Limited time to make a change:
An investigation into charitable behaviour around a deadline.

by

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Abstract

I conduct a laboratory experiment to analyse the effect of deadlines and deadline length on charitable giving. Individuals may postpone or procrastinate making a donation, and then forget about doing so due to inattention. This behavioural problem is called inertia. In other contexts, deadlines are a useful tool to prevent inertia. I examine their use in the context of charitable giving using a dictator game where the recipient is a local charity. Participants are either constrained by a one week deadline, a two week deadline, or no deadline. I find no statistically significant evidence of an inertia effect in charitable giving. Furthermore, I find no evidence that the use of a deadline increases the number of donations, or the average donation of participants. The length of the deadline does not change this result. Examining positive donations, there is a significantly higher average donation with the use of a two week deadline compared to no deadline, but this result does not carry through to other comparisons. Overall, I find that deadlines do not appear to help, nor hinder, charitable campaigns.

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1. Introduction

Many individuals are familiar with the behavioural problem of procrastination. We often delay tasks in our daily lives, especially if they are unpleasant. This generally has no impact on others: we delay, we hurry to finish the task, but ultimately it gets done. This is especially true if there is a deadline by which the action must be completed. However, what happens if this procrastination problem also affects charitable giving? In this case the procrastination problem no longer affects only the individual decision-maker, but also the charity and their beneficiaries. Despite making the decision to donate, individuals may postpone making the donation until a time when they are less busy. Having delayed once, they may do so again until eventually the decision to donate is forgotten. Constant procrastination, leading to failure to complete the task, is called inertia. This could have a negative impact on revenue for charities, so it is important to examine whether this issue does indeed exist and find ways to counter it if necessary. One of the primary ways in which inertia is overcome in other situations is with the presence of a deadline. In this study, I look at whether donors are affected by an inertia problem through a laboratory experiment examining charitable behaviour with and without deadlines. Secondly, I investigate whether changing the length of a deadline influences donation behaviour, with the hope of finding an optimal deadline length.

Many charities already use deadlines in their campaigns, including *PETA* and the *Christchurch Transitional Architecture Trust.*[1] Deadlines could be used for a number of reasons, including but not limited to:

- providing a cut-off point for matching donation schemes
- increasing campaign urgency (such as with telethons or disaster relief campaigns)
- giving a fundraising target, such as $10,000 by a certain date
- minimising the costs of running the campaign when there is a marginal cost associated with each additional day

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[1] See Appendix One for advertisements from these charities.

Crowd-funding websites such as Kickstarter and PledgeMe also use a deadline scheme where a target amount must be reached by a certain date for the donations to be successful.[2] Otherwise, the campaign ends and the donors retain their money. These fundraising methods are becoming popular as a way for charities to reach a wider, online audience. Through experimentally testing the effect of a deadline, I may also be able to draw conclusions about whether they are helpful or harmful for charities who already use them. While not specifically testing the scenarios listed above, this experiment may also reveal unintended side effects for charities who already use deadlines that should be considered when designing campaigns.

An important place to begin is outlining precisely what inertia is. My interpretation of inertia is guided by Knowles and Servátka (2014). Many people may have good intentions when it comes to donating money, deciding at first to donate but then constantly postponing, never completing the process. We witness this type of behaviour in many other contexts, including school assignments and the completion of other tasks such as housework. People often postpone these tasks until they can no longer be avoided. Inertia is often confused with a bias for the status quo, but it differs in that the individual makes a conscious decision to complete an action first, rather than simply doing nothing (Knowles & Servátka, 2014). If inertia does affect charitable behaviour, then giving individuals more time to make their decision will reduce donations.

In other areas we notice the impact of a deadline in helping individuals overcome inertia, such as with tertiary education and assignment due dates. While inertia may still be present initially, the presence of a deadline gives a concrete reason to stop postponing the task as to do so may result in negative consequences. A student may ignore an assignment until the deadline is looming, at which point the activity becomes a priority and the work must be completed. This shows that inertia and deadlines are strongly linked, which leads to the first research question addressed by this study. Does inertia affect charitable giving, and are deadlines an effective way to increase donations? In a charitable giving context, a deadline may also act as a cue that reminds people to donate, mitigating inertia for a number of individuals. This reminder could prompt additional donations that might not have occurred

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[2] These crowdfunding sites can be accessed at https://www.kickstarter.com/ and https://www.pledgeme.co.nz/ respectively.

without the deadline, or it may serve to simply redistribute the donations throughout time. I will examine the donation distribution to observe whether this is the case.

The second question addressed in this paper- whether the length of the deadline has an impact on donations to charity- is based on a theoretical model developed by Taubinsky (2014). This model shows that due to time-inconsistent preferences, people may respond differently to deadlines of various length. If this is the case in charitable giving, the length of a deadline may have a significant impact on the number of donations received, and also the amount of money donated overall. This is therefore an important issue for charities, who may wish to maximise revenue through effective campaign design. Overall, this study provides an investigation of charitable behaviour in the presence of a short, intermediate and long deadline to look at whether the length of a deadline can impact charitable revenue. This may have practical implications for charities when designing their campaigns.

Experimental economics has been widely used to examine behaviour with regard to charitable giving. The majority of these studies use a dictator game with a charity as the recipient, first implemented by Eckel and Grossman (1996). Recent findings include increased altruism towards specific victims (Small, Lowenstein & Slovic, 2007), bias towards certain racial groups (Fong & Luttmer, 2011), the positive effect of matching donations (Rondeau & List, 2008) and the benefits of positive framing (Brañas-Garza, 2007). This project augments previous research by looking at the presence of inertia and deadlines in charitable giving, an aspect that has remained largely untouched despite the immense interest in the economics of charity. Notably, participants in these studies decide whether to donate while in the laboratory and make the payment immediately if they choose to do so. There is therefore no possibility for inertia as the payment is made right away. In everyday life, an individual may make the decision to donate but then consistently postpone payment, resulting in inertia. An experimental set-up that allows for inertia more accurately simulates a real-life decision-making process.

To test the impact of deadlines on donations to charity I use a modified dictator game with a charity as the recipient, similar to many of the previous studies outlined above. In order to make the decision-making environment more realistic, I impose transaction costs through requiring participants to donate at a site other than the laboratory. This simulates a genuine

donation process as when giving to charity there is generally always a transaction cost such as posting a cheque or entering credit card details online. If there are no transaction costs to donating there would be no possibility for inertia, as the decision to donate could be actioned immediately without cost. In my experimental set-up, there is the possibility for inertia to emerge as participants can postpone their donation. They are making payments in their own time, rather than during the experiment session.

The number of charities worldwide is increasing every year and as such, individual organisations are becoming progressively competitive over limited donations from consumers. They are having to become more efficient in their campaigns, revising collection methods so as to maximise the probability that they will be selected by any one donor. Experimental economics is embracing research on charitable donations and many scholars have examined the effects of various factors on altruism and giving. This leads to many practical conclusions that guide charities in constructing worthwhile campaigns.

The rest of the paper is structured as follows. The next section summarises further literature relating to inertia, deadlines and deadline length. Section three describes the experimental design employed in this study, and outlines the hypotheses to be tested. Section four presents the results of the experiment while section five concludes.

2. Literature Review

O'Donoghue and Rabin (1999) provide a convenient starting point for the investigation of intertemporal preferences: individuals have time-inconsistent preferences that affect decision-making, and this affects behaviour over time. More specifically, the way in which people actually behave is often different to how they expect they will behave. O'Donoghue and Rabin divide individuals into *naifs* and *sophisticates*. A sophisticated agent knows exactly what the preferences of the future self will be and how they will differ from their current preferences, while a naive agent believes their future self will have identical preferences to the present self. This distinction is important in analysing theoretical models of choice over time, and this sets the framework for many analyses of intertemporal choice.

The first research question of this thesis concerns inertia in charitable giving. Intertemporal preferences are affected by inertia in areas such as retirement savings (Choi *et al.,* 2002) and vaccination decisions (Leventhal, Singer & Jones, 1965). Both sets of authors examine inertia through asking subjects' intentions and then comparing subsequent actions. In both cases, participants state that they intend to complete the specified action, but then never get around to doing so. Epley and Dunning (2000) find through experiments that people have immense difficulty predicting future behaviour accurately. Their subjects overestimate how likely they are to buy a daffodil in support of the American Cancer Society, or donate a portion of their experimental participation fee to charity.

There are many everyday situations in which a deadline can be put in place to assist with problems arising from time-inconsistent preferences. König and Kleinmann (2005) produce a model in which the presence of a deadline increases the subjective importance of an activity, which leads to a long period of inactivity followed by a 'deadline rush'. Ariely and Wertenbroch (2002) find that people self-impose deadlines in many situations, and use them effectively to complete tasks. Saez-Marti and Sjögren (2008) show that a distracted agent is more likely to complete a task by a specified deadline as he exercises increased precaution, starting the task earlier and thus finishing earlier. Deadlines not only improve completion rates but also individual performance on a specific task, and thus can improve the wellbeing of a procrastinator (Herweg & Müller, 2011). A rational decision-maker would not need such a tool, but in a world where self-control problems are present deadlines tend to be an effective way to overcome issues associated with time-inconsistent preferences (Ariely & Wertenbroch, 2002). This study looks at whether there is an inertia problem in charitable giving, and whether this can be overcome by deadlines.

There has been one significant study on inertia in charitable giving: Knowles and Servátka (2014), upon which the first research question of this thesis is based. While other authors use written intentions to study inertia, Knowles and Servátka look instead at whether giving people more time to donate reduces donations. This is to avoid a reduction in observed inertia through requiring subjects to state their intentions prior to acting, which may act as a written commitment to donating in the minds of some subjects. Knowles and Servátka find that most participants donate promptly. While giving people more time to donate does indeed reduce donations, consistent with an inertia effect, this is not statistically significant. However, it is

possible that the time horizons considered in this experiment were not long enough to observe an inertia effect. In addition to this, the presence of a deadline- whether this is one day or one week- may act as a reminder for donors and thus mitigate inertia. In this study, I introduce a longer time horizon through implementing no deadline at all. This gives the longest possible time horizon while also removing the presence of a deadline altogether, to alleviate the issue of a deadline acting as a potential reminder for subjects.

While Knowles and Servátka (2014) do not find conclusive evidence of an inertia effect, they do note an interesting distributional effect in one of their treatments. This is akin to a deadline effect, in which participants "rush" before a deadline. Of the 23 subjects who donated in their one week treatment, thirteen donated on Day One, followed by three on Day Two, two on Day Three, none on Day Four and five on Day Five. This shows that while most people donate promptly, the next most common response was to donate on the day of the deadline. This raises the question: would these people have donated if the deadline did not exist? Answering this question is a key motivation for this research project. I extend the work done by Knowles and Servátka through addressing two connected questions arising from their analysis. Firstly, whether the deadlines considered were different enough to detect an inertia effect, and secondly whether the presence of a deadline prompted additional donations, or simply shifted the distribution of donations. This is done using an experimental treatment with no deadline.

The second component of this thesis is looking at whether deadline length impacts donations to charity. This question is derived from a theoretical model developed by Taubinsky (2014), that uses deadlines to counter inertia arising from inattention. Taubinsky likens the inertia problem to a concept in psychology called 'prospective memory,' which he uses to provide the logic behind his model. Prospective memory describes everyday situations in which an individual decides to complete an action and fully intends to do so, but after forming this intention becomes engaged with other tasks and neglects to remember the deferred intention (Dismukes, 2012). There is nothing to explicitly prompt the agent to remember about the planned task. Instead, he must "remember to remember" (Dismukes, 2012: 215). This provides a striking example of how inertia might arise.

Taubinsky (2014) proposes a decision environment in which there is a task that must be completed only once over the course of T periods. Each period the decision-maker either

completes the task, or does not. Additionally, each period contains a set of cues which may remind the decision-maker about the task he must perform. These cues either lead the decision-maker to either think about the task in a given period (attention) or forget about it (inattention). The stronger the cue, the more likely an individual is to remember about the task. One of the most salient cues is a deadline, so Taubinsky's model includes a deadline in period T. The decision-maker learns about the task in t =0, at which point they are always attentive. They must complete the task at some point in time between t =1 and t =T. Taubinsky discusses three types of deadline in his model: short, intermediate, and long. He predicts the completion rates of sophisticated and naive individuals in each instance to theorise the impact of deadline length overall.

In the presence of a long deadline, Taubinsky (2014) conjectures that the completion rate will decrease for naive decision-makers. This is generated by a decay in attention over time. A naive individual perceives a longer deadline as giving him more choice, however he neglects to account for the fact that the task is likely to leave his mind. The decision-maker believes he has more time to complete the task, and so he delays doing so. In postponing, he increases the chance that he will be inattentive later. Completion rates for naive individuals are therefore lower with longer deadlines. For sophisticated agents, it is less clear what will occur. However, as a sophisticated agent is aware of his future inattention, he may set reminders or create other cues. He can correctly anticipate his behaviour and so will account for his inattention when making a decision. Longer deadlines should not reduce completion rates compared to short deadlines, as over a greater time period there is more chance for the decision-maker to be attentive and thus complete the task. With short deadlines, the task remains at the top of the individual's mind and so the majority of people who intend to complete the task will do so.

Taubinsky (2014) predicts that the completion rate will be lowest when there is an intermediate deadline. As with a long deadline, individuals postpone the task and become inattentive. At a later point in time, there may be a cue in the environment that reminds the individual about the task. When there is a long deadline it is more likely that when the individual remembers the task, they will have not missed the deadline altogether. However, with an intermediate length the deadline may have passed and so despite remembering, the individual cannot complete the task. Thus, specifying an intermediate deadline will result in

lower completion rates than using either a short deadline or long deadline. This project will examine whether this theoretical model of deadline length applies to charitable donating by testing donation rates with a one week deadline, a two week deadline and an infinite deadline.

Previous research reveals contradictory evidence regarding the impact of deadline length in other settings. In some contexts a longer deadline (or no deadline) may lead to increased response rates. According to the optimal stopping theory, a long time frame gives individuals a higher probability of finding a time to complete the task when the transaction costs and their opportunity cost of time are minimised (Chow, Robbins and Siegmund, 1971). There is also experimental data that shows an inverse relationship between deadline length and task completion rate. Firstly, Tversky and Shafir (1992) offer students five dollars if they return a completed questionnaire by a certain date. There are three treatments with varying deadline length: five days, three weeks, or no deadline. The respective completion rates are 60%, 42% and 25%, showing a significant decline in completion as the deadline length increases. Silk (2004) studies mail-in rebates and shows that although participants believed they were more likely to complete the rebate when there was a longer deadline, this was once again not the case. An inverse relationship between deadline length and completion rates is also found by Shu and Gneezy (2010) in the context of gift certificate redemption. Participants are given a gift certificate to purchase a pastry and a beverage at a local coffee shop, and these vouchers had either a three week deadline or a two month deadline. With the shorter deadline, 31% of participants redeemed their voucher. The redemption rate with the two month deadline is significantly lower, at just 6%. A survey sent to participants after the deadlines had expired revealed that most people continually believed they would redeem the voucher at a later date, until it was too late (Shu & Gneezy, 2010). In each of the cases above there are important outcomes achieved by varying the length of the deadline, such as fewer gift cards redeemed or fewer rebates claimed. While these effects might be beneficial for a company that is trying to improve revenue, a decrease in the donation rate would be detrimental for charities. My study investigates whether the length of a deadline can influence the number of donations made, thus impacting the total revenue of the charity. As outlined by previous experiments, the effect of deadline length can be significant and this may be an important policy decision for charities when designing fundraising campaigns.

While there has been a lot of research on the effect of deadlines in other situations, charitable giving differs from these activities for two main reasons. Firstly, an individual donor derives utility either from anticipating the recipient's increase in utility, or the 'warm glow' from the act of giving (Andreoni, 1990). Secondly, it is not compulsory to donate and forgetting to do so holds little consequence for the donor. As with inertia, there has been minimal research on deadline length in charitable giving. Damgaard and Gravert (2014) investigate deadlines in charitable campaigns using a field experiment, in co-operation with a Danish charity. Fundraising emails and text messages are sent to a pool of previous donors, with deadlines of various length. They do not find significant evidence that deadlines increase subjects' propensity to give, and conclude that changing the deadline length does not influence donations as individuals give either "now, or never." However, Knowles *et al.* (2015) conduct a field experiment that uses three different deadlines to solicit donations: one week, one month, or no deadline. They find that donations are significantly lower with the one month deadline, which is in line with Taubinsky's prediction that intermediate deadlines will have the lowest response rate.

In sum, research so far has only been conducted in the field with contradictory results. This study aims to augment this research using a laboratory experiment to examine whether, once external factors are removed, there is an optimal deadline length for a charitable campaign. This will allow for greater control of other variables that can influence donation decisions, which may not be accounted for in the field. Knowles *et al.* (2015) acknowledge, as does Taubinsky (2014), that it is unclear what constitutes an intermediate deadline. Knowles *et al.* use a one month deadline and find significantly lower responses, and so I will use a two week deadline to see whether the same result applies at this length.

3. Experimental Design and Hypotheses

The experiment took place in the New Zealand Experimental Economics Laboratory (NZEEL) at the University of Canterbury. Participants were randomly selected from the NZEEL database using the ORSEE recruitment system (Greiner, 2004). Two treatments were run for this project: a *No Deadline* treatment and a *Two Week* deadline treatment. Data from these treatments were compared to the *NDW-2* treatment of Knowles and Servátka (2014),

which will be referred to in this study as the *One Week* deadline treatment. This treatment was also run at NZEEL, at an earlier date.

A total of 88 participants took part in three sessions of the *No Deadline* treatment, with all sessions run on Monday 19 May, 2014.

The *Two Week* treatment was run over five sessions in 2015. Participants were drawn from the NZEEL database, again using the ORSEE recruitment system. 53 subjects took part in three sessions run on Monday 16 March 2015, and in order to have a sample size similar to the previous treatments additional treatments were run on Monday 4 May, 2015 with 28 subjects participating. This brought the total sample size to 81 participants.

These dates were selected as the sessions had to be run on a Monday to keep the deadline on the same day for all treatments, and the donating period could not fall within the university term break in case participants were away from campus. A two week deadline was chosen for the intermediate deadline length as when participants were given no deadline, the final donation was made on the 12th day. A two week deadline would give ten possible days to donate, excluding the weekend, so this was deemed to be an appropriate intermediate deadline length.

3.1. Experimental Procedures

In all treatments, subjects entered the laboratory and were paid a $10 show-up fee before being seated at partitioned cubicles. This ensured anonymity and eliminated social influence as participants were unable to see each other and therefore could not make judgements regarding the donation decisions of others. They also did not need to consider the social expectation of others around them and were free to make their decisions in private. After everyone was seated, decision-making instructions were handed out for the relevant treatment. These can be found in Appendix Two (*No Deadline* treatment) and Appendix Three (*Two Week* treatment). The instructions used by Knowles and Servátka (2014) for the *One Week* deadline treatment are also included, in Appendix Four.

The only difference in the instructions of the two treatments was to indicate how long subjects had to donate. They either had two weeks from the following day, or indefinitely. The instructions for the *No Deadline* treatment were read by Maroš Servátka, as he was the experimenter who ran the O*ne Week* treatment in the Knowles and Servátka (2014) study. This was done to maintain control of the data generating process and minimise the changes between these two treatments. A new experimenter may read the instructions in a manner that frames the task differently and thus influences the decisions of subjects, and this should be avoided when possible. However, I read the instructions for the *Two Week* treatment as Maroš was on sabbatical when these sessions were run.

The experimental design used in both the *No Deadline* and the *Two Week* treatment was identical to that of the Knowles and Servátka (2014) *One Week* treatment. During the recruitment process, the sessions for both treatments were advertised as being a decision-making task of thirty minutes. Participants were paid a $10 show-up fee, as well as an additional payment of $10 which they could use to donate to the selected charity, *World Vision.*

The additional payment was a windfall gain as subjects did not have to work to earn it; it was simply handed to participants separately from the show-up fee. This design feature was implemented as there are several studies that show subjects are more generous in dictator games if their endowment is a windfall gain.[3] Incentivising donating helps to ensure the treatment effects are detectable. Initially, Knowles and Servátka (2014) had participants fill out a survey to earn their endowment. They found that donations were very low, and this data was difficult to analyse. To further incentivise donating, I provided information about the charity who was receiving the funds, and what they would be doing with the money provided. Brañas-Garza (2006) finds that increasing the information available to participants will have a positive impact on donations. As such, participants were told that *World Vision* will direct donations from the experiment towards vaccinations to protect children in poor countries including Rwanda, Tanzania and Uganda against a list of potentially fatal diseases. It has been organised with *World Vision* that the funds collected from the experiment will indeed go

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[3] See, for example, Cherry and Shogren (2008) and Carlsson, He and Martinsson (2013).

towards this specific cause. The intention here is to encourage donating through telling the participants where the money would be sent and who it would help.

The experimental design for these treatments also incorporated a dollar-for-dollar subsidy on donations made by participants. This created an incentive for participants to donate within the experiment rather than sending it to *World Vision* themselves or donating to a different charity altogether (Knowles & Servátka, 2014). As the option of donating to charity was mentioned multiple times in the instructions, this action may be given increased weight in the mind of participants when considering what to do with their earnings. As many individuals have charities that they support due to personal preferences, it was important that they had an incentive to donate to *World Vision* within the experimental setting even if this is not their standard choice of charity. A matching subsidy lowers the cost of giving, meaning donations have a more significant monetary impact than the same amount donated elsewhere. This was intended to encourage subjects to donate within the experiment.

The instructions in each treatment were divided into stages which described the various components of the experiment. Having been paid their show-up fee upon arrival, participants were given an additional $10 in a brown envelope consisting of one $5 note, two $2 coins, and a $1 coin. This allowed them to donate any amount from $0 to $10. Subjects were asked to confirm that their envelope did indeed contain $10 as they needed to sign a receipt for accounting purposes when they left the experiment. They were then told that their donations would be matched by the laboratory, where the money would be sent and how it would be used, and that their decision would remain completely anonymous. Finally, participants randomly selected a blue envelope from a box that was carried around the lab. These were marked with an alpha-numeric code to ensure anonymity, and participants were reassured that I would not know who had each code. This envelope contained a decision form, necessary for audit reasons, in which participants were to indicate how much they wish to donate, if any, and how much money this meant *World Vision* would receive after their donation was matched.[4] This also meant I could check that participants understood the nature of the matching subsidy, and emphasised its presence one final time.

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[4] See Appendix Five for the decision form used in all treatments.

In the *No Deadline* treatment, participants were told that if they wanted to make a donation, they could place the money in a box located on campus "any time at [their] convenience over the coming months" in order to indicate that the box would be available indefinitely. In the *Two Week* treatment, participants were given a specific date by which they had to donate.

Participants signed a receipt and left the laboratory one at a time to ensure they did not linger and communicate about their decisions at the conclusion of the session. Had this occurred it may have led to subjects' decisions being influenced by other participants, as social influence can be significant especially when it comes to donating to charity (Shang & Croson, 2009). They were asked to leave immediately after signing the receipt and I regularly checked to make sure participants were not gathering outside the laboratory.

Both of the treatments in this study, as well as the *One Week* treatment run by Knowles and Servátka (2014), were run under a double-blind social distance protocol. This is an experimental set-up in which the decisions and payoffs of subjects are not known by other subjects or the experimenter (Hoffman *et al.*, 1994). The processes described above, including the cubicle arrangement and random envelope selection, are in place to make certain that I do not know who makes each decision, nor that participants know the decisions of others. Participants are also aware that I do not know what decision an individual makes.

There were no major events identified between the *One Week* treatment of 2013, the *No Deadline* treatment of 2014 or the *Two Week* treatment of 2015 that would have had significant impact on subjects' perceptions of *World Vision* or the specific purpose of the donations. This was strongly considered before deciding whether the three treatments could be compared.

3.2. Hypotheses

Hypothesis One: *One Week > No Deadline*

The *No Deadline* treatment is compared to the *One Week* treatment of Knowles and Servátka (2014) in order to detect if inertia is present in charitable giving. If inertia affects donations to

charity, giving subjects more time to donate will reduce donations. The key variables are the number of donations and the average amount donated.

Hypothesis Two: *Two Week < One Week*

Hypothesis Three: *Two Week < No Deadline*

This experiment also allows me to test the impact of deadline length in charitable giving, using the model outlined by Taubinsky (2014) as a framework. I compare a one week deadline, an infinite deadline and an intermediate deadline of two weeks. According to Taubinsky's model, an intermediate deadline will have the lowest response rate. Thus, applying this to charitable giving, the prediction is that donations will be lower for the *Two Week* treatment than for both the *One Week* treatment and the *No Deadline* treatment.

This occurs as with an intermediate deadline there is the chance for individuals to forget to complete the task, or procrastinate. While they eventually may remember, the deadline is more likely to have passed with an intermediate deadline than with a long deadline. With a short deadline there is less chance to procrastinate or forget, and so it is more likely that the individual will complete the task within the given timeframe.

4. Results

Summary statistics for the three treatments are presented in Table One. The median donation across all treatments was zero, with an average donation of $2.00 in the *One Week* treatment, $2.94 in the *Two Week* treatment and $1.80 in the *No Deadline* treatment. The summary statistics conditional on giving are also reported. The median donation conditional on giving is $10 for the *One Week* treatment, $10 for the *Two Week* treatment and $5 for the *No Deadline* treatment. The average donation conditional on giving is $7.57, $8.20 and $6.58 respectively.

One participant in both the *No Deadline* treatment and the *Two Week* treatment donated the full $20, comprised of the show-up fee and the additional $10 payment. As the instructions

asked subjects to donate only using the additional payment, I treat this as a $10 donation for the purpose of reporting results. The entire $20, as well as a matching subsidy of $20, was forwarded to *World Vision.*

Table One:
Summary Statistics

	One Week	Two Weeks	No Deadline
All Data			
Number of observations	87	81	88
Average donation	2.00	2.94	1.80
Median donation	0	0	0
Standard deviation	3.64	4.19	3.36
Intensive Margin (conditional on donating)			
Number of positive donations	23 (26.4%)	29 (35.8%)	24 (27.3%)
Average donation conditional on giving	7.57	8.20	6.58
Median donation conditional on giving	10	10	5
Standard Deviation conditional on giving	2.79	2.32	3.15

4.1. Significance Tests

Over all treatments, the response rate is 29.69%. The response rate for each treatment is given in Table Two. I analyse whether the differences between the three treatments are statistically significant using a two-sided Fisher's exact test on STATA. I also test for the difference in average donation across treatments using a Wilcoxon Rank Sum Test, with the null hypothesis of identical distributions. I look at both the overall data and the intensive margin, or the statistics conditional on donating. These results are summarised in Table Three.

Table Two:
Response Rates per Treatment

	One Week	Two Week	No Deadline
Donations	23	29	24
Participants	87	81	88
Response Rate	26.43%	35.80%	27.27%

Table Three:
Significance Tests for Differences Across Treatments
(p-values in parentheses)

	Wilcoxon Rank-Sum Test	Fisher's Exact Test for Proportion of Positive Donations
All Data		
One Week v *No Deadline*	0.036 (0.971)	(1.00)
One Week v *Two Week*	1.475 (0.140)	(0.242)
Two Week v *No Deadline*	-1.544 (0.116)	(0.249)
Intensive Margin (conditional on donating)		
One Week v *No Deadline*	0.940 (0.347)	
One Week v *Two Week*	1.008 (0.3136)	
Two Week v *No Deadline*	-2.056 (0.040)	

Result One: There is no evidence of an inertia problem in charitable giving, as the response rate in the *No Deadline* treatment is not significantly lower than that in the *One Week* treatment.

The Fisher's exact test for the difference in the number of donations made within the *One Week* and *No Deadline* treatments has a p-value of 1.00. This indicates that giving subjects more time to donate does not reduce donations. In fact, in this instance the response rate is higher for the *No Deadline* treatment (27.27% compared to 26.43%) though this difference is not significant.

Across all data for these two treatments, there is no evidence for a difference in mean donation. Performing a Wilcoxon Rank Sum test gives a p-value of 0.971. This significance does not change across positive donations only, where the p-value is 0.347.

Result Two: There is no evidence that the response rate with an intermediate two week deadline is lower than a short deadline of one week. Conversely, the response rate is higher in the *Two Week* treatment though this is not statistically significant.

The p-value for the Fisher's exact test in this instance is 0.242. While 26.43% of participants donated in the *One Week* treatment, 35.8% donated when they had two weeks to do so. The higher proportion in the *Two Week* treatment may be because with two weeks there is more flexibility for the donor: they have a wider range of times available, so they can donate when their opportunity cost of time is lowest. However, the higher proportion in the *Two Week* treatment is not statistically significant.

Comparing the mean donations in the *Two Week* treatment and the *One Week* treatment also provides no statistically significant result. The significance test here has a marginally insignificant p-value of 0.140 across all data. Analysing the average donation conditional on giving has a p-value of 0.314.

Result Three: There is no statistically significant evidence that there is a difference in the number of positive donations when comparing the *Two Week* treatment and the *No Deadline* treatment.

While the Taubinsky (2014) model predicts that an intermediate deadline will have a lower response rate than a long deadline, this study finds no evidence to support this claim within a charitable giving context. The Fisher's exact test in this case has a p-value of 0.249.

The summary statistics show the largest nominal difference between average donations occurs between the *Two Week* treatment and the *No Deadline* treatment. The Wilcoxon Rank Sum test using all data again has a marginally insignificant p-value of 0.116, and conditional on donating this becomes significant with a p-value of 0.040. It is possible that the deadline creates a sense of urgency that increases the average donation made by participants, but as

this result did not carry through to a significant level with the one week deadline, further research would be needed to analyse this.

It may be that a two week deadline is not long enough to be deemed 'intermediate' according to Taubinsky's model; he states it is difficult to predict when the lower response rate might come into effect. Knowles *et al.* (2015) find significantly lower donations with their one month treatment, compared to both a one week deadline and no deadline. A valuable extension of my study would be to run a *One Month* treatment under the same conditions, to try and replicate the field result of Knowles *et al.* (2015) in the laboratory. If the result holds, it could be concluded that two weeks is actually still a 'short' deadline, and that the lower response rate does occur for intermediate deadlines of approximately one month.

4.2 Donation Distribution

I discretely checked the donation box after 5pm each day, to ensure that no participants would be attempting to donate while I was there in case this altered their decisions. I cleared the donations daily for either the period of the specified deadline or, in the case of the *No Deadline* treatment, until it appeared that there would be no further donations. Beyond this, I checked the donation box once a week to ensure there were no late donations. This allowed me to accurately follow the distribution of donations over time to see if there were any clear behavioural changes influenced by the deadline. The number of donations per day is shown for each treatment: *One Week* in Figure One, *Two Week* in Figure Two and *No Deadline* in Figure Three.

As there was no deadline for one treatment, participants from these sessions are still able to donate if they wish. However, no donation has been made since June 5, 2014. This was the 12th day of the donation period. There have been no late donations in either the *One Week* treatment or the *Two Week* treatment to date.

Figure One:
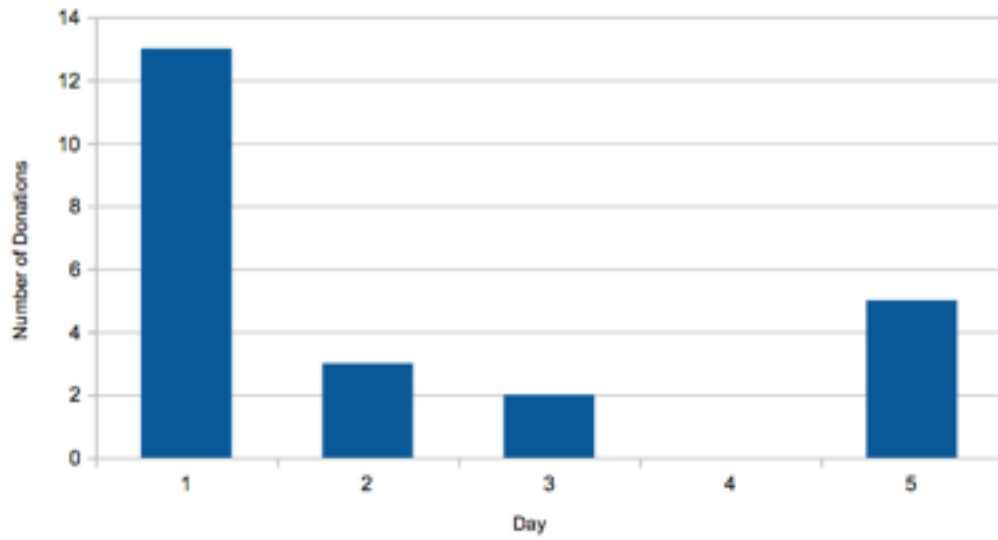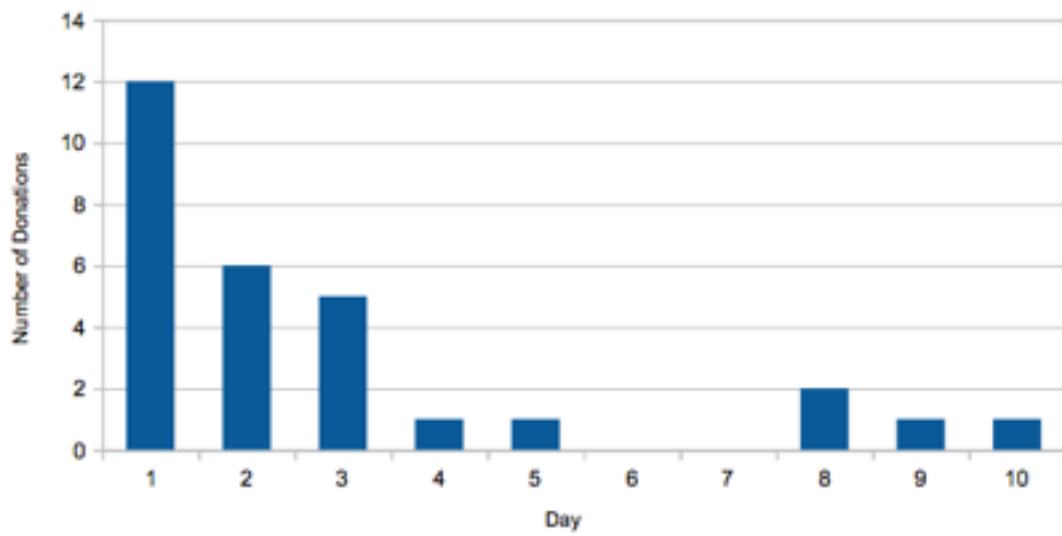**Donation Distribution in the *One Week* treatment**
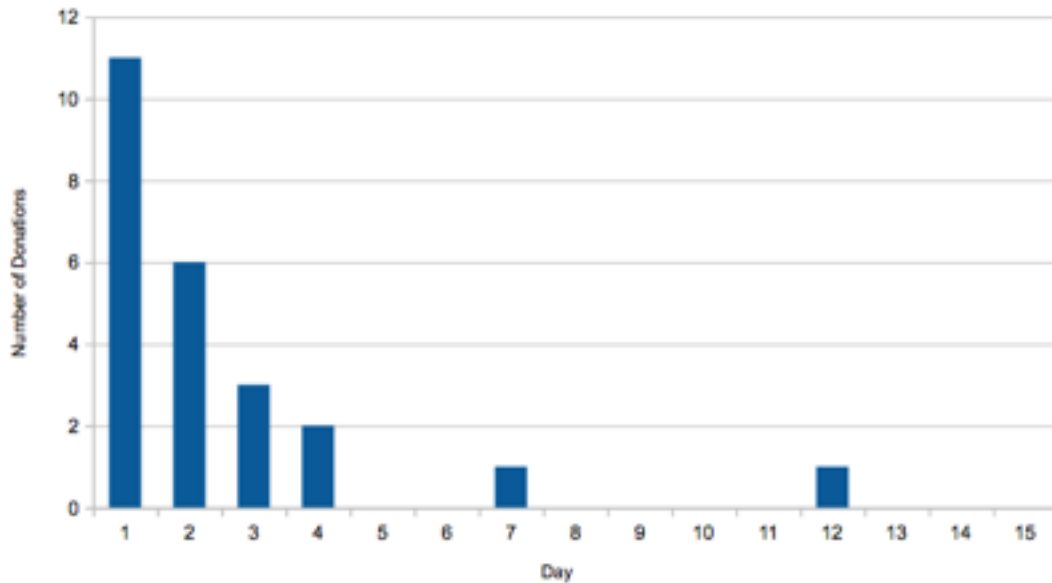

Figure Two:
Donation Distribution in the *Two Week* treatment

The 'deadline rush' distribution noted by Knowles and Servátka (2014) is shown as the *One Week* treatment of this study. Most people donate on the first day (56.5% of donors), but the next most common result was to donate on the day of the deadline (21.7% of donors). This was Day Five of the donation period. In the *No Deadline* treatment there were no donations on this day, and in the *Two Week* treatment there was just one. This suggests that perhaps the deadline did act as a cue to remind people to donate within the *One Week* treatment, however as donations overall are not significantly higher it appears that this is just a change in the distribution. Those who would have donated later instead just donated within the time frame specified, rather than new donors being encouraged to donate by the presence of a deadline.

The lack of a uniform distribution over all treatments indicates that donation behaviour is not consistent with the optimal stopping model, in which a rational individual would make their donation when their expected transaction cost is minimised.

Result Four: Donors tend to donate promptly, rather than postponing payment or waiting for the deadline.

Table Four:
Proportion of Prompt Donations

	One Week	*Two Weeks*	*No Deadline*
First Day	56.5%	41.37%	45.83%
Initial Three Days	78.26%	79.31%	83.33%

In all treatments, the most common response is to donate on the first possible day: in the *One Week* treatment 56.5% of those who donate do so on Day One, for the *Two Week* treatment this figure is 41.37% and for the *No Deadline* treatment it is 45.83%. This prompt behaviour is particularly notable if this is extended to the proportion that donates in the first three days: 78.26% of donors in the *One Week* treatment, 79.31% in the *Two Week* treatment and 83.33% when there was no deadline specified. These results are summarised in Table Four. Generally, there is then a steady decline with donations dropping on each subsequent day of the donation period and one or two late donations. This reinforces the "now or never" effect found by Damgaard and Gravert (2014). It may be that these prompt donors are 'sophisticates' according to the definition of O'Donoghue and Rabin (1999); they are aware that if they do postpone payment once, they will forget and never complete their donation. These participants know that if they do not donate while the decision is at the top of their mind, they will become inattentive and ultimately forget to complete their donation.

4.3 Policy Implications

This study finds no evidence that deadlines increase donations to charity, in terms of the number of donations or the average amount donated. The only significant result is a higher average donation conditional on donating when comparing the *Two Week* treatment and the *No Deadline* treatment, which may suggest that a deadline conveys urgency and so encourages subjects to donate more. While it appears that deadlines are not a useful tool for charities, this research could indicate that should a charity require a deadline for some reason (say, they are raising funds for a specific event, or they want to minimise the number of days that the campaign runs to keep costs to a minimum), imposing one will not hinder their campaign. There is no evidence that results are significantly lower when a deadline is used, compared to when no deadline is specified. However, it is important to note that while my

results suggest an equivalence of donation campaigns with or without deadlines, I am unable to categorically accept the hypothesis that the two scenarios are the same. Based on the data in this project, I can only fail to reject this hypothesis. Donors who were intending to donate appear to simply shift their decision-making forward to fit within the deadline, rather than deciding not to donate at all. A deadline may therefore still be a useful tool to help charities raise the same funds sooner, rather than later.

Some of the donors who waited and donated later in the period also appeared to change their mind regarding how much they wanted to donate. More specifically, they decided in the interim that they wanted to spend some or all of the money, rather than donate it. For example, one participant in the *Two Week* treatment handed in a donation form where the amount donated had been changed from $10 to $0, and there was no money in the envelope. This was received on Day Eight of the donation period, and so it appears that while the participant had previously intended to donate, other expenses arose which led him to change his mind. In the *No Deadline* treatment, the final donation was received on Day 12, in a different envelope than the one supplied.[5] Written on the envelope was a note: "Sorry, I needed to use the money (twice) and had to reopen the blue envelope (twice) so it got a bit ripped and stuff. I copied the code onto this one. P.S. That's why it's a $10 note. Hope that's okay." This may be important for charities to note: given that most people donate promptly, and a portion of those who postpone then change their minds, campaigns should be designed so as to solicit immediate donations with minimal time for donors to alter their decisions. Increasing the urgency of the request or sending reminders to donate may be options to ensure people do not forget to donate before their situation changes. However, further research would be needed to confirm the effect of these methods.

5. Conclusion

Deadlines are used in a number of contexts to maximise completion rates by reducing inertia and inattention. This study looks at whether deadlines are an effective tool for charities by examining the number of donations, mean donation and distribution of donations with three

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[5] See Appendix Six for a scanned copy of these decision forms.

different deadlines: a one week deadline, a two week deadline and an infinite deadline. Overall this gives a thorough investigation into deadlines and deadline length in charitable giving.

Two papers guided this study. Firstly, an empirical examination of inertia and transaction costs in charitable giving by Knowles and Servátka (2014) left some unanswered questions surrounding deadline behaviour in a charitable giving context. Secondly, Taubinsky (2014) develops a theoretical model for task completion with deadlines of various length, in which deadlines of intermediate length result in significantly lower completion rates. This led to two key research questions: is there an inertia problem in charitable giving that might be solved by deadlines, and does the length of a deadline matter? While these issues have been considered in many contexts before, the literature on both inertia and deadlines in charitable giving is very limited. This thesis adds to existing charitable behaviour research by testing the effects of deadlines in the laboratory, allowing for increased control over the data generating process, and with a greater range of deadlines including 'no deadline.'

I find no significant evidence of an inertia effect in charitable giving. If donors suffered from inertia, providing more time to donate would reduce donations. Through comparing data from the *One Week* treatment and the *No Deadline* treatment, where people had the longest possible amount of time to donate, it appears that this is not the case. In fact, the response rate with no deadline is higher than with a one week deadline, though this difference is not significant. Further, my results suggest that donations are not impacted by deadline length. There is no evidence to support Taubinsky's (2014) claim that intermediate deadlines have a lower response rate. Alternatively, it may be that a two week deadline cannot be classed as 'intermediate' in length as Knowles *et al.* (2015) do find significantly lower donations with a one month deadline. While conditional on donating there is a significantly higher average donation with a two week deadline compared to no deadline at all, this result does not occur with a one week deadline. This result may suggest that adding a deadline increases the perceived urgency for those who are already inclined to donate, however further research would be needed to confirm this since it did not occur in the other deadline treatment.

Overall, the presence of a deadline does not appear to help a charity increase its revenue, but nor does it seem to hinder fundraising. If a charity has limited time or budget, a deadline may

be a useful tool for keeping a campaign short, yet effective. However, if there is no need to restrict the donation period, this study suggests that charities should not impose deadlines on their campaigns, instead allowing individuals to donate when it is most convenient for them.

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Appendix One: Examples of charities using deadlines

(http://www2.peta.org/site/R?i=2fkBcOsrRDl2mva4u1zMzQ)

(http://www2.peta.org/site/R?i=89I7bEEBKfLUCr_59-4Q4Q) Dear Friend,

There are just hours left for you to help!

The last day of PETA's Global "Stop Animal Tests" Challenge is October 31, and we need your help to reach our $250,000 online goal—we're still $40,000 away! **Please donate before the month ends to help us reach this critically important goal! (http://www2.peta.org/site/R?i=YWRYev7IDH7I_6x-IjBZVA)**

Your gift will help PETA save more animals like Libby, who had been living in an animal experimentation hellhole until our undercover investigator exposed the laboratory's cruel practices and helped bring about the release of this sweet dog. Thanks to PETA's investigation, the laboratory where she was held captive shut its doors and the animals released found real homes!

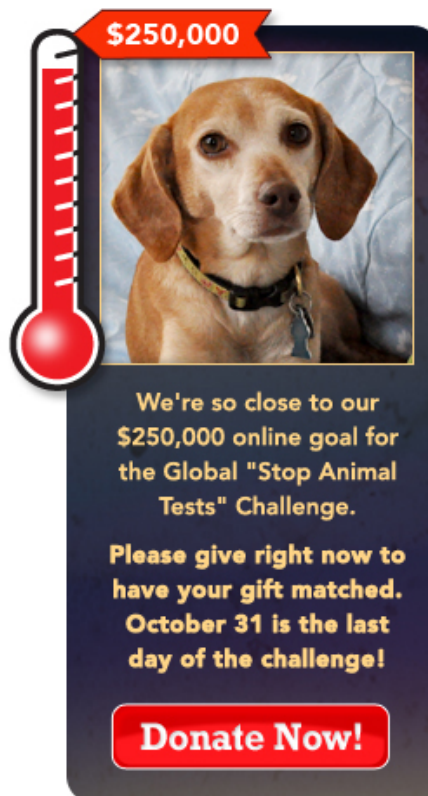**Donate right now to support PETA's work to expose abuse behind laboratory doors and save animals from terrible experiments, and your gift will be DOUBLED! (http://www2.peta.org/site/R?i=_SCeP8ZWVu7dGkvjLytaIQ)**

Image One: PETA Campaign using a deadline to provide a target and signal the end of a matching donation scheme.[6]

Text reads: "Please give right now to have your gift matched. October 31 is the last day of the challenge!" and
"Please donate before the month ends to help us reach this critically important goal!"

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[6] Source: http://www2.peta.org/site/MessageViewer?\em_id=108648.0&dlv_id=159251&printer_friendly=1
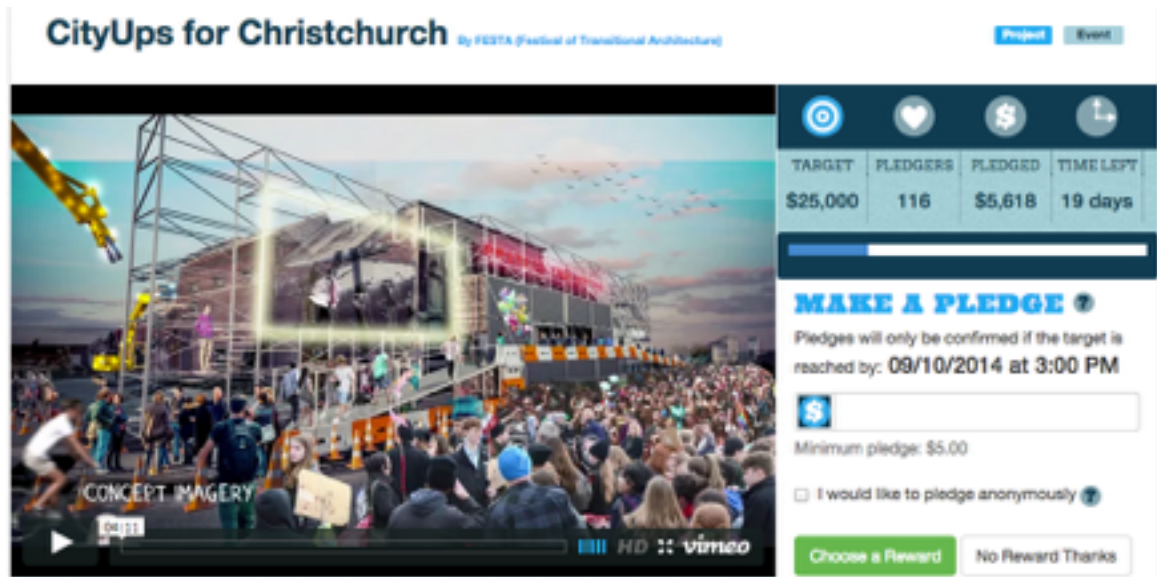
Image Two: PledgeMe campaign by FESTA, part of the Christchurch Transitional Architecture Trust, a registered New Zealand charity.

Donations will only be confirmed if the target is reached by a deadline, which is emphasised by 'time left' and the bold deadline of 3pm on 09/10/2014.[7]

[7] Source: https://www.pledgeme.co.nz/projects/2588

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.) If you wish to make a donation, you can donate any time at your convenience over the coming months starting from tomorrow, Tuesday 20th May at 8am. Please note that you may place the envelope in the box any workday as the building will be closed on Saturday and Sunday. 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 any time over the coming months from tomorrow, Tuesday 20th May at 8am.

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 starting from 8am tomorrow. Thank you once more for taking part in our study.

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.

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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 ([date]) until 5pm [deadline 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 two weeks. 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 [date] until [deadline 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 [deadline date]. Thank you once more for taking part in our study.

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.

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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.

Appendix Five: Decision form for all treatments

We would like to give you the opportunity to donate all or some of your additional payment of $10, if you wish, 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.

I wish to donate $_____ to *World Vision*. Given that the researchers will match my donation dollar for dollar, this means *World Vision* will receive $_____ as a result of my donation.

Appendix Six: Altered decision forms
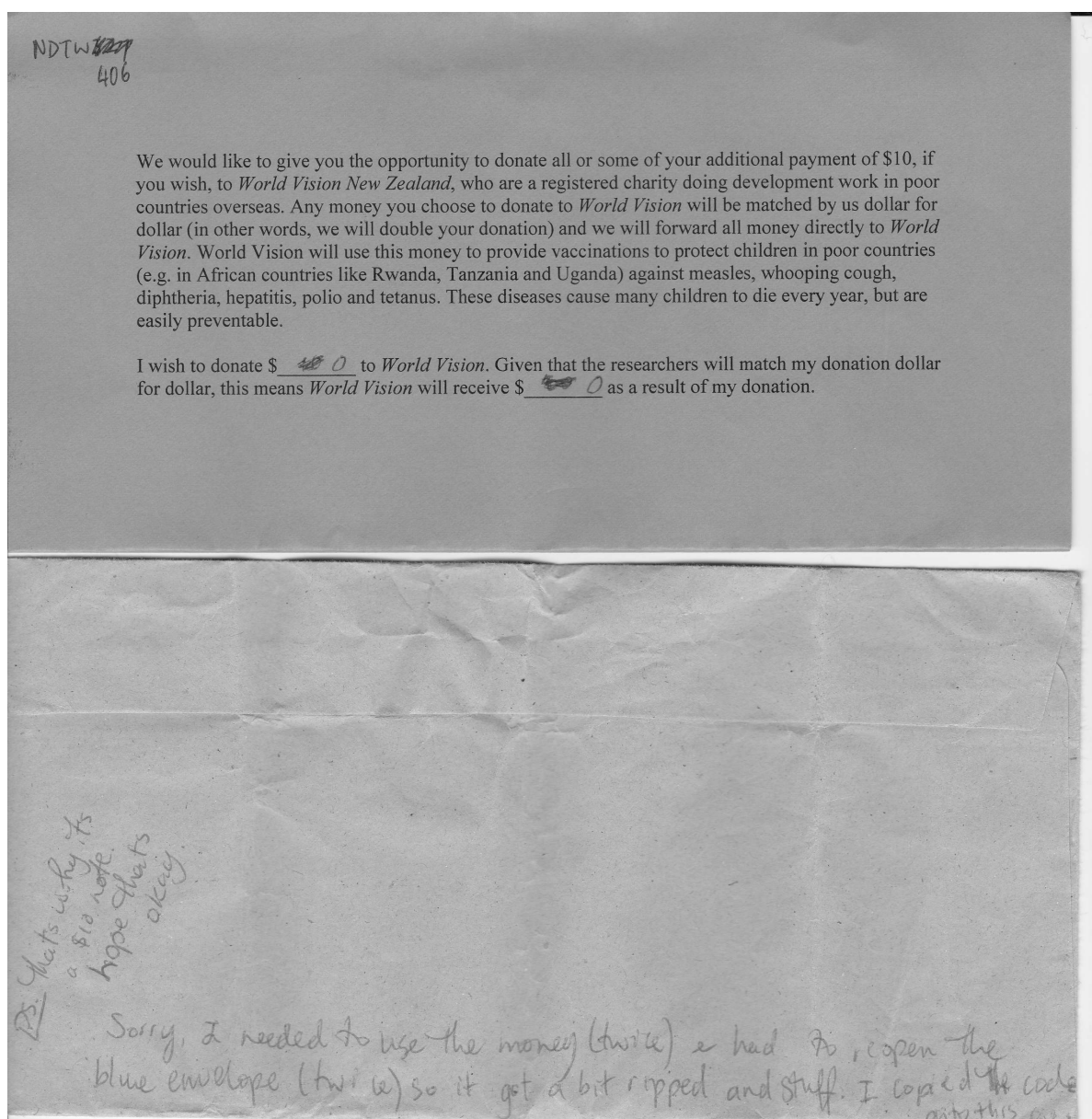
Top form: Subject changed "I wish to donate $10" to "I wish to donate $0". This was submitted on Day Eight of the *Two Week* treatment, but was not included as a data point as it was a non-donation.

Bottom envelope, text reads: "Sorry, I needed to use the money (twice) and had to reopen the blue envelope (twice) so it got a bit ripped and stuff. I copied the code onto this one. PS. That's why it's a $10 note. Hope that's okay."