictionary, "I swear" is (i) "used to stress that one is being absolutely honest" and (ii) "used for emphasis (informal); for example, I swear, every time I see her she's got a new boyfriend.".

[4] According to the Merriam-Webster Dictionary, an oath (e.g., the Hippocratic Oath in medicine and the MBA Oath in business) is "a solemn usually formal calling upon God or a god to witness to the truth of what one says or to witness that one sincerely intends to do what one says." For further distinctions between oaths and promises, see Sulmasy (1999) and de Bruin (2016).

and I will make my final decision."), or decline to donate directly. The pledge is non-binding and can be fulfilled or reneged upon in week 2. Our treatment variable is the pledge language. In the *swear* treatment, we add "I swear" to the beginning of the pledge wording, whereas in the *control* treatment, "I swear" is not included in the pledge wording.

To test whether adding "I swear" to the pledge wording can increase pledge fulfillment, we conduct Experiments 1 and 2 in which we include only two options (i.e., pledge or decline to donate directly). In Experiment 1, subjects first decide whether to pledge, and then we ask them to confirm their pledge choice with or without the phrase "I swear" at the beginning of the pledge wording. That is, the treatment variable in Experiment 1 is manipulated after the subjects have decided to pledge. In Experiment 2, however, the treatment variable is manipulated before the decision to pledge: Subjects are randomly assigned to the *control* and *swear* treatments and then decide whether to pledge. The results of Experiments 1 and 2 show that, regardless of whether the treatment variable is manipulated after or before the decision to pledge, adding "I swear" to the pledge wording significantly reduces the percentage of subjects who renege on a pledge, thereby increasing ultimate donations.

To examine whether the increase in ultimate donations is due to an increase in immediate giving in week 1 or pledge fulfillment in week 2, we conduct Experiment 3 in which we include three options (i.e., give now, pledge, or decline to donate directly). As in Experiment 2, in Experiment 3 we randomly assign subjects to the *control* and *swear* treatments and then ask them to decide whether to pledge, give now, or decline to donate directly. The results of Experiment 3 show that adding "I swear" to the pledge wording increases both immediate giving in week 1 and pledge fulfillment in week 2. The treatment effect on immediate giving is more pronounced, which is attributed to more subjects switching from pledging to give later to giving immediately when "I swear" is added to the pledge wording. This is a positive and important effect for charitable organizations because donors who give immediately have a 100% follow-through rate and are less likely to break their promises. This consistency reduces the risk of prospective donors reneging on their pledges, resulting in a more reliable revenue stream for the organization.

To check the robustness of our treatment effect, we conduct Experiment 4, which has three important differences from the previous experiments. In Experiments 1, 2, and 3, the subjects are Chinese college students, whereas in Experiment 4, the subjects are residents of the United States. Moreover, in Experiments 1, 2, and 3, the subjects donate windfall money, whereas in Experiment 4, the subjects donate their earned money. In Experiment 4, we also change the second sentence of the pledge wording from "Ask me again next week and I will make my final decision" to "Please remind me next week". The treatment effect is replicated in Experiment 4, suggesting that our findings are robust to non-Chinese samples and the second sentence of the pledge wording, and remain robust regardless of whether the endowment is a windfall or earned.

An important concern is that subjects may be reluctant to pledge if "I swear" is added, leading more subjects to decline to donate directly. That is, in week 1, subjects may switch from pledging to give later to declining to donate directly when the "I swear" is added to the pledge wording. We show that this is not the case.

The results of Experiments 2, 3, and 4 show that the difference in the percentage of subjects who declined to donate directly in week 1 between the *control* and *swear* treatments is not significant. Thus, adding "I swear" to the pledge wording does not move subjects from pledging to declining to donate directly, but rather moves them to giving immediately.

We then investigate the mechanism underlying the treatment effect. By conducting an additional survey study, we provide suggestive evidence that adding "I swear" to the pledge wording may increase the perceived costs of reneging in week 2 and the perceived costs of pledging and direct declining in week 1, thereby increasing immediate giving in week 1 and pledge fulfillment in week 2. We also run an individual heterogeneity analysis using the data from Experiments 2, 3, and 4, which shows that moral identity is an important source of heterogeneity in the treatment effect. Moral identity is a self-concept built around a set of moral traits, and the moral self-schema is central to the self-definition of individuals with high moral identity but not those with low moral identity (Aquino & Reed, 2002). We find that the treatment effect is present among subjects with low moral identity but not among those with high moral identity.

Our paper contributes to the literature in several ways. First, we add to the nascent experimental literature studying pledges and giving, which documents that pledges are ineffective at increasing donations because pledges are often reneged upon. For example, Andreoni and Serra-Garcia (2021) show both theoretically and experimentally that pledging itself has only a limited effect on giving. Pledging mainly increases the number of insincere pledges that individuals make in order to avoid the immediate discomfort of refusing a donation request. In an experiment involving door-to-door fundraising, Fosgaard and Soetevent (2022) also find that most individuals do not fulfill their pledges. Experimental results from Sutan et al. (2018) show that in the absence of endowment uncertainty, private and public pledges reduce donations. Two experimental studies examine the role of pledges in other forms of giving and find that pledges are ineffective in increasing volunteering and blood donations (Capra et al., 2022; Meyer & Tripodi, 2021).

To improve pledge fulfillment, the existing literature suggests several strategies to increase cash donations, such as sending a thank-you note after a pledge decision has been made (Andreoni & Serra-Garcia, 2021) or requesting the pledge amount with an additional signature at the time of making the pledge decision (Fosgaard & Soetevent, 2022). While these tactics have been shown to be effective, they may require a significant additional investment of time and effort to implement. For example, sending a thank-you note to potential donors who have pledged requires the fundraiser to allocate time and effort. Similarly, requesting the pledge amount upfront with an additional signature would add complexity to the pledge process and prolong the fundraising timeline. Our study provides an alternative strategy (i.e., adding "I swear" to the pledge wording) that is both simple and cost-free for online fundraising. Our strategy requires no additional time or effort on the part of the fundraiser. To apply it to online fundraising, all the fundraiser needs to do is add the phrase "I swear" to the pledge language.

Second, our paper is related to the literature that examines the role of promises and oaths in economic behavior. Evidence from economic experiments shows that

promises (i.e., statements of intent) in pre-play communication, even in the form of mere cheap talk, increase trust and subsequent levels of cooperation in trust and dictator games (Charness & Dufwenberg, 2006; Di Bartolomeo et al., 2019; Ederer & Stremitzer, 2017; Vanberg, 2008). Other experimental evidence shows that swearing a truth-telling oath can reduce dishonest behavior in sender-receiver games (Jacquemet et al., 2019) and increase efficient coordination in coordination games (Jacquemet et al., 2018).

These studies examine the effect of promises or oaths only within a short time horizon, where the time between promise and behavior is short (less than a day). In contrast, our study involves a longer time frame, where the interval between promise and behavior is 1 week. In a related study, Ederer and Schneider (2022) conduct a large-scale hybrid laboratory and online trust experiment, with and without pre-play communication, to explore the influence of time on trust. They find that the increase in cooperation, trust, and trustworthiness resulting from promises made during pre-play communication does not diminish even when 3 weeks elapse before the trustee's actual decision. We examine the role of pledges in giving when a week elapses before the decision to give.

More importantly, we incorporate the crucial language of taking an oath (i.e., "I swear") into the pledge wording to reinforce the binding nature of the pledge over an extended time horizon. In this way, we retain the fundamental characteristic of the pledge (i.e., a statement of intent) while incorporating an important aspect of taking an oath that can strengthen commitment. Previous research provides evidence that adding publicity (another characteristic of taking an oath) to the pledge process can backfire on giving (Sutan et al., 2018). We show that adding the phrase "I swear" to the pledge language is effective in increasing ultimate donations in online fundraising.

In this regard, our work is also related to a handful of economic literature that examines the effects of small variations in the choice of wording. In a related study, Adena and Huck (2022) conduct an experiment on crowdfunding and find that using the term "donation" leads to higher revenues than using "contribution"; the possible explanation is that the word "donation" evokes more positive emotional responses and that these emotions are strongly associated with giving in crowdfunding. We examine the impact of varying pledge wording and inform fundraising managers to consider pledge language when designing pledge options.

Finally, our paper relates to the economic literature that examines the role of identity in charitable giving. Using large charitable giving field experiments run by the American Red Cross, Kessler and Milkman (2018) find that individuals are more likely to donate when a facet of their identity associated with a norm of generosity is primed in an appeal. Charness and Holder (2019) examine the effect of group identity in a team competition environment and find that team competition for matching funds increases giving, even when groups are randomly assigned. Sánchez (2022) experimentally examines the pure effect of group identity on giving and finds that strengthening group identity has a positive effect on the amount of money donated

to a charity. Our study provides evidence that moral identity plays a role in the effect of the pledge on giving.[5]

2 The experiments

2.1 Experiment 1

2.1.1 Design

Experiment 1 consists of two parts separated by exactly 1 week. In week 1, subjects received the link to the experiment website and completed the week-1 experiment. The link to the week-2 experiment webpage, which varied depending on the subject's choice and treatment, was sent to all subjects via the email. The link of experiment webpage is generated via an online platform called "Wenjuanxing", which provides functions equivalent to Amazon Mechanical Turk. To reduce attrition, we sent subjects a text message to remind them to participate in the week-2 experiment.

In week 1, subjects were given 6 RMB and asked whether they would like to donate 5 RMB to a charity project called "*Helping the Sick and Poor*". This project was initiated by the *China Charity Federation* and solicited cash donations online.[6] The project aims to help the poor and patients in need, and to finance public welfare activities to promote the development of medical care. Subjects could choose to pledge to donate in week 2 or say no. The pledge was described as "Yes, I would like to donate 5 RMB next week. Ask me again next week and I will make my final decision." Except for the pledge amount, the wording of our pledge is the same as in Andreoni and Serra-Garcia (2021).[7]

For subjects who chose to pledge, we added a confirmation procedure in which they were asked to confirm their pledge choice. In the confirmation procedure, we manipulated the description of the pledge. Specifically, in the CONTROL treatment, the description of the pledge was not changed, and subjects only confirmed their choice. In the SWEAR treatment, the pledge was formulated as "Yes, I swear, I

[5] For psychological literature examining the effects of moral identity on charitable giving, see Aquino and Reed (2002) and Reed et al. (2016).

[6] China Charity Federation (CCF) is a national non-profitable public welfare social organization, which is legally registered as an independent entity with the approval of the Chinese government. CCF is one of the largest and most influential charitable organizations in China.

[7] Andreoni and Serra-Garcia (2021) gave two reasons for using this pledge wording. The first reason was that the meaning of the pledge varied widely in the solicitations of different charities. Sometimes pledges were considered irrevocable promises and sometimes revocable promises. To ensure a common understanding across individuals, they did not use the word pledge. The second reason was that, based on the economic literature studying promises (e.g., Charness and Dufwenberg, 2006; Di Bartolomeo et al., 2019; Ederer and Stremitzer, 2017; Heller and Sturrock, 2020; Vanberg, 2008), subjects would perceive a statement of intent as a promise. Other economic literature studying pledges and giving also uses similar wording for pledges (Capra et al., 2022; Fosgaard and Soetevent, 2022; Meyer and Tripodi, 2021; Sutan et al., 2018). Table B3 in Appendix B provides an overview of the pledge wording used in the existing literature.

would like to donate 5 RMB next week. Ask me again next week and I will make my final decision." At this stage, subjects in both treatments were not allowed to change their choice. Such a design allows us to exogenously manipulate the pledge wording and examine the causal effect of the word "I swear" on pledge fulfillment without worrying about the self-selection bias.

At the beginning of the week-2 experiment, all subjects were reminded of their choice in week 1. For subjects who declined to donate directly in week 1, we reminded them that their decision was final. For subjects who pledged, the reminder was the description of the pledge in the confirmation procedure. Subjects were then asked to make their final decision. If they decided to donate, they completed their donation themselves with the help of a detailed step-by-step explanation of how to donate.[8] This donation procedure was only provided to the subjects who decided to donate. After completing the donation, subjects received an electronic donation certificate. They were asked to upload their certificate to the experiment website. This allows us to make sure that they have actually donated.[9] To avoid the salient effect of social image concerns, the donation procedure was not provided to the subjects in advance. No subject had ever donated to the "*Helping the Sick and Poor*" project before.

At the end of the week-2 experiment, subjects completed a post-experiment survey about their gender, age, one-child, monthly household income, and donation frequency.[10] We also measured their altruism using a dictator game (Forsythe et al., 1994).[11]

Experiment 1 lasted about 20 min. A total of 266 college students from Shandong University participated in Experiment 1. We put up posters around campus to recruit subjects. The average payoff was 18.5 RMB, which consisted of the show-up fee (6 RMB in week 1 and 10 RMB in week 2) and the payment in the dictator game (ranging from 0 to 5 RMB).[12] Subjects were paid via Alipay. Experiment 1 was conducted from May to June 2022. The experimental instructions for Experiment 1 were written in Chinese, and Appendix E1 presents the English translation.

[8] See Appendix F for an example of the donation procedure. Each subject took part in one of our experiments, and no subject took part in our experiments more than once.

[9] We do not observe the discrepancy between stated and verified donations.

[10] One-child means that a subject has no siblings. Evidence from economic experiments shows that China's one-child policy has significant effects on social preferences (Cameron et al., 2013). Thus, we control for one-child in our experiments.

[11] Specifically, subjects were paired with an anonymous partner in which one played the role of dictator and the other played the role of recipient. All subjects, as dictators, made decisions to divide 5 RMB between themselves and the recipients. The amount allocated by the dictator provides a measure of the subjects' altruism. After the experiment, subjects were randomly assigned to either the dictator or the recipient role. Only the dictator's decisions count for payment.

[12] The show-up fee in weeks 1 and 2 and the pledge amount in week 1 closely follow Andreoni and Serra-Garcia (2021). One potential concern is that this design may make it easier to give or pledge a positive donation to a charity. To address this concern, Andreoni and Serra-Garcia (2021) varied the show-up fee and found that the time structure of show-up fees had no effect on giving decisions.

2.1.2 Results

In week 1, approximately two-thirds of subjects (66.9%, 178 of 266) chose to pledge. This pledge proportion was similar to that observed in Andreoni and Serra-Garcia (2021). Of the subjects who pledged in week 1, sixteen subjects (eight subjects per treatment) did not participate in the week-2 experiment, leaving us with 162 subjects for data analysis (82 subjects in the CONTROL treatment and 80 subjects in the SWEAR treatment). Table B1 in Appendix B1 summarizes the demographic characteristics of the subjects who pledged in each treatment. The last column in Table B1 shows that the distributions of the demographic characteristics are evenly balanced between the CONTROL and SWEAR treatments.

Figure 1 shows the percentage of subjects who fulfilled their pledge and donated in week 2. In the CONTROL treatment, 48.8% (40 of 82, SE = 5.6%) of subjects fulfilled their pledge and donated. The percentage of pledge fulfillment in the SWEAR treatment is 73.8% (59 of 80, SE = 5.0%), which is significantly higher than that in the CONTROL treatment ($\chi^2 = 10.623$, $p = 0.001$).[13] This result suggests that adding "I swear" to the pledge wording increases pledge fulfillment and ultimate donations.

We then run linear probability regressions to estimate the treatment effect. The regression results are reported in Table 1.[14] The dependent variable is *Pledge Fulfillment in Week 2*, which is a binary variable equal to one if the subject fulfilled their pledge and donated in week 2 and zero otherwise. The independent variable is our treatment dummy, *SWEAR*, which equals one if the subject was in the SWEAR treatment and zero otherwise. Consistent with the previous nonparametric test, in column (1) the regression coefficient of *SWEAR* is positive and significant at the 1% level. In column (2), we control for altruism, gender, age, one-child, monthly household income, and donation frequency; the coefficient of *SWEAR* is still positive and significant at the 1% level. These results suggest that subjects in the SWEAR treatment are more likely to fulfill their pledge and donate in week 2 than those in the CONTROL treatment. Overall, we provide experimental evidence that adding "I swear" to the pledge wording has a causal effect on pledge fulfillment.

2.2 Experiment 2

Experiment 1 manipulates the description of the pledge after subjects have pledged and provides causal evidence that adding "I swear" to the pledge wording significantly increases pledge fulfillment, highlighting the important role of the phrase "I swear" in curbing pledge reneging. Although the design of Experiment 1 has the strength of avoiding the self-selection bias, some potential concerns are worth noting.

[13] In our data analysis, all statistical tests involve two-tailed *p*-values. M denotes the mean. SE denotes the standard error of the mean.

[14] For our four experiments, all treatment effect regression results are robust to the probit model, see Tables B2, B6, B10 and B15 in Appendix B.

First, the pledge with the phrase "I swear" was imposed on the subjects by the experimenters, and the subjects could not change their pledge choice in the confirmation procedure, making the pledge somewhat involuntary. This concern may be exacerbated by the experimenter demand effect; that is, subjects may fulfill their pledge just to please the experimenters because they cannot withdraw their pledge choice in the confirmation procedure. Second, people may not like swearing to do something. Thus, adding "I swear" to the pledge wording may crowd out the willingness to pledge, leading to a more direct refusal to donate. To address these concerns, we conduct Experiment 2.

2.2.1 Design

We recruited 432 students from the subject pool of Shandong University by circulating the link of the week-1 experiment website. Subjects were randomly assigned to one of two treatments: CONTROL (214 subjects), SWEAR (218 subjects). The link to the week-2 experiment webpage, which varied based on their treatment and choice, was sent to all subjects via email. Twenty-one subjects in the CONTROL treatment and twenty-six subjects in the SWEAR treatment did not participate in the week-2 experiment, leaving us with 385 subjects for data analysis (193 subjects in the CONTROL treatment and 192 subjects in the SWEAR treatment). In week 2, the participation rate was 89.1% and was not affected by treatment, the decision made by the subjects in week 1, or the background characteristics (see Table B4 in Appendix B2). Randomization checks show that the demographic characteristics of the subjects were evenly balanced between the CONTROL and SWEAR treatments (see Table B5 in Appendix B2).

In Experiment 2, we remove the confirmation procedure and manipulate the description of the pledge at the time subjects are asked whether to pledge. Subjects are free to pledge or not pledge with the phrase "I swear", which eliminates the potential concern of the experimenter demand effect and is more appropriate for real-world applications. Specifically, in week 1, subjects in the CONTROL treatment chose either "Yes, I would like to donate 5 RMB next week. Ask me again next week and I will make my final decision" or "No". In the SWEAR treatment, subjects chose either "Yes, I swear, I would like to donate 5 RMB next week. Ask me again next week and I will make my final decision" or "No".

In addition to the demographic information and altruism collected in Experiment 1, we also measured subjects' time preferences as a control in Experiment 2.[15] Following Niu et al. (2023), we used a delay-discounting task to elicit subjects' time preferences (see Appendix G1 for a detailed description). Other experimental design and procedures of Experiment 2 were identical to those of Experiment 1. Experiment 2 lasted approximately 23 min, and the average payoff was 22.3 RMB. Experiment 2 was conducted from October to November 2022. The experimental instructions for Experiment 2 are presented in Appendix E2.

[15] Demographic information was collected at the end of the week-1 experiment in Experiment 2.

Table 1 Regression analysis of treatment effect for Experiment 1

	Pledge fulfillment in week 2	
	(1)	(2)
SWEAR	0.250***(0.075)	0.246***(0.076)
Altruism		0.044**(0.021)
Male		−0.003(0.080)
Age		−0.023(0.014)
One-child		0.035(0.080)
Income		−0.000(0.035)
Frequency		−0.108(0.120)
Constant	0.488***(0.052)	1.021**(0.411)
Observations	162	162
R^2	0.066	0.112

The regressions are linear probability models. Standard errors are displayed in parentheses. Pledge Fulfillment in Week 2 is a dummy equal to one if the subject fulfilled their pledge and donated in week 2 and zero otherwise. SWEAR is a treatment dummy that takes the value one if the data is from the SWEAR treatment. Altruism is the amount allocated by the subject in the dictator game. The dummy variable of Male equals to one if the subject is a man, and zero otherwise. Age is the self-reported age. The dummy variable of One-child equals to one if the subject has no siblings in the household, and zero otherwise. Income is an ordinal variable coded as 1, 2, 3, 4, and 5 if the average monthly household income per person is less than RMB2001, RMB2001-RMB4000, RMB4001-RMB6000, RMB6001-RMB8000, and more than RMB8000, respectively. Frequency is an ordinal variable based on subjects' answers of "How often do you donate to charities? (1, Never; 2, Sometimes; 3, Frequently). Significance levels: $^{*}p<0.1$, $^{**}p<0.05$, $^{***}p<0.01$

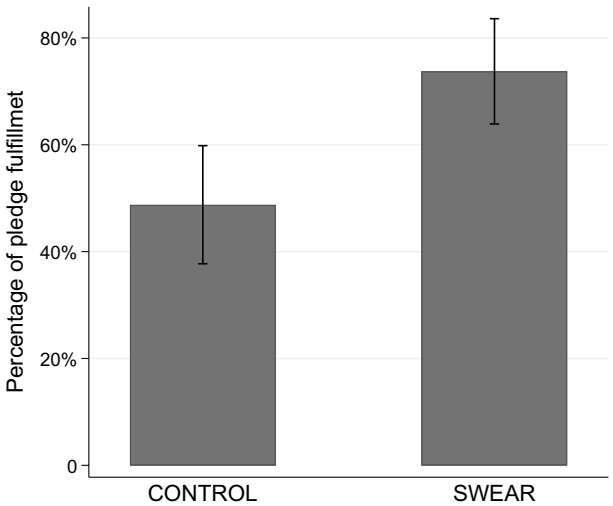

Fig. 1 Percentage of fulfilling pledges by treatment in Experiment 1. Error bars denote 95% confidence intervals

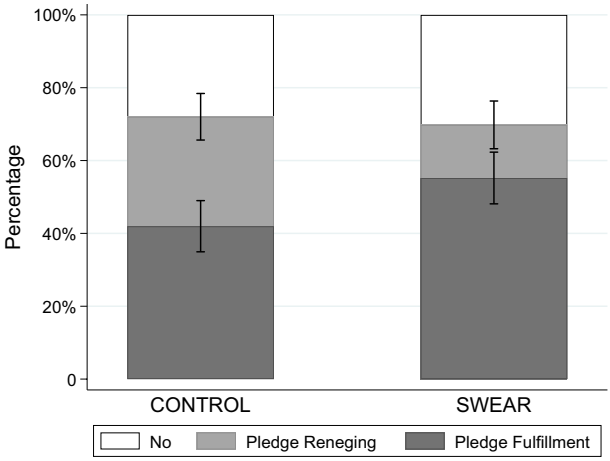

Fig. 2 Donation behavior by treatment in Experiment 2. The white bar shows the percentage of subjects who declined to donate directly in week 1. The light gray bar shows the percentage of subjects who pledged in week 1 but reneged on their pledge in week 2. The gray bar shows the percentage of subjects who pledged in week 1 and fulfilled their pledge in week 2. Error bars denote 95% confidence intervals

2.2.2 Results

Figure 2 shows an overview of the donation behavior by treatment. We find that adding "I swear" to the pledge wording does not affect the percentage of subjects who pledged in week 1. In the CONTROL treatment, 72.0% (139 of 193, SE = 3.2%) of subjects chose to pledge in week 1. In the SWEAR treatment, the percentage of subjects who pledged in week 1 is 69.8% (134 of 192, SE = 3.3%). The difference in the percentage of subjects who pledged in week 1 is not significant between the two treatments ($\chi^2 = 0.232$, $p = 0.630$). This result suggests that adding "I swear" to the pledge wording does not crowd out the willingness to pledge.

Importantly, consistent with the results of Experiment 1, we find that adding "I swear" to the pledge wording increases the percentage of subjects who fulfilled their pledge and donated in week 2. In the SWEAR treatment, 55.2% (106 of 192, SE = 3.6%) of subjects fulfilled their pledge and donated in week 2. This percentage is significantly higher than the value of 42.0% (81 of 193, SE = 3.6%) in the CONTROL treatment ($\chi^2 = 6.754$, $p = 0.009$).

In Table 2, we report linear probability regressions to estimate the treatment effect.[16] The dependent variable in columns (1) and (2) is *Pledge in Week 1*, a dummy equal to one if the subject pledged in week 1 and zero otherwise. The dependent variable in columns (3) and (4) is *Pledge Fulfillment in Week 2*, a dummy equal to one if the subject fulfilled their pledge and donated in week 2 and zero

[16] For Experiments 2, 3, and 4, all treatment effect regression results are qualitatively the same when we include a full sample of subjects in the regression analysis (i.e., including subjects who participated in the week 1 experiment but did not appear in the week 2 experiment, and regarding subjects who pledged in week 1 but did not appear in week 2 as those who reneged on their pledges), see TablesB7, B11 and B16 in Appendix B.

otherwise. Consistent with the previous nonparametric test, the coefficients on *SWEAR* in columns (1) and (2) are not significant, indicating that adding "I swear" to the pledge wording does not affect willingness to pledge in week 1. The coefficients on *SWEAR* in columns (3) and (4) are positive and significant at 5% level. Thus, adding "I swear" to the pledge wording can significantly increase pledge fulfillment and ultimate donations.

2.3 Experiment 3

Experiments 1 and 2 provide evidence that adding "I swear" to the pledge wording significantly reduces pledge reneging and increases ultimate donations. However, a drawback of Experiments 1 and 2 is that subjects could not choose to donate immediately. In real-world fundraising, people are often asked to give now, pledge, or decline to give. Moreover, in the absence of the give-now option, we cannot distinguish whether the positive effect of adding "I swear" to the pledge wording on ultimate donations is driven by an increase in immediate giving in week 1 or a decrease in pledge reneging in week 2. To examine this, we conduct Experiment 3.

2.3.1 Design

A total of 404 students from Shandong University participated in Experiment 3. Subjects were randomly assigned to one of two treatments: CONTROL (196 subjects) and SWEAR (208 subjects). The link to the week-2 experiment website, which varied based on treatment and choice, was emailed to all subjects. Twenty subjects in the CONTROL treatment and twenty-two subjects in the SWEAR treatment did not participate in the week-2 experiment, leaving 362 subjects for data analysis (176 subjects in the CONTROL treatment and 186 subjects in the SWEAR treatment). In week 2, the participation rate was 89.6% and was not affected by treatment, the decision made by the subjects in week 1, or most background characteristics (see Table B8 in Appendix B3). Randomization checks show that the demographic characteristics of the subjects were evenly balanced between the CONTROL and SWEAR treatments (see Table B9 in Appendix B3).

The procedure of Experiment 3 is similar to that of Experiment 2, with the notable modification that we add a give-now option in week 1. Specifically, in week 1, subjects in the CONTROL treatment chose from the following three options: "Yes, I would like to donate 5 RMB today", "Yes, I would like to donate 5 RMB next week. Ask me again next week and I will make my final decision", and "No". In the SWEAR treatment, subjects chose from the following three options: "Yes, I would like to donate 5 RMB today", "Yes, I swear, I would like to donate 5 RMB next week. Ask me again next week and I will make my final decision", and "No". In addition to adding the give-now option, we also changed the charity project to test the robustness of our results. The charity project used in Experiment 3 is called the "*Ocean Paradise Program*", sponsored by the *One*

Table 2 Regression analysis of treatment effect for Experiment 2

	Pledge in week 1		Pledge fulfillment in week 2	
	(1)	(2)	(3)	(4)
SWEAR	−0.022	−0.011	0.132***	0.140***
	(0.046)	(0.046)	(0.051)	(0.051)
Altruism		0.050***		0.040***
		(0.013)		(0.015)
Time		0.018		0.016
		(0.013)		(0.014)
Male		−0.012		−0.034
		(0.054)		(0.059)
Age		−0.005		−0.012
		(0.010)		(0.011)
One-child		−0.006		0.002
		(0.049)		(0.054)
Income		0.010		0.018
		(0.020)		(0.021)
Frequency		−0.079		−0.028
		(0.070)		(0.077)
Constant	0.720***	0.707**	0.420***	0.455
	(0.033)	(0.289)	(0.036)	(0.318)
Observations	385	385	385	385
R^2	0.001	0.049	0.018	0.047

The regressions are linear probability models. Standard errors are displayed in parentheses. Pledge in Week 1 is a dummy equal to one if the subject pledged in week 1 and zero otherwise. Pledge Fulfillment in Week 2 is a dummy equal to one if the subject fulfilled their pledge and donated in week 2 and zero otherwise. SWEAR is a treatment dummy that takes the value one if the data is from the SWEAR treatment. Time is the average number of impatient choices chosen in the three delay-discounting scenarios. Other definitions of the control variables (i.e., Altruism, Male, Age, One-child, Income, and Frequency) are the same as in Table 1. Significance levels: $^{*}p<0.1$, $^{**}p<0.05$, $^{***}p<0.01$

Foundation, and solicited cash donations online.[17] The project aims to help children with autism, cerebral palsy, or rare diseases to experience a dignified and quality social life.

[17] Founded by acclaimed actor and philanthropist Jet Li, *One Foundation* is a non-governmental organization dedicated to addressing pressing social issues, with a focus on disaster relief, children's welfare, and public health initiatives. Compared to the China Charity Federation, which operates under the guidance and supervision of the Chinese government, *One Foundation* operates with a great degree of autonomy.

Other experimental design and procedures of Experiment 3 were identical to those of Experiment 2. Experiment 3 lasted approximately 22 min, and the average payoff was 23.2 RMB. Experiment 3 was conducted from May to June 2023. The experimental instructions for Experiment 3 are presented in Appendix E3.

2.3.2 Results

Figure 3 presents an overview of the donation behavior by treatment. We find that adding "I swear" to the pledge wording increases immediate giving and reduces pledge in week 1. In the SWEAR treatment, the percentage of subjects who chose to give immediately in week 1 is 54.3% (101 of 186, SE = 3.7%), which is significantly higher than the value of 42.0% (74 of 176, SE = 3.7%) in the CONTROL treatment ($\chi^2 = 5.439$, $p = 0.020$). The percentage of subjects who chose to pledge in week 1 in the SWEAR treatment is 16.7% (31 of 186, SE = 2.7%), which is significantly lower than the value of 25.0% (44 of 176, SE = 3.3%) in the CONTROL treatment ($\chi^2 = 3.823$, $p = 0.051$). The percentages of subjects who chose to say no in week 1 in the SWEAR and CONTROL treatments are 29.0% (54 of 186, SE = 3.3%) and 33.0% (58 of 176, SE = 3.6%), respectively; this difference is not significant ($\chi^2 = 0.651$, $p = 0.420$).[18] This result suggests that adding "I swear" to the pledge wording induces a shift to immediate giving in week 1 among subjects who would have chosen to pledge.

We also find that adding "I swear" to the pledge wording reduces the percentage of subjects who reneged on their pledge in week 2. The percentage of subjects who fulfilled their pledge in week 2 in the SWEAR treatment is 77.4% (24 of 31, SE = 7.6%), which is higher than the value of 59.0% (26 of 44, SE = 7.5%) in the CONTROL treatment; although this difference is marginally significant ($\chi^2 = 2.749$, $p = 0.097$).

Thus, adding "I swear" to the pledge wording both increases immediate giving in week 1 and reduces pledge reneging in week 2. As a result, the percentage of ultimate donations is significantly higher in the SWEAR treatment (M = 67.2%, 125 of 186, SE = 3.5%) than that in the CONTROL treatment (M = 56.8%, 100 of 176, SE = 3.7%) ($\chi^2 = 4.147$, $p = 0.042$).

In Table 3, we report linear probability regressions to estimate the treatment effects. We regress the decision to give now in week 1 in columns (1) and (2), the decision to pledge in week 1 in columns (3) and (4), and the decision to say no in week 1 in columns (5) and (6). Columns (7) and (8) regress the pledge fulfillment in week 2. Columns (9) and (10) regress the ultimate donations, including immediate giving in week 1 and pledge fulfillment in week 2.

Consistent with the previous nonparametric test, the coefficients on *SWEAR* in columns (1) and (2) are significantly positive, the coefficients on *SWEAR* in columns (3) and (4) are significantly negative, and the coefficients on *SWEAR* in columns (5)

[18] In the SWEAR or CONTROL treatments, the differences in the percentage of subjects who chose to say no in week 1 between Experiments 2 and 3 are not significant (χ^2 test, all p values > 0.20), indicating that adding give-now option does not affect the decision to say no.

and (6) are not significant. This result indicates that adding "I swear" to the pledge wording increases immediate giving by reducing the pledge in week 1. The coefficients on *SWEAR* are positive in columns (7) and (8), but only significant in column (7). This suggests that adding "I swear" to the pledge wording has a positive influence on pledge fulfillment in week 2. The coefficients on *SWEAR* in columns (9) and (10) are significantly positive, indicating that adding "I swear" to the pledge wording significantly increases ultimate donations.

An important concern is whether the inclusion of "I swear" in pledge language has negative spillover effects on future interactions with the charitable organization. To address this concern, approximately one month after the end of Experiment 3, we randomly contacted 300 subjects (approximately 80% of the total sample) and asked them to express their feelings and perceptions about the charity and their donations. The results provide suggestive evidence that adding "I swear" to the pledge wording does not have a negative spillover effect on future interactions with the charity (see Appendix B3 for detailed analysis).

2.4 Experiment 4

The aim of Experiment 4 is twofold.[19] First, in Experiments 1, 2, and 3, subjects donate from a windfall rather than from earned money. Experimental evidence shows that subjects donate more money when their endowment is a windfall (Reinstein & Riener, 2012), and that this effect carries over from the laboratory to the field (Carlsson et al., 2013). Thus, the external validity of our findings may be limited, as in real life people donate from their own earned money, but not from a windfall. To address this concern, in Experiment 4 we have subjects earn their endowment in an effort task. Second, in Experiment 4, we use a pool of non-Chinese subjects and vary the second sentence of the pledge wording to test the robustness of our findings.

2.4.1 Design

Experiment 4 was conducted on Prolific Academic, where we recruited a sample of 430 residents of the United States. The link to the experiment website was generated via the Qualtrics survey platform. Subjects were randomly assigned to one of two treatments: CONTROL (215 subjects) and SWEAR (215 subjects). Twenty-three subjects in the CONTROL treatment and eighteen subjects in the SWEAR treatment did not participate in the week-2 experiment, leaving 389 subjects for data analysis (192 subjects in the CONTROL treatment and 197 subjects in the SWEAR treatment). In week 2, the participation rate was 90.5% and was not affected by treatment, the decision made by the subjects in week 1, or the background characteristics

[19] Experiment 4 was pre-registered on AsPredicted (#165,017). We thank the editors and anonymous referees for guiding us to conduct this robustness check experiment. We also note that our four experiments were conducted in a sequential manner, with each subsequent experiment building on the findings of its predecessor.

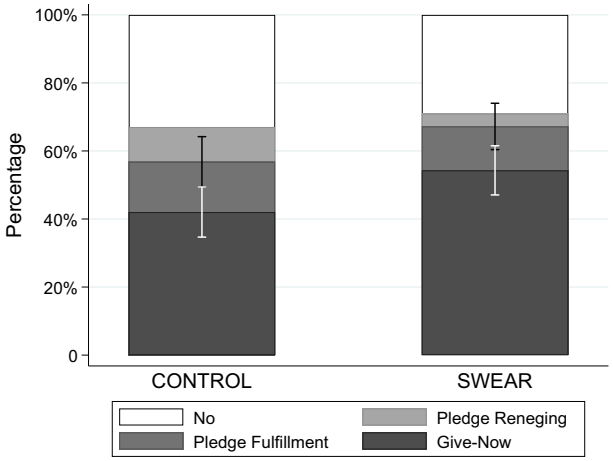

Fig. 3 Donation behavior by treatment in Experiment 3. The white bar shows the percentage of subjects who declined to donate directly in week 1. The light gray bar shows the percentage of subjects who pledged in week 1 but reneged on their pledge in week 2. The gray bar shows the percentage of subjects who pledged in week 1 and fulfilled their pledge in week 2. The dark gray bar shows the percentage of subjects who donated immediately in week 1. Error bars denote 95% confidence intervals

(see Table B13 in Appendix B4). Randomization checks show that the demographic characteristics of the subjects were evenly balanced between the CONTROL and SWEAR treatments (see Table B14 in Appendix B4).

At the beginning of each week of the experiment, subjects could earn money by completing a real effort task adapted from Abeler et al. (2011). The task was to correctly count the number of zeros in five 4×4 tables containing zeros and ones. Subjects earned \$0.3 (\$ denotes United States dollars) for each correct count, such that they could earn up to \$1.5 in each week of the experiment.[20] The income they earned in the effort task was paid as a bonus. In addition to the bonus, subjects also received a show-up fee of \$0.2 in each week of the experiment.

After the effort task, the design and procedure for the week-1 and week-2 experiments were as follows. Specifically, in the week-1 experiment, subjects were asked whether they would like to donate \$1 to GiveDirectly, a non-profit organization that aims to reduce poverty by providing financial assistance directly to people in need. In the SWEAR treatment, subjects could choose from the following three options: "Yes, I would like to donate \$1 today", "Yes, I swear, I would like to donate \$1 next week. Please remind me next week", and "No". In the CONTROL treatment, the three options were the same except that the phrase "I swear" was removed. In the

[20] In week 1, 85.35% (332 of 389) of subjects made five correct counts, 11.83% (46 of 389) made four correct counts, 2.06% (8 of 389) made three correct counts and 0.77% (3 of 389) made two correct counts. In week 2, 87.15% (339 of 389) made five correct counts, 10.03% (39 of 389) made four correct counts, 1.54% (6 of 389) made three correct counts, 0.77% (3 of 389) made two correct counts and 0.51% (2 of 389) made one correct count. Our results are robust when we exclude subjects who made less than four correct counts.

Table 3 Regression analysis of treatment effect for Experiment 3

	Give now in week 1		Pledge in week 1		Say no in week 1		Pledge fulfillment in week 2		Ultimate donation	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
SWEAR	0.123**	0.139***	−0.083*	−0.084*	−0.039	−0.055	0.183*	0.174	0.104**	0.114**
	(0.052)	(0.052)	(0.043)	(0.043)	(0.049)	(0.048)	(0.110)	(0.113)	(0.051)	(0.050)
Altruism		0.034**		0.016		−0.050***		0.018		0.044***
		(0.014)		(0.011)		(0.013)		(0.039)		(0.013)
Time		−0.010		0.007		0.003		0.041		−0.002
		(0.014)		(0.011)		(0.012)		(0.032)		(0.013)
Male		0.008		−0.065		0.057		−0.200		−0.049
		(0.058)		(0.048)		(0.053)		(0.146)		(0.056)
Age		−0.006		0.007		−0.000		0.023		0.004
		(0.010)		(0.009)		(0.010)		(0.024)		(0.010)
One-child		0.090		−0.037		−0.053		0.185		0.090*
		(0.055)		(0.046)		(0.051)		(0.123)		(0.053)
Income		0.011		0.009		−0.020		−0.140***		−0.011
		(0.023)		(0.019)		(0.021)		(0.047)		(0.022)
Frequency		−0.224***		0.032		0.192***		−0.090		−0.210***
		(0.069)		(0.057)		(0.063)		(0.238)		(0.066)
Constant	0.420***	0.843***	0.250***	−0.038	0.330***	0.195	0.591***	0.442	0.568***	0.758***
	(0.037)	(0.295)	(0.030)	(0.245)	(0.035)	(0.271)	(0.071)	(0.818)	(0.036)	(0.285)
Observations	362	362	362	362	362	362	75	75	362	362
R^2	0.015	0.074	0.011	0.027	0.002	0.085	0.037	0.195	0.011	0.082

The regressions are linear probability models. Standard errors are displayed in parentheses. Give Now in Week 1 is a dummy equal to one if the subject gave immediately in week 1 and zero otherwise. Pledge in Week 1 is a dummy equal to one if the subject pledged in week 1 and zero otherwise. Say No in Week 1 is a dummy equal to one if the subject chose to say no in week 1 and zero otherwise. Pledge Fulfillment in Week 2 is a dummy equal to one if the subject pledged in week 1 and fulfilled their pledge in week 2 and zero otherwise. Ultimate Donation is a dummy equal to one if the subject gave in week 1 or fulfilled their pledge in week 2 and zero otherwise. SWEAR is a treatment dummy that takes the value one if the data is from the SWEAR treatment. The definitions of the control variables (i.e., Altruism, Time, Male, Age, One-child, Income, and Frequency) are the same as in Table 2. Significance levels: $^{*}p<0.1$, $^{**}p<0.05$, $^{***}p<0$

week-2 experiment, we asked subjects who pledged in week 1 to make their final donation decision and then collected their demographic information. We also elicited their altruism and time preferences, following Falk et al. (2023), with a combination of responses to a quantitative and qualitative survey measure (see Appendix G2 for a detailed description).[21] For subjects who donated and declined to donate in week 1, we directly measured their demographic information, altruism, and time preferences.

Other experimental design and procedures were identical to Experiment 3. Experiment 4 lasted approximately 12 min and the average payoff was $3.3. Experiment 4 was conducted between March and April 2024. The experimental instructions for Experiment 4 are presented in Appendix E4.

2.4.2 Results

Figure 4 presents an overview of the donation behavior by treatment in Experiment 4. We replicate our previous experimental results and find that adding "I swear" to the pledge wording increases immediate giving in week 1 and reduces pledge reneging in week 2. Specifically, in the SWEAR treatment, the percentage of subjects who chose to give immediately in week 1 is 39.1% (77 of 197, SE = 3.5%), which is significantly higher than the value of 27.1% (52 of 192, SE = 3.2%) in the CONTROL treatment ($\chi^2 = 6.320$, $p = 0.012$). The percentage of subjects who chose to pledge in week 1 in the SWEAR treatment is 5.1% (10 of 197, SE = 1.6%), which is significantly lower than the value of 15.1% (29 of 192, SE = 2.6%) in the CONTROL treatment ($\chi^2 = 10.840$, $p = 0.001$). The percentages of subjects who chose to say no in week 1 in the SWEAR and CONTROL treatments are 55.8% (110 of 197, SE = 3.5%) and 57.8% (111 of 192, SE = 3.6%), respectively; this difference is not significant ($\chi^2 = 0.155$, $p = 0.694$). The percentage of subjects who fulfilled their pledge in week 2 in the SWEAR treatment is 70.0% (7 of 10, SE = 15.3%), which is significantly higher than the value of 37.9% (11 of 29, SE = 9.2%) in the CONTROL treatment ($\chi^2 = 3.077$, $p = 0.079$).[22] As a result, the percentage of ultimate donations is significantly higher in the SWEAR treatment (M = 42.6%, 84 of 197, SE = 3.5%) than that in the CONTROL treatment (M = 32.8%, 63 of 192, SE = 3.4%) ($\chi^2 = 3.994$, $p = 0.046$).

[21] In Experiment 4, we change the measures of altruism and time preferences to check for robustness.

[22] In a laboratory experiment, Andreoni and Serra-Garcia (2021) conduct a Pledge-or-Give-Now treatment similar to the CONTROL treatment in our online Experiments 3 and 4. Comparing the results of the three experiments, a high percentage of giving now is observed in our Experiment 3, a high percentage of pledging and reneging is observed in Andreoni and Serra-Garcia (2021), and a high percentage of saying no is observed in our Experiment 4. These differences may be explained by the source of the endowment and the experimental setting. First, in Experiment 4, the money donated is earned rather than a windfall, which may lead to more refusals to donate directly. Second, in Andreoni and Serra-Garcia's (2021) laboratory experiment, subjects are under more pressure to donate and the cost of participating in the experiment may be relatively high for them compared to our online experiments, which may lead to more pledges but less fulfilment to partially compensate for the cost of participation. Finally, the windfall effect and the low cost of participation together may explain more giving now in our Experiment 3.

As in Table 3, in Table 4 we report linear probability regressions to estimate the treatment effects with and without the controls. We also control for the number of correct counts in the effort task. The regression results in Table 4 are consistent with our previous nonparametric test. Overall, Experiment 4 shows that our findings are robust when the subjects' endowment is earned, when we use non-Chinese subjects, and when we change the second sentence of the pledge wording.

3 Mechanism and heterogeneity

3.1 Underlying mechanism

Having provided strong evidence that adding "I swear" to the pledge wording significantly increases ultimate donations through an increase in immediate giving and a decrease in pledge reneging, we explore the underlying mechanism.

In online fundraising, adding "I swear" to the pledge wording would highlight absolute sincerity and implicate an individual's personal character (Blok, 2013). In this context, reneging on a pledge may cause psychological discomfort (Heller & Sturrock, 2020) and damage self-image (Adena & Huck, 2020), which would impose a high cost of reneging. Thus, subjects may perceive a higher cost of reneging in the SWEAR treatment than in the CONTROL treatment, thereby reducing pledge reneging in week 2. Moreover, a pledge option that begins with "I swear" would promote moral responsibility and evoke divine transcendence (de Bruin, 2016). Consequently, subjects in the SWEAR treatment may not only experience more guilt from directly declining to donate, but also feel more pressure from the pledge choice than in the CONTROL treatment. Thus, adding "I swear" to the pledge wording may increase both the cost of direct declining and the cost of pledging, thereby increasing immediate giving in week 1. Based on a theoretical framework of intertemporal charitable pledges (Andreoni & Serra-Garcia, 2021; Fosgaard & Soetevent, 2022), our arguments are formally derived in Appendix A.

To provide evidence for the underlying mechanism, we recruited 160 college students (80 subjects per treatment) from Shandong University and conducted an online survey study. In the survey, subjects were given the instructions of Experiment 3, but were not asked to make their donation decisions. After reading and understanding the instructions, we measured subjects' perceived costs of direct declining, pledging, and reneging using nine statements on a 7-point Likert-type response scale ranging from 1 (strongly disagree) to 7 (strongly agree).[23] Consistent with our arguments, we

[23] In the SWEAR treatment, the cost of direct declining was measured with "I feel pressured if I refuse to donate", "I feel sorry if I refuse to donate" and "I feel guilty if I refuse to donate"; the cost of pledging was measured with "I feel pressured if I swear I would like to donate", "I feel psychologically burdened if I swear I would like to donate", "I feel pressured currently if I swear I would like to donate and end up donating" and "I feel psychologically burdened currently if I swear I would like to donate and end up donating"; the cost of reneging was measured with "I feel psychologically uncomfortable if I swear I would like to donate but end up not donating" and "If I swear I would like to donate, but end up not donating, it damages my self-image". Except for the removal of the phrase "I swear", the statements in the CONTROL treatment were identical to those in the SWEAR treatment. Our measure of each cost is the average of the corresponding statements.

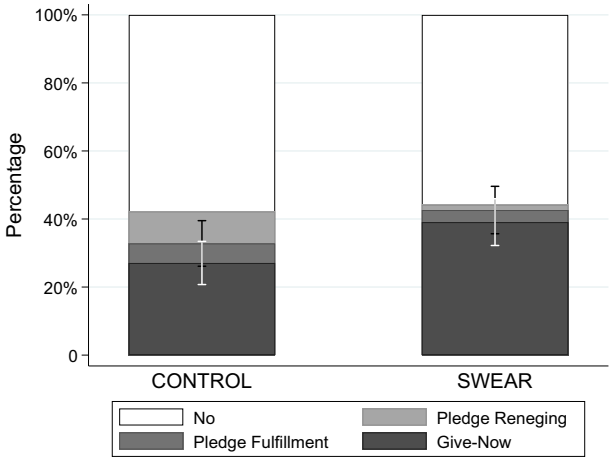

Fig. 4 Donation behavior by treatment in Experiment 4. The white bar shows the percentage of subjects who declined to donate directly in week 1. The light gray bar shows the percentage of subjects who pledged in week 1 but reneged on their pledge in week 2. The gray bar shows the percentage of subjects who pledged in week 1 and fulfilled their pledge in week 2. The dark gray bar shows the percentage of subjects who donated immediately in week 1. Error bars denote 95% confidence intervals

find that subjects in the SWEAR treatment perceive a higher cost of direct declining, pledging, and reneging than in the CONTROL treatment. This result provides suggestive evidence that adding "I swear" to the pledge wording may increase the perceived costs of direct declining, pledging, and reneging, thereby increasing immediate giving and pledge fulfillment.[24] The detailed results of the survey study can be found in Appendix C1.

To provide further evidence for the mediating role of the cost of reneging between the SWEAR treatment and ultimate donations, in Experiment 3 we measured the cost of reneging at the end of week-2 experiment. We conduct an exploratory causal mediation analysis that provides suggestive evidence that the cost of reneging may be a mechanism underlying the effect of the SWEAR treatment on ultimate donations (see Appendix C2 for detailed analysis).

3.2 Individual heterogeneity

After providing suggestive evidence for the mechanism underlying the treatment effect, we examine the individual heterogeneity. In particular, we test whether there is a heterogeneous treatment effect in moral identity.

An identity is a person's sense of self. A moral identity is a specific type of identity that revolves around the moral aspects of the self. Following the social psychological literature (Aquino & Reed, 2002), we define moral identity as a self-concept

[24] We note that our evidence on the underlying mechanism is suggestive but not conclusive, as our measure of the mechanism is the non-incentivized survey question.

Table 4 Regression analysis of treatment effect for Experiment 4

	Give now in week 1		Pledge in week 1		Say no in week 1		Pledge fulfillment in week 2		Ultimate donation	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
SWEAR	0.120**	0.108**	−0.100***	−0.104***	−0.020	−0.004	0.321*	0.348*	0.098**	0.081*
	(0.047)	(0.044)	(0.030)	(0.030)	(0.050)	(0.045)	(0.180)	(0.188)	(0.049)	(0.044)
Altruism		0.226***		0.034*		−0.260***		0.217**		0.258***
		(0.029)		(0.020)		(0.030)		(0.105)		(0.029)
Time		0.000		0.003		−0.004		−0.051		−0.006
		(0.025)		(0.017)		(0.026)		(0.102)		(0.026)
Male		0.001		0.011		−0.012		−0.033		0.003
		(0.046)		(0.032)		(0.047)		(0.186)		(0.046)
Age		−0.001		0.001		−0.000		0.003		−0.000
		(0.002)		(0.002)		(0.003)		(0.009)		(0.002)
Income		0.025*		0.002		−0.027*		−0.092*		0.018
		(0.014)		(0.010)		(0.015)		(0.054)		(0.014)
Frequency		0.013		−0.044		0.032		−0.093		−0.021
		(0.048)		(0.033)		(0.049)		(0.182)		(0.048)
Correct1		0.061		0.010		−0.071		−0.116		0.048
		(0.046)		(0.031)		(0.047)		(0.200)		(0.047)
Correct2								0.317		0.022
								(0.201)		(0.042)
Constant	0.271***	−0.106	0.151***	0.166	0.578***	0.940***	0.379***	−0.226	0.328***	−0.011
	(0.034)	(0.260)	(0.021)	(0.178)	(0.036)	(0.267)	(0.091)	(1.360)	(0.035)	(0.309)
Observations	389	389	389	389	389	389	39	39	389	389
R^2	0.016	0.179	0.028	0.051	0.000	0.215	0.079	0.369	0.010	0.221

The regressions are linear probability models. Standard errors are displayed in parentheses. Altruism and time are a combination of responses to a quantitative and a qualitative survey measure (Falk et al., 2023). Income is an ordinal variable coded as 1, 2, 3, 4, 5, and 6 if total household income per year is less than $25,000, $25,000-$49,999, $50,000-$74,999, $75,000-$99,999, $100,000-$150,000, and more than $150,000, respectively. Correct1 and Correct2 are the number of correct counts made in the effort task in weeks 1 and 2, respectively. The other definitions of variable (i.e., Give Now in Week 1, Pledge in Week 1, Say No in Week 1, Pledge Fulfillment in Week 2, and Ultimate Donation, SWEAR, Male, Age, and Frequency) are the same as in Table 3. Significance levels: $^{*}p<0.1$, $^{**}p<0.05$, $^{***}p<0.01$

organized around a set of moral traits (e.g., caring, compassionate, and helpful), and it is a cognitive schema a person holds about his or her moral character. Individuals typically strive to maintain self-consistency, and those who define themselves in terms of moral traits are likely to be motivated to act in a morally upright manner to preserve this self-conception. Individuals with high moral identity consider moral concerns to be more important and central to their self-concept, so they expend more effort to regulate their behavior in accordance with their internal moral self-concept than those with low moral identity (Aquino & Reed, 2002).

Applying this to our settings, we argue that subjects with high moral identity may be more likely to donate immediately under any circumstances. This is because they have internalized a moral self-concept, and any deviation from it would lead to increased costs. Thus, adding "I swear" to the pledge wording may not affect the donation decision of high moral identity subjects. In contrast, subjects with low moral identity may do not care about their moral self-concept; adding "I swear" to the pledge wording may increase their perceived costs of direct declining, pledging, and reneging, leading to an increase in immediate giving and a decrease in pledge reneging.

To test this, we measured moral identity in Experiments 2, 3, and 4 using the self-importance of moral identity scale developed by Aquino and Reed (2002).[25] This scale captures two dimensions of moral identity: internalization and symbolization. The former reflects the degree to which a set of moral traits is central to one's self-concept, while the latter reflects the degree to which these traits are publicly expressed through a person's actions. Because our theoretical explanations are based primarily on the internalized moral self-concept, we measured only the internalization dimension of moral identity using Aquino and Reed's (2002) subscale.

Specifically, subjects were asked to read a list of nine characteristics that could describe a person (i.e., caring, compassionate, fair, friendly, generous, helpful, hard-working, honest, and kind) and then to visualize "the kind of person who has these characteristics [and] imagine how that person would think, feel, and act." After being asked to think about someone who has these characteristics, subjects were asked to complete five items, such as "It would make me feel good to be a person who has these characteristics."[26] A 7-point Likert-type response scale ranging from 1 (strongly disagree) to 7 (strongly agree) was used for each of the items.

The results of Experiments 2, 3, and 4 consistently show that adding "I swear" to the pledge wording only affects the donation decision of subjects with low moral identity, but not of subjects with high moral identity. We also provide suggestive evidence that adding "I swear" to the pledge wording may increase the cost of

[25] In Experiments 2 and 3, moral identity was measured at the end of week-1 experiment, whereas in Experiment 4 it was measured at the end of week-2 experiment. This was done to check the robustness of the individual heterogeneity.

[26] The other four items were "Being someone who has these characteristics is an important part of who I am", "I would be ashamed to be a person who had these characteristics", "Having these characteristics is not really important to me", and "I strongly desire to have these characteristics". We used the average of the five items as a measure of moral identity. Subjects whose scores were above or equal to the median were classified as high moral identity, and the rest were classified as low moral identity.

reneging for low moral identity subjects, but not for high moral identity subjects. Detailed individual heterogeneity analyses for Experiments 2, 3, and 4 are presented in Appendix D.

4 Discussion

Although pledges are commonly used in fundraising to encourage donations, they are often reneged upon. Our paper addresses this crucial issue and provides an effective approach to increasing pledge fulfillment. By conducting four experiments in the context of online fundraising, we show that including the phrase "I swear" in pledge wording can increase immediate giving and decrease pledge reneging, resulting in more ultimate donations. The increase in immediate giving is primarily driven by more individuals switching from pledging to immediate giving after adding "I swear" to the pledge wording. Adding "I swear" to the pledge wording has no effect on the decision to decline giving directly. Our findings are robust to non-Chinese subjects (i.e., samples from the United States) and remain robust regardless of whether the endowment is a windfall or earned.

We also investigate the underlying mechanism and individual heterogeneity. We provide suggestive evidence that the perceived costs of direct declining, pledging, and reneging may be the mechanisms underlying the treatment effect. Furthermore, we observe a heterogeneous treatment effect in moral identity: Including "I swear" in the pledge wording increases immediate giving and pledge fulfillment only among individuals with low moral identity, but not among those with high moral identity.

In summary, our findings suggest that adding the phrase "I swear" to pledge language can reduce pledge reneging and increase ultimate donations in online fundraising. In recent years, online fundraising has gained tremendous popularity among fundraising managers, and an increasing amount of charitable giving is moving online. Therefore, it is important to design an effective strategy to increase pledge fulfillment in online fundraising. Our paper provides such a strategy, which is both simple and cost-free. Fundraising managers who apply our strategy to online fundraising do not need to spend any additional time or effort.

Despite these advantages, it is an open question whether our strategy can be applied to offline fundraising. This is because our experiments are conducted in the context of online fundraising, where self-image concerns are a key motive for giving (Adena & Huck, 2020). In offline fundraising, such as door-to-door fundraising, potential donors' giving decisions are often asked face-to-face by fundraisers, and thus giving is primarily driven by social image concerns (Ariely et al., 2009) and social pressure (DellaVigna et al., 2012). We leave this question for future studies that can examine whether our strategy is effective in increasing cash donations in offline fundraising.

Moreover, the phrase "I swear" can have different meanings and implications depending on the cultural context. For example, in some secular or non-religious cultures (e.g., China and United States), the phrase may simply be used to emphasize or express the sincerity of a statement and may be used casually in everyday conversation. In religious cultures (e.g., Iran), however, "I swear" may be seen as a solemn declaration made before a deity or deities. In such a culture, using the phrase casually or in

a non-religious context may be considered inappropriate or disrespectful. Therefore, when applying our strategy to online fundraising, the specific cultural context should be considered.

In addition, in our experiments, subjects who pledged would be reminded of their pledge choice and asked to make their final donation decision later. In practice, however, it is often difficult for charities to reconnect with potential donors. In a field experiment on door-to-door fundraising, Fosgaard and Soetevent (2022) show that when the charity does not reconnect with potential donors, most of them do not follow through with their pledged donations. This suggests that the subjects in our experiments may have reduced their reneging because they were actively approached by the experimenter. Future studies are needed to investigate whether our findings are robust when we do not reconnect with subjects who have pledged.

Finally, pledges are ineffective in increasing not only cash donations (Andreoni & Serra-Garcia, 2021; Fosgaard & Soetevent, 2022; Sutan et al., 2018), but also blood and effort donations (Capra et al., 2022; Meyer & Tripodi, 2021). Future studies can examine whether adding "I swear" to pledge language is an effective strategy for increasing blood and effort donations.

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Declarations

Conflict of interest The authors have no conflict of interest.

Ethical approval Our experiments were approved by the Research Ethics Board of Shandong University.

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