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**Transaction Costs, the Opportunity Cost of Time and
Procrastination in Charitable Giving**

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Transaction Costs, the Opportunity Cost of Time and Procrastination in Charitable Giving

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Abstract: We conduct a laboratory experiment to study whether giving people more time to donate to charity reduces donations. People may intend to donate, but because of the transaction costs of doing so, postpone making the payment until they are less busy, and having postponed making the donation once, keep postponing. We conjecture that transaction costs will have a greater effect on donations if the solicitation is received when the opportunity cost of time is high. We find evidence of a transaction cost reducing donations, with the size of this effect depending on the opportunity cost of time, but no statistically significant evidence that giving people more time to donate increases procrastination and thus reduces donations.

Keywords: charitable giving; dictator game; transaction costs; opportunity cost of time; procrastination, inattention

JEL Classifications: C91, D64

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“Many things never get done not because someone has chosen not to do them, but because the person has chosen not to do them *now*.” (Tversky and Shafir, 1992, p. 361, italics in original).

1. Introduction

Do some people intend to give money to charity, but simply never get around to doing so? For example, someone may read an email asking for a donation and is inclined to donate, but as she is busy preparing for a meeting decides to wait until after the meeting to donate via the charity’s website. It is then possible that having delayed making the donation once, she will do so again, and procrastinates until the opportunity to donate has passed, or she has forgotten about it (e.g. Akerlof, 1991; O’Donoghue and Rabin, 1999; Shu and Gneezy, 2010). The inefficiency associated with people not getting around to completing a task that is beneficial to them has been documented in a number of contexts (e.g. joining a retirement savings scheme, claiming rebates, redeeming vouchers, etc.), which all involve a transaction cost. Giving to charity, especially in response to solicitations received by mail or email, also typically involves a transaction cost; examples include writing out a check and posting it or visiting the charity’s website and entering credit card details. We argue that the presence of even a small transaction cost might have implications for the likelihood of procrastination, depending on the opportunity cost of time when the opportunity to take an action first arises. In the case of charitable giving this means analyzing if people are more likely to donate if they are not busy when they first receive the solicitation. This has important policy implications as finding ways to reduce transaction costs, and minimizing the potential for procrastination, could increase donations.

Building on the existing literature on procrastination, we incorporate the interaction between transaction costs and the opportunity cost of time (at the time of solicitation) in the following way. We conjecture that procrastination is likely to exist in the presence of transaction costs when two other conditions are satisfied simultaneously: (1) making a donation does not have to be made on the spot but can be postponed until later (which is usually the case with requests sent out by mail or email) and (2) the opportunity cost of donors’ time at the moment they receive the solicitation is high relative to the magnitude of transaction costs. The intuition is that if someone could transfer money to a charity without this taking up any time and effort, there would be less reason to postpone the actual donation, once the decision to donate has been made. However, if potential donors are approached when they are busy, even

a small transaction cost may be enough to prevent them from donating immediately. Having postponed donating once, they may do so again until the opportunity to donate has passed. A straight forward corollary is that if potential donors are approached when they are not busy, they might choose to make a donation right away even if it involves a transaction cost. Finally, if there is no option to postpone the decision (e.g. as in street collections) there is no scope for procrastination.

A number of studies have tested for the presence of procrastination by varying the deadline by which people need to perform a task (e.g. redeem a voucher for a café or claim a rebate). From the perspective of the optimal stopping theory (see Chow, Robbins, and Siegmund, 1971), a longer deadline would likely increase response rates as giving people more time to complete a task increases the probability of finding a time to donate when the transaction costs, interacted with the opportunity cost of time, are expected to be lower than under a shorter deadline. However, the studies with variable deadline lengths typically find response rates are higher for shorter deadlines, providing evidence that procrastination is a common phenomenon in these contexts (Janakiraman and Ordóñez, 2012; Shu and Gneezy, 2010; Tversky and Shafir, 1992). In contrast, in two charitable giving field experiments, one requiring the donors to send a text message with the other requiring them to enter credit card details on the charity's website, Damgaard and Gravert (2014) find no evidence of a deadline effect. None of these studies analyze the role of transaction costs or the opportunity cost of time.

Charitable giving differs from redeeming vouchers or claiming rebates in that utility is derived from the consumption of others, or the warm glow of giving, not from increasing the donor's own consumption. Whereas most models of procrastination assume people must undertake an activity by a specified deadline, in the charitable giving case there is no compulsion to donate, so people who intend to donate may forget to do so. Although this is also the case in contexts like redeeming vouchers, it is likely that the proportion of people choosing to donate will be lower than the proportion of people redeeming vouchers. Furthermore, there is evidence that some people suffer disutility from being asked to donate (e.g. Dana et al., 2006; DellaVigna et al., 2012). Therefore, it may well be that the effects of deadline length on charitable giving are not the same as for redeeming vouchers and claiming rebates. For example, if people 'conveniently' forget to donate then procrastination is more likely in the charitable giving case. Alternatively, if people are less likely to 'find' the time to

donate than they are to claim a rebate, this would partly mitigate the negative relationship between deadline length and response rates, making procrastination less likely.

We nest our experimental manipulations in the Dictator Game with a charity as the recipient. First implemented by Eckel and Grossman (1996), there now exists a large body of literature which uses Dictator Games to analyze giving to charity. However, in all of these studies subjects decide while in the laboratory whether to donate and then make any payment immediately. Hence, there is no possibility for procrastination, as the payment cannot be delayed. There are also no transaction costs, as participants who choose not to donate do not get to leave the lab any earlier than those who do donate. However, in everyday life, giving money to charity nearly always involves a transaction cost. Outside the lab there is also the possibility of procrastination, as making the payment can often be put off to another time.

Testing our conjectures requires a design that controls for both the presence of transaction costs and the magnitude of the opportunity cost of time when the solicitation is first received. We introduce a transaction cost by having subjects, who wish to donate, walk to another location on campus to make their donation. To control for the opportunity cost of time at the moment of solicitation we develop a novel procedure that allows us to vary whether (i) subjects can donate immediately after the experimental session, but when they had expected to still be in the laboratory taking part in the experiment (i.e. the experimental session finished earlier than advertised), which serves as a proxy for a low opportunity cost of time, or (ii) whether the donation cannot be made until the following day, which rules out donating when we know the opportunity cost of time is low. If procrastination exists in the context of charitable giving, giving people more time to donate will reduce donations because with longer deadlines people tend to procrastinate more and are more likely to forget to donate. To test whether longer deadlines lead to lower donations, we vary the amount of time the subjects have available to donate. For reasons discussed in Section 3, we conduct these treatments across two separate studies, performed three months apart. We do not incorporate reminders in our experiments, as charities are unlikely to make frequent use of reminders in everyday life.

To sum up, our main contribution to the literature stems from analyzing the effect of the opportunity cost of time when the opportunity to undertake a task first arises. In the context of charitable donations this is at the time of solicitation. We also analyze whether deadline length affects charitable donations which has practical implications for charities designing

their campaigns. Our method for controlling for the opportunity cost of time in lab experiments could also be applied to a number of other research questions in the lab.

2. Literature Review

Our experimental design allows us to isolate the effect of transaction costs on charitable giving in the lab. Two studies explore the effect of transaction costs in the context of charitable giving in the field: Huck and Rasul (2010) and Meer and Rigbi (2013). However, these studies are unable to control for the opportunity cost of time at the moment of solicitation. Huck and Rasul conduct two experiments. In the first they assume that subjects who did not respond to an initial postal request to donate, but did respond to a reminder, responded to the reminder because it triggered a new draw from the same distribution of transaction costs (e.g. perhaps they were not as busy when the reminder letter arrived). There were a significant number of responses to the reminder letter, which Huck and Rasul argue implies the presence of transaction costs. The idea that people face different transaction costs at different times is consistent with our contention that when people are asked to make a donation they will sometimes have time to do so immediately, and sometimes will not. If they do not have time now, and postpone making the donation, it is possible they will never get around to donating. In Huck and Rasul's second experiment a solicitation letter is sent out for a separate fund raiser. Different treatments provide different payment options (a bank transfer versus a pre-filled bank transfer form or paying by credit card over the phone). When the transaction costs of donating were lower, the response rate was higher, but mean donations were not significantly different.

Meer and Rigbi (2013), in a randomized natural experiment, analyze transactions costs in the context of whether people donating money to entrepreneurs in developing countries, through the Kiva online platform, are more likely to donate money to projects where the information posted about the project is in the donor's own language. They argue that having to translate the information represents a transaction cost. Meer and Rigbi find evidence of a transaction cost effect, for donors living in a country where English is the main language. Note, however, that Meer and Rigbi are not so much focusing on the effect of transaction costs on the decision of whether to donate or not as those using the website have incurred a fixed cost of signing up, and the fact that they are browsing the website indicates a desire to donate.

Instead they are focusing on the effect of transaction costs on the decision of who to donate to, conditional on having an interest in making a donation.

Procrastination is related to willpower depletion in the face of temptation (modeled by Halevy, 2008; Harris and Laibson, 2013; Dekel and Lipman, 2011; Fudenberg and Levine, 2006; Ozdenoren, et al., 2012). In the economics literature procrastination is often discussed in the context of inconsistent time preferences where people find reasons to put off doing onerous tasks that generate immediate costs and future rewards (e.g. O'Donoghue and Rabin, 1999). However, as argued by Shu and Gneezy (2010) the tendency to procrastinate can also apply to positive experiences with immediate benefits such as redeeming vouchers. Shu and Gneezy find that vouchers are more likely to be redeemed the shorter the expiry date, suggesting that people tend to procrastinate more when deadlines are longer, which often results in forgetting to complete the task.

Donating money to charity because of the warm glow (at the moment of making a decision to donate), or because the donor cares about the recipient's payoff, is likely another example of immediate benefits. O'Donoghue and Rabin's model in fact considers both types of situations: when the costs are immediate while the rewards are delayed and when the rewards are immediate but the costs are incurred in the future. The doing-it-once version of the model assumes that the decision maker (DM) must perform the task exactly once during $T < +\infty$ available periods and in each period she decides whether to perform the task and incur the cost or whether to postpone. If she performs the task in period t , she receives the benefit and makes no further choices in the future. If she postpones, she faces the same decision in the next period. If she postpones until the last period, she must perform the task then.

O'Donoghue and Rabin differentiate between three types of DMs: people with standard exponential time-consistent preferences, naifs, and sophisticates. Naifs and sophisticates represent people with present-biased preferences who have self-control problems, with the main distinction being that sophisticates are aware of their self-control problem while naifs believe that they are time-consistent.¹

¹ Self-control problems have numerous conceptualizations with the main theme being that people tend to give up to impulses against their better judgment. Related to our topic of charitable giving, Martinsson et al. (2012) show that individuals might experience a self-control conflict when tempted to act selfishly while at the same time they have the better judgment to act pro-socially. This line of research shows that subtle cues and commitment devices might prompt individuals to overcome their self-control problems.

Manipulating whether or not subjects could donate immediately following the lab session could be interpreted as changing the magnitude of the immediate costs (i.e. the interaction of transaction costs with the opportunity cost of time) of making a donation. O'Donoghue and Rabin's model would predict that the perceived magnitude of the cost would change depending on whether it was possible to donate immediately or not. Assuming particular time preferences, time-consistent people would donate at a moment that is expected to minimize their transaction cost, which might be right after the experiment, if such an option is available, or in the future when they might be near the donation box. If donating immediately after the experiment is not an option, they would donate at a time when they are close to the box. Sophisticated procrastinators, due to their present-biased preferences, would not make a donation immediately after the experiment, even if such an option is available. However, being aware of their self-control problems, they would make the donation the following day. Finally, naifs would not make a donation following the experiment; rather they would postpone it until the very last moment and, assuming they remember to do so, donate just before the deadline. Because of O'Donoghue and Rabin's assumption that the task *must* be completed, their model predicts that there are likely to be many late donations, but changing the deadline will not reduce the number of donations.

The assumption that that if the task has not been completed by the final time period, it must be completed immediately does not necessarily hold in some of the contexts in which procrastination has been demonstrated (e.g. in Shu and Gneezy, 2010 with respect to redeeming vouchers) and clearly does not hold in the context of charitable giving. An intuitive theoretical framework, which builds on the notion of procrastination, and which incorporates the possibility of people forgetting to take an action and missing the deadline, is provided by Taubinsky's (2014) model of inattention (see also Karlan et. al, 2012).

Taubinsky (2014, p. 13) argues that "a decision maker may form a clear intention for how he would like to act in the future, but then fails to follow through on that intention because it is not top of mind." This is similar to the notion of overconfidence of prospective memory, which Ericson (2011) defines as people overestimating their ability to perform a task in the future. In Taubinsky's model of one-off tasks with deadlines the DM learns about the task (for example, she purchases a television and learns about the opportunity to claim a rebate on the purchase price) in time period 0. The rebate can be claimed any time from time period 1 until a specified deadline. Starting in time period 1, the DM decides whether or not to claim the rebate in that time period, comparing the benefits of taking the action to the opportunity

cost of doing so. However, there is a probability that the DM will be inattentive, and not even think about claiming the rebate during that time period. Sophisticated DMs are aware of the possibility of future inattentiveness, and will take steps to protect against this such as taking the action early or creating reminders, knowing that if they do not, they may well forget about it. Naïve DMs, on the other hand, mistakenly assume that they will be fully attentive in all time periods, and put off tasks that they fully intend to do, but never get around to doing them because they miss the deadline. Taubinsky conducts a lab experiment in which subjects register online to complete a 20-minute survey, which cannot be completed until the next day at the earliest, and finds that a long deadline (21 days) has a significantly lower response rate than a short (2 days) deadline. In Taubinsky's model and experiment, the DM cannot complete the task in time period 0, when she first learns about it. However, in many everyday contexts, including charitable giving, it is possible to complete the task immediately.

Analyzing whether, and under which conditions, people postpone completing a task, and whether this leads to not completing it at all, is the focus of our research. It is important to note that while models of procrastination and inattention provide important insights about factors that could be driving people's behavior when postponing donations, our experiments were not designed to explicitly discriminate between these two models. Instead our focus was on the policy questions of whether giving people more time to donate reduces donations, and whether this depends on the opportunity cost of time at the moment of solicitation. However, we do, in Section 6, comment on the extent to which our findings are consistent with these two models.

3. Study 1 Experimental Design and Procedures

The experiment took place in the New Zealand Experimental Economics Laboratory (NZEEL) at the University of Canterbury in April and May 2013, with 246 undergraduate students serving as subjects. Subjects were selected randomly from the NZEEL database using the ORSEE recruitment system (Greiner, 2004). The sessions were advertised as a 'Life as a Student' survey, for which the participants would receive \$20, followed by a short decision-making task. The survey questions are provided in the appendix. We advertised that a session might take up to one hour, however, each session lasted only 35-40 minutes.

Upon entering the laboratory all participants were seated at cubicles. After reading through the survey instructions, we handed out the survey forms in large manila envelopes. The

subjects were given 10 minutes to complete the survey, after which they were asked to place the forms back into the manila envelope to protect their anonymity. After the completed surveys were collected in, we handed out instructions for the decision-making task. The instructions informed the subjects that we were going to hand out white envelopes containing their \$20 payment. They were asked to open the envelope and confirm it contained \$20, since we needed them to sign a receipt for accounting purposes before they left the lab. Subjects were then given an opportunity to donate some, or all, of their \$20 payment to *World Vision New Zealand*, who are a registered charity doing development work in poor countries overseas. We did not provide any further information about the charity, but World Vision is a very well-known charity in New Zealand, especially among younger people as many secondary schools participate in *World Vision's* annual 40-hour famine. We informed subjects that any money they chose to donate would be matched by us dollar for dollar and we would forward all money directly to *World Vision*. The white envelope contained a \$10 note, a \$5 note, two \$2 coins and a \$1 coin, so it was possible to donate any whole dollar amount, between \$0 and \$20. We reminded the subjects that they were under no obligation to donate any money unless they wished to do so. As subjects came to the lab with an expectation of earning \$20 for completing the survey, they likely viewed their payment as earned income, rather than as a windfall gain. We suspect that with earned income subjects are rather unlikely to change their donation decision due to an entitlement effect kicking in once they had a chance to 'sleep on their decision'.

Subjects randomly selected a blue envelope from a box carried around the lab by one of the experimenters. This envelope contained a blue form with a space to indicate how much money, if any, subjects wished to give to *World Vision*, and how much this meant *World Vision* would receive following the matching subsidy.² Requiring subjects to write down both the amount of their donation, and how much *World Vision* would receive, enabled us to verify that subjects understood the nature of the matching subsidy. The matching subsidy was a particularly important aspect of our design. A potential concern with Dictator Games where the recipient is a charity is that subjects may choose to send the money to the charity, or to a different charity, themselves rather than donating the money as part of the experiment. The

² In the light of Taubinsky's (2014) model, the blue envelope and blue form could also serve as cues reminding subjects to make a donation as long as they placed them in a visible place. We would expect sophisticated subjects to place it strategically to mitigate their inattention (unless they donated promptly) while naïve subjects, who are not aware of their inattention, would not create a reminder on purpose; however, the blue form can still act as a reminder cue as long as it is in a prominent place.

matching subsidy, however, creates a strong incentive for subjects to donate the money as part of the experiment. The way the actual donations were made, varied across treatments and is described below.

The experiment was run under a double-blind social distance protocol to make subject decisions completely anonymous and thus constant across treatments. This was crucial since we wanted to ensure that the subjects did not perceive their decisions to be more anonymous in treatments where donations were dropped in a box in a different location on the university campus, as opposed to in a box right outside the lab. In each treatment we took care to make sure that subject's behavior could not be observed by their peers or the experimenters. While in the lab subjects were seated at partitioned cubicles so it was not possible for anyone to observe what they wrote on the blue form and how much money they put inside the blue envelope and how much money they kept. Neither subjects' names nor their student ID numbers appeared on any form that recorded their decisions. The only identifying marks were alpha-numeric codes on the donation forms and envelopes. We explained to participants that since they randomly picked an envelope from a box, we had no way of knowing who had been assigned which code. In an attempt to minimize the chances that the subjects' donation decisions would be influenced by their peers, at the end of the session we asked the subjects one at a time to come up to a room at the back of the laboratory and sign a receipt for \$20. This ensured that they left the lab at 30-40 second intervals. We asked subjects not to wait around outside the lab, and checked to make sure that they did not. Given these steps taken to guarantee subjects' anonymity, we think it unlikely that there are any differences across treatments in the social pressure to donate. However, if subjects *perceived* scrutiny to be higher in some treatments, due to the proximity of the experimenters and/or other subjects, this could lead to higher donations as a result of social pressure to give (Levitt and List, 2006; DellaVigna et al., 2012). However, for this to confound our results would require this effect being greater in some treatments than others which we think is unlikely given the steps taken to ensure strict anonymity in all treatments.

We acknowledge that by leaving the lab we might be losing some control over the data generating process, just as in field experiments or field studies. For example, our subjects may initially decide to donate, but then change their mind if, before getting around to donating, they face some unexpected expenditures that could change their donation decision. Alternatively, they might also receive some unexpected income that could make them more likely to donate. However, this departure from the lab allows us to add realism by introducing

transaction costs into the picture and also enables us to control for the opportunity cost of time.

In order to analyze the effects of transaction costs and procrastination on charitable giving we implemented a baseline and four different treatments, using an across-subjects design. What varied across the different treatments was when and where any donation was made. In *Baseline (B)* participants placed the blue envelope containing their transfer form and their donation, if any, in a box outside the laboratory immediately following the experimental session. Subjects were told to put any money they had chosen to keep in their pocket or bag. Subjects filled in the transfer form, and, if they chose to make a donation placed the money in the envelope, while seated at a partitioned cubicle. Subjects who did not wish to make a donation also put the blue envelope in the box outside the lab, but without any money. These procedures ensured that nobody, including the other subjects or the experimenters, could find out the size of the donation (and link it to a person's identity), even if this donation was zero. This was also explained in the instructions, for the Baseline and all the other treatments. Making a donation at the time of the experiment is the standard procedure in Dictator Games with a charity acting as the recipient. In this treatment there is no transaction cost or possibility for procrastination.

In the *One Hour (1H)* treatment, participants wishing to make a donation had to place the blue envelope, containing their donation and the blue donation form, in a secure box located elsewhere on the university campus, and had one hour (following the advertised completion time of the survey) to do so. We refer to the amount of time taken to walk to the donation box as the "nominal transaction cost". The "effective transaction cost" depends on both the nominal transaction cost and the opportunity cost of time. The walking time from the lab to the donation box is approximately 5 minutes. The lab is located on the outskirts of the campus, with the box being located in a more central part of the campus. So for subjects planning on walking back towards the center of the campus following the experimental session, the marginal amount of time to walk to the box would be less than 5 minutes, and for participants planning on heading in the opposite direction following the session it would be more than 5 minutes. Therefore, the nominal transaction cost might vary across participants. This is also true in everyday life where some participants will write a check and post it, others will pay online, and for those paying online internet speeds may differ. In order to ensure the secure box was easy to find, participants in *1H*, and all subsequent treatments, were provided

with a map showing the location of the box. On the map we included the time by which they needed to make a donation, if they wished to do so.

The *IH* treatment introduces a transaction cost: the time taken to walk to the donation box. As participants had been told the experimental session would take up to 60 minutes, and the last participant left within 35-40 minutes, we know that participants had plenty of time to walk to the box before the 60 minutes of planned lab time was up. In other words, the nominal transaction cost was being incurred during time for which all subjects should have had no previous plans. This is not to say the opportunity cost of walking to the box was zero, as they could, when leaving the lab, choose to do something else with the time, but the opportunity cost would not likely be high.

As it was important to our design that subjects expected to be in the lab for an hour, we took a number of steps to emphasize this. The recruitment email explicitly twice specified the duration of the experiment. In addition, the majority of sessions carried out in the lab do last for one hour. Note also that the \$20 subjects were paid is roughly what university students in New Zealand are paid for one hour's work in other contexts. Anecdotal evidence supports that subjects did indeed expect to be in the lab for an hour as a number of them expressed surprise, when signing the receipt at the end, that the session had finished so early.

The potential for procrastination is extremely low in the *IH* treatment as there is very little scope for postponing making a donation. The only possible source of procrastination would be for someone to decide to make a donation in 60 minutes time, rather than immediately after leaving the lab, and then not get around to doing so. Hence, we interpret any difference between *B* and *IH* as being due to transaction costs.

Our *One Day (1D)* treatment is identical to *IH*, except that subjects were given 25 hours to make a donation. This treatment includes the transaction cost and, as making a donation can be delayed until the following day, this treatment introduces potential for procrastination. This treatment enables us to observe, by clearing the box on the day of the experiment as well as at the deadline, the proportion of people who choose to make their donation promptly following the laboratory session. We also wanted to check the box to make sure no-one donated outside of the allowable times and found no instances of this. We were careful not to clear the box too regularly, as we did not want subjects to observe us clearing the box and postpone making a donation.

In our first two treatments (*ID* and *IH*), subjects were able to make their donation immediately upon leaving the laboratory, during planned lab time. As discussed previously, this is analogous to receiving a request from a charity when you have time on your hands to donate immediately (when your opportunity cost of time is low). To simulate the everyday life situation where a request is received at a time when the opportunity cost of time is high, our *Next Day (ND)* treatment only allowed for donations to be made (in the same box located elsewhere on campus) between 8am and 5pm the following day. This represents a higher effective transaction cost compared to the other treatments, as subjects do not have the option of making the donation in planned lab time.³ By not allowing donations until the following day, this treatment also allows for procrastination, in the sense that participants might intend to donate the following day, but not get around to doing so. In fact, as we ruled out donating immediately, the potential for procrastination is higher than in any of our previous treatments.

Our original intention was also to include a *Next Day all Week (NDW)* treatment, similar to *ND*, but with subjects being given a week to donate. However, when we ran the experiment we found that average donations were sufficiently low in *ND* that it would be difficult to observe a statistically significant lower level of donations in *NDW*. Hence, we postponed running the *NDW* treatment and re-calibrated the design to increase average donations across treatments, then conducted *ND* and *NDW* using these new procedures. This second study was conducted three months after Study 1. Further discussion of *NDW* is left for Section 4.

The different experimental treatments for Study 1 are summarized in Table 1. There is no transaction cost or procrastination in the *Baseline*. *IH* introduces a nominal transaction cost but no procrastination, with *ID* including both a nominal transaction cost and the potential for procrastination. In both *IH* and *ID* the donation can be made during planned lab time, so the opportunity cost of time is low, at the time the solicitation is received. *ND* has both a nominal transaction cost and procrastination, but the donation cannot be made in planned lab time, or even the same day, representing a high opportunity cost of time. As the effective transaction cost depends both on whether there is a nominal transaction cost and whether the

³ An alternative way of creating a high opportunity cost of time would have been to have a treatment where subjects remained in the lab for the full hour the session was advertised for. However, we would not have known whether subjects were busy or not when they left the lab. If subjects were not busy when they left the lab after an hour, this treatment would actually be very similar to *ID*. The *ND* treatment, by contrast, imposes an infinite opportunity cost of time when the solicitation is made, providing a clean comparison with *ID*, where we knew the opportunity cost of time was lower.

donation can be made during planned lab time, the effective transaction cost is highest in *ND*. The potential for procrastination is also highest in *ND*.

Table 1. Summary of Experimental Treatments

	Nominal Transaction Cost	Opportunity Cost of Time (when request is received)	Effective Transaction Cost	Procrastination
<i>Baseline</i>	Zero	n/a	Zero	Zero
<i>IH</i>	Yes	Low	Yes	Extremely Low
<i>ID</i>	Yes	Low	Yes	Yes
<i>ND</i>	Yes	Infinite	Yes; higher than 1D and IH	Yes; higher than 1D and 1H

Our conjectures and testable hypotheses can be summarized as follows.

Conjecture 1: Introducing a transaction cost (but still requiring donations to be made promptly ruling out procrastination) will reduce donations.

Hypothesis 1: $IH < B$ (and all other treatments)

Conjecture 2: Giving more time to donate, when the opportunity cost of time is low, will not introduce procrastination and therefore not reduce donations.

Hypothesis 2: $IH = ID$

Hypothesis 2 tests the effect of giving subjects more time to donate, but keeping the opportunity cost of time low when the request is received. While giving more time to donate could potentially introduce procrastination (condition 1 presented in the introduction); condition 2, which specifies that procrastination requires high opportunity cost of time, is not satisfied. Since we conjecture that both conditions have to be satisfied simultaneously in order for procrastination to be found, we do not expect to observe a difference between *IH* and *ID*.

Conjecture 3: The potential for procrastination, and the effective transaction cost, will be higher if the request is received at a time when the opportunity cost of time is high (and in the presence of transaction costs).

Hypothesis 3: $ND < ID$

Hypothesis 3 tests the effect of giving people more time to donate (hence introducing procrastination) but ruling out donating immediately (i.e. the opportunity cost of time is infinite at the moment of solicitation). Lower donations in *ND* could be due to the higher *effective* transaction cost (which is due to the higher opportunity cost of time) or to the higher potential for procrastination.

Conjecture 4: If the opportunity cost of time is low at the moment of solicitation, most subjects who choose to donate do so promptly minimizing the potential for procrastination.

Hypothesis 4: In *ID* the majority of donations will be made promptly.

Hypothesis 4 tests whether people will tend to donate promptly if, at the time the solicitation is received, their opportunity cost of time is low.

4. Study 1 Results

Summary statistics for each treatment are reported in Table 2. The mean donation in *B* is \$2.48 (12.4% of the subjects' endowment),⁴ with over half (58%) of subjects donating a positive amount. Donations are higher in *B* than in any of the treatments, and the results presented in Table 3 suggest this may be due in large part to the lower number of small donations (those between \$1 and \$4) made in the various treatments compared to in *B*.

⁴ Our mean donation of 12% in *Baseline* is lower than in some other Dictator Games where the recipient is a charity, but is the same as in Reinstein and Reiner's (2012) performance/cash treatment. Like our *Baseline* treatment, in their performance/cash treatment there is a double-blind protocol, subjects were not paid a show-up fee, they had to earn their endowments and were paid prior to making a decision as to how much to donate. However, one difference between our study and Reinstein and Reiner's is that we include a matching subsidy.

Table 2: Summary Statistics for Study 1

Treatment	Baseline (B)	One Hour (1H)	One Day (1D)	Next Day (ND)
<i>Panel A: All Data</i>				
Number of observations	60	58	61	67
Average donation	2.48	1.43	1.72	1.20
Median donation	2	0	0	0
Standard deviation	3.52	3.41	5.33	4.37
<i>Panel B: Intensive Margin</i>				
Number of positive donations	35 (58.3%)	14 (24.1%)	14 (23.0%)	7 (10.4%)
Average donation conditional on giving	4.26	5.93	7.50	11.36
Median donation conditional on giving	3	5	5	10
Standard deviation conditional on giving	3.71	4.73	6.28	8.49

In *B*, 33% of subjects donate between \$1 and \$4, but this falls to single figure percentages in all the treatments. Of the \$2.48 average donation in *B*, \$0.68 of this is made up of small donations, with the remaining \$1.80 made up of large donations. The proportion of small donations is much lower in all remaining treatments. Fisher's Exact Test reports a significant difference in the proportion of small and large donations between *B* and all other treatments ($p < 0.001$ in all three cases). As with all other tests for statistical significance reported throughout the paper, these are two-tailed tests.

Table 3: Small and Large Donations

Treatment	Baseline (B)	One Hour (1H)	One Day (1D)	Next Day (ND)
Number of observations (N)	60	58	61	67
Number of small donations (\$1-\$4)	20 (33.3%)	3 (5.2%)	4 (6.6%)	2 (3.0%)
\$ value of small donations	41	6	10	4.50
\$ value of small donations / N	0.68	0.10	0.16	0.07
Number of large donations (\$5 or more)	15 (25.0%)	11 (19.0%)	10 (16.4%)	5 (7.5%)
\$ value of large donations	108	77	95	75
\$ value of large donations / N	1.80	1.32	1.56	1.12
Average donation	2.48	1.43	1.72	1.20

Table 4 presents formal statistical tests for whether the differences across treatments are statistically significant. We report the results for a non-parametric Wilcoxon Rank Sum Test of the null hypothesis that the two distributions are identical. We also report Fisher's Exact Test for the proportion of positive donations. The only pairwise comparison of treatments where the differences are not statistically significant is between *1H* and *1D*. For the intensive margin, the average donation conditional on donating is statistically significantly lower in *B* compared to all other treatments, but none of the other pairwise comparisons are statistically significant (which is likely due to the small number of positive donations in many of these treatments).

Table 4: Significance Tests for Differences across Treatments

Data	Wilcoxon Rank-Sum Test	Fisher's Exact Test for Proportion of Positive Donations
<i>Panel A: Mean Donations (All Data)</i>		
B vs. 1H	-3.15 (0.002)	(<0.001)
B vs. 1D	-3.25 (0.001)	(<0.001)
B vs. ND	-5.20 (0.000)	(<0.001)
1H vs. 1D	-0.10 (0.920)	(1.000)
1H v ND	-1.91 (0.056)	(0.055)
1D v ND	-1.82 (0.070)	(0.093)
<i>Panel B: Intensive Margin (Mean Conditional on Donating)</i>		
B vs. 1H	1.673 (0.094)	
B vs. 1D	2.079 (0.038)	
B vs. ND	2.154 (0.031)	
1H vs. 1D	0.350 (0.726)	
1H v ND	1.149 (0.250)	
1D v ND	0.805 (0.421)	

All reported tests are two-sided. p-values in parentheses.

Our four key results are summarized below.

Result 1 (*based on Hypothesis 1*): Transaction costs reduce donations.

Support for Result 1: Introducing a relatively small nominal transaction cost (requiring subjects to take a short walk in order to make a donation), but without introducing any possibility for procrastination, reduced average donations from \$2.48 in *Baseline* to \$1.43 in *1H*. This difference, which is statistically significant (p-value = 0.002), represents a decrease in donations of 42 percent. The Fisher's Exact Test suggests there are significantly more

positive donations in *B* than in any of the treatments ($p\text{-value} < 0.001$). A large part of this reduction in donations is due to fewer small donations (in the \$1-\$4 range) being made once a transaction cost has been introduced.

Result 2 (*based on Hypothesis 2*): There is no evidence of procrastination when the solicitation is received at a time when the opportunity cost of time is low.

Support for Result 2: Both tests reported in the fourth row of Table 4 find no statistically significant difference in giving between *IH* and *ID*. Failing to find a significant difference between these treatments is consistent with our conjecture that procrastination is less likely to exist if the solicitation is received at a time when the opportunity cost of time is low.

However, another possibility, which we cannot rule out, is that there may be subjects for whom the nominal transaction cost is lower in *ID* if they have a class near the box the following day. If this is the case, then this would mean the effective transaction cost is lower in *ID*, but the potential for procrastination higher, with the two effects potentially cancelling out.

Result 3 (*based on Hypothesis 3*): Nominal transaction costs have a bigger negative impact on donations when the solicitation is received at a time when donations cannot be made immediately.

Support for Result 3: Average donations fall from \$1.72 in *ID* (where the donation can be made immediately, at a time when the opportunity cost of time is known to be low, or at any other time in the following 25 hours) to \$1.20 in *ND* (where the donation cannot be made until the next day). This difference is weakly significantly different ($p\text{-value} = 0.070$) and represents a reduction in donations of 30 percent. There is a significantly higher proportion of positive donations in *ID* than in *ND*, however, this result is only marginally significant ($p\text{-value} = 0.093$).

There are two possible reasons for why nominal transaction costs have a bigger impact when the donation request is received at a time when the donation cannot be made immediately. The first is that the effective transaction cost is higher (as the opportunity cost of time is higher) and the second is that delaying making the donation introduces the potential for procrastination. As our experiment was not designed to distinguish between these explanations, we leave this issue for future research. Note, however, that from a policy

perspective, the important point is that donations are lower, if the solicitation is received when the potential donor's opportunity cost of time is high.

Result 4 (*based on Hypothesis 4*): Given the option of donating promptly or delaying payment most subjects choose to donate promptly.

Support for Result 4: In 1D subjects could make their donation any time in the 25 hours following the experiment. One interesting result from this treatment is that of the 14 subjects who gave a positive amount, 12 did so that day, with only 2 making a donation the following day. This is an important result, as it provides some confirmation that subjects really did perceive the opportunity cost of their time to be low immediately following the lab session, giving us confidence that our method for controlling the opportunity cost of time, at the moment of the solicitation, is valid. From the perspective of O'Donoghue and Rabin's model, this result implies that the majority of subjects who donated did not suffer from present-biased preferences. From the perspective of Taubinsky's model of inattention, this result may imply that a number of subjects are sophisticates, who realize that if they delay donating they may be inattentive. The implications, that the opportunity cost of time was low and that a number of subjects are not procrastinators and/or are sophisticated inattentives, are not mutually exclusive. Instead, for sophisticated inattentives to donate promptly, requires that they have time to do so. It does follow, however, that the more sophisticated inattentives there are to take advantage of the low opportunity cost of time, the higher the number of prompt donations there are likely to be. This finding is also consistent with overconfidence in prospective memory (Ericson, 2011).

Implications of Study 1 Results

Our results from Study 1 suggest a number of important findings with policy implications for charities. The first is that introducing a transaction cost reduces donations, but this comes about largely as a result of transaction costs reducing the number of smaller donations. If the charity receiving the money faces a significant transaction cost in *processing* donations, but the cost of *solicitation* is negligible, this reduction in smaller donations increases the charities net revenue (the donation less the cost of processing it) by reducing the number of low value donations. However, if the charity has a very low marginal transaction cost of processing the donation, lowering the transaction cost for the donor would be desirable. One example of a fund raising effort with low transaction costs for both the donor and charity is street

collections where volunteers stand on the street with a container asking passers-by for a donation. Other examples include stores asking customers if they wish to add a donation to charity to the cost of their purchase, or charities advertising that if a text message is sent to a certain number, that a specified donation will be made to the charity and the amount be automatically added to the donor's phone bill. Smith (2012) reports that \$43 million was raised in the US in response to the Haiti earthquake, as a result of advertisements encouraging people to send a text message to make a \$10 donation. Based on a survey of a sample of those who donated, Smith finds that 50% donated immediately upon learning about the campaign, with an additional 23% donating on the same day, which is consistent with donating promptly in response to low transaction costs. Increased use of the push-pay app, which is available for use on smart phones, would also greatly reduce transaction costs, as the web site for the app claims that, once registered, users can make payments in only ten seconds. Our results would suggest this should increase donations to charity.

Our results also suggest that donations will be higher if people receive a solicitation from a charity at a time when their opportunity cost of time is low. This has important implications for charities as it implies donations will be higher if they can catch potential donors when they have time on their hands to donate, if they choose to do so. Perhaps street collectors could position themselves near bus stops, or where people are queuing to get into sports or cultural events, and other places where people with time on their hands are likely to be congregating. Our results also have some welfare implications. We assume that the people who gave in *Baseline* did so because this increased their utility, either due to a warm glow from giving, or because they derive utility from the consumption of others (in this case the people overseas who benefit from the work of *World Vision*). It follows that making it easier for people to donate by reducing transaction costs and soliciting people when their opportunity cost of time is low will be welfare improving.

5. Study 2 Experimental Design and Procedures

Study 2 introduces a treatment which gives subjects one week to make a donation, starting at 8am the day following the experimental session. We refer to this treatment as the *Next Day all Week (NDW-2)*⁵ treatment. As the effective transaction cost can be no higher in *NDW-2*

⁵ “-2” indicates that Study 2 procedures were used.

than in *ND-2* (as the options for when to donate in *ND-2* are a subset of those in *NDW-2*) finding a lower level of donations in *NDW-2* would be evidence of a procrastination effect.

As mentioned earlier, the low level of donations in the *ND* treatment in Study 1 raised the concern that it would be difficult to observe a statistically significant difference between the *ND* and *NDW* treatments, hence we did not run the *NDW* treatment in Study 1. In Study 2, conducted in August 2013 at NZEEL with new subjects, we changed the experimental design in two key ways in an attempt to increase average donations for both the *ND-2* and *NDW-2* treatments. A comparison of *ND-2* with *NDW-2* tests for the presence of a procrastination effect, when the opportunity cost of time is high at the moment of solicitation. Hence, the key focus of Study 2 is to analyze whether giving subjects more time to donate reduces donations, if the opportunity cost of time is high at the time of the solicitation.

The first change to the experimental design was to give subjects their endowment as a windfall gain, rather than getting them to earn it. The lab session was advertised as being a decision-making task lasting 30 minutes, for which subjects would be paid a \$10 show-up fee. Having been paid their show-up fee at the beginning of the session, participants were then given an additional windfall payment of \$10 and invited to donate some or all of the additional payment (which was paid to them as one \$5 note, two \$2 coins and one \$1 coin) to *World Vision*. A number of studies find that subjects are more generous in Dictator Games if their endowment is a windfall gain (see, for example, Cherry et al., 2002; Oxoby and Spraggon, 2008). Even more to the point, Carlsson et al. (2013) show that generosity observed under laboratory conditions is often greater than one would observe in the field and that this might be partly due to the windfall gains.⁶

The second change to the experimental design was to tell participants what *World Vision* would spend the money on. In Study 1 they were simply told the money would go to *World Vision*; in Study 2 subjects were told that *World Vision* would spend donations “to provide vaccinations to protect children in poor countries (e.g. in African countries like Rwanda, Tanzania and Uganda) against measles, whooping cough, diphtheria, hepatitis, polio and tetanus” and that “these diseases cause many children to die every year, but are easily

⁶ Note that earlier we mentioned that with windfall gains subjects could possibly change their donation decision after they had a chance to sleep on it. This is not a concern in Study 2 as, in the two treatments that are being compared, the subjects could not donate on the day of the lab session and so had a chance to sleep on it in both cases.

preventable.” Brañas-Garza (2006) finds that providing subjects with information on what donations would be spent on increased donations. With the exception of these two changes, the experimental design was the same as in Study 1 (the Study 2 instructions are included as Appendix C). Subjects in the *ND-2* treatment were able to make donations the following day between 8am and 5pm, with subjects in the *NDW-2* treatment being able to make a donation any weekday between 8am and 5pm starting the next day for the following week.

Our conjecture and hypothesis for Study 2 are presented below.

Conjecture 5: Giving subjects more time to donate will reduce donations. If donations are lower in *NDW-2* than in *ND-2* this will provide evidence of a procrastination effect.

Hypothesis 5: $ND-2 > NDW-2$

Note, however, that in the absence of a procrastination effect, donations could be higher in *NDW-2* due to a lower effective transaction cost. Hence, failing to find a significant difference between *NDW-2* and *ND-2* does not necessarily mean there is no procrastination effect as there could be both a procrastination effect and a transaction cost effect, but with the two cancelling out.

6. Study 2 Results

Summary statistics for the two treatments are reported in Table 5.⁷ The first point to note is that donations are higher in the *ND-2* treatment in Study 2 (mean donation = \$2.24; 22.4% of the \$10 endowment they were asked to consider donating) than in the *ND* treatment in Study 1 (mean donation = \$1.20; 6.1% of the \$20 endowment they were asked to consider donating), meaning that the change in procedures successfully increased donations. Table 6 provides information on the number of small and large donations. There are very few small donations, with the vast majority of those who chose to donate, giving at least \$5. In fact, the full \$10 was donated by 14 subjects in *ND-2* and 12 subjects in *NDW-2*.

⁷ One subject in the *ND-2* treatment donated the full \$20. As the instructions only asked subjects to give a maximum of \$10, we treat this as a \$10 donation for the purpose of reporting results. The full \$20, along with a matching subsidy of \$20, was forwarded to the charity.

Table 5: Summary Statistics for Study 2

Treatment	Next Day (ND-2)	Next Day all Week (NDW-2)
<i>Panel A: All Data</i>		
Number of observations	82	87
Average donation	2.24	2.00
Median donation	0	0
Standard deviation	3.83	3.64
<i>Panel B: Intensive Margin</i>		
Number of positive donations	25 (31.7%)	23 (26.4%)
Average donation conditional on giving	7.36	7.57
Median donation conditional on giving	10	10
Standard deviation conditional on giving	3.19	2.79

Table 6: Small and Large Donations in Study 2

Treatment	Next Day (ND-2)	Next Day all Week (NDW-2)
Number of observations (N)	82	87
Number of small donations (\$1-\$4)	4 (4.8%)	4 (4.6%)
\$ value of small donations	9	15
\$ value of small donations / N	0.11	0.17
Number of large donations (\$5 or more)	21 (25.6%)	19 (21.8%)
\$ value of large donations	175	159
\$ value of large donations / N	2.13	1.83
Average donation	2.24	2.00

Our key focus is on comparing the *ND-2* and *NDW-2* treatments. Both the number of positive donations and the mean donation are higher in *ND-2*, which is consistent with a procrastination effect. However, as reported in Table 7, these differences are not statistically significant, either for all data or on the intensive margin. In summary, we find some suggestive evidence of a procrastination effect, but this is not statistically significant.

Table 7: Significance Tests for Differences across Treatments

Data	Wilcoxon Rank-Sum Test	Fisher's Exact Test for Proportion of Positive Donations
<i>Panel A: Mean Donations (All Data)</i>		
ND-2 v NDW-2	-0.575 (0.565)	(0.611)
<i>Panel B: Intensive Margin (Mean Conditional on Donating)</i>		
ND-2 v NDW-2	-0.011 (0.991)	

All reported tests are two-sided. p-values in parentheses.

Result 5 (based on Hypothesis 5): There is no statistically significant evidence of procrastination when the request is received at a time when the opportunity cost of time is high.

Also of interest is how promptly people donated in the *NDW-2* treatment. Of the 23 subjects who made a donation, 13 donated on Day 1 (i.e. the day following the experimental session), three on Day 2, two on Day 3, no one on Day 4 and five on Day 5. Therefore, the majority of people donated on the first possible day, with the next most common response being to leave donating till the last possible day. It is possible that some of those who donated on the last day were prompted to do so by the looming deadline and that they would not have donated if there had been no specified deadline for donations.

Implications of Study 2 Results

We find donations are higher in *ND-2*, but this difference is not statistically significant. This does not necessarily mean there is no procrastination effect, as it could be that any

procrastination effect is cancelled out by the effective transaction cost being lower in *NDW-2*. However, from a policy perspective, the important question is whether giving people more time to donate reduces donations, and we do not find statistically significant evidence that this is the case. It could be that the time horizon we considered was not long enough to detect procrastination. One could hypothesize that if we had added a treatment where subjects had been given a month to donate, or if we included a treatment with no specific deadline, evidence of a procrastination effect might have emerged. However, since it is not clear how long a time horizon is required to induce procrastination, we leave these explorations for future research.

Data from *NDW-2* shed some light on the theoretical explanations that could be driving postponing donations. The observed pattern of the majority of people (56.5%) donating on Day 1 rather than at the deadline is inconsistent with procrastination, but suggests that the behavior of these donors could be driven by inattention (and indeed is similar to Taubinsky's experimental results) as these donors might be worried about forgetting to donate later and therefore prefer to complete the task when it is on top of their mind. The second largest group of donors (21.7%) donated on the last day and could thus be classified as (naive) procrastinators who, however, remembered to complete the task at the deadline. Finally, the overall pattern is inconsistent with a rational optimal stopping model in which the DM makes her donation on the day with the lowest expected transaction cost. Such a model would predict a much more uniform distribution of donations over the week during which it was possible to make donations.

7. Conclusion

Models of procrastination predict that people will put off tasks that do not have to be done immediately. Evidence of longer deadlines reducing the probability of people completing a task, such as claiming a rebate, is consistent with procrastination. Charitable giving differs from other contexts studied in the literature in a number of ways; for example, people may be more likely to find the time to redeem a voucher than to make a donation as it directly benefits their *own* consumption, making procrastination in charitable giving and conditions under which it may arise, an interesting subject of study. We add to the existing literature by analyzing three separate but closely related questions: To what extent do transaction costs reduce charitable giving? Does this depend on how busy potential donors are when the

solicitation is received? Do people suffer from procrastination with respect to charitable giving?

We analyze these three questions using a Dictator Game experiment where the recipient is a charity. A transaction cost is introduced by having subjects who wish to donate place their donation in a secure box located a short walk away. This transaction cost significantly reduces donations, especially small donations, compared to a baseline with no transaction cost. We control for the opportunity cost of time, at the moment of the solicitation, by giving some subjects the opportunity of walking to the donation box during time they planned to be taking part in the experiment, whereas other subjects do not have this option. We find that donations are lower when the opportunity cost of time is high at the moment of the solicitation.

We test for procrastination by giving some subjects longer to donate than others. In Study 1, consistent with our hypothesis, there is no evidence of procrastination when the opportunity cost of time is low at the moment of the solicitation. In Study 2, we find some evidence that giving subjects longer to donate reduces donations, but this difference is not statistically significant.

Along with Damgaard and Gravert's (2014) field experiments, our laboratory results suggest that charitable giving does not depend on the deadline length. We also find that this holds irrespective of whether or not subjects are able to donate immediately when they receive the solicitation. One possible explanation for this, which could be explored in future research, is that people may be more likely to 'find' the time to take an action that increases their own consumption, but less likely to 'find' the time to take an action that benefits others. Our results have two important policy implications. The first is that charities should use solicitation techniques which minimize transaction costs for potential donors, especially if the charity finds it valuable to receive small donations. Encouraging more use of the push pay app, text messaging, and asking for donations at store check-outs as a means of making donations, are examples of how transaction costs can be minimized. Our second key policy implication is that it is important to solicit donations when people are likely to not be too busy. Street collections would be an example where the transaction costs are low. While passers-by might be too busy to donate, people waiting at a bus stop or queuing to get into sports events are likely not.

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APPENDICES: FOR ONLINE PUBLICATION

Appendix A: Survey Completed by Subjects in Study 1

Survey: Life as a Student

This survey asks questions about yourself, some questions about student life and some general knowledge questions about the University and Christchurch. Your responses to the questions will be completely anonymous. No one, including the researchers, will ever know which individuals gave which answers.

Some questions about yourself

1. Gender: Male ☐ ☐ Female ☐ ☐
2. Intended major subject (if known) _____
3. Are you an active member of any voluntary organisation or club (e.g., sports, craft, social club)? Yes ☐ ☐ No ☐ ☐
If yes, specify what sort of organisation/club _____
4. How frequently do you take part in organised religious activities?
once a week or more ☐ less than once a week but more than once a month ☐
once a month or less ☐ ☐ never or almost never ☐
5. How often do you follow news from around the world (e.g., through television, the internet or newspapers)?
most days ☐ ☐ 2-3 times a week ☐ ☐
once a week ☐ less than once a week ☐
6. How often do you follow news from New Zealand (e.g., through television, the internet or newspapers)?
most days ☐ ☐ 2-3 times a week ☐ ☐
once a week ☐ less than once a week ☐
☐

7. If you do follow news, from around the world or from New Zealand, which media do you use the most often?

internet ☐ ☐ television ☐ ☐ newspaper ☐ other ☐ ☐
don't follow world news ☐ ☐

8. How often do you watch sport on television?

several times a week ☐ ☐ once or twice a week ☐ ☐
between once a week and once a month ☐ ☐ never ☐

9. If you do watch sport on television, which sports do you watch

10. In an average week, how many nights do you spend out at a bar, club, restaurant or cinema?

6-7 ☐ ☐ 3-5 ☐ ☐ 1-2 ☐ ☐ zero ☐ ☐

Some questions about student life and the University of Canterbury

11. What is the main reason you chose to study at Canterbury rather than at another university?

Academic reputation of Canterbury ☐ ☐ Social life at Canterbury ☐ ☐
Family/friends in Christchurch ☐ ☐ Other ☐ ☐
If other, please specify _____

12. For how many years are you planning on studying at Canterbury?

1 ☐ ☐ 2 ☐ ☐ 3 ☐ ☐ 4 or more ☐ ☐

13. Where do you live?

Hall of residence ☐ ☐ Private flat ☐ ☐
Family home ☐ ☐ Other ☐ ☐

14. Do you have a student loan?

Yes ☐ ☐ No ☐ ☐

15. Do your parents contribute to your fees or living expenses?

Yes ☐ ☐ No ☐ ☐

16. Who is the current Vice Chancellor of the University of Canterbury?

17. In what year did the University of Canterbury open? _____

Some general knowledge questions about Christchurch and the surrounding area:

18. Who is the current mayor of Christchurch? _____

19. The city of Christchurch is named after a college at which English university?

20. In December 1850, 4 ships carrying settlers from England arrived in Lyttelton . Name one of the ships. _____

21. Who is the current coach of the Crusaders? _____

22. In the 2006 census, the percentage of people living in Christchurch who listed their ethnicity as European was:

95% ☐ ☐ 85% ☐ ☐ 75% ☐ ☐ 65% ☐ ☐

Appendix B: Study 1 Instructions

[The survey instructions shown below were identical across all treatments in Study 1.]

Instructions: Survey

Thank you for participating in this research project. As well as completing a survey, we will also get you to take part in a short decision-making task. This should take no longer than 1 hour.

Survey

The survey form is in a manila envelope which we will now hand out to you. You may start filling in the survey once it is handed to you, and we will give you ten minutes to complete this. Your anonymity is guaranteed as you have not been asked to write your name or ID number on the survey. We will get you to place your completed survey in the manila envelope when you hand it back in, so we cannot see your answers. Please do not leave when you finish the survey as we still have the decision-making task to conduct.

[The decision-making task instructions shown below are those used in *Baseline*.]

Instructions: Decision-making task

White envelope

We are going to hand out a white envelope containing your \$20 payment for filling out the survey. Please open the envelope and confirm it contains \$20. We will get you to sign a receipt for this before you leave.

Decision-making task

We are now going to undertake the second part of this session. We ask that you listen quietly to the following instructions and do not speak until you have left the room.

Donation

We would now like to give you the opportunity, if you wish, to donate some, or all, of your \$20 payment to *World Vision New Zealand*, who are a registered charity doing development

work in poor countries overseas. Any money you choose to donate to *World Vision* will be matched by us dollar for dollar (in other words, we will double your donation) and we will forward all money directly to *World Vision*. The white envelope you opened earlier contains a \$10 note, a \$5 note, two \$2 coins and a \$1 coin, so it is possible to donate any whole dollar amount, between \$0 and \$20 to *World Vision*. You are under no obligation to donate any money to *World Vision* unless you wish to do so.

Anonymity

Your decision is completely anonymous. This task is designed in such a way that no-one will ever know how much any individual has given. Your privacy is guaranteed because neither your name nor your student ID number will appear on any form that records your decisions. The only identifying mark in all records will be the alpha-numeric code on your form and envelopes. We have no way of knowing who has been assigned which code. We will shortly invite you to put any money you wish to donate in a blue envelope and place this envelope in a box outside the lab when you leave. As you are sitting in a cubicle, no-one, including us, can see how much money you put in the blue envelope.

Blue envelope

We are also going to hand out a blue envelope containing a blue form with a space to indicate how much money, if any, you wish to give to *World Vision*, and how much money this means *World Vision* will receive once we have matched your donation dollar for dollar. For audit reasons, we are only able to match any donation you make dollar for dollar if we have a written record of what has been donated, hence the need for you to complete this form.

Please open the blue envelope and take a few seconds to decide how much, if anything, you want to donate to *World Vision*. Please complete the blue form, and place the form, and any money you have chosen to donate, in the blue envelope and seal the envelope. We suggest you put any money you have decided to keep in your pocket or bag. We will give you two minutes to do this.

Receipt

At the end of the session we will ask you one at a time to come up to the room at the back of the lab and sign a form acknowledging that you were paid \$20 for completing the survey. When you have done this, please leave the lab and place the blue envelope, whether you have chosen to donate any money or not, in the red box labelled “Economics” sitting outside the lab. Please do not wait around outside the lab once you have done this.

Thank you once more for taking part in our study.

[The decision-making task instructions shown below are those used in *IH*]

Instructions: Decision-making task

White envelope

We are going to hand out a white envelope containing your \$20 payment for filling out the survey. Please open the envelope and confirm it contains \$20. We will get you to sign a receipt for this before you leave.

Decision-making task

We are now going to undertake the second part of this session. We ask that you listen quietly to the following instructions and do not speak until you have left the room.

Donation

We would now like to give you the opportunity, if you wish, to donate some, or all, of your \$20 payment to *World Vision New Zealand*, who are a registered charity doing development work in poor countries overseas. Any money you choose to donate to *World Vision* will be matched by us dollar for dollar (in other words, we will double your donation) and we will forward all money directly to *World Vision*. The white envelope you opened earlier contains a \$10 note, a \$5 note, two \$2 coins and a \$1 coin, so it is possible to donate any whole dollar amount, between \$0 and \$20 to *World Vision*. You are under no obligation to donate any money to *World Vision* unless you wish to do so.

Anonymity

Your decision is completely anonymous. This task is designed in such a way that no-one will ever know how much any individual has given. Your privacy is guaranteed because neither your name nor your student ID number will appear on any form that records your decisions. The only identifying mark in all records will be the alpha-numeric code on your form and envelopes. We have no way of knowing who has been assigned which code. We will shortly invite you to put any money you wish to donate in a blue envelope and place this envelope in a box labelled “ECON” located on the ground floor in the main entrance of the Psychology building (the car park side, not the Cafe 101 side) following this session. You will have until [insert

time] today to place the envelope in the box if you wish to make a donation. Note that the box will be emptied shortly after [insert time] today, so you cannot make a donation after that time, even if you see the box there. There is a map in the blue envelope showing the location of the Psychology Building.

Blue envelope

We are also going to hand out a blue envelope containing a blue form with a space to indicate how much money, if any, you wish to give to World Vision, and how much money this means World Vision will receive once we have matched your donation dollar for dollar. For audit reasons, we are only able to match any donation you make dollar for dollar if we have a written record of what has been donated, hence the need for you to complete this form.

Please open the blue envelope and check that it contains a map and the blue form. However, please do not fill in the blue form until you have left the lab. If you need a pen to fill it in, feel free to take the one we lent you earlier. Remember if you choose to make a donation, you need to place the envelope, containing your donation and the completed blue form, in the red box in the Psychology Building by 3pm today.

Receipt

At the end of the session we will ask you one at a time to come up to the room at the back of the lab and sign a form acknowledging that you were paid \$20 for completing the survey.

When you have done this, please leave the lab and do not wait around outside. Remember if you wish to make a donation you have until [insert time] today to do so.

Thank you once more for taking part in our study.

[The decision-making task instructions shown below are those used in *ID*]

Instructions: Decision-making task

White envelope

We are going to hand out a white envelope containing your \$20 payment for filling out the survey. Please open the envelope and confirm it contains \$20. We will get you to sign a receipt for this before you leave.

Decision-making task

We are now going to undertake the second part of this session. We ask that you listen quietly to the following instructions and do not speak until you have left the room.

Donation

We would now like to give you the opportunity, if you wish, to donate some, or all, of your \$20 payment to *World Vision New Zealand*, who are a registered charity doing development work in poor countries overseas. Any money you choose to donate to *World Vision* will be matched by us dollar for dollar (in other words, we will double your donation) and we will forward all money directly to *World Vision*. The white envelope contains a \$10 note, a \$5 note, two \$2 coins and a \$1 coin, so it is possible to donate any whole dollar amount, between \$0 and \$20 to *World Vision*. You are under no obligation to donate any money to *World Vision* unless you wish to do so.

Anonymity

Your decision is completely anonymous. This task is designed in such a way that no-one will ever know how much any individual has given. Your privacy is guaranteed because neither your name nor your student ID number will appear on any form that records your decisions. The only identifying mark in all records will be the alpha-numeric code on your form and envelopes. We have no way of knowing who has been assigned which code.

Blue envelope

We are also going to hand out a blue envelope containing a blue form with a space to indicate how much money, if any, you wish to give to *World Vision*, and how much money this means *World Vision* will receive once we have matched your donation dollar for dollar. For audit reasons, we are only able to match any donation you make dollar for dollar if we have a written record of what has been donated, hence the need for you to complete this form.

Please do not open the blue envelope until you have left the lab. If you wish to make a donation put the money you wish to donate in the blue envelope and place this envelope in a box labelled “ECON” located on the ground floor in the main entrance of the Psychology building (the car park side, not the Cafe 101 side) tomorrow. You will have from 8am until 5pm tomorrow ([insert day of week and date]) to place the envelope in the box if you wish to make a donation. Note that donations will only be matched dollar for dollar if placed in the box between 8am and 5pm tomorrow. There is a map in the blue envelope showing the location of the Psychology Building.

Remember if you choose to make a donation, you need to place the envelope, containing your donation and the completed blue form, in the red box in the Psychology Building between 8am and 5pm tomorrow ([insert day of week and date]).

Receipt

At the end of the session we will ask you one at a time to come up to the room at the back of the lab and sign a form acknowledging that you were paid \$20 for completing the survey.

When you have done this, please leave the lab and do not wait around outside. Remember if you wish to make a donation you can do this between 8am and 5pm tomorrow.

Thank you once more for taking part in our study.

[The decision-making task instructions shown below are those used in *ND*]

Instructions: Decision-making task

White envelope

We are going to hand out a white envelope containing your \$20 payment for filling out the survey. Please open the envelope and confirm it contains \$20. We will get you to sign a receipt for this before you leave.

Decision-making task

We are now going to undertake the second part of this session. We ask that you listen quietly to the following instructions and do not speak until you have left the room.

Donation

We would now like to give you the opportunity, if you wish, to donate some, or all, of your \$20 payment to *World Vision New Zealand*, who are a registered charity doing development work in poor countries overseas. Any money you choose to donate to *World Vision* will be matched by us dollar for dollar (in other words, we will double your donation) and we will forward all money directly to *World Vision*. The white envelope contains a \$10 note, a \$5 note, two \$2 coins and a \$1 coin, so it is possible to donate any whole dollar amount, between

\$0 and \$20 to *World Vision*. You are under no obligation to donate any money to *World Vision* unless you wish to do so.

Anonymity

Your decision is completely anonymous. This task is designed in such a way that no-one will ever know how much any individual has given. Your privacy is guaranteed because neither your name nor your student ID number will appear on any form that records your decisions. The only identifying mark in all records will be the alpha-numeric code on your form and envelopes. We have no way of knowing who has been assigned which code.

Blue envelope

We are also going to hand out a blue envelope containing a blue form with a space to indicate how much money, if any, you wish to give to *World Vision*, and how much money this means *World Vision* will receive once we have matched your donation dollar for dollar. For audit reasons, we are only able to match any donation you make dollar for dollar if we have a written record of what has been donated, hence the need for you to complete this form.

Please do not open the blue envelope until you have left the lab. If you wish to make a donation put the money you wish to donate in the blue envelope and place this envelope in a box labelled “ECON” located on the ground floor in the main entrance of the Psychology building (the car park side, not the Cafe 101 side) tomorrow. You will have from 8am until 5pm tomorrow ([insert day of week and date]) to place the envelope in the box if you wish to make a donation. Note that donations will only be matched dollar for dollar if placed in the box between 8am and 5pm tomorrow. There is a map in the blue envelope showing the location of the Psychology Building.

Remember if you choose to make a donation, you need to place the envelope, containing your donation and the completed blue form, in the red box in the Psychology Building between 8am and 5pm tomorrow ([insert day of week and date]).

Receipt

At the end of the session we will ask you one at a time to come up to the room at the back of the lab and sign a form acknowledging that you were paid \$20 for completing the survey. When you have done this, please leave the lab and do not wait around outside. Remember if you wish to make a donation you can do this between 8am and 5pm tomorrow.

Thank you once more for taking part in our study.

Appendix C: Study 2 Instructions

[The instructions below are for *ND-2*]

Instructions: Decision-making task

Thank you for participating in this research project, which should take no longer than 30 minutes.

Show up fee

You have all received your \$10 show up fee when you arrived at the lab. We will get you to sign a receipt for this before you leave.

Decision-making task

We are now going to undertake the decision making task. We ask that you listen quietly to the following instructions and do not speak until you have left the lab. If you have a question after we finish reading the instructions, please raise your hand and the experimenter will approach you and answer your question in private.

Donation

We will shortly hand out to you a brown envelope containing \$10. This money is being given to you in addition to your \$10 show up fee. You can either keep this additional \$10 for yourself, or donate some, or all, of it to *World Vision New Zealand*, who are a registered charity doing development work in poor countries overseas. Any money you choose to donate to *World Vision* will be matched by us dollar for dollar (in other words, we will double your donation) and we will forward all money directly to *World Vision*. World Vision will use this money to provide vaccinations to protect children in poor countries (e.g. in African countries like Rwanda, Tanzania and Uganda) against measles, whooping cough, diphtheria, hepatitis, polio and tetanus. These diseases cause many children to die every year, but are easily preventable. The brown envelope contains a \$5 note, two \$2 coins and a \$1 coin, so it is possible to donate any whole dollar amount, between \$0 and \$10 to *World Vision*. You are under no obligation to donate any money to *World Vision* unless you wish to do so.

Anonymity

Your decision is completely anonymous. This task is designed in such a way that no-one will ever know how much any individual has given. Your privacy is guaranteed because neither your name nor your student ID number will appear on any form that records your decisions. The only identifying mark in all records will be the alpha-numeric code on your form and envelope. We have no way of knowing who has been assigned which code.

Blue envelope

We are also going to hand out a blue envelope containing a blue form with a space to indicate how much money, if any, you wish to give to *World Vision*, and how much money this means *World Vision* will receive once we have matched your donation dollar for dollar. For audit reasons, we are only able to match any donation you make dollar for dollar if we have a written record of what has been donated, hence the need for you to complete this form.

If you wish to make a donation put the money you wish to donate in the blue envelope and place this envelope in the box labelled “ECON” located on the ground floor in the main entrance of the Psychology building (the car park side, not the Cafe 101 side) tomorrow. You will have from 8am until 5pm tomorrow ([insert day of week and date]) to place the envelope in the box if you wish to make a donation. Note that donations will only be matched dollar for dollar if placed in the box between 8am and 5pm tomorrow. There is a map in the blue envelope showing the location of the Psychology Building.

Remember if you choose to make a donation, you need to place the blue envelope, containing your donation and the completed blue form, in the red box in the Psychology Building between 8am and 5pm tomorrow ([insert day of week and date]).

Receipt

At the end of the session we will ask you one at a time to come up to the room at the back of the lab and sign a form acknowledging that you were paid \$20 (the \$10 show up fee and the additional \$10). When you have done this, please leave the lab and do not wait around outside. Remember if you wish to make a donation you can do this between 8am and 5pm tomorrow. Thank you once more for taking part in our study.

[The instructions below are for *ND-2*]

Instructions: Decision-making task

Thank you for participating in this research project, which should take no longer than 30 minutes.

Show up fee

You have all received your \$10 show up fee when you arrived at the lab. We will get you to sign a receipt for this before you leave.

Decision-making task

We are now going to undertake the decision making task. We ask that you listen quietly to the following instructions and do not speak until you have left the lab. If you have a question after we finish reading the instructions, please raise your hand and the experimenter will approach you and answer your question in private.

Donation

We will shortly hand out to you a brown envelope containing \$10. This money is being given to you in addition to your \$10 show up fee. You can either keep this additional \$10 for yourself, or donate some, or all, of it to *World Vision New Zealand*, who are a registered charity doing development work in poor countries overseas. Any money you choose to donate to *World Vision* will be matched by us dollar for dollar (in other words, we will double your donation) and we will forward all money directly to *World Vision*. *World Vision* will use this money to provide vaccinations to protect children in poor countries (e.g. in African countries like Rwanda, Tanzania and Uganda) against measles, whooping cough, diphtheria, hepatitis, polio and tetanus. These diseases cause many children to die every year, but are easily preventable. The brown envelope contains a \$5 note, two \$2 coins and a \$1 coin, so it is possible to donate any whole dollar amount, between \$0 and \$10 to *World Vision*. You are under no obligation to donate any money to *World Vision* unless you wish to do so.

Anonymity

Your decision is completely anonymous. This task is designed in such a way that no-one will ever know how much any individual has given. Your privacy is guaranteed because neither

your name nor your student ID number will appear on any form that records your decisions. The only identifying mark in all records will be the alpha-numeric code on your form and envelope. We have no way of knowing who has been assigned which code.

Blue envelope

We are also going to hand out a blue envelope containing a blue form with a space to indicate how much money, if any, you wish to give to *World Vision*, and how much money this means *World Vision* will receive once we have matched your donation dollar for dollar. For audit reasons, we are only able to match any donation you make dollar for dollar if we have a written record of what has been donated, hence the need for you to complete this form.

If you wish to make a donation put the money you wish to donate in the blue envelope and place this envelope in the box labelled “ECON” located on the ground floor in the main entrance of the Psychology building (the car park side, not the Cafe 101 side.) You will have from 8am tomorrow ([insert day of week and date]) until 5pm [insert day of week and date] to place the envelope in the box if you wish to make a donation. Please note that you may place the envelope in the box any workday as the building will closed on Saturday and Sunday. Note that donations will only be matched dollar for dollar if placed in the box between 8am and 5pm from tomorrow for the next week. There is a map in the blue envelope showing the location of the Psychology Building.

Remember if you choose to make a donation, you need to place the blue envelope, containing your donation and the completed blue form, in the red box in the Psychology Building between 8am and 5pm from tomorrow ([insert day of week and date]) until [insert day of week and date].

Receipt

At the end of the session we will ask you one at a time to come up to the room at the back of the lab and sign a form acknowledging that you were paid \$20 (the \$10 show up fee and the additional \$10). When you have done this, please leave the lab and do not wait around outside. Remember if you wish to make a donation you can do this between 8am and 5pm from tomorrow until [insert day of week] next week. Thank you once more for taking part in our study.