EXPLORING THE ROLE OF RELUCTANT ALTRUISM ON CHARITABLE DONATIONS

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General Abstract

Humans are remarkable for the level of altruistic and prosocial behaviour they display. This has been an enduring puzzle to social scientists who have proposed a range of theories to try to account for human's propensity to act altruistically. This thesis adds to this tradition by exploring a new altruistic preference, known as, reluctant altruism. Reluctant altruists are those who do not trust others to help and display a positive response to high free riding contexts. Chapter one reviews the main influential theories that seek to explain altruistic behaviour and introduces the theory of reluctant altruism. Chapters two to five empirically tests core characteristics of reluctant altruism within a university population. Chapter two attempts to identify whether reluctant altruists choose to support the least supported charity and if observable contexts enhance reluctant altruist's prosocial behaviour. Chapter two shows a clear preference for the least supported charity which is not explained by reluctant altruism or levels of observability. Chapter three tests whether reluctant altruism predicts less trusting helping behaviour in a modified trust game and identifies if reluctant altruists donate more under observable conditions with a larger sample than chapter two. The results show a clear preference for the least supported charity but find no evidence for reluctant altruists displaying less trusting helping behaviour or reluctant altruists donating more in observable contexts. Chapter four tests if reluctant altruists make charitable donations to causes suffering from varying levels of free riding. The findings again show a preference for donating to the least supported charity and displays mixed evidence for reluctant altruist's donating under high levels of free riding. Chapter five explores reluctant altruist's emotional responses pre and post charitable donations. The results indicate that reluctant altruists are more negative pre-donation and do not become happier post donation as might be expected by Negative State Relief theory.
Chapter 6, utilises the underdog preference which is a preference to support those at a relative disadvantage to explain the consistent finding over chapters two to four that the least supported charity receives more donations. Chapter seven presents a systematic review and meta-analysis of

the effect the observability has on prosocial behaviour. The main finding is the observability has a small positive effect on prosocial behaviour. Finally, in the discussion, I review the mixed findings surrounding reluctant altruism and suggest future avenues of research that might help further clarify reluctant altruism.

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Chapter 1

1 General Introduction

In our everyday life, we often witness acts of altruism like people making monetary donations to charity, volunteering to help others or donating bodily products (i.e. blood, bone marrow, organs) (Ncvo/Caf, 2016). In each case, all of these acts involve a cost to the individual performing that behaviour and a subsequent benefit for the receiver (Fehr & Fischbacher, 2003; Nowak & Sigmund, 2005).

Understanding the motivations behind such altruistic behaviour has been a puzzle for proponents of evolutionary theory and standard economic models (McAndrew, 2002). From an evolutionary perspective, it is puzzling why an individual would willingly incur a cost that might harm their fitness for a genetically unrelated individual (Hamilton, 1964; McAndrew, 2002). Equally, it is difficult to understand from an economic perspective why a rational and self-interest individual would perform a behaviour which incurs a cost on them without any prospect of future reward (Fehr & Fischbacher, 2003). In an attempt, to develop a deeper understanding of the motivations underlying altruistic behaviour biologists, economists and psychologists have proposed a range of theories. Biologists have drawn upon the ideas of evolution and natural selection to develop theories like reciprocal altruism, reciprocity, costly signals, and competitive altruism. Economists have utilised social preference theory to develop behavioural explanations of altruism like impure altruism, conditional cooperation, equality and fairness theories. Psychologists have looked at internal motivations like reducing negative emotions and lack of trust in others to develop theories like the negative state relief model and reluctant altruism. This thesis explores a relatively new type of altruistic preference, known as, reluctant altruism.

The following introduction shall briefly define altruism and then outline the key theories from biological, economic and psychological perspectives. Next, I will draw four core components: observability, social information and free riding, trust and negative emotions from key altruistic

theories that might be relevant to developing our understanding of reluctant altruism. Finally, I end by describing the structure of the thesis.

1.1 Defining altruism

Different disciplines have their own definition of what constitutes as altruistic behaviour. For a biologist, a behaviour can be said to be altruistic if it increases the fitness of a recipient at the expense of an actors fitness (Wilson, 1992). In psychology, an action can be classified as altruistic if it meets the following criteria: a) must benefit another, b) must be performed voluntarily, c) must be intentional, d) the goal of the act must be to benefit others and e) the act must be performed without expectation of reward (Piliavin & Charng, 1990). For an economist, a behaviour is altruistic if it benefits other and incurs a cost upon the actor (Fehr & Fischbacher, 2003). This thesis adopts the economic definition of altruism because of the clarity it provides in assessing what is altruistic, without the requirement to identify the reproductive benefits of an act or the actor's intentions, expectations and goals. This thesis also frequently uses the term prosocial behaviour which we define broadly as behaviours, efforts or intentions intended to benefit the welfare of individuals, groups, organizations or society (Bolino & Grant, 2016).

1.2 Biological theories explaining altruistic behaviour

This section outlines five prominent biological theories: Reciprocal Altruism, Indirect Reciprocity, Strong Reciprocity and Competitive Altruism that explain the motivations driving altruistic behaviour.

1.2.1 Reciprocal Altruism.

Reciprocal altruism is cooperative behaviour among unrelated individuals that benefits everyone involved in the long term (McAndrew, 2002; Trivers, 1971). Trivers, (1971) suggested that there are three conditions required for reciprocal altruism to occur. First, there must be many

opportunities in one's life time to perform altruistic acts. Second, there must be an opportunity for the altruists to repeatedly interact with the recipient after the altruistic act has occurred. Third, both recipient and altruists must, in the long run, produce equivocal benefits and endure similar costs. Examples of potential areas where altruistic acts might occur are sharing knowledge, sharing equipment, helping the sick or vulnerable (i.e. children and the old), sharing food or providing assistance in times of danger (i.e. accidents)(Trivers, 1971).

Although reciprocal altruism extended our understanding of altruism beyond genetically related individuals it cannot easily explain one-off acts of altruism or altruism among complete strangers who are unlikely to ever meet again (Nowak, 2006). To address these issues, we explore the theory of indirect reciprocity.

1.2.2 Indirect Reciprocity.

Indirect reciprocity is where person A helps person B incurring a short-term cost but gaining an enhanced reputation and increasing their likelihood of obtaining long-term rewards from another individual C (i.e. highly co-operative relationships)(Nowak & Sigmund, 1998). Indirect reciprocity comes in two forms: upstream and downstream(Nowak, 2006; Nowak & Sigmund, 2005).

Upstream reciprocity works when an individual who has received help goes on to help others (A helps B who helps C)(Boyd & Richerson, 1989). For example, Bartlett & DeSteno, (2006) show that participants who received help during an experiment were more likely to help strangers by participating in their study.

Downstream reciprocity occurs when a player who has helped in the past is then more likely to receive help in the future (A helps B then C helps A) (Boyd & Richerson, 1989). Van Apeldoorn & Schram, (2016) illustrate downstream reciprocity by showing that travellers part of an online community who had previously provided accommodation for other travellers (i.e. evidence of past helping) were much more likely to have their requests for accommodation accepted than a control group with no history of providing accommodation to others.

Indirect reciprocity relies upon individuals knowing the reputation of others and being able to discriminate from those who are likely to act selfishly and not reciprocate (Nowak, 2006). Indirect reciprocity may struggle to maintain cooperation in large societies with multiple one-off interactions with strangers because the likelihood of others knowing their reputation would be low so selfish players could cheat and avoid sanctions (Fehr, Fischbacher, & Gachter, 2002). Strong reciprocity offers a solution to this problem by allowing the sanctioning of selfish individuals (Marlowe et al., 2008).

1.2.3 Strong reciprocity and altruistic punishment.

Strong reciprocity is where an individual is willing to sacrifice resources to reward cooperative behaviour (strong positive reciprocity) and to punish selfish behaviour (strong negative reciprocity) even if this is costly and provides no material reward for the reciprocator (Fehr et al., 2002). Altruistic punishment is where individuals punish selfish people incurring costs on themselves without any material benefits (Fehr & Gächter, 2002). It is worth distinguishing between second party punishment where the punisher is often punishing a transgression against themselves and third-party punishment where the punisher is an unaffected third party sanctioning a selfish individual (Marlowe et al., 2008). Henrich et al., (2006) shows across 15 rural societies a willingness in all of them to punish (rejecting unfair offers) to some degree in an ultimatum game with the level of punishment being displayed positively correlated with the degree of altruistic behaviour present within those societies. Marlowe et al., (2008) contends that third-party punishment increases as societies become more complex and second party punishment is no longer able to resolve collective action problems.

Strong reciprocity has been shown to be important for the maintenance and enforcement of social norms (Fehr & Fischbacher, 2004a, 2004b). For example, Fehr & Fischbacher, (2004b) showed that third parties were much more likely to punish dictators in a dictator game when they violated distribution norms (i.e. not transferring 50% of the endowment). Strong reciprocators incur the costs

of surveillance (so they know who to punish) and the costs of actually punishing/rewarding others so an obvious question is why bother being a strong reciprocator. One popular explanation is that the violation of norms engenders negative emotions within strong reciprocators which motivates them to punish selfish behaviour (Fehr et al., 2002). An alternative account is that a group with strong reciprocators in will have high levels of cooperation and will be able to be more competitive than groups with low levels of cooperation suggesting between group pressures would select strong reciprocators (Gintis, 2000).

1.2.4 Cost signalling theory (CST).

Similar, to indirect reciprocity, is cost signalling theory where an individual performs a costly act in front others to gain prestige through advertising their attractive qualities in the hope of gaining future rewards as a potential partner (Hawkes & Bird, 2002; Zahavi, 1995). These costly acts can be prosocial but do not have to be (Bereczkei, Birkas, & Kerekes, 2010a).

There are three key characteristics of cost signalling theory. First, the signaller and their behaviour must be visible to an audience otherwise there is no signalling benefit (Hawkes & Bird, 2002). Second, the signalled behaviour must be sufficiently costly to act as an honest signal of the fitness or quality of the signalling individual (Hawkes & Bird, 2002). Third, the signaller must benefit from performing the behaviour in public, normally via preferential treatment afterwards (Hawkes & Bird, 2002). Van Vugt & Hardy, (2010) illustrate cost signalling theory in a step-level public goods game where participants in the public condition (i.e. visible to others) contributed more (costly behaviour) to the unattainable public good than those in the private condition. In return, those participants who donated more in public were rated as being more influential in the group and having higher status (benefits). What differentiates cost signalling theory and forms of indirect reciprocity is in cost signalling theory the act that is being performed visibly does not have to be beneficial to another party whereas, in indirect reciprocity it normally is (van Vugt & Hardy, 2010; Zahavi, 1995).

1.2.5 Competitive Altruism.

Competitive altruism extends cost signalling theory by adding the idea that individuals will compete to be seen as the most altruistic partner incurring greater shorter term costs in the hope of long-term rewards (Barclay, 2004a; Barclay & Willer, 2007a). Similar to cost signalling theory, competitive altruism requires acts to be observable, to be sufficiently costly to constitute honest signs of the signaller's qualities and be appropriately rewarded (Hardy & Van Vugt, 2006b). Unlike cost signalling theory the acts signallers perform can only be altruistic. The underlying logic of competitive altruism is that altruists will through their altruistic acts enhance their reputation increasing their likelihood of being chosen as a mate or an allay allowing them to recoup their costs in the long term (Hardy & Van Vugt, 2006b). To test competitive altruism Barclay and Willer, (2007) had two participants (A and B) play a prisoner dilemma task with a third party watching them. The third party was then either: randomly paired with A or B and not informed of their decision, randomly paired with A or B and informed of their decision or allowed to choose A or B and were informed of their decision. They find that more generous donations are made in the prisoner dilemma task when A and B know that the third party can choose their partner and is aware of their donation which is a sign of competing to be chosen. They also find that the more generous A or B's were more likely to be chosen for an additional task which suggests that there was a long-term reward for competitive altruists.

Within the competitive altruism literature, there is some suggestion that males are particularly likely to compete to be seen as the most generous, especially if this involves impressing a female (Böhm & Regner, 2013; Iredale, Vugt, & Dunbar, 2008; Mcandrew & College, 2012). For example, Van Vugt and Iredale, (2013) use a public goods game where male participants play five rounds with either no observer, male observer or female observer. They find substantially higher contributions to the public pot when observed by a female audience.

1.3 Economic theories explaining altruistic behaviour

This section explores mainstream economic theories like pure and impure altruism, conditional cooperation, and egalitarian/fairness theories that help to illuminate motivations underlying altruistic behaviour.

1.3.1 Pure and Impure Altruism.

Pure altruism occurs when donors only give to causes (individual or organisations) to meet their needs and have no ulterior motive or derive any personal pleasure from making the donation (Ferguson, 2015). The difficulty with this idea is often in the real world people donate to causes even when their need has been satisfied which results in the donor's donation making no difference to the cause (Andreoni, 1990). To explain this Andreoni, (1990) proposed impure altruism which is where individuals contribute to a cause and gain personal utility, often referred to as 'warm glow', from making a donation.

A number of studies have shown that donors do feel warm glow or an increased sense of happiness after making charitable donations (Aknin, Broesch, Hamlin, & Vondervoort, 2015; Aknin, Mayraz, & Helliwell, 2014; Dunn, Aknin, & Norton, 2014). For example, Aknin, Fleerackers, & Hamlin, (2014) gave Canadian university students the decision to purchase a goodie bag for themselves or for a sick child in the hospital. After the decision self-report and third-party measures of emotions were completed. They find that both self-report and third-party ratings for those who had bought a goodie bag for themselves as less happy than those who purchased a goodie bag for the children in the hospital. Impure altruism and warm glow have also proven to be useful predictors of blood donation with impure altruism driving first-time blood donors and warm glow predicting donations by experienced donors (five or more donations)(Ferguson, Atsma, de Kort, & Veldhuizen, 2012; Ferguson, Farrell, & Lawrence, 2008).

1.3.2 Conditional Cooperation.

Conditional cooperation proposes that people will look to how much others are contributing and will then donate roughly in line, albeit selfishly, with the contributions made by others (Fischbacher & Gächter, 2006; Fischbacher, Gachter, & Fehr, 2001). For example, Fischbacher et al., (2001) asks participants at each average contribution level made by others to the public good how much they would contribute. They find that around fifty percent of participants made contributions that increased roughly in line with average group levels of giving. Research suggests that the preference of conditional cooperation is relatively stable over time (Volk, Thöni, & Ruigrok, 2012). The phenomenon of conditional cooperation has been found outside the laboratory in a university fundraising scheme, contributions to a local radio station and in the maintenance of a ski resort (Frey & Meier, 2004; Heldt, 2005; Shang & Croson, 2009).

1.3.3 Equality and fairness.

A number of theories propose that people are motivated to reduce other players payoffs relative to their own in an attempt to bring about more equitable outcomes and reduce inequality (Bolton & Ockenfels, 2000; Fehr, Naef, & Schmidt, 2006; Rabin, 1993). For example, Fehr & Schmidt, (1999) self-centred model of inequality aversion suggests that individuals experience greater loss of utility when they are at a monetary disadvantage than the utility loss they experience when another is at a monetary disadvantage. This aversion to inequality can help explain why people punish in public goods games with those who suffer from high inequality being more willing to punish which has the effect of increasing overall levels of cooperation (Fehr & Schmidt, 1999). Similar to Fehr & Schmidt, (1999) model is Bolton & Ockenfels, (2000) who proposes that people care about their own earnings and how they compare to the average level of earnings by others. They suggest that equality, reciprocity and competitive behaviours found within laboratory experiments can be explained by the thresholds at which people diverge from the assumption that more money is

preferred to less money. Rabin, (1993) proposed a fairness model based on the intentions of others. If one believes that others have the intention to cooperate then they should be cooperated with. If one believes that others intend to hurt then they should be hurt also.

A number of studies show that negative emotions could be one mechanism behind why people are motivated to reduce inequality and promote more egalitarian outcomes (Bosman & van Winden, 2002; Fowler, Johnson, & Smirnov, 2005; Xiao & Houser, 2005). For example, Dawes, Fowler, Johnson, McElreath, & Smirnov, (2007) played a public goods game where players could use their payoff to reduce one of their group members payoff or use their payoff to increase the payoff of another group member. They found those who expressed more negative emotions spent more of their payoff reducing the income of top earners or enhancing the payoff of group members who had below average payoffs. Xiao & Houser, (2005) allowed recipients in an ultimatum game to write a message to the allocator. They found recipients who received unfair offers, less than 20% of the allocators' endowment, expressed negative emotions whilst, recipients who received fair offers, 50% of the allocators' endowment, expressed positive emotions. Furthermore, giving recipients the ability to express their negative emotions at unfair offers actually led to significantly fewer rejections of unfair offers. These two findings suggest that unfair offers can arouse negative emotions which if not expressed can lead to increased rejection rates.

1.4 Psychological theories explaining altruistic behaviour

This section describes the psychological theories of the Negative State Relief model and Reluctant Altruism that propose alternative mechanisms underlying altruistic behaviours.

1.4.1 Negative state relief model.

The negative state relief model predicts that individuals in a negative emotional state will try to find a way to reduce their negative emotions by performing a benevolent or pleasurable activity (Cialdini, Darby, & Vincent, 1973). Individuals within that negative state will take the first opportunity

they have to relieve their negative state which could be something like making a charitable donation (benevolent) or eating a tasty snack (pleasurable). For instance, Manucia, Baumann, & Cialdini, (1984) invoked sad, neutral or happy mood by asking participants to remember sad, neutral or happy events after which they were asked whether they would like to make phone calls to solicit experienced blood donors to take part in the next blood drive. They found that those in the sad moods were more likely to help and volunteer to make more phone calls than those in the neutral mood. The negative state relief model is unlikely to motivate young children to act altruistically since they have not yet learnt the association between performing an altruistic act and feeling good about helping (Cialdini & Kenrick, 1976; Kenrick, Baumann, & Cialdini, 1979). Weyant's, (1978) research suggests that the cost of helping is likely to moderate the effect that negative mood states have in helping behaviour. For instance, low-cost helping behaviour leads to increased helping compared to those with neutral moods whereas, participants with negative moods performing high-cost helping behaviours tended to help comparably with those who had a neutral mood.

1.4.2 Reluctant Altruism.

Reluctant altruism is a preference to help in contexts of high levels of free riding (not helping) by others (Ferguson & Lawrence, 2016). There are two mechanisms that drive this preference: first, reluctant altruists do not trust others to help therefore they take it upon themselves to increase their level of helping and second, reluctant altruists feel negative emotions towards others that are not helping which is hypothesised to energises them to do more (Ferguson, 2015). Public goods games used to explore conditional cooperation often elicit a behavioural preference known as 'humped contributors.' Humped contributors are individuals who cooperate when few others are helping and then begin to stop cooperating once the majority of others start to help. This could be the behavioural signature of a reluctant altruist (Ferguson, 2015). Ferguson et al., (2012) have shown that reluctant altruism is an important predictor of intentions in first time and novice blood donors (less than four donations) but not experienced donors. Furthermore, Evans & Ferguson, (2014) show

that reluctant altruism differentiates blood donors and non-blood donors. Reluctant altruism is an important predictor of blood donation as reluctant altruists will be attracted to donate due to the high level of free riding in blood donation (Ferguson & Lawrence, 2016).

1.5 Core characteristics of altruistic preference that might be relevant to Reluctant Altruism

In this section, we review four characteristics (observability, social information and free riding, trust and negative emotions) that play a role in prominent altruistic theories that might be applicable to reluctant altruists.

1.5.1 Observability.

Observability is crucial to a number of altruistic preferences. For example, indirect reciprocity and cost signalling theory require altruistic acts to be observable to others in order to signal that the performers of the act have attractive qualities which would make them good potential mates or cooperative partners (Kurzban, Burton-Chellew, & West, 2015). If the altruistic act is not observable, then the performance of the act will not gain reputation or have the possibility of future rewards. Competitive altruism relies on the observability of behaviours to send signals and to facilitate the creation of competition between actors trying to outperform one another in generous behaviour (Hardy & Van Vugt, 2006b). These three theories (indirect reciprocity, cost signalling theory and competitive altruism) would predict that prosocial behaviour ought to be higher in observable compared to private conditions.

There is some evidence across economic games that observable conditions do enhance prosocial behaviour in the charity dictator game (Franzen & Pointner, 2012; Haley & Fessler, 2005; Hoffman, Mccabe, & Smith, 1996), public goods game(Barclay, 2004a; Rege & Telle, 2004; Samek & Sheremeta, 2016a), trust game (Fehr & Schneider, 2010; Smith et al., 2009; Xin, Liu, Yang, & Zhang, 2016) and ultimatum game (Roth, 1995; Schmidt & Zultan, 2005). There is also evidence from the

field that observability reduces littering (Bateson et al., 2015; Ernest-Jones, Nettle, & Bateson, 2011), increase donations to honesty boxes (Bateson, Nettle, & Roberts, 2006a), increase time spent volunteering (Carpenter & Myers, 2010), and reduces the time between blood donations (Lacetera & Macis, 2008).

There are two broad mechanisms that are proposed to explain why observability, as opposed to private conditions, enhances prosocial behaviour (Karlan & McConnell, 2014; Reinstein & Riener, 2012). The first mechanism is reputation where acting altruistically in an observable condition increases ones standing in the eyes of others potentially leading to long-term benefits. The second mechanism is signalling where actors give publically in order to influence others to donate or give larger donations to charity.

Given the prominence of observability in explaining prosocial behaviour it also possible that observability might be important within reluctant altruism (Ferguson, 2015). Although we expect that reluctant altruists will use observability not to enhance their reputation like indirect reciprocity and cost signalling theory but to signal to others that this is a cause that needs your support (Ferguson, 2015; Ferguson & Lawrence, 2016). Chapters two and three attempt to isolate the basic effect that reluctant altruists donate more in observable conditions. If this basic effect is identified future research can explore whether reluctant altruists give more in observable conditions to signal to others that a charity/cause needs help or if they donate more to enhance their own reputations.

1.5.2 Social information and free riding.

Social information about how other people are behaving can influence how we ourselves decide to behave, especially in situations where the appropriate course of action is ambiguous (Cialdini, Reno, & Kallgren, 1990). The theory of conditional cooperation suggests that there are a certain number of people (roughly 50% of us) who are willing to contribute more if others are also contributing more (Fischbacher et al., 2001). Competitive altruism suggests that in observable conditions when one has knowledge of how much others are contributing some people will choose to compete and try to

outperform others in how generous they are (Barclay, 2004b; Hardy & Van Vugt, 2006b). Both conditional cooperation and competitive altruism suggest people use social information of how much others are cooperating to influence their decision to be cooperative as well.
Whereas, strong reciprocity takes the social information of others free riding or acting selfishly as a signal to altruistically punish (Fehr et al., 2002). Altruistic punishment is altruistic in the sense that it incurs a cost to the punisher (normally resources or money) and benefits others as the punishment often ensures higher levels of group cooperation in the future (Fehr & Gächter, 2002). Reluctant altruists are expected to operate like strong reciprocators in the sense that both will perform altruistic acts in the face of free riding (Ferguson, 2015; Ferguson & Lawrence, 2016). The key difference between the two theories is that strong reciprocity will result in a negative response to free riding (i.e. punishment) whereas, reluctant altruists are hypothesised to positively respond through increase donations or volunteering (Ferguson, 2015). Over the course of four experimental chapters, we test whether reluctant altruists demonstrate a positive response to free riding within the laboratory.

1.5.3 Trust.

Trust plays an important part in economic decision making (Nowak & Sigmund, 2005). Berg, Dickhaut, & McCabe, (1995) developed a trust game (also called the BDM game) where player A (trustor) has the decision of keeping some, none or all of an endowment or transferring it to player B (trustee) (a measure of trust). Any money transferred to the trustee is normally tripled and the trustee then has the choice of keeping all, some or none of it for themselves or transferring it back to the trustor (a measure of trustworthiness). Berg et al., (1995) found that the trustor did transfer money to trustee's and explained this by suggesting that trustors must have a high enough level of trust in the trustees to reciprocate the gift which outweighs the risk of receiving nothing from trustees. This explanation suggests one mechanism behind reciprocal altruism (direct reciprocity) is

the levels of trust between parties. If either party does not trust the other then no reciprocity will occur.

Trust is also important for indirect reciprocity and costly signalling for two reasons. First, individuals performing the altruistic act must trust that the signal will be seen as an honest signal which will bring about future rewards (Hawkes & Bird, 2002). Second, for those watching the altruistic act, they have to trust that it constitutes an honest signal or trust that the 'good reputation' of others is not a hoax (Hawkes & Bird, 2002). Mohtashemi & Mui, (2003) show that in order for indirect reciprocity to be an evolutionarily stable strategy on average the benefits of being a trusting and cooperative individual must outweigh the cost of helping and trusting a disreputable individual. Keser, (2002) conducts a modified trust game with three conditions. The no reputation condition where players play a standard trust game for twenty rounds using a stranger matching design (i.e. trustor never plays with the same trustee). The short-term reputation condition also goes for twenty rounds with a stranger matching design only this time the trustor is informed about the trustee last transfer back to the trustor with ratings being either positive, negative or neutral. The long-term reputation condition is where the trustor knows about the distribution of previous ratings and the last rating. They find that the two reputation conditions substantially increase the level of reciprocal transactions between the trustor and trustee. Both reciprocity and indirect reciprocity seem to suggest that high levels of trust should lead to high levels of prosocial behaviour.

However, reluctant altruism counterintuitively suggests that it is actually a lack of trust in others to help a well deserving cause that motivates them to perform the prosocial behaviour (Evans & Ferguson, 2014; Ferguson & Lawrence, 2016). The relationship between trust, reluctant altruism and prosocial behaviour are explored further in chapter three.

1.5.4 Negative Emotions.

A number of theories highlight the role that negative emotions might play in driving prosocial behaviour. For example, the Negative state relief model posits that people seek to relieve negative

emotions by participating in behaviours that will make them feel good (Cialdini et al., 1973). This could be donating money to charity, volunteering time or eat their favourite ice cream. The behaviour that is most readily available to be performed after the induced emotional state will be performed i.e. if participants in a negative state are asked to donate money to charity they will donate money or if they are near an ice cream stand they will get ice cream (Cialdini et al., 1973).

Strong reciprocity is proposed to be motivated by anger and frustration at others acting selfishly (Fehr et al., 2002). For example, Fehr & Gächter, (2002) asked participants how they would feel towards a member of a public goods game who only invested 2 francs to the public good whilst their fellow members contributed over 14 francs. They found increased anger and frustration especially when others had contributed a lot.

Violations of equality and fairness concerns can also generate negative emotions which in turn can generate prosocial behaviour that aims to restore egalitarian and fair outcomes (Dawes et al., 2007; Xiao & Houser, 2005). For instance, Bosman & van Winden, (2002) conduct a power to take game where two players earn money then one of the players is randomly chosen to be the taker and the other the responder. The taker can choose how much of the responder's earning they wish to take and the responder can then decide how much of their own earning they wish to destroy. Bosman & van Winden, (2002) found that the more the taker took from the responder the higher the negative emotions felt by the responders were and the greater amount of their earning they were willing to destroy to prevent the taker getting it.

The difference between the Negative state relief model and theories like third-party punishment, egalitarian/fairness concerns and reluctant altruism is a) the cause of the negative emotion can be unrelated to others people's actions and b) the negative emotion can be relieved through means other than prosocial behaviour. Whereas, reluctant altruists, egalitarian/fairness concerns and strong reciprocators become angry and frustrated at others selfish behaviour and express that anger by performing the prosocial behaviour (i.e. donating towards a cause or punishing selfish players). The difference between reluctant altruism and strong reciprocators is that

reluctant altruist ought to display a positive response to selfish behaviour (i.e. donate more money to charity) whilst strong reciprocity will produce a negative response to selfish behaviour (i.e. punishing selfish players). The difference between reluctant altruists and those high on egalitarian and fairness concerns is that reluctant altruists, to our knowledge, are not motivated by reducing inequality or restoring equal outcomes. In Chapter five, we explore how reluctant altruists feel pre and post charitable decisions and how this emotional reaction differs by the levels of free riding the charity is experiencing.

1.6 Structure of the thesis

This thesis consists of three components. First, empirical studies explore and develop the theory of reluctant altruism with a particular focus on the four core characteristics: observability, social information and free riding, trust, and negative emotions that are prominent within other altruistic preferences and might play a key role in reluctant altruism (chapters two - five). Second, a consistent finding across the first three studies indicated that people preferred the charity/school with the least support. One explanation for this pattern of findings is the Underdog Effect where people prefer the organisation/charity which is at an underserved disadvantage (Vandello, Goldschmied, & Richards, 2007). This effect is explored further in Chapter six. Third, results of chapters two and three found no effect of observability manipulations on charitable donations. This is at odds with some of the literature on observability and prosocial behaviour where positive effects of observable conditions on prosocial behaviour are reported (Andreoni & Petrie, 2004; Haley & Fessler, 2005; Soetevent, 2005). To investigate what the overall effect of observability on prosocial behaviour is and to try to clarify some of the mixed findings in the literature a meta-analysis was conducted in chapter seven. Finally, Chapter eight discusses the key findings of this thesis for each of the three components (reluctant altruism, the Underdog Effect and the effect of observability on prosocial behaviour) and then suggest areas for future research directions for reluctant altruism research. Below we outline each of the remaining chapters in more detail.

Chapter two looks at reluctant altruist's response to free riding contexts and whether reluctant altruists donate more in observable than in private conditions. Costly signal, indirect reciprocity and competitive altruism would all predict that there should be higher levels of donations in the observable condition since those donors in the observable condition could use visible donations to enhance their reputations and gain long-term benefits (i.e. increased offers of cooperation)(Bereczkei et al., 2010a; van Vugt & Hardy, 2010).

Chapter three replicates Chapter two with a large sample to see if reluctant altruists do show a positive response in free riding contexts and if they give more in observable conditions. Chapter three also introduces a behavioural trust measure designed to test whether reluctant altruists low on trust would display less trusting helping behaviour. Indirect reciprocity and strong reciprocity would predict that higher levels of trust should increase charitable donations whereas, reluctant altruists predicts that a lack of trust should increase levels of donations since others cannot be relied upon to help (Berg, Dickhaut, & McCabe, 1995; Ferguson, 2015).

Chapter four is an online study consisting of a hypothetical crowdfunding scenario designed to identify at what level of free riding reluctant altruists would begin helping at. Conditional cooperation and social norms would predict that donors would contribute in line (or slightly selfishly) with what the majority of others were doing. Whereas, reluctant altruism and humped contributors would provide help when levels of helping were low then provide less help when levels of helping increased. Levels of helping with varying levels of free riding are explored further in chapter four.

Chapter five is a lab-based study with measures of negative emotions taken pre and post charitable donation decisions to see how reluctant altruist's emotions vary over the course of a charitable decision. The negative state relief model would predict negative emotions pre-donation whilst warm glow and the negative state relief model would predict positive emotions after the donation (Andreoni, 1990; Cialdini et al., 1973). Emotional responses of reluctant altruist's pre and

post donation and reluctant altruist's response to subtle manipulations of free riding are explored more in chapter five.

Chapter six highlights the consistent preference to donate to the least supported charity and school in chapter's two to four. Two explanations are put forward to explain these findings: the Underdog Effect and the Impact Philanthropy model. The underdog effect is when people prefer the organisation/charity at an undeserved disadvantage and the Impact Philanthropy model suggests that donors will contribute to the charity where their donation is likely to have the biggest impact (Duncan, 2004; Vandello et al., 2007). A follow up qualitative survey replicating the hypothetical crowd fundraising scenarios used in chapter four suggests that the Underdog Effect is the most likely explanation of the preference to donate to the charity/school with the least.

Chapter seven looks at whether observability enhances prosocial behaviour. A number of prominent theories like costly signals, indirect reciprocity and competitive altruism suggest that observability should enhance prosocial behaviour. However, there are also a number of empirical studies that show no or negative effects of observability. The meta-analysis consists of 117 papers with 134 study level effects looking at whether observability enhances prosocial behaviour. In addition to identifying the overall effect of observability on prosocial behaviour theoretical and methodological moderators of the effect were also tested.

Finally, chapter eight the general discussion outlines the main findings of the thesis in regards to reluctant altruism, the Underdog Effect and Observability's effect on prosocial behaviour. It also provides implications of how the underdog effect and observability effect could be used by charities to enhance prosocial behaviour. Broad limitations of the empirical chapters are highlighted along with recommendations for future research.

Chapter 2

Reluctant altruism, observability and charitable donations.

2 Abstract

This study was designed to explore if reluctant altruists prefer to donate to less supported charitable causes and if they were more likely to help under observable conditions. The study uses a charity dictator game, where participants had the opportunity to donate as much or as little of an endowment of £4 across the British Heart Foundation (BHF), Cancer Research UK (CRUK) and themselves. Observability of the donation act was manipulated by informing participants that their donation decisions would be either private or announced to participants completing the study with them. The relative wealth of the charities was manipulated through the display of two charity money boxes (one for BHF and one for CRUK) that are either 50%:50%, 20%:80% or 80%:20% full of coins. Multi-level negative binomial regressions were conducted on the amount donated to charity. Results showed that reluctant altruists did not donate more to the least supported charity or donate more under observable conditions. However, an interesting finding emerged that participants preferred to donate more to the least supported charity.

2.1 Overview

A common problem in the provision of public goods is free riding, those who benefit from the good but do not bear a proportion of the costs for providing the benefits (Albanese, 1985). Everyday examples of free riding are people who use public transport but try to avoid paying for their tickets or individuals who use communal milk, tea and coffee without contributing to the drinks fund. The early literature using public goods games suggested that the extent of free riding was non-negligible with up to 30-70 percent of participants free riding (Ledyard, 1994). A unique altruistic preference, known as reluctant altruism, suggests that some individuals (reluctant altruists) express a positive response to free riding (Ferguson, 2015). Instead of punishing those who free ride, or starting to free ride themselves, they are more likely to help. Reluctant altruists are not angels they do not unconditionally help, instead, they selectively offer help in contexts where free riding is high and do not help where support is frequently provided (Ferguson & Lawrence, 2016). A further prediction arising from reluctant altruism is that they should help in situations where their help is observed, in an attempt to influence others to start helping (Ferguson & Lawrence, 2016). We now review the literature on motivations to help in free riding contexts and provide an overview of the effect that observability has on charitable giving before outlining the current study.

2.2 Motivations for helping in free riding contexts

In this section, I review three theories: impact philanthropy model, strong reciprocity and reluctant altruism that provide explanations of why individuals might choose to help in contexts where few others are helping.

Duncan's (2004) Impact Philanthropy model defines a new type of charitable donor (known as impact donors) who actively seek out charities that other donors are not helping. Impact donors derive satisfaction from knowing their contributions make a real difference to the level of goods and/or services provided by a charity. For example, an impact donor would derive satisfaction from

knowing that their contribution helped to buy an extra ten malaria nets, not from the fact that the charity provides 100,010 malaria nets. If other donors have already given to that charity then, potentially, any additional donations will have a smaller effect on increasing the level of goods and/or services that the charity provides (Duncan, 2004). For example, impact donors can't derive as much satisfaction from providing 10 new malaria nets if only 5 new nets are needed. Borgloh, Dannenberg, and Aretz, (2013) provided empirical support for the impact philanthropy model by giving participants a choice between donating to a large charity with a high annual revenue or a small charity (i.e. less well-supported charity) with a low annual revenue. They find that donors prefer to give to the small charity, which they argue is due to the donation having a larger impact on increasing the smaller charity's revenue. Duncan's impact philanthropy model provides a theoretically plausible explanation of why individuals might help in high free riding contexts.

Another plausible explanation of why people help in free riding context is provided by the theory of strong reciprocity. Strong reciprocity is the idea that certain individuals, known as strong reciprocators, have a preference towards helping others and punishing non co-operators even if this comes at a personal cost to themselves (Gintis, 2000). Strong reciprocators help at times when others are not helping by punishing those acting selfishly. This act of punishment is altruistic in the sense it incurs a cost to the punisher (i.e. surveillance costs and the cost of punishing) whilst helping to improve or maintain co-operation within the group which ultimately should benefit everyone (Gintis, 2003). Support for strong reciprocity comes from third-party punishment games. Third-party punishment games typically involve an economic game (i.e. dictator game or public goods game) with the addition of an independent party who is not financially or materially affected by the outcome of the game but does have the option of punishing players in the game at a cost to themselves (Fehr & Fischbacher, 2004b). Typical third-party punishment games show substantial levels of punishment (Henrich et al., 2006). Third-party punishment is more likely to occur when participants deviate selfishly from a perceived norm (Fehr & Fischbacher, 2004b) and some argue that it is motivated by anger at norm violations (Jordan, McAuliffe, & Rand, 2016). Together strong

reciprocity and third-party punishment games provide theoretical and empirical support for the idea that some people do help when others are free riding.

Reluctant altruists should also be motivated to help in contexts of high free riding too not because they wish to have an impact or a desire to punish others. Instead, reluctant altruists are motivated by a lack of trust in others, a sense of moral anger and a negative view of humanity (Ferguson & Lawrence, 2016; Ferguson, 2015). In this sense, there are parallels between third-party punishers who are motivated to punish by anger and reluctant altruists who are motivated to help by moral anger. This study was designed to test whether reluctant altruists prefer to help the least supported charity.

2.3 Donating more under observable conditions

In this section, we review the empirical findings of the effect observability has on prosocial behaviour and explore theoretical motivations behind making donations in an observable context. The section finishes with predictions of how reluctant altruists might behaviour in observable conditions.

The effects of observability on donations are well documented across a number of economic games like the charity dictator game (Franzen & Pointner, 2012b), public goods game(Andreoni & Petrie, 2004), trust game (Fehr & Schneider, 2010) and ultimatum game(Schmidt & Zultan, 2005). Field studies also report the positive effects of observability on: firemen volunteering more hours, churchgoers donating more to the collection and university staff contributing more to a drinks honesty box (Bateson et al., 2006a; Carpenter & Myers, 2010; Soetevent, 2005). A recent meta-analysis of 117 papers (N = 788, 164) found that there is a small positive effect (r = .14) of observability on prosocial behaviour (Bradley, Lawrence, & Ferguson, 2018). There is a general consensus that making a decision under observable conditions leads to more charitable donations than conditions where individuals decisions are private and anonymous. The question, is why do people donate more in observable conditions?

Broadly, there are two explanations for why people donate more whilst being observed (Karlan & McConnell, 2014; Reinstein & Riener, 2012). First, an individual may wish to signal to others their generosity to enhance their reputation (reputation building approach)(Harbaugh, 1998). For example, Milinski, Semmann, & Krambeck, (2002) found that those who contributed more under observable conditions to charity were more likely to be voted as a delegate to represent their group. Similarly, Bereczkei, Birkas, & Kerekes, (2010) showed that participants in the observable condition who volunteered more time to charity were subsequently rated by others as more sympathetic and trustworthy. Second, an individual may care about the public good/charity and contribute in the hope of influencing others to give more (influencing approach)(Vesterlund, 2003). For example, Reinstein & Riener, (2012) show that donors who are aware that other potential donors will see their decisions and have the option to make larger donations. Those donors who know other potential donors will see their decision after having made their contributions donate less. These results indicated that donors do try to use their donation to influence others. A real-world example of donors influencing others is provided by List & Lucking-Reiley (2002) who found that increasing the seed money (contributions already provided by other donors) from 10% to 67% generated six times more in contributions and doubled contribution rates. Both the reputation seeking and influencing others account provide credible explanations of why people might donate more in observable contexts.

Given the past literature (outlined above) we expect reluctant altruists will show a positive response to observability by donating more in observable conditions. Previous work on reluctant altruism has suggested that reluctant altruist will donate more in observable conditions because of their desire to reduce levels of free riding by inspiring others to contribute (Ferguson, 2015). Due to the dearth of research looking at reluctant altruism and observability this study was designed to test the main proposition that reluctant altruists will donate more in observable conditions. If successful, future research can address whether this is due to a desire to inspire others to contribute or to enhance their own reputations.

2.4 Current study

The present study was designed to identify if reluctant altruists support a least supported charity and whether they give more when observed. A charity dictator game (CDG) is used where participants have the choice of donating, as much or as little as they like, to two charities, the British Heart Foundation and Cancer Research UK (see the pilot study below for more details on how the charities were chosen), or keeping the money for themselves. Observability of the donation act was manipulated by informing participants that their donation decisions would be either private or announced to participants completing the study with them. The relative wealth of the charities was manipulated through the display of two charity money boxes (one for BHF and one for CRUK) that are either 50%:50%, 20%:80% or 80%:20% full of coins.

This study was devised to test the following hypotheses:

1) High reluctant altruists will donate more to the least supported charity.

2) High reluctant altruists should donate more to both charities under observable conditions.

3) There should be more donations to the least supported charity if participants are in the observable condition and score high on reluctant altruism.

2.5 Pilot Study: Choosing the Charities

A pilot study was conducted to a) identify two charities that are roughly equivalent in terms of desirability. In total, 360 undergraduate students from Nottingham University completed a nine-item questionnaire on one of six different charities (British Heart Foundation, Cancer Research UK, Macmillan, Marie Curie, Howard League of Penal Reform and Action on Addiction) using a between subjects design. The questionnaire contained nine items that assessed the perceived: need for donations, efficacy, worthiness and reputation of one of the six charities. Mokken scaling on the questionnaire indicated one underlying dimension: desirability. A one-way analysis of variance was conducted with the dimension as the dependent variable and charities as the grouping variable,

which was then followed up by a Tukey-Kramer post hoc comparison for unequal groups. The results showed that there was a significant difference in desirability between the charities (F (5, 335) = 66.60, $p < .001$) with the post hoc comparison indicating the significant difference lay between the medical and non-medical charities ($p < .05$). Out of the medical charities, there was no difference in desirability between the British Heart Foundation and Cancer Research UK therefore these two charities were used in studies one and two.

2.6 Method

2.6.1 Sample.

One hundred and fifty-six Nottingham University students were recruited through convenience sampling. The sample contained 62 males, 93 females and 1 who wished not to disclose. The sample contained students on 43 different courses and academic attainment ranged from Undergraduate level (n=117) to Master (n = 22), PhD (n =14) and other (n = 3). Participants were recruited to the study by placing posters up around campus so interested volunteers could get in touch. We also emailed out to different schools to invite them to forward an invite to participate in the study to their students who might be interested in taking part. Once interested participants got in touch a mutually convenient time was arranged to take part in the study. Participants completed the study in groups of between 4-10 participants at a time with each group being randomly assigned to a condition via a random number generator (random.org). All participants completed the experiment in the same computer laboratory space with dividers between each computer to ensure privacy of decisions. Participants were reminder not to interact or communicate with other participants during the experiment. Participants remuneration was the amount earned from the money earning task (£4) minus the amount, if any, donated to charity. All participants were remunerated at the end of the study using an anonymous remuneration system where the experimenter wrote on a letter the participant ID number and the amount they selected to keep for

themselves. The envelopes where then placed on a table away from the experimenter ready for collection by the participant. This prevented the experimenter from linking remuneration to a participant's identity.

2.6.2 Design.

A 2 (observability: Private vs Public) X 3 (relative wealth of charities: 80:20, 20:80, 50:50) between subjects design was used. The experiment was conducted using Psychopy software (Peirce, 2007) and the questionnaires were run through Qualtrics (Qualtrics, 2013). The independent variables of observability and relative wealth of charities were manipulated using the following method:

Observability: If participants were in the observable condition they were informed before making their donation that they would have to read out their donations at the end of the experiment to the other participants completing the study with them (see *Figure 2.1* and Appendix A for consent form and information sheet). Participants in the non-observable condition were informed that their donation decisions are private and anonymous. This manipulation has been used by Ariely, Bracha, and Meier, (2009) in a charity dictator effort game task with each participant in the observable condition being required to announce to other participants in the lab how much they had earned for charity and how much they choose to keep for themselves.



Figure 2.1. Screenshots of observable (left) and non-observable (right) manipulations

Relative wealth of charities: the relative wealth of charities was manipulated by showing participants a screen entitled 'Donations made by participants so far' (see *Figure 2.2*). On the screen, there were two jars filled with money each labelled with the name of a charity (the British Heart Foundation or Cancer Research UK). The levels in the jars changed across the three conditions: 1) British Heart Foundation is 80% full and Cancer Research is 20% full, 2) British Heart Foundation is 20% full and Cancer Research is 80% full and 3) British Heart Foundation is 50% full and Cancer Research is 50% full (see Figure 2.2). The 50:50 conditions provide a measure of whether one charity is generally a more preferred donation option. It's important to note that the amounts in the jars remained constant £52 made up of 22x£1, 40x50p, 50x20p. Only the height of the coins changed in the jars either: 2.8 cm, 7cm or 11.2cm high. To allow the height to be manipulated whilst only using the same amount of coins and the same composition of coins the container was stuffed with a transparent material which wasn't visible in the displayed images. Furthermore, to make the pictures of the jars more authentic they were taken in the same room as the experiment was conducted in. This study, like Martin and Randal (2008), uses indirect social information where it is the visual image of the amounts in the jars that give participants information about how past participants have contributed. This is different from other studies where participants are told the average amount of donations or the number of past donations (Frey & Meier, 2004; Heldt, 2005).



Figure 2.2. An example of the 80% (most supported charity), 50% and 20% (least supported charity) full jars of coins.

Controls: Following the finding that unearned wealth in dictator games leads to more selfless donating behaviour (Cherry, Frykblom, & Shogren, 2002), this study adapts Ariely et al., (2009) effort task (pressing the keyboard keys 'zx') to simulate earning wealth (see section 2.6.3.1). Another potential issue that could confound the findings is whether one charity is more favoured than another (charity effect). This is dealt with in two ways: first, there are two 50:50 conditions (one for public and one for the private manipulations) where the social information about what past participants have donated is kept the same hence we should find no preference for one charity over another. Second, in the 20:80 conditions the 20% charity and 80% charity is counterbalanced to appear as both the British Heart Foundation and Cancer Research UK.

2.6.3 Materials.

2.6.3.1 Money earning task.

The money earning task is a replication of the one used in the Ariley, Bracha and Meier (2007) paper where participants are asked to press the keyboard keys of 'z' then 'x' in that sequence for a period of 5 minutes. If the participant gets less than 200 correct 'zx' responses they receive £1.00 and if they get more they earn £4.00. Everyone in this study had enough zx responses to earn

£4 with the average number of 'zx' responses being 954 (SD = 257.83) which relates to over 3 'zx' responses per second.

2.6.3.2 Charity task practice scenarios.

To aid understanding of the charity task three example scenarios were given for example: "Example 1: participant has earned 400p and decides to give 0p to the British Heart Foundation, 0p to Cancer Research Uk and is keeping 400p." These scenarios' highlighted a number of potential donating strategies they might use: giving all to charity, giving equally to charity and self or keeping all the money for themselves. They also highlighted the importance of: spending only what they earned and not leaving any funds earned unallocated.

2.6.3.3 Charity Task.

The charity task involves participants being presented on screen with three response scales labelled: 'British Heart Foundation', 'Cancer Research UK' and 'Self' (see Figure 2.3). The participant can choose how much they wish to give to each option by moving the slider along the scale with the slider increasing in 1p increments. Presented on this screen are also the jars representing how much other participants have already given to the British Heart Foundation and Cancer Research UK.

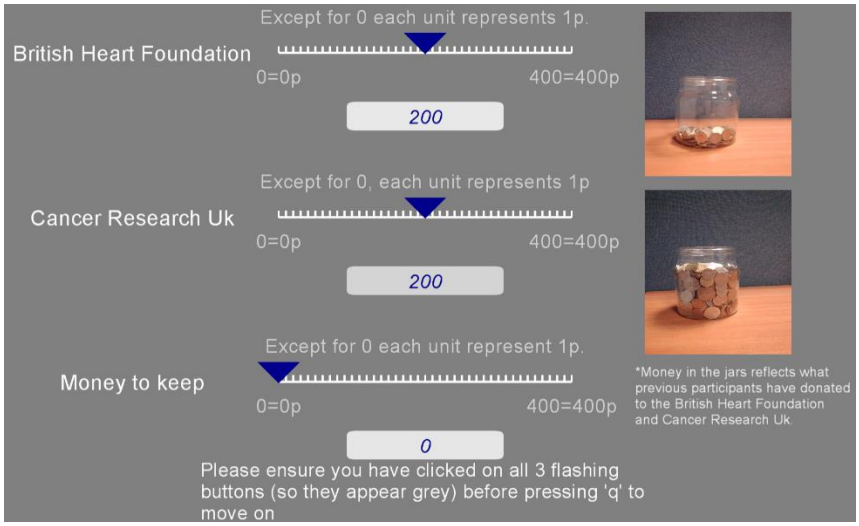


Figure 2.3. Screen shot of the charity task where participants can use the sliding scales to donate some, none or all of their endowment to British Heart Foundation, Cancer Research UK or themselves.

2.6.3.4 Reluctant Altruism Scale.

The measure of reluctant altruism is composed of thirteen items across three subcomponents: lack of trust (made up of two items i.e. 'I can't trust others to help' and 'very few people help others these days'), moral anger (consisting of five items i.e. 'I get angry because others don't help those in need', 'I get frustrated that other people do not help those in need', 'I get ashamed that other people do not help others', 'I get upset by people's disregard of others in need', and 'I feel sad that people generally do not help each others') and a negative view of humanity (made of six items i.e. 'We live in a selfish society', 'I feel our society is uncaring', 'many people are only interested in themselves these days', 'most people are selfish', 'it seems it is culturally acceptable these days to put self before others', and 'people these days consider their own needs before others'); total α = 0.91.). All items a prefaced with the sentence "I would/do volunteer to help others because.." after which participants are asked to rate that item on a 1-7 scale from Strongly Disagree to Strongly Agree (see Appendix B. A total sum score of these items was used to give each participant a score on the reluctant altruism scale that is used in the subsequent analyses.

2.6.4 Procedure.

Participants were asked to complete the money earning task where they clicked 'z' then 'x' for five minutes after which they were informed how many correct responses (z-x pairs) they had made and how much they had earned (see Figure 2.4). The charity task is then introduced with examples of possible legitimate donation decisions. Next, the public or private manipulations are presented with half the participants being told their decisions will be kept anonymous and private and the other half-informed that their decisions will be made public to others. Participants are then presented with the screen showing them donations made by other participants so far where jars representing each charity were displayed with differing amounts of coins in. Depending upon the condition they were in the jars will either be 80%:20%, 50%:50% or 20%:80% full of coins. A final instruction screen was presented reminding participants of the amount they had earned and how

they could use it. The donation screen had three scales labelled the British Heart Foundation, Cancer Research UK or self where participants could donate as much or as little as they liked so long as it all added up to the amount they earned. This page also contained the pictures of the jars as a reminder of how much past participants had given to each charity. Finally, participants were asked to complete an online questionnaire which collected demographic information like gender and course of study as well as the Moral Foundations Questionnaire (MFQ) and the reluctant altruism scale (see Appendix B). The MFQ is not of interest to reluctant altruism so is not discussed further.

If participants were in the public condition, once everyone had completed the study, they read their donation decisions out to the rest of the participants present. All participants were thanked for their time, given a debriefing sheet and reimbursed with the money they selected to keep (see

Appendix C for public and private debriefing sheet).

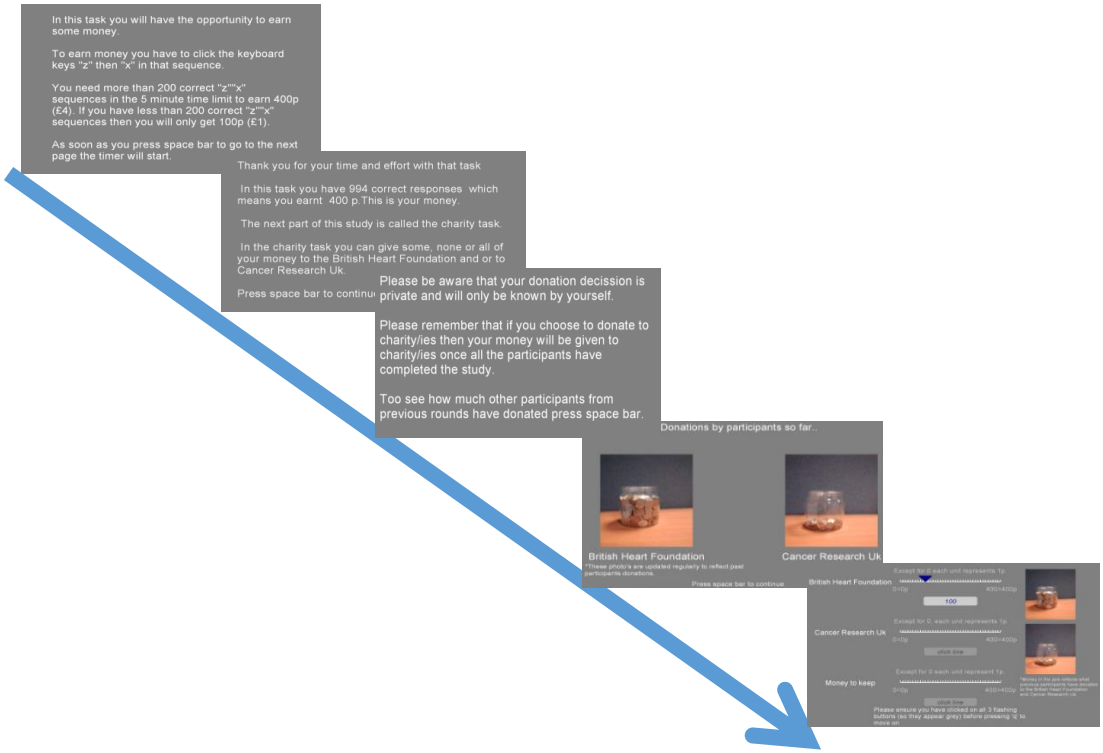


Figure 2.4. Flow of the study. Screen shot in top left depicts earning task instructions and the following screen shot shows results of the earning task. The middle screen shot is the observability manipulation. The fourth screen shot from top left indicated the relative wealth of charities manipulation. The final shot shows the donation page.

2.7 Results

2.7.1 Incomplete and Invalid responses.

From the one hundred and fifty-six participants who completed the study two participants were dropped: one due to technical problems preventing all their data being collected, and one due

to invalid responses in the charity dictator game (i.e. donating more than they earnt) indicating a misunderstanding of the task.

2.7.2 Charity effect.

To identify if participants had a preference for donating to either the British Heart Foundation or Cancer Research UK a Wilcox sign rank test was conducted. The sign rank test showed no difference between the money donated to the British Heart Foundation (*M* = 0.88, *SD* = 0.98) or Cancer Research UK (*M* = 1.00, *SD* = 1.07) (z = -1.07, p = .28).

2.7.3 Overview of Donations.

As can be seen from Table 2.1 marginally more money is given on average in the non-observable (*M* = £1.97, *Mdn* = £2) than in the observable conditions (*M* = £1.82, *Mdn* = £1.5) although this difference is not statistically significant (z = 0.58, p = .56). Donations to the 20%:80% and 80%:20% conditions (*M* = £2.02, *Mdn* = £2) are slightly higher than the 50%:50% conditions (*M* = £1.59, *Mdn* = £1.25) however, this difference is not significant (z = -1.49, p = .13). A comparison between donations to the least supported charity (20%) (*M* = 1.14, *Mdn* = 1.00) and most supported charity (80%) (*M* = 0.88, *Mdn* = 0.50) shows significantly more donations are given to the least supported charity (z = 2.79, p < .01).

Table 2.1. *Shows the mean and median responses in total donations across the visibility and relative wealth of charities manipulation.*

Manipulations	N	Mean (£)	SD (£)	Median (£)
Observability	154			
Non Observable	75	1.97	1.60	2
Observable	79	1.82	1.55	1.5
Relative wealth of charities	154			
Control	48	1.59	1.41	1.25
20:80 and 80:20	106	2.02	1.63	2
Least supported charity	106	1.14	1.17	1.00
Most supported charity	106	0.88	1.03	0.50

2.7.4 Analysis strategy.

A multilevel approach is used to account for the correlation between observations caused by each participant making two donations decisions (giving to the least supported charity and/or giving to the most supported charity). These two donations are likely to be correlated because they come from the same participant violating the assumption of independence of observations. A multilevel approach allows a random intercept to be added to account for between-participant variation in a manner that models the correlation among the repeated measures (Fang, 2013). A multilevel negative binomial model is appropriate to deal with the right-skewed distribution of donations (skew = 1.12, $p < .001$) (see Figure 2.5) and deal with the overdispersion (excess variance in non-zero observations) that would make Poisson models inappropriate (Moghimbeigi, Eshraghian, Mohammad, & Mcardle, 2008).The negative binomials are conducted with robust standard errors to deal with issues of heteroscedasticity. To aid interpretation of the coefficients they are reported as incident rate ratio's where 1 indicates no increase/decrease rate of donating to charity with values greater than one indicating a higher rate of giving and negative values suggesting reduced rates of giving.

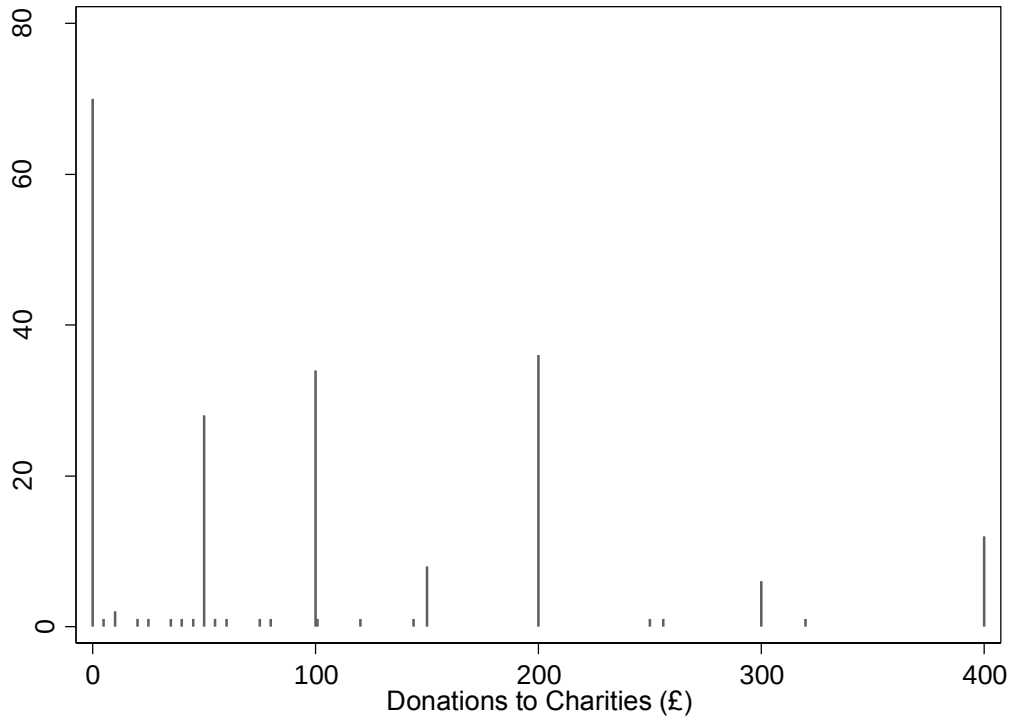


Figure 2.5. Spike plot showing the distribution of donations to charities.

2.7.5 Multilevel Negative Binominal Regression.

Five multilevel negative binomial regressions on the amount donated to charity were conducted. The first model contained the relative wealth of charities predictor (dummy coded). Model 2 added mean centred reluctant altruism and model 3 included observability (dummy coded). Model 4 includes the three main effects and three 2 way interactions (relative wealth of charities by reluctant altruism, relative wealth of charities by observability and reluctant altruism by observability). Model 5 contained three main effects, three 2 way interactions and one 3 way interaction (observability by relative wealth of charities by reluctant altruism).

Table 2.2 shows that in model 1 the relative wealth of charities was a marginally significant predictor of giving more to the least supported charity than the most supported charity (IRR = 0.75, SE = 0.11, p = .05). This effect remain significant with reluctant altruism and observability being

added in model 2 and 3. Neither reluctant altruism nor observability predicted increased donations (reluctant altruism IRR = 1.00, SE = 0.01, p = .83; observability IRR = 0.99, SE = 0.16 p = .96).

Model 4 includes three 2 way interactions being added to the main effects which allow us to test hypothesis one that reluctant altruists will donate more to the least supported charity. The interaction term between reluctant altruism and the relative wealth of charities was nonsignificant (IRR = 1.00, SE = 0.01, p = .68) suggesting reluctant altruists did not give more to the least supported charity. To test hypothesis two that reluctant altruists should donate more to both charities under observable condition an interaction term was added to the model between reluctant altruism and observability. The interaction term was non-significant (IRR = 0.99, SE = 0.01, p = .71) indicating reluctant altruist do not donate more to charity under observable conditions.

Model 5 includes the three-way interaction which allows us to test hypothesis three that there should be more donations to the least supported charity if participants are in the observable condition and score high on reluctant altruism. The three-way interaction term was insignificant (IRR = 0.99, SE = 0.04, p = .71) suggesting reluctant altruists under observable condition do not give more to the least supported charity.

Table 2.2 *Multilevel Negative Binominal random intercept model exploring whether observability, relative wealth of charities and reluctant altruism predict charitable donations.*

	Model 1	Model 2	Model 3	Model 4	Model 5
	IRR (SE)	IRR (SE)	IRR (SE)	IRR (SE)	IRR (SE)
Relative wealth of charities (20/80)	0.75 (0.11)*	0.75 (0.11)*	0.75 (0.11)*	0.67 (0.15)	0.67 (0.26)
Reluctant Altruism (RA)		1.00 (0.01)	1.00 (0.01)	1.00 (0.01)	1.00 (0.02)
Observability (OBS)			0.99 (0.16)	0.89 (0.18)	0.89 (0.35)
20/80* RA				1.00 (0.01)	1.01 (0.03)
20/80*OBS				1.24 (0.37)	1.23 (0.68)

OBS*RA	0.99 (0.01)	1.00 (0.03)
OBS*RA* 20/80		0.73 (0.04)

Note 1. Model 1 χ^2 (1) = 3.84, p = .049. Model 2 χ^2 (2) = 3.92, p = .14. Model 3 χ^2 (2) = 3.94, p = .27. Model 4 χ^2 (6) = 4.43, p = .62. Model 5 χ^2 (7) = 1.51, p = .98. * p < .05.

2.8 Discussion

2.8.1 Overview.

The multilevel models showed no evidence of reluctant altruist donating more to the least supported charity as predicted by hypothesis one. There was no effect of reluctant altruism predicting higher donations in the observable as opposed to the private condition as expected by hypothesis two. There was no support for hypothesis three that reluctant altruists should donate more in the observable condition to the least supported charity. Interestingly, there was an effect of the relative wealth of charities with people donating more to the least supported charity. The rest of the discussion explores these four findings, looks at limitations of the current research and outlines future research.

2.8.2 Reluctant altruists did not preferentially help the least supported charity.

The results of this study do not support our first hypothesis that reluctant altruism scores should predict donation to the least supported charity. One possible explanation was that the manipulation of the relative wealth of charities was too subtle to activate reluctant altruists to support the least supported charity. Previous work like Frey & Meier (2004) explicitly informs students that 46% or 64% of others have donated to this cause or Shang & Croson (2009) tell callers into a radio station that previous donors gave either $75, $180 or $300. Both of these manipulations are a lot more explicit than showing participants pictures of jars filled with money. However, the multilevel models do show that more money is donated to the least supported charity suggesting the relative wealth of charities was a successful manipulation. Possibly, just not successful at activating a reluctant altruist response. Alternatively, reluctant altruism is a relatively new concept

with only two empirical papers that look at reluctant altruisms effect at predicting blood donations (Evans & Ferguson, 2014; Ferguson et al., 2012). No published papers hitherto have looked at reluctant altruism effect on charitable donations. This makes it difficult to know reluctant altruisms effect size on charitable donations. Perhaps this study did not have adequate power to accurately detect the effect.

2.8.3 Reluctant altruists were not more charitable under observable conditions.

Hypothesis two predicted that reluctant altruists would donate more to charity in the observable than in private condition. The result does not support this hypothesis. One possible explanation for this null results is that the manipulation of observability was not successful. This idea is supported by the similar levels of donations to charity in both the observable and private conditions. The manipulation of having one group of participants announce their donations at the end of the study vs another group whose donations are kept private is a common observability manipulation (Alevy, Jeffries, & Lu, 2014; Ariely et al., 2009; Tamas Bereczkei et al., 2010a; Binzel & Fehr, 2013). Although the manipulation is common the finding that observability always increases donations under observable conditions is not (Matland & Murray, 2015; Pedersen, 2016). A number of studies finding no or even negative effects of observability on charitable donations (Barmettler, Fehr, & Zehnder, 2012; Festre & Garrouste, 2014; Noussair & Tucker, 2007a). If observability was not successfully manipulated then perhaps reluctant altruists did not feel like they could influence others through their donations hence did not donate more in the observable condition. A lack of power could also explain the null observability main effect and null interaction. A meta-analysis we subsequently conducted on observability and prosocial behaviour (see Chapter 7 for more details) suggests that the overall effect of observability is small (r = .14). The sample size of the current study might have been too small and therefore might not have had adequate power to detect the effect.

2.8.4 No three-way interaction between reluctant altruism, observability and the least supported charity.

The results do not support the third hypothesis of an interaction between observability and reluctant altruism predicting more donations to the less well-supported charity. This is not surprising given the non-significant two-way interactions. Previous explanations of unsuccessful manipulations and lack of power can account for the non-significant three-way interaction.

2.8.5 Effect of the relative wealth of charities.

The finding that participants gave more to the least supported charity is interesting. A number of studies that have manipulated social information tend to show that people donate more when they know others have donated more (Frey & Meier, 2004; Martin & Randal, 2008). For example, Heldt, (2005) found contributions to the maintenance of a ski resort was higher from skiers told that 70% of skiers contribute to maintaining the ski track than from a control condition where no social information is given. One explanation of why the current findings differ from those from previous research is the social information is presented within subjects (not between). Previous research has presented social information to see if it increases donations to a charity relative to a control group (no information). This research looks at whether participants use social information to discriminate between charities i.e. does one charity with more donations and another charity with fewer donations effect where the next participant will donate to. Previous research showed that social information could be used to increase donations to a given charity (Frey & Meier, 2004; Heldt, 2005). This study shows that social information can be used to discriminate between giving to one charity as opposed to another with the least supported charity receiving more. Further discussion of the motivation driving this effect can be found in Chapter 6.

2.8.6 Limitations.

All the participants used in the study were university students and therefore were all western, educated, industrialised, rich and from a democratic country (WEIRD)(Henrich, Heine, & Norenzayan, 2010). This limits how generalizable the findings of this study are to other age groups, cultures and countries. Dictator games have been criticised for being artificial and abstract weakening the degree to which they can predict altruistic behaviour in the real world (Bardsley, 2005). To make the current research more realistic well-known charities were used (British Heart Foundation and Cancer Research UK) and participants had no constraints placed on how much they kept and/or donated to charity/ies. Sample size might have been too small to adequately detect effects, therefore, future work will use a similar design to enable the data from studies one and two to be pooled.

2.8.7 Next Chapter.

This study was designed to test reluctant altruists' preference for donating to less well-supported causes and to do so more under observable than private conditions. The results showed no effect of reluctant altruism on donating more to the least supported charity or donating more under observable conditions. One reason for these null results could be a lack of power. The sample size was small and the effect sizes of observability and reluctant altruism could well be small too. The next study will not contain the 50:50 conditions so will have a larger sample with more power to detect the effect. Apart from that change, we shall keep the design the same to allow a combined analysis of the two studies to further enhance the power to detect small effects. The next study will focus on trust and the role it plays in reluctant altruism. Previous literature on reluctant altruism suggests that a lack of trust in others to help is an important predictor of blood donations (Ferguson et al., 2012). The next study will explore whether reluctant altruists lack of trust in others to help will lead them to make less trusting donations to charity.

Chapter 3

Reluctant altruism, trust and charitable donations

3 Abstract

This study was designed to test predictions made in chapter one with a larger sample and to explore if reluctant altruisms predicts less trusting helping behaviour in a modified trust game. One hundred and thirty-two students from the University of Nottingham completed a charity dictator game (CDG) and a modified trust game. Multilevel tobit regression models showed reluctant altruists did not give more to the least supported charity or donate more in observable conditions. A linear multiple regression showed that reluctant altruists did not predict less trusting helping behaviour in the modified trust game. The null results might reflect an unsuccessful manipulation of the relative wealth of charities with free riding not being high enough to activate a reluctant altruist preference.

The previous study found that reluctant altruism did not predict donations to the least supported charity or more contributions to charity in an observable as opposed to a private condition. One reason for these null findings could be the relatively small sample of participants (N = 106) having insufficient power to detect small effects. The aim of conducting this study was to a) test the predictions made in chapter one with a larger sample and b) to identify if reluctant altruism predicts less trust in others to help. The following introduction will: review the role reluctant altruism plays in helping during high free riding and observable contexts, assess the relationship between trust and prosocial behaviour, consider problems of measuring trust and introduce the current research.

3.1 Helping in high free riding contexts and Reluctant Altruism

This section outlines two theories (Impact Philanthropy and Strong Reciprocity) that explain why people help in high free riding contexts before introducing reluctant altruist's motive for helping in high free riding contexts.

Duncan's Impact Philanthropy model indicates that donors will give to the charity with the least donations to have the biggest impact possible with their donation (Duncan, 2004). This assumes charities relative efficiency and effectiveness do not differ. Strong reciprocity suggests that there are individuals, known as strong reciprocators, who cooperate with others and punish those who do not cooperate (Gintis, 2000). Strong reciprocates help in high free riding contexts by punishing non-co-operators which can have the effect of increasing and maintaining levels of cooperation (Fehr & Gächter, 2002). Reluctant altruists do not help in high free riding contexts to increase their impact on a cause or to punish non-co-operators. Instead, previous research on reluctant altruism has hypothesised that reluctant altruists ought to help in high free riding contexts because they are driven by a lack of trust in others, a sense of moral anger and a negative view of humanity (Ferguson & Lawrence, 2016).

3.2 Observability and Reluctant Altruism

This section briefly reviews the effect observability has on charitable donations and outlines the two main theories that explain why people donate more in observable contexts.

In contexts where donors are more observable, having their identity or donations revealed leads to higher charitable donations than private, anonymous situations (Andreoni & Petrie, 2004; Bradley et al., 2017; Soetevent, 2005). There are two main explanations for this effect in the literature: reputation building and influencing others (Karlan & McConnell, 2014; Reinstein & Riener, 2012). Reputation building is where donors give in order to signal to others their qualities (generosity, abundant resources etc.) in an attempt to enhance their reputation (Harbaugh, 1998; Nowak & Sigmund, 1998; Zahavi, 1995). The influence approach is where donors value the charity and use observable contexts to make donations in the hope of persuading others that they should donate or give more than they originally intended to this cause (Karlan & McConnell, 2014; Reinstein & Riener, 2012).

It is hypothesised that reluctant altruists are individuals that will choose to provide help in high free riding contexts (Ferguson & Lawrence, 2016). Reluctant altruists are primarily motivated by their negative emotions towards others free riding and a lack of trust in others to help. Previous research hypotheses that reluctant altruists ought to help in high free riding contexts and use observable contexts to inspire others to help (Ferguson, 2015). In chapter two we did not find that reluctant altruists gave more in the observable condition. However, this could have been due to the small sample size used, therefore, this study has a large sample suitable for analyses (i.e. no 50/50 condition). This study also has a similar design to study one so both studies can be combined to further increase sample size and power. The larger sample size will provide a more sensitive test of whether reluctant altruism predicts increased donations in the observable condition.

3.3 Trusts relationship to prosocial behaviour

This section develops a working definition of trust, looks at the influence that trust has on prosocial behaviour and then explores the effect reluctant altruist's trust has on prosocial behaviour.

The past literature conceptualises trust in a number of ways defining it as a general outlook on human nature (Uslaner, 2000), a decision (Bohnet & Zeckhauser, 2004; Eckel & Wilson, 2004) and a behaviour (Berg et al., 1995; Ernst Fehr, 2009). According to Nannestad, (2008) conceptualizations of trust vary along how particular or generalised they conceive trust to be. An example of a particular notion of trust is Berg et al., (1995) who defines trust as a behaviour within the context of an economic game. For Berg et al., (1995) trust is when player A, who has an endowment say £10, decides to transfer an amount of money greater than zero to player B who has no contractual obligation to return that money to player A. Player A makes themselves vulnerable to player B and accepts a risk that player B will not reciprocate when player B has the option of returning money to player B. Generalised conceptions of trust are broad beliefs that others can be expected to do the right thing. For example, Uslaner, (2000) defines moralistic trust as putting faith in others to do the right thing based on an understanding of shared values. Notice that particularised conceptions of trust define trust as what happens between individuals in relation to a specific choice or behaviour whilst generalised conception of trust are broad expectations of what other people are expected to do (Nannestad, 2008). Reluctant altruism has up to this point been measured through questionnaires that use items that measure generalised trust in others to help. For example, one item is ''you cannot be careful enough when dealing with other people' and another item is 'in general, most people can be trusted'(Ferguson, Atsma, de Kort, & Veldhuizen, 2012). Neither item specifically states who is to be trusted nor specifies what others are being trusted to do, therefore, a generalised conception of trust is appropriate. We adopt Kuhne, (2012) definition that 'trust is a positive expectation about the behaviour of others'. We focus on this definition of generalised trust

because it closely mirrors the concept of trust within reluctant altruism which appears to be a generalised lack of trust in others to help.

Generalised trust has a positive effect on a wide range of prosocial behaviours (Anderson, Mellor, Milyo, & Anderson, 2004; Kuhne, 2012). For example, higher levels of trust have been found to increase contributions in public goods games (Anderson et al., 2004; Gächter, Herrmann, & Thöni, 2004; Thöni, Tyran, & Wengström, 2012), increase blood donations (Kuhne, 2012) and enhance memberships to voluntary associations that provide public goods (Sonderskov, 2008, 2009, 2011). Trust has also received attention recently for enhancing pro-environmental behaviour with higher levels of trust being associated with lower household energy expenditure (Volland, 2015), reduction in greenhouse gas emissions through decreases in energy consumption (Carattini, Baranzini, & Roca, 2015), and increased likelihood of buying green products (Gupta & Ogden, 2009).

However, reluctant altruists show a very different relationship between trust and prosocial behaviour. Ferguson, Atsma, de Kort, and Veldhuizen, (2012) found that low levels of trust within reluctant altruists predicted novice (1-4 donations) blood donations. Similarly, Evans and Ferguson, (2014) find that increased lack of trust within reluctant altruists differentiated blood donors from non-blood donors. Both of these papers show that it is a lack of trust in others to help that motivates prosocial behaviour which is in contrast to the previous literature and is worth exploring further. To do this a suitable measure of generalised trust in others to help needs to be developed.

3.4 Problems measuring trust

This section briefly describes the standard trust game, outlines measurement problems with the typical trust game, describes our modified trust game and then explores how the modified trust game is a more appropriate measure of reluctant altruism.

The standard trust game involves two participants and two exchanges (Berg et al., 1995). One participant is the trustor whilst the other is the trustee (see *Figure 3.1* left-hand side). The trustor is informed that any money they transfer will be tripled and that the trustee will have the option of

transferring received funds back to them or keeping it for themselves. The trustor then decides whether they wish to keep or transfer an endowment to the trustee (a measure of trust). The trustee then receives the tripled amount, assuming a transfer, and can decide how much they wish to give back to the trustor (a measure of trustworthiness).

There are two main issues with the standard trust game: first there is often only a weak or non-significant relationship between the trust game and survey measures (i.e. the World value survey) (Ermisch et al., 2009; Glaeser, Laibson, Scheinkman, & Soutter, 2000; Holm & Danielson, 2005; Johnson & Mislin, 2012). This is an issue for the current research since a behavioural measure of reluctant altruists lack of trust in others to help would need to be predicted by the survey measure of reluctant altruism. In part, the discordance between behaviour and survey measures has been attributed to the mismatch between the target (whom you are placing trust in) of trust in the behavioural game (specific trust against a participant) and the target of trust in surveys (generalized trust in other people)(McEvily, Radzevick, & Weber, 2012; Nannestad, 2008). Second, the transfers in the standard trust game are often not solely motivated by trust but by other confounding motives like altruism (defined as behaviour that benefits others but incurs a cost upon oneself) (Ben-Ner & Kramer, 2011; Etang, Fielding, & Knowles, 2012; Sapienza, Toldra, & Zingales, 2013), reciprocity (Cox, 2004), betrayal aversion and risk aversion (Sapienza et al., 2013; Schechter, 2007). We next describe how the modified trust game works.

The modified trust game comes in two stages. In the first stage, the trustor (person who receives an endowment) has three options: first the trustor can give all of the endowment (£1) to Macmillan Cancer Care, second the trustor can give all the endowment to the trustee or third give some of the endowment to Macmillan Cancer Care and give some of the endowment to the trustee (see Table 3.1 and right side of *Figure 3.1*). The trustor knows that any money transferred to the trustee is multiplied by three and that the trustee may choose to keep some or all of the money they have received or donate some or all to Macmillan Cancer Care. The trustor is also aware that the trustee will not be told where the money has come from. The measure of trust in others is defined as the

amount donated to members of the public divided by the total endowment. In stage two, the trustee (the person who receives the tripled endowment) is told that they can give as much or as little as the like to Macmillan Cancer Care and/or keep the money for themselves (see Table 3.1. and *Figure 3.1*). We next outline how the modified trust game addresses the issue of measuring an appropriate target of trust and controlling for potential confounding variables.

Table 3.1 *Shows the decision options for trustor and trustee in the modified trust game.*

Role in the Trust game.	Number of decision options. Choice 1	Choice 2	Choice 3
Trustor (Nottingham student)	Gives £1 direct to Macmillan Cancer Care	Gives £1 to the trustee.	Gives to both trustee and Macmillan Cancer Care
Trustee (e.g., Research café participants)	Gives all transferred money to Macmillan Cancer Care	Keeps all transferred money for self.	Gives some to Macmillan Cancer Care and keeps some for self.

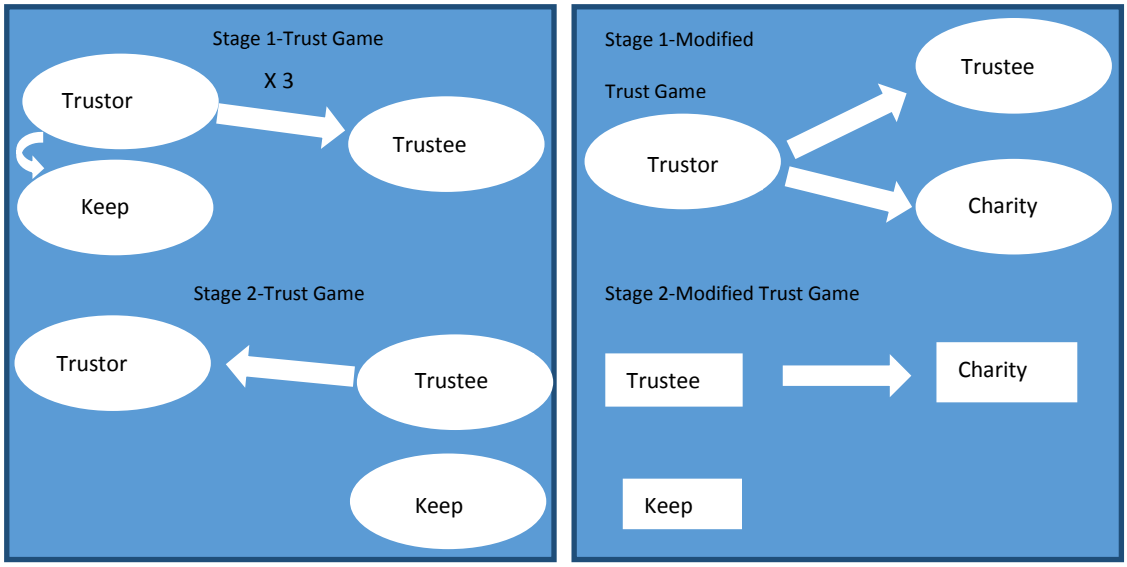


Figure 3.1. Diagrammatic representation of the BDM (left) and the new trust game (right)

If trustors in the modified trust game decide to donate all their money to the participant in Nottingham this indicates that they trust the person in Nottingham to help by passing the tripled amount on to Macmillan. The trustor also knows that the person in Nottingham (trustee) may choose to keep some or all of the money. In the standard laboratory trust game, trustors know that the trustee is another university student and one probably in the same room as them. In the

modified trust game the trustor has no way of knowing anything about the trustee from Nottingham. This represents a more generalised measure of trust. If the trustor transfers all the money to Macmillan this indicates that they do not trust the person of Nottingham (trustee) to help. Trustors who decide to send money to the participants in Nottingham and to Macmillan show mixed levels of trust in the trustee. At the heart of all three options, the trustor has the question of whether they trust others to donate money to Macmillan. Whereas the question central to the standard trust game is whether the trustor 'trusts' the trustee to reciprocate (Cox, 2004). The reason why the modified trust game does not measure reciprocity is that there is no back transfer from the trustee to the trustor. The absence of a back transfer also mitigates a self-centred risk motive where a trustor transfers money to the trustee as an investment hoping to make a greater return. Finally, the standard trust game has the issue that altruism might increase trustors donations to the trustee (Ben-Ner & Kramer, 2011; Etang, Fielding, & Knowles, 2012). The modified trust game mitigates this problem as the trustor is forced to be altruistic by not having the option to keep the money. The modified trust game is a more appropriate measure of trust for reluctant altruists because a) it measures generalised trust, b) it measures trustors trust in others to help not their trust in others to reciprocate (Cox, 2004) and c) it mitigates motives like altruism and risk. We next, outline two alternative motives to make a transfer directly to Macmillan other than reluctant altruism.

There are however two alternative motives to transfer money directly to Macmillan. First, direct transfers to Macmillan might increase the trustor's warm glow from knowing that it was their decision to donate directly that led to Macmillan receiving the donation (Andreoni, 1990). Second, betrayal aversion which is the idea that the trustor suffers disutility from being betrayed by others (i.e. the trustee not donating all the received money to Macmillan Cancer Care). To avoid experiencing betrayal trustors would choose to pass the money directly to Macmillan (Bohnet & Zeckhauser, 2004).To control for these issues a measure of warm glow and expectation of others transfers was taken after the trust game.

3.5 Current Research

The present research aims to a) test the predictions made in chapter one and b) to see if reluctant altruism predicts less trust helping behaviour.

To test the predictions made in chapter one a charity dictator game is used where participants have the option of donating all, some or none of their endowment to the British Heart Foundation, Cancer Research UK and/or keep it for themselves. Observability of the donation decision was manipulated by telling participants that their donation decisions would be either private or announced to participants completing the study with them. The relative wealth of the charities was manipulated through the display of two charity money boxes (one for BHF and one for CRUK) that are either 20%:80% or 80%:20% full of coins.

To explore whether a reluctant altruist predicts less trusting behaviour a modified trust game is conducted. The first stage of the game involves university students deciding how much of their endowment they wish to donate directly to Macmillan Cancer Care and/or to members of the public in stage two. Stage one participants know that any money transferred to members of the public are tripled and are told that stage two participants may keep or donate that money to Macmillan. Stage two participants may then donate some, none or all of that money to Macmillan Cancer Care or keep it for themselves. The measure of trust in others to help is the amount donated to members of the public divided by the total endowment.

This study was designed to test the following hypotheses:

1) Reluctant altruists will donate more to the least supported charity.

2) Reluctant altruists should donate more to both charities under observable conditions.

3) There should be more donations to the least supported charity if participants are in the observable condition and score high on reluctant altruism.

4) Reluctant altruists should be less trusting of others to help and therefore donate less to members of the public in the trust game.

3.6 Method

3.6.1 Sample

One hundred and thirty-two students from the University of Nottingham participated in the first part of this study. The sample contained 58 (44%) males and 72 (55%) females with 2 (1%) who preferred not to disclose gender. The mean age of participants was 21.18 years (SD = 3.54). Academic attainment ranged from those who have completed A levels (n= 91, 69%), Undergraduate (n= 21, 16%), Masters (n=17, 13%), PhD (n=2, 1%) and prefer not to say (n=1). Participants were recruited to the first part of the study by placing posters up around campus so interested volunteers could get in touch. We also emailed out to different schools to invite them to forward an invite to participate in the study to their students who might be interested in taking part. Once interested participants got in touch a mutually convenient time was arranged to take part in the study. In the second half of the study 58 participants were recruited from a public engagement event at the University of Nottingham with the exclusion criteria that participants must not be members of staff or students from the University. This data will not be discussed further since it is not relevant to exploring and developing reluctant altruism. All participants completed the experiment in the same computer laboratory space with dividers between each computer to ensure privacy of decisions. Participants were reminder not to interact or communicate with other participants during the experiment. Remuneration for both parts of the study was the amount participants received minus any money they donated to charity. Remuneration occurred at the end of the study using an anonymous remuneration system where the experimenter wrote on a letter the participant ID number and the amount they selected to keep for themselves. The envelopes where then placed on a table away from the experimenter ready for collection by the participant. This prevented the experimenter from linking remuneration to a participant's identity.

3.6.2 Design

This study comes in three sections: a charity dictator game (CDG) (via Psychopy), a trust game (paper-based), and a post-decision questionnaire (via Qualtrics). The trust game has two stages the first is played with Nottingham University students (the trustor) and the second is played at a public engagement event like the Research Café with participants who are not students or members of staff (the trustee). Finally, to control for carryover effects (where performance on one task affects performances on subsequent tasks) the CDG and trust game are counterbalanced.

3.6.2.1 Section 1 (CDG).

A 2 (observability: Private vs Public) X 2 (relative wealth of charities by others: 80%:20%, 20%:80%) between subjects design will be used. All participants will be randomly assigned to one of the four conditions.

To manipulate both observability and relative wealth of charities the following method will be used:

Observability: Participants will be given the choice of donating some, none or all of their experimental endowment (up to 300p) to two charities or keeping some, none or all of the money for themselves. If participants wish to donate they will select on screen how much they wish to give to either the British Heart Foundation or Cancer Research UK or keep for themselves. Before donating, participants in the public condition will be made aware that they will be asked to read out their donation decisions to the rest of the participants completing the study at the end (see Figure 2.1 and Appendix D for an information sheet and consent form).

Relative wealth of charities: This is manipulated by showing participants a screen entitled 'Donations made by participants so far' (Figure 2.2). On this screen will be two jars filled with money each labelled with the name of a charity (the British Heart Foundation or Cancer Research UK). The amounts in the jars will change across the two conditions: 1) British Heart Foundation is 80% full and

Cancer Research UK is 20% full, 2) British Heart Foundation is 20% full and Cancer Research UK is 80% full.

3.6.2.2 Section 2 (Trust Game).

The trustor (person who receives an endowment) has three options: first the trustor can give all of the endowment (£1) to Macmillan Cancer Care, second the trustor can give all the endowment to the trustee or third give some of the endowment to Macmillan Cancer Care and give some of the endowment to the trustee (see Table 3.1 and Figure 3.1). The trustor knows that any money transferred to the trustee is multiplied by three and that the trustee may choose to keep some or all of the money they have received or donate some or all to Macmillan Cancer Care. The trustor is also aware that the trustee will not be told where the money has come from.

The trustee is told that they have some money and can choose to: give all the money to Macmillan Cancer Care directly, keep all the money for themselves, or give some to Macmillan Cancer Care and keep some for themselves (see Table 3.1 and Figure 3.1).

Past literature has suggested that altruism, risk aversion and betrayal aversion influence the amounts transferred to the trustee (Ashraf, Bohnet, & Piankov, 2006; Bohnet & Zeckhauser, 2004; Cox, 2004; Schechter, 2007). Items measuring risk aversion and betrayal aversion will be conducted to allow us to control for these confounds. Furthermore, the transfers from the CDG will be used to control for altruism affecting behaviour in the trust game.

3.6.2.3 Section 3 (Post decision questionnaire).

Questions were administered on: risk aversion, betrayal aversion item, warm glow and the reluctant altruism scale (see Appendix E).

3.6.3 Materials

3.6.3.1 Money earning task.

The money earning task is a replication of the one used in the Ariley, Bracha & Meier (2007) paper where participants are asked to press the keyboard keys of 'z' then 'x' in that sequence for a period of 5 minutes. If the participant gets less than 200 correct 'zx' responses they receive £2.00 and if they get more they earn £4.00. Everyone in this study had enough zx responses to earn £4 with the average number of 'zx' responses being 966.14 (SD =241.7) which relates to on average 3.2 'zx' responses per second.

3.6.3.2 Charity task practice scenarios.

To aid understanding of the charity task three example scenarios were given for example: "Example 1: a participant has earned 300p and decides to give 0p to the British Heart Foundation, 0p to Cancer Research Uk and is keeping 300p." These scenarios highlighted a number of potential donating strategies they might use: giving all to charity, giving equally to charity and self or keeping all the money for themselves. They also highlighted the importance of: spending only what they earned and not leaving any funds earned unallocated.

3.6.3.3 Charity Task.

The charity task involves participants being presented on screen with three response scales labelled: 'British Heart Foundation', 'Cancer Research UK' and 'Self'. The participant can choose how much they wish to give to each option by moving the slider along the scale with the slider increasing in 1 penny increments. Presented on this screen are also the jars representing how much other participants have already given to the British Heart Foundation and Cancer Research UK.

3.6.3.4 Trust Game.

In the first part of the trust game with Nottingham University students, the trustor is told that they would be paired with another person the trustee who will be a resident living in Nottingham. The trustee will be selected by the experimenter from Nottingham residents attending

one of the university's public engagement events. Participants were then told that they had £1 which they could allocate, as much or as little, as they liked to either go directly to Macmillan Cancer Care and/or to the trustee. If they gave money straight to Macmillan Cancer Care it will be sent once all the data from the study has been collected. Any money you transferred to the trustee would be multiplied by three. The trustee then has the decision of passing on some, none or all of the money to Macmillan Cancer Care or keeping some, none or all of it for themselves.

Participants were then given two bits of paper and two envelopes. On one bit of paper it read "Please fill in the blank: Amount out of £1 donated directly to charity is £__.___" and on the other piece it read "Amount out of £1 donated to an Attendant of the Research Café is £__.___". The envelopes had the names "Direct to Macmillan" and "To Other Participant". Any money that was transferred to the attendant of the research café was multiplied by three and given to the trustee in the second part of the trust game.

Attendants at the research café are also given a letter entitled "Money donated to MacMillan Cancer Care" where they put any transferred money in which they wished to donate. If they wished to keep any money they were instructed to put somewhere safe on their person.

3.6.3.5 Post decision Questionnaire.

3.6.3.5.1 Risk Aversion.

This study adopts the general risk question used in the Socio Economic Panel survey which has been behaviourally validated in a large-scale study (Dohmen et al., 2005). The single item asks 'are you generally a person who is fully prepared to take risks or do you try to avoid taking risks?' The item is on a scale from 1 ("Unwilling to take risks") to 11 ("Fully prepared to take risks") (see Appendix E).

3.6.3.5.2 Betrayal Aversion.

One item that asks the trustor to indicate how much money they would expect the trustee to send to charity for every amount received (£0.75, £1.50, £2.25 and £3.00) (Item adapted from

Sapienza et al., (2013)). A percentage of the amount they expected to be passed on for each of these different levels of money (£0.75, £1.50, £2.25 and £3.00) sent by the trustee was calculated with a grand average of these different percentages being calculated. If this grand average was less than 33.33% (i.e. less money would be passed on to charity than the trustee had been sent) they were classified as betrayal averse (0) however if it was greater than 33.33% (i.e. more money passed on to charity by the trustee than they were sent) they were classified as not betrayal averse (1). Those who expected less than the amount sent to be passed on to charity were classified as betrayal averse. For example, if the trustor wanted to send £0.25 the trustee would receive £0.75 and if the trustor then expected of that money that a 100% of that money would be passed on to charity they would not be classified as betrayal averse, however, if they only expected 20% (£0.15) of that money to be passed on they would be classified as betrayal averse (see Appendix E).

3.6.3.6 Warm glow

Warm glow was comprised of three items: it makes me feel good about myself, it makes me feel proud and it is the right thing to do. All items were on a 1-7 scale from Strongly Disagree (1) to Strongly Agree (7) (total $\alpha = 0.88$).

3.6.3.6.1 Reluctant Altruism Scale.

The measure of reluctant altruism is composed of thirteen items across three subcomponents: lack of trust (made up of two items i.e. 'I can't trust others to help' and 'very few people help others these days'), moral anger (consisting of five items i.e. 'I get angry because others don't help those in need', 'I get frustrated that other people do not help those in need', 'I get ashamed that other people do not help others', 'I get upset by people's disregard of others in need', and 'I feel sad that people generally do not help each others') and a negative view of humanity (made of six items i.e. 'We live in a selfish society', 'I feel our society is uncaring', 'many people are only interested in themselves these days', 'most people are selfish', 'it seems it is culturally acceptable these days to put self before others', and 'people these days consider their own needs before others'); total $\alpha = 0.88$. All items a prefaced with the sentence "I would/do volunteer to help others because.." after

which participants are asked to rate that item on a 1-7 scale from Strongly Disagree to Strongly Agree (see Appendix B). A total sum score of these items was used to give each participant a score on the reluctant altruism scale that is used in the subsequent analyses.

3.6.3.6.2 World Value Survey (WVS) and General Social Survey (GSS) Measures of Trust.

The World Value Survey measure of trust consists of one item asking "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?" Participants can respond using the following three answers: "Most people can be trusted", "Can't be to careful" or "I don't know". The General Social Survey consists of three items. The first item asks "Do you think most people would try to take advantage of you if they got a chance, or would they try to be fair". Participants can respond with either "Would take advantage of you" or "Would try to be fair." The second item asks "Would you say that most of the time people try to be helpful, or that they are mostly just looking out for themselves?" Participant could respond with either "Try to be helpful" or "Just look out for themselves". The third items asks "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?" Participants could respond with either "Most people can be trusted" or "Can't be too careful." A composite variable all three items is then created by sum scoring participants three responses.

3.6.4 Procedure

Participants were tested in groups of 4-10 students at a time. First, participants completed a money earning task where they got paid contingent on how many 'zx' pairs they clicked in five minutes (Ariely, Bracha, & Meier, 2007).

First, participants completed a money earning task where they had to click over 200 'zx' pairs to earn £4. Participants were then informed of how many clicks they had made and how much money they had earned. Participants are then told that of the total endowment £1 is used for the trust game and the rest is used in the CDG.

Depending on the condition participants either completed the CDG or the trust game first. If participants were in the CDG condition then they were given examples of how they could donate their money to Cancer Research UK, the British Heart Foundation and/or keep the money for themselves. They were given questions to check their understanding. Next participants had the observability and relative wealth of charities manipulation. Finally, participants could decide how much of the £3 or £1 they wish to give to charity and how much they wished to keep for themselves.

Next, participants played the trust game. In the trust game participants can choose to give some, none or all of the money (£1) directly to Macmillan Cancer Care or to the trustee, who was selected from members of the public attending a university public engagement event. Participants were given two bits of paper and two envelopes. One envelope will be marked 'Direct to Macmillan Cancer Care' and the other 'To the other participant'. Participants then write on the paper how much they wish to transfer direct and put that bit of paper in the 'Direct to Macmillan Cancer Care' envelope. Participants then write how much they wish to transfer to the other person and put that in the 'To the other participant' envelope.

Once all participants have completed the CDG and trust game those participants in the public condition were asked to read out their participant id and donation decisions from the CDG. All participants then completed the post-decision questionnaire (see Appendix E). Finally, participants were given a debriefing sheet and reimbursed with any money they kept in the CDG (see Appendix G).

3.7 Results

3.7.1 Invalid responses.

From the one hundred and thirty-two participants who completed the study eight participants were removed before analyses due to incorrect responses on either the charity dictator game or

trust game (i.e. allocating more or less than their endowment). The final sample consisted of 124 participants.

3.7.2 Charity effect and order effects.

In order to control for one charity being preferred over another a Wilcox Signed Rank test was conducted which showed no difference between the amount donated to the British Heart Foundation (*M* = £0.98, *SD* = £0.83, *Mdn* = £1.00,) and Cancer Research UK (*M* = £1.00, *SD* = £0.84, *Mdn* = £1.00), suggesting that participants did not prefer one charity over the other ($z = 0.01$, $p = .99$). A Wilcox Rank Sum test also showed no difference between the amount donated if the charity dictator game (*M* = £2.07*, SD* = £1.06, *Mdn* = £2.75) was conducted first as opposed to the trust game (*M* = £1.90, *SD* = £1.12, *Mdn* = £2.00,) being conducted first ($z = 0.94$, $p = .35$) indicating order effects did not affect donations.

3.7.3 Overview of donations in CDG.

Table 3.2 shows that similar amounts of money were given in the private (*M* = £2.01, *SD* = 1.07, *Mdn* = £2.00) and in the public conditions (*M* = £1.96, *SD* = 1.11, *Mdn* = £2.00). A Wilcox Rank Sum test indicates no significant difference between charitable donations in the public vs private condition ($z = 0.11$, $p = .91$). However, more money is given to the least supported charity (*M* = £1.22, *SD* = 0.88, *Mdn* = £1.00) than the most supported charity (*M* = £0.76, *SD* = 0.71, *Mdn* = £0.87). A Wilcox Signed Rank test suggests that this difference is significant, ($z = 4.75$, $p < .001$).

Table 3.2 *The mean and median responses in total donations across observability and the relative wealth of charities.*

Manipulations	N	Mean (£)	SD (£)	Median (£)
Observability				
Private	59	2.01	1.07	2.00
Observable	65	1.96	1.11	2.00
Relative wealth of charities				
Least supported charity	124	1.22	0.88	100
Most supported charity	124	0.76	0.71	87

3.7.4 Analysis Strategy

A multilevel approach is adopted to account for the correlation between observations caused by each participant making two donations decisions (giving to the least supported charity and/or giving to the most supported charity). These two donations are likely to be correlated because they come from the same participant violating the assumption of independence of observations. A multilevel tobit model is used to account for the censoring of the distribution on the left and right side (see *Figure 3.2*).

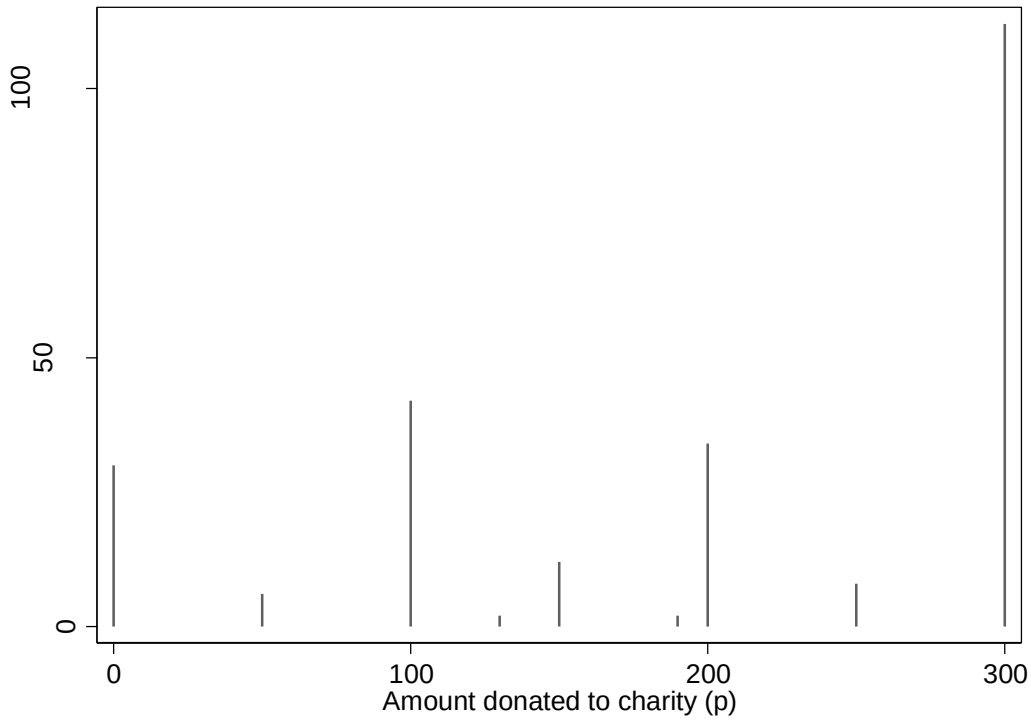


Figure 3.2. Spike plot showing the frequency distribution of donations to charity.

3.7.5 Multilevel Tobit Regression

Five multilevel tobit regressions on the amount donated to charity were performed. The first model consisted of the relative wealth of charities predictor (dummy coded). Model 2 added mean centred reluctant altruism and model 3 included observability (dummy coded). Model 4 contains the three main effects and three 2 way interactions (relative wealth of charities by reluctant altruism,

relative wealth of charities by observability and reluctant altruism by observability). Model 5 consisted of three main effects, three 2 way interactions and one 3 way interaction (observability by relative wealth of charities by reluctant altruism).

In models 1-3 the only significant predictor of charitable donations was the relative wealth of charities with participants giving an extra 58p to the least supported charity (see Table 3.3). Neither reluctant altruism nor observability had any effect on charitable donations.

Model 4 includes the three main effects and three 2-way interactions. This allows us to test hypothesis one that reluctant altruists will donate to the least supported charity. As Table 3.3 shows there is no effect of the relative wealth of charities and reluctant altruism interaction (Coef = 0.20, SE = 1.26, p = .87) indicating that reluctant altruist did not donate more to the least supported charity. The interaction term between reluctant altruism and observability allows us to test hypothesis two that reluctant altruist will give more in the observable condition. As Table 3.3 indicate there is no significant interaction suggesting reluctant altruists do not donate more in observable compared to private conditions (Coef = -1.13, SE = 1.31, p = .39).

Model 5 in addition to the three main effects, three 2-way interaction also contains a three-way interaction between relative wealth of charities, reluctant altruism and observability. This allows us to test hypothesis three that reluctant altruist should donate more in observable contexts to the least supported charity. The interaction is non-significant suggesting reluctant altruists do not donate more to the least supported charity in the observable condition (Coef = 1.08, SE = 2.61, p = .68).

Table 3.3 *Multilevel tobit random intercept models exploring whether observability, the relative wealth of charities and reluctant altruism predict charitable donations*.

	Model 1	Model 2	Model 3	Model 4	Model 5
	Coef.(SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)
Relative wealth of charities (20/80)	-58.43 (14.37)***	-58.42 (14.33)***	-58.41 (14.33)***	-70.22 (20.81) ***	-69.55 (20.85) ***
Reluctant Altruism (RA)		0.63 (0.63)	0.63 (0.63)	1.24 (1.20)	1.58 (1.44)

Observability (OBS)	-1.15 (14.36)	-11.73 (20.07)	-11.63 (20.06)
20/80* RA		0.20 (1.26)	-0.48 (2.07)
20/80*OBS		22.29 (28.69)	21.97 (28.76)
OBS*RA		-1.13 (1.31)	-1.66 (1.82)
OBS*RA* 20/80			1.08 (2.61)

Note 2 .* $p < .05$, ** $p < .01$, *** $p < .001$. Model 1 $\chi^2(1) = 16.52$, $p < .001$, Model 2 $\chi^2(2) = 17.60$, $p < .001$, Model 3 $\chi^2(3) = 17.61$, $p < .001$, Model 4 $\chi^2(6) = 18.95$, $p < .01$, Model 5 $\chi^2(7) = 19.16$, $p < .01$.

3.7.6 Combining studies one and two.

Studies one and two were combined to increase the sample size (N = 235[1]) to facilitate finding smaller effects. The endowment sized differed across study one (£4.00) and study two (£3.00) therefore the amount donated to charity was converted into the percentage of endowment given to charity (dependent variable). Multilevel random intercept tobit models were used for two reasons. First to account for the violation of the independence of observation due to each participant donating twice. Second, the distribution of the percentage of endowment given to charity is left and right censored (see

Figure 3.3). To control for differences between the two datasets a dummy variable (study number) was included in the analyses.

[1] Study one contained one hundred fifty six student and study two one hundred and thirty two. Unfortunately, forty eight students in study one were in the 50:50 condition so were dropped from the analyses and a further five participants across both studies made incorrect donations (i.e. donating more or less than they earnt).

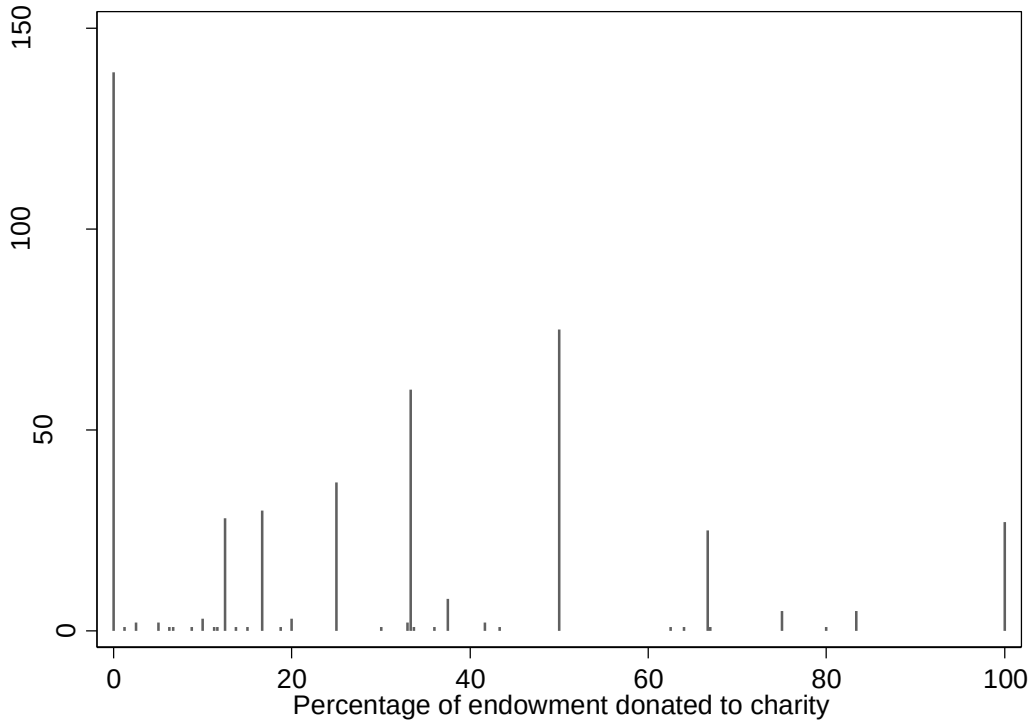


Figure 3.3. Spikeplot of the percentage of endowment donated to charity.

Five models were conducted with models 1-3 containing the main effects, model 4 contains main effects and three 2-way interactions and model 5 including main effects, all two-way interactions and one three-way interaction.

As Table 3.4 illustrates all five models were significantly better than the empty model (model with no predictors) ($p < .001$). Across all five models, the study number predictor was significant indicating that more was given to charity in study two than in study one ($p < .01$). There was also an effect of relative wealth of charities across all five models with significantly more being given to the least supported charity ($p < .001$). None of the two interactions were significant in models 4 and 5 indicating that reluctant altruists did not give more to the least supported charity (Coef = 0.18, SE = 0.30, $p = .60$) or donate more in observable compared to private conditions (Coef = 6.22, SE = 7.66, $p = .65$). The three-way interaction in model 5 is also non-significant suggesting reluctant altruist's did not give more to the least supported charity in the observable condition (Coef = 0.14, SE = 0.60, $p = .68$).

Table 3.4 *Multilevel tobit random intercept models seeing if reluctant altruists donated more to the least supported charity or contributed more to the observable condition in a combined analysis of studies one and two.*

	Model 1	Model 2	Model 3	Model 4	Model 5
	Coef.(SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)
Study number	10.55 (3.82)**	10.51 (3.86)**	10.52 (3.86)**	10.47 (3.86)**	10.47 (3.86)**
Relative wealth of charities (20/80)	-15.34 (3.82)***	-15.35 (3.82)***	-15.35 (3.82)***	-18.47 (5.47)***	-18.47 (5.48)***
Reluctant Altruism (RA)		0.11 (0.15)	0.10 (0.15)	0.10 (0.27)	0.14 (0.32)
Observability (OBS)			-0.41 (3.85)	-3.48 (5.37)	-3.49 (5.37)
20/80* RA				0.18 (0.30)	0.09 (0.46)
20/80*OBS				6.22 (7.66)	6.24 (7.66)
OBS*RA				-0.14 (0.30)	-0.21 (0.42)
OBS*RA* 20/80					0.14 (0.60)

Note 3. * $p < .05$, ** $p < .01$, *** $p < .001$. Model 1 $\chi^2(2) = 23.45$, $p < .001$, Model 2 $\chi^2(3) = 23.94$, $p < .001$, Model 3 $\chi^2(4) = 23.96$, $p < .001$, Model 4 $\chi^2(7) = 25.10$, $p < .001$, Model 5 $\chi^2(8) = 25.17$, $p < .01$.

3.7.7 Overview of Donations in the Trust Game

On average slightly more was sent to the trustee (*M* = £0.55, *SD* = £0.37, *Mdn* = £0.50) than was sent direct to Macmillan Cancer Care (*M* = £0.45, *SD* = £0.37, *Mdn* = £0.50). A Wilcox Signed Ranks test indicates that there is no difference between giving to the trustee and donating directly to Macmillan (Z = 1.01, *p* = .31).

3.7.8 Does reluctant altruism predict less trusting behaviour in the trust game?

A multiple regression was conducted with reluctant altruism, altruism, risk aversion and betrayal aversion predicting the percentage of endowment donated to the trustee (see Table 3.5 for correlation matrix of these measures). The overall model performed no better than taking the mean of the amount donated to MacMillan (F (4, 119) = 0.49, *p* = .74, R^2 .02). Reluctant altruism was not a significant predictor of less trusting behaviour in others to help. No other predictors in the model were significant either (see

	Percentage Trust	Reluctant Altruism	Altruism in CDG	Risk Aversion	Betrayal Aversion	Warm Glow
Percentage Trust	1.00					
Reluctant Altruism	-0.10	1.00				
Altruism in CDG	0.05	0.19*	1.00			
Risk Aversion	0.06	-0.18	0.12	1.00		
Betrayal Aversion	-0.03	0.06	-0.04	-0.07	1.00	
Warm Glow	-0.08	0.06	0.24*	0.08	-0.03	1.00

Table 3.6). However, all the predictor were in the expected direction with reluctant altruism, betrayal aversion and warm glow negatively predicting less trusting, helping behaviour ($p > .05$). Additional analyses were conducted to explore whether reluctant altruism correlated with survey measures of trust (i.e. the World Value Survey (WVS) and General Social Survey (GSS) items). Pearson correlation between reluctant altruism and the WVS showed a significant small negative correlation of r = -.35 ($p < .001$). Similarly, correlations between reluctant altruism and the GSS were also a significant small/medium negative correlation of r = -.45 ($p < .001$).

Table 3.5 *Correlation Matrix of the measures used to predict less trusting behaviour.*

	Percentage Trust	Reluctant Altruism	Altruism in CDG	Risk Aversion	Betrayal Aversion	Warm Glow
Percentage Trust	1.00					
Reluctant Altruism	-0.10	1.00				
Altruism in CDG	0.05	0.19*	1.00			
Risk Aversion	0.06	-0.18	0.12	1.00		
Betrayal Aversion	-0.03	0.06	-0.04	-0.07	1.00	
Warm Glow	-0.08	0.06	0.24*	0.08	-0.03	1.00

Table 3.6 *Multiple regression looking at whether reluctant altruism predicts less trusting behaviour.*

	B	SE	*p*
Reluctant Altruism	-0.10	0.01	.29
Altruism in CDG	0.09	0.03	.36
Risk Aversion	0.04	0.02	.67
Betrayal Aversion	-0.02	0.08	.84
Warm Glow	-0.10	0.01	.31

Note 4. F (4, 119) = 0.49, p = .74, R^2 .02; N = 124.

3.8 Discussion

3.8.1 Overview

This study has five main findings. First, there was a significant effect of the relative wealth of charities with significantly more being donated to the least supported charity. Second, the hypothesis that reluctant altruist would donate more to the least supported charity was not supported with no significant interaction between the least supported charity and reluctant altruism. Third, the prediction that reluctant altruists would donate more in the observed condition was not supported with no significant interaction between observability and reluctant altruism. Fourth, the hypothesis that reluctant altruists would donate more to the least supported charity in the observable condition was not supported with no significant three-way interaction. Fifth, reluctant altruism did not predict less money being donated to the trustee. The following discussion will explore each of these findings, highlight limitations of the study and outline future research.

3.8.2 Effect of the relative wealth of charities.

This study found that donors preferred to give more on average to the least supported charity. Replicating the findings of study one where the least supported charity was also preferred. In both cases, this cannot be explained by people preferring to donate to the British Heart Foundation or

Cancer Research UK since analyses showed that this did not affect average donations. As with study one participants used the social information to help them discriminate between the two charities and select the one with the least support. There are two theoretical accounts that could explain this preference to choose the least supported charity: the Impact Philanthropy Model and the Underdog effect(Duncan, 2004; Vandello et al., 2007). The impact philanthropy model suggests that impact donors would gain satisfaction from knowing their donations have had an impact on increasing the level of goods or service provided(Borgloh et al., 2013). In this study impact, donors would give to the least supported charity to enhance the impact that their donation would have on increasing the revenue of the charity. The underdog effect is where people express a preference to help those at relative, undeserved disadvantage(Vandello et al., 2007). In this study underdog, donors should give to the least supported charity due to its lack of support. More detailed description of this effect and the theoretical models that might explain it are given in Chapter 6.

3.8.3 Reluctant altruism and high free riding contexts

The results of this study do not support the hypothesis that reluctant altruists will donate more in high free riding contexts. We suggest two potential explanations for this finding. First, reluctant altruists might not have felt that free riding was sufficiently high for them to begin donating. For example, the least supported charity still had a jar 20% full of coins so perhaps for reluctant altruism to be effectively triggered greater levels of free riding are needed. Reluctant altruism in the published literature has only been found within the context of blood donation (Evans & Ferguson, 2014; Ferguson et al., 2012) where levels of free riding can be very high (Abásolo & Tsuchiya, 2014). Second, if reluctant altruist viewed the jars as how much has gone to charity in total, regardless of which charity it went too, then actually levels of donating would not be that low (i.e. (20% + 80%)/2 = 50%). To address the first issue, a study could use a wider range of donation options with causes that are experiencing higher levels of free riding than 20% contributing (see Chapter 4). To address the second issue, future research could use a between-subject design and only give participants the

option of donating to one charity experiencing varying degrees of free riding across conditions (see Chapter 5).

3.8.4 Reluctant altruism and observable conditions

The non-significant interaction term between reluctant altruism and observability suggests that the hypothesis that reluctant altruist will donate more in the observable condition is not supported. This mirrors the finding of study one where it was thought that a lack of power might help to explain why the effect was not found. In an attempt to increase the power to find the effect both studies one and two were combined giving a sample of two hundred and thirty-five participants. The combined analyses also found no effect of reluctant altruists donating more in the observable condition. Even with the larger sample, we cannot rule out the possibility that this study might not have had adequate power to detect the effect. This argument is supported by the findings in the meta-analysis in chapter seven which shows that average effect of observability manipulations is very small (r = .14). Alternatively, there are no empirical papers that show reluctant altruists are affected by observability so it remains a possibility that reluctant altruists might actually not be influenced by how observable their behaviour is to others.

3.8.5 Reluctant altruism, high freeriding and an observable context

Hypothesis three that reluctant altruist should donate more in observable conditions to the least supported charity is not supported by the analyses showing a non-significant three-way interaction. This is not surprising given the insignificant main effects and two-way interactions. Similar explanations like a lack of power and ineffective manipulations of the relative wealth of charities could be part of the reason why no effects were found.

3.8.6 Reluctant altruism and less trusting helping behaviour

Hypothesis four predicted that reluctant altruists would be less trusting donating less to the trustee. The analyses although in the right direction did not find that reluctant altruists predicted less being donated to the trustee. One potential explanation is that the modified trust game measures a more specific type of trust than the reluctant altruism scale which measures a more generalised measure of trust (McEvily et al., 2012). An attempt was made to make the modified trust game a more general measure of trust by emphasising that the trustee could not be a member of staff or student at the University of Nottingham. An alternative explanation is the preference of reluctant altruism was not activated because there was no sign of Macmillan suffering from high levels of free riding. In order, to remedy this future research could provide a vignette suggesting that the charity used in the modified trust game suffers from high levels of free riding. Reluctant altruism was negatively correlated with other survey measures of trust suggesting that as participants scored higher on reluctant altruism (therefore less trusting) they also responded to WVS and GSS trust items in a less trusting manner.

3.8.7 Limitations

A key part of reluctant altruism is the motivation to help in high free riding contexts(Ferguson, 2015; Ferguson & Lawrence, 2016). In both studies one and two there was no significant interaction between reluctant altruism and donations made to the least supported charity. One possible reason for this is the relative wealth of charities manipulation although effective at influencing donors to give to the least supported charity is not sufficient to activate a reluctant altruists response. As mentioned this could be due to the least supported charity (20% charity) still receiving too much support. Future work should try to vary the levels of free riding to see how much free riding is required to activate reluctant altruists.

3.8.8 Next Chapter

The findings from this study do not support the idea that reluctant altruists donate more to a less supported charity or contribute more in observable conditions. Furthermore, reluctant altruism does not appear to predict less trusting behaviour in the modified trust game. The previous literature on reluctant altruism suggests reluctant altruists ought to be attracted to helping in contexts with high rates of free riding (Ferguson, 2015; Ferguson & Lawrence, 2016). Given the null findings in chapter two and three surrounding reluctant altruists and their preference to help in high free riding contexts, we dedicated chapter four to exploring and hopefully clarifying this relationship.

Chapter 4

Reluctant altruism and varying levels of free riding

4 Abstract

This study was designed to explore whether reluctant altruists donate to charity under high levels of free riding. This study presented a hypothetical scenario of an online crowd fundraising campaign where 5 equivalent schools were trying to raise £130 to buy fruit trees to plant on their school grounds. The only difference between the schools is the different amount raised in the first week of collecting with one school having raised £136.50 (raised 105% of the target) to another school that has only raised £10 (7.69% of the target). In decision task one, participants were asked to decide which school they want to donate to and how much they would be willing to donate to it. In decision task two, participants were shown one school's fundraising campaign and asked how much they would donate in each day of the campaign. Results showed that reluctant altruists did not choose to donate more to the least supported school in decision task one. However, in decision task two reluctant altruism predicted more (frequency and quantity) being donated earlier in the fundraising campaign when the school had received less. The mixed findings can be explained by reluctant altruist preference not being activated by the relatively undeserving cause of donating to plant fruit trees in schools ground which is potentially a bigger factor in decision task one than in decision task two.

There are several theories that can explain why we help when others are helping: conditional co-operation, competitive altruism, and descriptive social norms (Barclay & Willer, 2007b; Fischbacher et al., 2001; Goldstein, Cialdini, & Griskevicius, 2008). There are also theories like free riding and the bystander effect that can explain why we don't help when we think others are helping (Andreoni, 1988, 1993; Panchanathan, Frankenhuis, & Silk, 2013). What is less well known is why people help when others are not helping. Arguably, this is the most important context to understand since the level of helping is the lowest and unless the levels of helping increases other psychological mechanisms like cooperation or competitive altruism cannot be utilised. One hypothesised explanation for why people help when others aren't is reluctant altruism. Reluctant altruists are predicted to help in high free riding contexts motivated by a lack of trust in others, a negative view of humanity, and a sense of moral anger (Ferguson, 2015). The following introduction will outline theories that explain why we help when others are helping, theories that account for why we free ride on others helping and theories that illustrate why we help when others are not helping.

4.1 Why we help when others are helping?

In this section, we outline three theories: conditional cooperation, competitive altruism and descriptive social norms that all provide explanations of why people help when they know others are helping.

Conditional cooperation would suggest that there should be a positive association between the prosocial behaviour of others and an individual's own prosocial behaviour (Fischbacher et al., 2001). Conditional co-operation can be regarded as a motivation by itself or as a function of other underlying preferences like altruism, inequality aversion or reciprocity (Fischbacher et al., 2001). Evidence for conditional co-operation has been found within public goods games and outside the laboratory in a university fundraising scheme, maintaining a ski-ing course and fundraising for a public radio station (Fischbacher et al., 2001; Frey & Meier, 2004; Heldt, 2005). As well as

cooperating with others in prosocial behaviour we also compete to be the most prosocial (Duffy & Kornienko, 2010).

Competitive altruism suggests that certain people, known as competitive altruists, will compete to be seen as the most altruistic (Barclay, 2004b). For example, competitive altruists might donate large sums of money to charity or dedicate substantial amounts of their time to volunteering. Competitive altruists by incurring short terms costs (i.e. donating money) enhance their reputation which produces long-term benefits like access to more cooperative partners and enhanced cooperation in relationships (Barclay & Willer, 2007a; Hardy & Van Vugt, 2006b). Evidence for competitive altruism is found across economic games like the prisoner dilemma, public good games and outside the laboratory in the purchasing of green products (Barclay & Willer, 2007a; Griskevicius, Tybur, & Van den Bergh, 2010; Hardy & Van Vugt, 2006b). Sometimes we are not looking to compete with others but are simply just trying to behave in a comparable co-operative manner.

Descriptive social norms refer to how most people tend to behave in a certain situation (Cialdini et al., 1990). In the domain of charitable donations, descriptive social norms have been found to increase both the quantity and frequency of donations (Agerström, Carlsson, Niclasson, & Guntell, 2015; Alpizar, Carlsson, & Johansson-Stenman, 2008; Croson, Handy, & Shang, 2009). Croson, Handy, & Shang, (2009) argue that descriptive social norms work by altering donors perceptions of an appropriate amount to donate and donors then match that amount out of a desire to conform to the perceived descriptive norm.

One underlying connection between these three theories is the idea that there is a norm which people for varying motivations have a wish to adhere to. For example, conditional cooperation and descriptive norms both rely on the knowledge that the majority of other people (norm) are contributing, therefore, I should contribute too. Competitive altruism also requires an awareness of what the majority of others are donating so they can outperform others and gain a better reputation. The common outcome that unites these three theories, conditional cooperation,

competitive altruism and descriptive social norms, is that as more people are perceived to be helping the more likely subsequent people are to help.

4.2 Why don't we help when others are helping?

This section looks at two theories: free riding and the bystander effect which predicts why people will not help when they know others are.

A free rider is someone who obtains benefits from belonging to a group without bearing a proportional share of the costs for providing the benefits (Albanese & Van Fleet, 1985). Free riding is an optimal solution for self-interested people especially in contexts where the interactions are one-shot (i.e. only occur once) and the fellow players are strangers (Fehr et al., 2002). Within a public good model of philanthropy, a donor's motivation to give to a public good derives from their desire to consume it (Duncan, 2004). If others are already supplying that good then a public good donor will prefer to free ride off the donations of others. This means that others will not help if a sufficient number of others to produce the public good are contributing. However, the adverse effects of free riding can be controlled through punishment by strong reciprocators. Strong reciprocates are defined as people who reciprocate acts of generosity and punish at a cost to themselves those that violate cooperation and fairness norms (i.e. free riders)(Fehr & Henrich, 2003). Reluctant altruism could be seen less as a controlling mechanism of free riding but as a compensatory mechanism where reluctant altruists see others free riding and take that as their motivation to help.

A concept that is similar in producing less overall helping behaviour is the bystander effect whereas the number of people available to help increases the less helping behaviour there is due to the belief that other bystanders will help (Latané & Darley, 1968). For example, Wiesenthal, Austrom, & Silverman, (1983) show that donations to the Guatemalan relief fund reduced as group sizes increased. Similarly, Panchanathan, Frankenhuis, & Silk, (2013) showed that as the number of dictators increased the less the recipient receives and the smaller the percentage share of the endowment dictators give. Latan & Nida, (1981) suggested three potential mechanisms underlying

the bystander effect. First, audience effects are when the bystander does not intervene to avoid the embarrassment of misinterpreting the situation and offering help when it was not needed. Second, social influence is where people look to others to help assess whether help is actually needed. Third, diffusion of responsibility is where the psychological cost of not helping are shared (i.e. someone else was there and could have helped). The explanation of social influence and diffusion of responsibility could readily be extended to charitable decision making. For example, other people were not donating to this charity, therefore, this charity does not need my help either (social influence) or others could have donated to it so why should I (diffusion of responsibility)?
Both free riding and the bystander effect produce less overall helping behaviour. Motivationally, free riding is less complex as it is driven by self-interest whereas the bystander effect is potentially driven by a number of concerns like the wish to avoid embarrassment, social influence and diffusion of responsibility. Although these theories explain why people do not help they do not provide insight into why people might help in low helping contexts hence we turn to impact philanthropy, strong reciprocity and reluctant altruism.

4.3 Why we help when others do not?

Arguably this is the most important time context to understand since levels of helping are at their lowest and unless they increase other mechanisms (i.e. conditional cooperation) cannot operate. In the following section, we briefly look at three theories: impact philanthropy model, strong reciprocity and reluctant altruism that explain why we help when we know that other people aren't helping.

The impact philanthropy model predicts that certain individuals, called impact donors, will give to the poorest charity in order to maximise the impact they can have on increasing that charity's revenue (Borgloh et al., 2013; Duncan, 2004). Thus impact donors will help a charity precisely because others are not helping the charity to maximise the impact of their donations. However, in

situations where a threshold exists before a public good is provided an impact donor would also give just below the threshold to have the impact of realising the public good.

Strong reciprocators are individuals who are willing to help in high free riding contexts by imposing costly punishments on those who do not co-operate. This is helping since in the long run groups with strong reciprocates maintain high levels of cooperation (Fehr & Gächter, 2002; Gintis, 2000). However, for strong reciprocity to function their needs to be some form of punishment otherwise it would not increase cooperation (Gintis, 2003). Reluctant altruism, however, will operate in circumstances where there is a threshold and in situations lacking the option to punish non co-operators. Reluctant altruists help in high free riding contexts because they do not trust others to help, feel a sense of moral anger towards others that are not helping and tend to hold a negative view of humanity (Ferguson, 2015). Chapter 2 and Chapter 3 tested the idea that reluctant altruists would donate more to the least supported charity and found no effect of reluctant altruism predicting donations to the least supported charity. However, one possible reason for this is the least supported charity still had a jar 20% full of coins, therefore, might not have activated reluctant altruists who might only help in contexts with very high levels of free riding.

4.4 Present research

This research focuses on reluctant altruism because it is the only theory that consistently predicts helping behaviour in low helping contexts and is not affected by the addition of thresholds nor does it rely on the option to punish non co-operators. This research, therefore, explores how reluctant altruists behave when others are not helping. In particular, do reluctant altruists only contribute to a cause if it's experiencing very high levels of free riding (i.e. less than 10% helping). We explore this using a hypothetical crowd fundraising scenario where there are 5 identical schools all trying to raise £130 to buy 10 fruit trees. The only difference between the schools is the different amount raised in the first week of collecting with one school having raised £136.50 (raised 105% of the target) to another school that has only raised £10 (7.69% of the target). The first task is a discrete choice task

where participants have to select one school to support and select the amount they would be willing to donate (out of £10). The second task uses the strategy method to assess at what stage in School C's fundraising campaign people would be willing to donate at. A timeline of the fundraising campaign is presented with School C earning £0 on day one of the campaign to the school having raised £120 at day nine.

The study was designed to test the following hypotheses:

In the first decision task, reluctant altruists will donate significantly more (frequency and quantity) to the school that has the least support (School B).

In the second decision task, reluctant altruists will donate significantly more (frequency and quantity) earlier in the fundraising campaign when the school has received fewer donations.

4.5 Method

4.5.1 Sample.

Two hundred and six participants from the University of Nottingham were recruited via convenience sampling to take part in an online study. Participants were recruited to the study by placing posters up around campus so interested volunteers could get in touch. We also emailed out to different schools to invite them to forward an invite to participate in the study to their students who might be interested in taking part. In the poster and email a link was provide so interested students could directly take part in the study. The final sample was one hundred and seventy-seven since twenty-nine cases were dropped due to participants not completing key items (i.e. reluctant altruism scale). This represents a dropout rate of fourteen percent which is similar to dropout rates in previous online research (Hoerger, 2010).The final sample consisted of 75 males (42.3%), 101 females (57.1%) and 1 (0.6%) who preferred not to disclose. The mean age of participants was 23.53 years (SD = 6.77). Academic attainment ranged from those who have completed GCSE levels (n = 3, 1.69%), A levels (n = 85, 48.02%), Undergraduate (n = 43, 24.29%), Masters (n = 43, 24.29%), and PhD (n = 3,

1.69%). Due to the study being conducted online we have no control on the testing environment under which participant completed the study. Remuneration was via a conditional lottery mechanism (see Fischbacher et al., 2001 for details) where participants had a one in ten chance of having their responses to the decision task remunerated, meaning they either earned up to £10 that they could keep or donate (some or all) to a local school in the form of book tokens. Once all the data had been collected for the study one of the participant decision from either decision task one or two was randomly selected to be remunerated. Any more sent to school was given in the form of book tokens to a local school randomly selected from a list of local schools. Any more kept for oneself was email in the form of book tokens to participants.

4.5.2 Design.

The study comes in three sections: first a hypothetical scenario, second two decision-making tasks and third, an online questionnaire. Each section is described below:

4.5.2.1 Crowd Fundraising Scenario.

Participants are first given a definition of what crowdfunding is (see Appendix H). For example, “Crowdfunding is a good way of raising money for charity or a good cause, by asking large numbers of people for a small amount of money. Crowdfunding works by allowing those seeking money for charity or a good cause, to set up a profile of their project on a website where members of the public can, if they wish, choose to donate to the project.” Next, participants are told about a crowd fundraising raising profile inspired by an actual campaign where schools try to raise £130 to buy ten fruit trees to plant on their own school grounds. Next participants are told about some of the benefits of the projects for the school children. For example, “We will be able to educate our children on sustainable and local produce and by planting our own trees we will be able to do this with our very own produce.” Participants are also told about what will happen if a school receives more than its £130 target. For example, “if we exceed our target, we will use all the extra funds for environmental projects going on at the school, minus the 5% crowd

funder admin fee." Participants are then told that several schools have set up an identical campaign and after one week have raised varying amounts (see Table 4.1). For example, "Several schools, which are identical in terms of size, Ofsted reports and public attainment, have set up their own crowdfunding profile identical to this one. Each school has been running their campaigns for one week and they have two weeks before the project ends." Participants were given additional information on key metrics like Ofsted reports, size and public attainment to suggest to participants that the schools are of a similar quality and equally deserving of their support.

Table 4.1. *The amount raised by the five different schools over the first week of the campaign.*

The amount raised so far by the different schools are:
School A has raised £136.50
School B has raised £10.00
School C has raised £120.00
School D has raised £65.00
School E has raised £110.00

4.5.2.2 Decision task one.

Decision task one is split into two parts. First, participants are told that they have £10. Next, they are told that "In task 1 you can choose a school to donate some, none or all of this money to (if you do not wish to donate to any school then please select the option "None"). If you chose a school in the first task you will be asked to indicate how much (some, none or all) of this money to donate to that school." Participants are then reshown Table 1 and asked to select either School A, School B, School C, School D, School E or None. In the second part of decision task one, participants are asked to indicate how much of the money they would like to give to their chosen school. For example, "you can choose to donate some, none or all of this money to the school you choose above (assuming you didn't select 'None'). If you did select 'None' please give all £10 to yourself and give 0 to schools." Participants are also reminded that they must spend all of the £10.

4.5.2.3 Decision task two.

Participants are first shown a figure that depicts a timeline of School C's fundraising campaign which shows that over 9 days they have managed to raise £120 (see Figure 4.1 and Appendix H). Participants are then asked to a) indicate whether or not they would be willing to donate at each of the nine-time points and b) if they are willing to donate to indicate how much they would be willing to give, out of £10.00, at each of the selected time points.

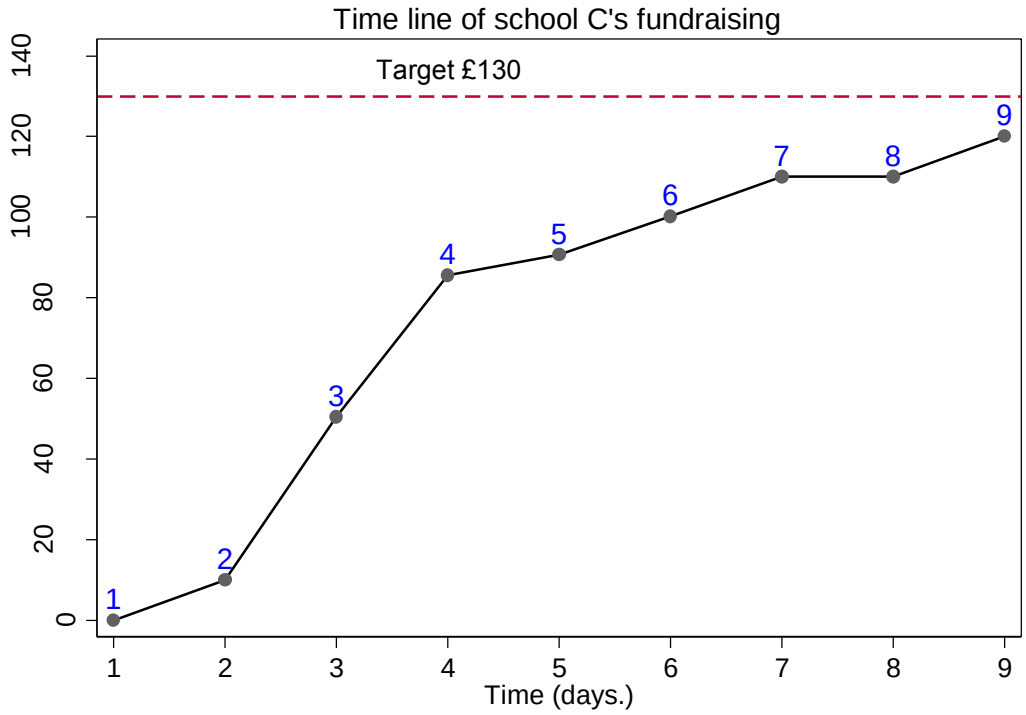


Figure 4.1. Shows a timeline of School C's Fundraising campaign over the first nine days.

4.5.2.4 Online questionnaire.

The questionnaire came in two parts:

4.5.2.4.1 Demographics Questionnaire.

The demographic questions looked at sex, age and educational attainment (see Appendix I).

4.5.2.4.2 Reluctant Altruism Measure.

The measure of reluctant altruism is composed of thirteen items across three subcomponents: lack of trust (made up of two items i.e. 'I can't trust others to help' and 'very few people help others these days'), moral anger (consisting of five items i.e. 'I get angry because others don't help those in need', 'I get frustrated that other people do not help those in need', 'I get ashamed that other people do not help others', 'I get upset by people's disregard of others in need', and 'I feel sad that people generally do not help each others') and a negative view of humanity (made of six items i.e. 'We live in a selfish society', 'I feel our society is uncaring', 'many people are only interested in themselves these days', 'most people are selfish', 'it seems it is culturally acceptable these days to put self before others', and 'people these days consider their own needs before others'); total α = 0.90. All items a prefaced with the sentence "I would/do volunteer to help others because.." after which participants are asked to rate that item on a 1-7 scale from Strongly Disagree to Strongly Agree (see Appendix B). A total sum score of these items was used to give each participant a score on the reluctant altruism scale that is used in the subsequent analyses.

Procedure.

Participants were first asked to read an online information screen and, assuming there were happy to, complete a consent screen (see Appendix J). Next, participants were asked for demographic information (see Figure 4.2 and Appendix I).

Participants are then shown the hypothetical crowd fundraising profile. They are told that several schools are using this identical profile and that each school has been fundraising for one week with two weeks left to raise the required £130 target. The five schools have raised varying amounts of money so far from just £10 to £136.50. Next, participants were introduced to the first decision task where they had to a) choose which school, if any, they would like to donate to and b) how much of the £10 they would choose to give to their chosen school or keep for themselves. The second task involves showing participants a figure of a hypothetical timeline of School C's fundraising campaign.

On the figure are nine time points which vary in terms of the number of days into the campaign the school is and the amount that the school has raised so far. Participants are asked at each of the nine-time points if (a) they would be willing to contribute to this school and (b) if so, how much out of £10. Next, the reluctant altruism scale was administered. Finally, a debriefing screen was displayed informing participants about the study and thanking them for their time (see Appendix K).

Once all the data for the study had been collected ten participants were randomly selected for remuneration of the choices they made in decision task one. These participants were emailed with Amazon vouchers for the amount they choose to keep for themselves. All money donated to the school was sent to a randomly selected school within the Nottingham area.

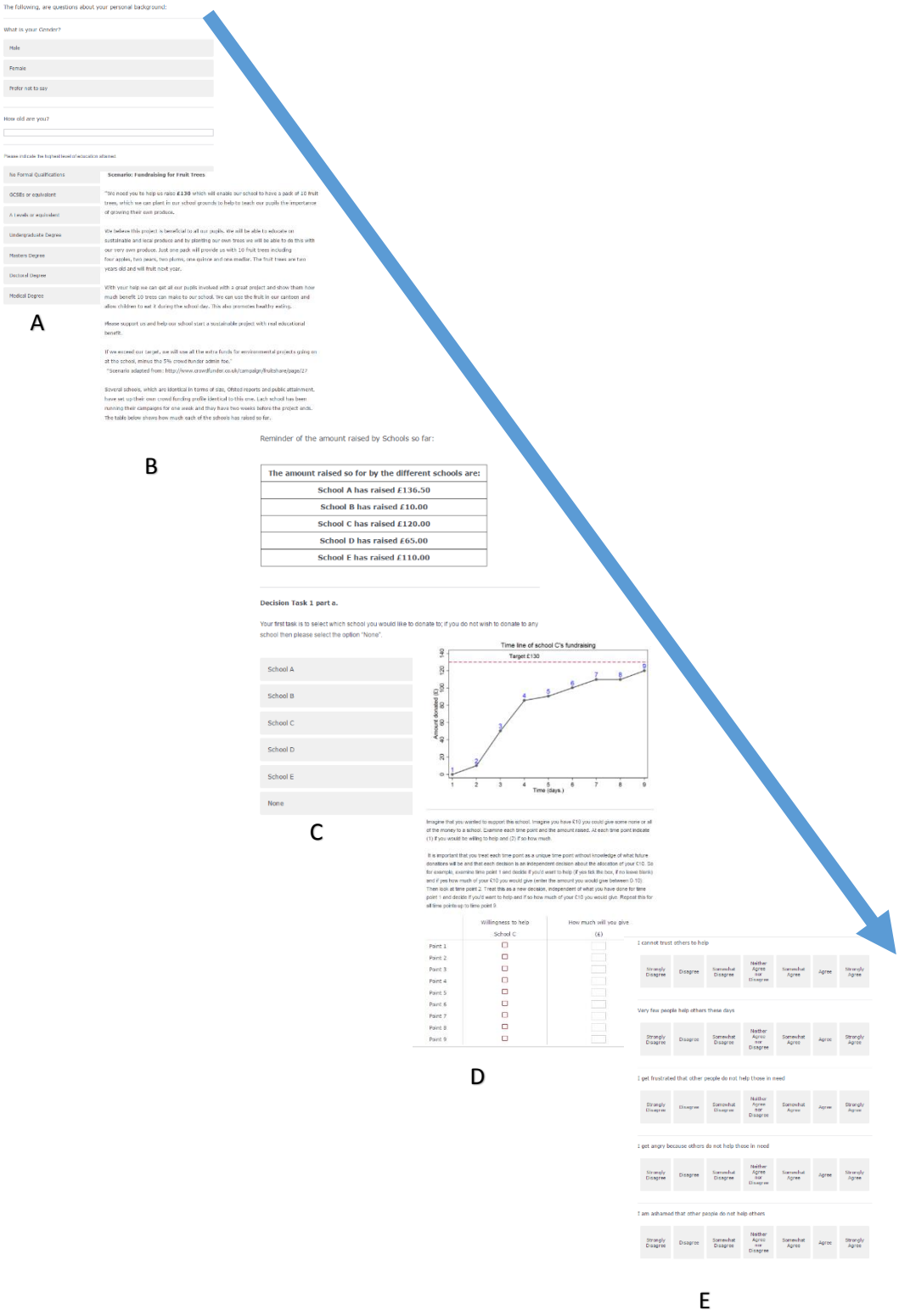


Figure 4.2. A flow chart of the study. Screenshot A shows the demographic and control questions. Screen shot B contains the crowd-fundraising instructions. Screen shots C and D represent the decision making task. Screen shot E shows the reluctant altruism scale.

4.6 Results

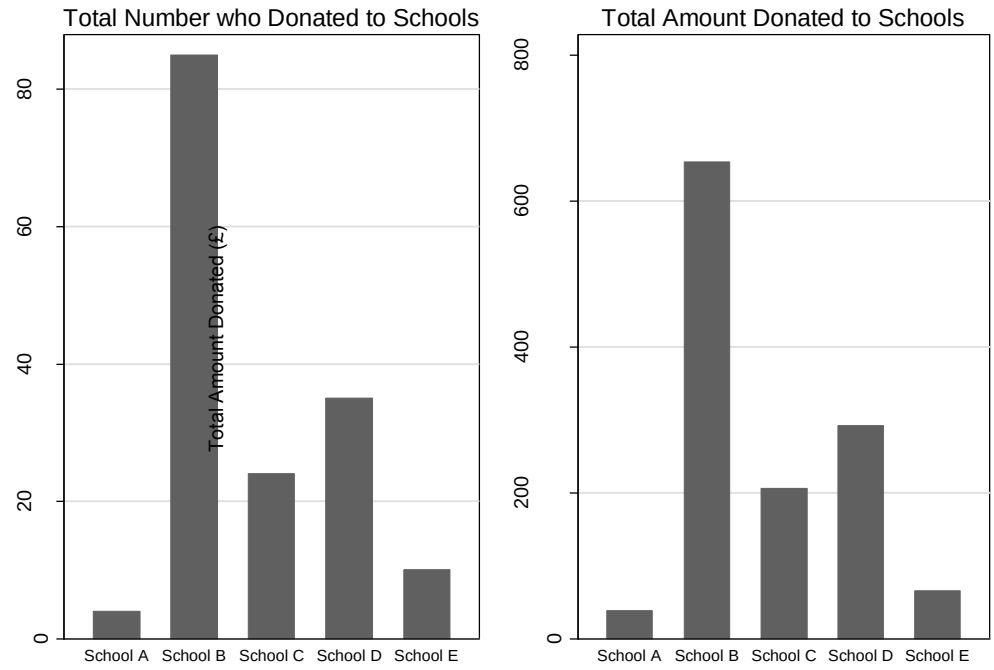
4.6.1 Overview of Giving to Schools.

One hundred and fifty-eight participants (89%) decided to donate to a school with the average levels of giving in task one being £7.21 (SD = 3.58) with a median donation of £10.00. As Table 4.2 shows the school with the highest average donations was School A (richest school) with people on average donating £9.63 (SD = 0.75) however, School A also had the smallest number of donors (n = 4). School B (poorest school) had the largest number of donors (n = 85) with 54% of donors giving to School B which led to it receiving the most donations (£653.00) (see Figure 4.3). School E had the lowest average level of donations (M = 6.60, SD = 3.31) and had relatively few donors (n = 10).

In decision task two, the average levels of giving (*M* = £5.40, *SD* = 4.35, *Md* = 5.00) and frequency of donations (n = 122, 69% donated) were highest at time point one when the school had raised £0 on day 1 (see Table 4.3). Average levels of giving and frequency of donations on the whole declined till time point 9 (*M* = 5.08, *SD* = 4.51, *Md* = 5.00, n = 113, % donated = 64) when they noticeably increased, although not up to time point 1 levels (see *Figure 4.4*). Similarly, total donations were highest at time point 1 (£955.00) and then declines till time point 6 (£711.00) where it increases again up till time point 9 (£899.00)

Table 4.2 *Average and Total donations to the five schools.*

Schools Target (£130.00)	Number who donated	Mean (SD)	Total Donations
School A (£136.50)	4	£9.63 (£0.75)	£38.50
School B (£10.00)	85	£7.68 (£3.10)	£653.00
School C (£120.00)	24	£8.58 (£2.26)	£206.00
School D (£65.00)	35	£8.34 (£2.63)	£292.00
School E (£110.00)	10	£6.60 (£3.31)	£66.00



Amount Schools had received: School A £136.50, School B £10, School C £120, School D £65, School E £110,

Figure 4.3. The total frequency and total amount (£) donated to each school.

Table 4.3 *Frequency, average and total amount donated to School C over their 9 days fundraising campaign.*

	Number who donated (% donated)	**Mean amount donated (SD) (£)**	**95% Ci Mean**	**Median (£)**	**Total Amount Donated (£)**
Time point 1	122 (69%)	5.40 (4.35)	4.75-6.04	5	955.00
Time point 2	116 (66%)	5.03 (4.38)	4.38-5.68	5	899.50
Time point 3	115 (65%)	4.86 (4.29)	4.23-5.50	5	860.50
Time point 4	117 (66%)	4.60 (4.18)	3.98-5.22	5	814.50
Time point 5	108 (61%)	4.21 (4.20)	3.59-5.22	3	745.00
Time point 6	105 (59%)	4.02 (4.08)	3.41-4.62	4	711.00
Time point 7	107 (60%)	4.29 (4.19)	3.66-4.91	5	759.00
Time point 8	104 (59%)	4.25 (4.27)	3.62-4.89	5	753.00
Time point 9	113 (64%)	5.08 (4.51)	4.41-5.75	5	899.00

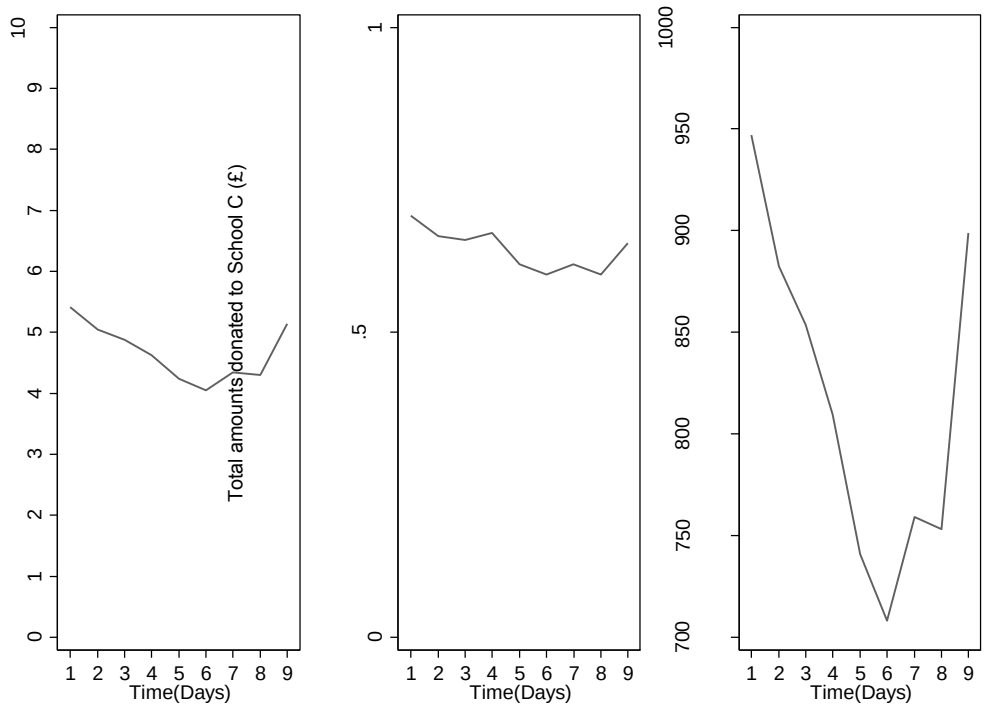


Figure 4.4. Three line graphs showing a change in average amounts donated (left), the frequency of donation (centre) and total donations (right) over School C's nine-day fundraising campaign.

4.6.2 Analysis Strategy.

In decision task one an ordinal logit model is conducted to assess whether reluctant altruists were more likely to donate to schools that have raised the least (Hypothesis 1). An ordinal logit model is appropriate to deal with the ordered nominal dependent variable of school choice. The choice of school is ordered as this reflects the different amounts that each school has raised with the dependent variable being arranged from poorest school (School B) to richest school (School A). Two simple regressions were also conducted to see if reluctant altruism predicted the amount donated to the poorest school and the amount donated to schools in general.

In decision task two, random effects logit models are conducted to see if reluctant altruism predicted donations earlier in the fundraising campaign. The random effect model used a random intercept of each participant to account for the lack of interdependence between each participant's

nine donation decisions. Random effects tobit model was performed to see if reluctant altruists donate more earlier in the fundraising campaign. A random-effects Tobit model was used due to a) the censored nature of the data (52% of responses being right censored donating the full £10) and b) the large rho (.68) indicating that a lot of the total variance can be explained by within subject's variability[2].

4.6.3 Do reluctant altruists give to the poorest school?

An ordinal logit model analysis was conducted on school preferences (going from poorest to richest school) to see if reluctant altruism predicted choosing to donate to the poorest school[3]. Overall the model was not significantly different from the empty model (model with no predictors in) ($\chi^2(1) = 0.53$, $p = .46$). Table 4.4 shows that reluctant altruism had no impact on people choosing the poorest school (OR = 1.01, SE = 0.01, $p = .46$).

A simple regression was conducted to see if reluctant altruism predicted the size of donations to the poorest school. The overall model was significant explaining 13% of the overall variability ($F(1, 83) = 10.23$, $p < .01$) (see Table 4.5). Reluctant altruism was a significant, negative predict of giving to the poorest school with a one standardised unit increase in reluctant altruism leading to a -0.30 decrease in the amount donated to the poorest school. An additional multiple regression was run to see if increases in reluctant altruism just reduce donations to the poorest school or reduce donations to schools in general (see Table 4.6). The regression model was significant and explained 4% of the total variation in donations to schools ($F(1,156) = 5.37$, $p < .05$.). A one standardised unit increase in reluctant altruism leading to a decrease of -.19 in donations to schools (see Table 4.6). A z test comparing the two standardised beta coefficients indicates reluctant altruists donated significantly

[2] The tobit model had good quadrature approximation with all the relative differences being less than 1% indicating stable estimation of coefficients

[3] The approximate likelihood ratio test of proportional odds indicated that the assumptions of proportionality of odds was met ($\chi^2(12) = 10.86$, $p = .54$).

less to the poorest school than they did to all schools ($z = 3.75$, $p < .01$). In summary, reluctant altruism did not predict choosing to donate to the poorest school or giving more to schools in general.

Table 4.4. *An ordinal logit model of reluctant altruism on school preferences*

School Preferences	Odds ratio (SE)	Standard Error	*z*	p
Reluctant Altruism	1.01	.012	0.73	.47

Note 5. $\chi^2(1) = 0.53$, $p = .46$.

Table 4.5. *A simple regression on donations to the poorest school*

Predicting donations to the Poorest School	β	Standard Error	*t*	p
Reluctant Altruism	-.28	.02	-2.81	< .01

Note 6. $F(1,83) = 10.23$, $p < .01$. $R^2 = .09$. N=85 - the number of people who donated to the poorest school

Table 4.6 *A simple regression on the amount donated to all five schools*

Predicting donations to the Five Schools	β	Standard Error	*t*	p
Reluctant Altruism	-.19	.02	-2.32	.02

Note 7. $F(1,156) = 5.37$, $p < .05$. $R^2 = .04$. N=158

4.6.4 Do reluctant altruists prefer to contribute earlier in the fundraising campaign?

Two random effect logit models were run to see if reluctant altruism predicts willingness to donate at different time points in School C's fundraising campaign. The first model contains centred reluctant altruism and time points as predictors and the second model contains the main effects plus the interaction term between reluctant altruism and time points. The first random effects logit model was significant ($\chi^2(2) = 6.24$, $p < .04$) with a non-significant effect of reluctant altruism (OR = 0.99,SE = 0.15,$p = .59$) and a significant negative effect of time point (OR = 0.94,SE = 0.03,$p < .05$) predicting willingness to donate. The second model was a significantly better fit than a model with no predictors ($\chi^2(2) = 35.68$, $p < .001$) and the first model ($\chi^2(2) = 33.58$, $p < .001$). Reluctant altruism was a significant predictor of donations (OR = 1.05, SE = 0.02, $p < .05$) with those who scored higher

on reluctant altruism being more likely to make a donation over the nine days of fundraising. There was also a significant interaction between reluctant altruism and time points (OR = 0.99, SE = 0.00, $p < .001$) indicating that those who scored higher on reluctant altruists were less likely to donate as the days of fundraising increased (see *Figure 4.5*).

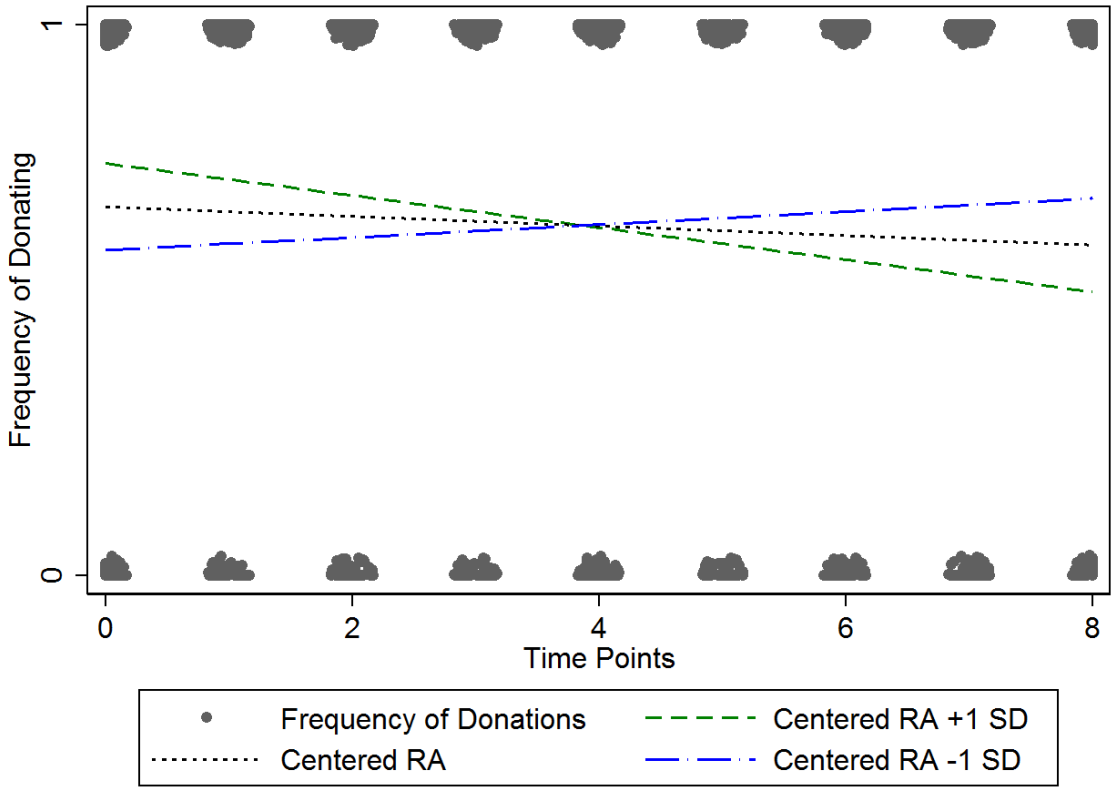


Figure 4.5. Simple slopes of reluctant altruism and time points predicting the probability of donating money to School C's fundraising campaign.

Next two random effects tobit models were run to see if reluctant altruism predicted higher amounts being donated earlier in the fundraising campaign for school C. The first model contains reluctant altruism and time points as predictors and the second model contains the main effects plus the interaction term between reluctant altruism and time points. Model one was significant ($\chi^2(2) = 10.79$, $p < .001$) with no significant effect of reluctant altruism ($z = -1.41$, $p = .16$), and a significant effect of time points ($z = -2.98$, $p < .01$) (see Table 4.7). The significant effect of time points suggests that as the number of days spent fundraising increased the smaller average donations were to School C. The second model, contains reluctant altruism, time points and the interaction term. The

interaction between time points and reluctant altruism was added to the model to directly address this issue of whether reluctant altruists give earlier in the fundraising campaign (see Table 4.8). The second model was significantly better than a model with no predictors ($\chi^2(1) = 38.65$, $p < .001$) and a significantly better fit than the first model ($\chi^2(1) = 29.71$, $p < .001$). Reluctant altruism as a predictor of donations to School C across the nine days of fundraising remained insignificant ($z = -0.89$, $p = .376$). Time points was a significant negative predictive of donations indicating that less was given as the number of days into the campaign increased ($z = -2.47$, $p = .014$). The interaction term was significant ($z = -5.33$, $p < .001$) indicating that as reluctant altruists scores increase less on average was donated as the days into the fundraising campaign increased (see *Figure 4.6*).

Table 4.7. *Random intercept logit model looking at whether reluctant altruism predicts the frequency of donations earlier in School C's fundraising campaign.*

Frequency of donations to School C over the fundraising campaign	Model 1 Odds Ratio (SE)	Model 2 (SE)	Odds Ratio
Reluctant Altruism	0.99 (0.15)	1.05 (0.20)*	
Time Points	0.94 (0.03)*	0.95 (0.03)	
Interaction		0.99 (0.01)***	

Note 8 Model 1 $\chi^2(2) = 6.23$, $p < .04$. Model 2 $\chi^2(3) = 35.68$, $p < .001$.

Table 4.8 *Random effect tobit model looking at whether reluctant altruism predicts giving early in School C's fundraising campaign.*

Frequency of donations to School C over the fundraising campaign	Model 1 *z* (SE)	Model 2 *z* (SE)
Reluctant Altruism	-1.41 (0.07)	0.89 (0.07)
Time Points	-2.98 (0.09)**	-2.47 (0.09)*
Interaction		-5.33 (0.01)***

Note 9 Model 1 $\chi^2(2) = 10.79$, $p < .01$, Rho = .68 (SE = 0.03). Model 2 $\chi^2(3) = 38.65$, $p < .001$ Rho = .69 (SE = 0.03).

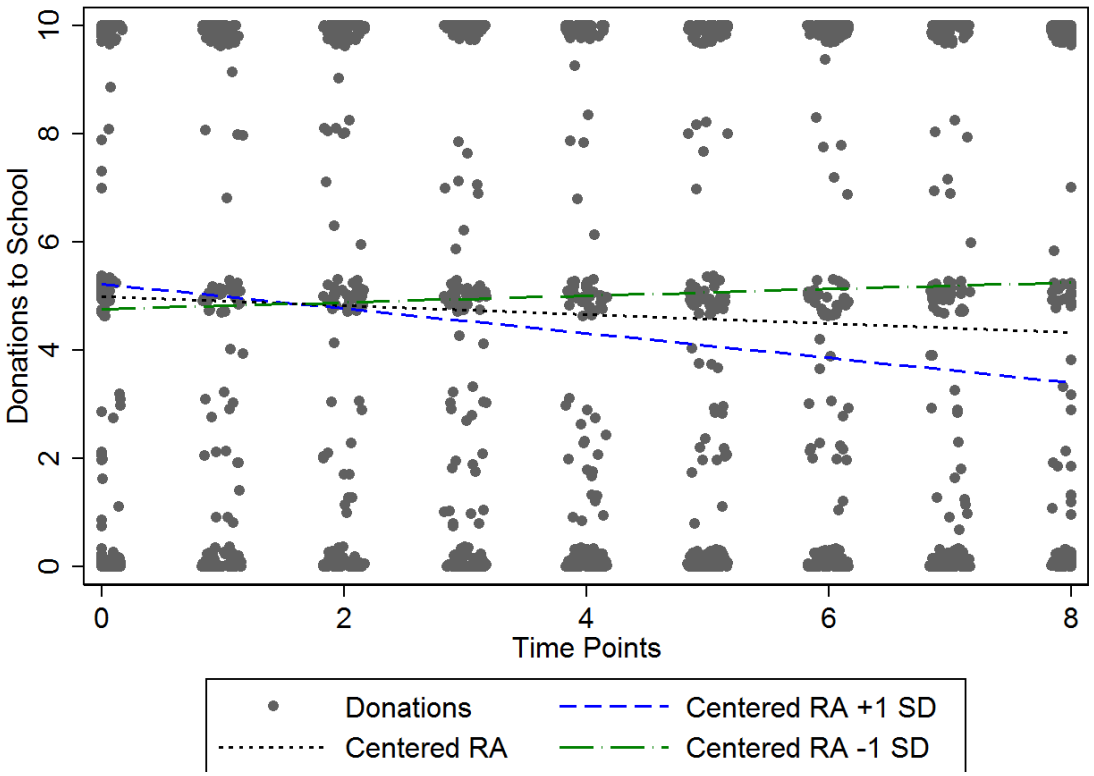


Figure 4.6. Simple Slopes of reluctant altruism and time points predicting donating money to School C's fundraising campaign.

4.7 Discussion

4.7.1 Overview.

This study has mixed findings. Hypothesis one predicted that reluctant altruists would give more frequently and give more on average to the poorest school (School B). The results contradict the hypothesis suggesting that reluctant altruists did not prefer to donate to the poorest school and actually gave less to the poorest school. Hypothesis two predicted that reluctant altruists would be more likely to and give higher average amounts earlier in School C's fundraising campaign giving less as the campaign went on. The analyses support hypothesis two showing that higher reluctant altruism scores predicted more frequent donations and predicted increased likelihood of donating earlier in School C's campaign. Furthermore, results also suggest that reluctant altruists gave higher average amounts earlier in school C's fundraising campaign. The results from decision task one and two seem to be at odds with each other for example how can reluctant altruists negatively predict

donating to the poorest school but then positively predict frequency and quantity of donations earlier in School C's fundraising campaign?

One potential explanation is that the decision context of task one and two are quite different. In task one participants are given the option of choosing only one school out of five to donate to or keeping the money for themselves. Whereas in decision task two, participants only have the option of donating to School C and have to make a donation decision at every single time point, therefore, they are not forced into making a mutually exclusive decision as is the case in decision task one. The only decision they have in decision task two is how much to donate (0-£10) at each time point. Decision task one forces reluctant altruists to evaluate each of the schools and decide if any are deserving of their donation and if none are there is an explicit option to keep the money for themselves. Previous research has suggested that reluctant altruists will only donate to a 'deserving cause' and perhaps schools wishing to grow fruit trees on their school ground is not deserving enough for reluctant altruists(Ferguson & Lawrence, 2016). This explanation could explain why reluctant altruism predicted not only fewer donations to the poorest school but also less being donated to all schools in general. In decision task two, the deservingness of the cause is potentially less important in the decision-making process because the main question is how much to give at each time point. Future research testing reluctant altruism could mitigate this potential issue by carefully selecting their charitable causes to ensure they are appropriate to activate reluctant altruists. Another factor to consider is that decision task two uses a within-subject design with each participant contributing nine different responses meaning there are over 1,500 observations nested within 177 participants. Whereas, task one is a between subjects one-shot design with only 177 responses making it less powerful than task two and therefore less likely to identify small effects.

4.7.2 Limitations.

There is an unusually high level of generosity, 52% donated their entire endowment in task 2, compared to the average dictate where only 5% of the sample donate all their endowment(Engel,

2011). This discrepancy could be due to a number of factors: use of the strategy method, conditional lottery or unearned endowment. A number of studies support the idea that the strategy method and conditional lottery payments are equivalent in terms of results to output from methods like direct elicitation or direct payment methods(Brandts & Charness, 2009; Fischbacher, Gächter, & Quercia, 2012; S. Laury, 2005). However, Cherry, Frykblom, & Shogren, (2002) showed that participants were more altruistic with unearned endowments. Although unearned endowments do lead to more charitable behaviour my other two laboratory studies which did have earning tasks also showed above average levels of generosity.

4.7.3 Next Chapter.

This study was designed to explore how reluctant altruist behaviour when others are not helping. The results provide mixed support for reluctant altruists helping when others are not with decision task one finding reluctant altruists donate less when others are not helping. However, the idea of donating to schools to plant fruit trees on their grounds may not have been perceived to be deserving enough to activate a reluctant altruists response. Results from decision task two do support the idea that reluctant altruists will help when others are not. The discrepancy between decision task one and two could be due to a) decision task two having more power and b) the focus on how deserving the cause is perceived to be is arguably less important in the decision making process of task two. Future research will explore two aspects of reluctant altruism. First, do reluctant altruists donate to the least supported charity when that charity is a deserving charitable cause? Second, how do reluctant altruists emotional response before and after charitable decisions change?

Chapter 5

The role of negative emotions within reluctant altruism

5 Abstract

This study was designed to a) identify if reluctant altruist's respond positively to high levels of free riding and b) explore reluctant altruist's emotional responses pre and post charitable donation. We predicted that reluctant altruists should be more likely to donate to the charity with the least support, should have greater negative emotions before making a charitable donation and potentially, have higher positive emotions after the donation. Two hundred students from the University of Nottingham participated in the study. A mixed design was used with participants either being informed that a charity had received more (less) volunteers than expected and being asked to fill out emotional measures pre and post completion of a charity dictator game. There are three main findings: first, reluctant altruists did not donate more to charity in the low support condition, second, reluctant altruists did express significantly higher levels of negative emotion before the donation and third, reluctant altruists did not have significantly reduced negative emotions post charitable donations.

Reluctant altruism is an unusual altruistic preference in the sense that it's their negative emotions (anger, frustration, sadness etc.) towards others not helping that is proposed to motivate reluctant altruists to help others and give to charity. This in contrast to the theory of warm glow where people make charitable donations to experience positive warm feelings. A large number of papers have shown that people do indeed feel happier and report higher levels of happiness and subjective well-being after making charitable donations (Aknin et al., 2015; Aknin, Mayraz, et al., 2014; Dunn, Aknin, & Norton, 2008). The current study was designed to identify reluctant altruist's response to free riding and explore reluctant altruist's emotional responses pre and post donation whilst manipulating the level of free riding. The rest of the introduction will outline the previous work on reluctant altruist's response to free riding, then review theories that link negative emotions and prosocial behaviour before introducing the current research study.

5.1 Will reluctant altruists help when others are not helping?

This section will review the findings from chapter two to four on reluctant altruist's behaviour in high free riding contexts.

In chapter two and three the relative wealth of charities was manipulated to simulate a scenario where one charity is suffering from higher levels of free riding in an attempt to activate reluctant altruists to help. The manipulation of relative wealth was achieved by altering the level of coins in the charity jars with one charity jar being twenty percent full, whilst another charity's jar was 80% full. The findings from these studies suggest that the manipulation of the relative wealth of charities was successful in the sense that more money was consistently donated to the poorer charity. However, reluctant altruism did not predict donating to the poorer charity. A possible explanation for this finding is that the level of free riding was not high enough to activate a reluctant altruist response i.e. the poorer charity still had a jar 20% full of coins.

In chapter four, a hypothetical crowd fundraising scenario was adopted where five schools were trying to raise £130 to plant 10 fruit trees on school grounds. There were two decisions making

tasks that altered the perception of free riding in slightly different ways. In the first task, participants were shown the amount raised by five different schools with the poorest school receiving £10 out of £130 which represents only 7.69% of the amount needed to reach its target. Even though free riding was higher to the poorest school than the least supported charity in chapters two and three reluctant altruism did not predict giving to the poorest school. In fact, reluctant altruism negatively predicted donations to the poorest school and schools in general. In the second task, levels of free riding were altered by showing participants one school's fundraising campaign from day 1 where they had £0 to day 9 where they had raised £120. Participant's responses were collected via a strategy method where each participant selected which day/s they would donate on and how much out of £10 they would like to donate. Reluctant altruism predicted making donations earlier in the fundraising campaign when the school had received the least amount of money. The main difference between the tasks is decision task one involves participants having to evaluate which if any of the schools they would like to donate to, whilst in task two they have to decide which time point/s they would like to donate at. The question of whether the school is worthy of a donation is involved in decision task one but not in decision task two where they can only donate to one school. Previous research on reluctant altruism has suggested that worthiness is an important consideration for reluctant altruists (Ferguson & Lawrence, 2016). Perhaps, donating to a school so that it can plant fruit trees on its grounds does not satisfy that consideration.

To overcome issues of worthiness, this study used a children's charity that helps children in developing countries provide basic, life-saving support. For example, participants are informed that £3.00 could help buy life-saving diarrhoea treatment for eight children. Another potential issue with the previous manipulations of levels of free riding is that they have all focussed on the charities/schools having a deficit of money. However, the published literature is exclusively on blood donation where the deficit is of volunteers willing to donate blood (Evans & Ferguson, 2014; Ferguson, Atsma, de Kort, & Veldhuizen, 2012). Deficits in money could be a lot more easily met by finding one rich donor whereas deficits in people to give blood or time cannot be so easily fixed. To

address this possibility the current study uses a manipulation of low or high levels of volunteers being recruited by the children's charity.

5.2 Negative emotions and prosocial behaviour

Emotions play an important role in prosocial decision making (Pillutla & Murnighan, 1996; Rilling et al., 2002; Sanfey, 2003). The theory of warm glow and the effects of happiness have well-documented effects on increasing charitable donations (Aknin, Fleerackers, et al., 2014; Andreoni, 1990; Dunn et al., 2008). However, what is less clear is whether negative emotions can also have beneficial effects on prosocial behaviour. Theories like altruistic punishment, the negative state relief model and reluctant altruism suggest negative emotions can enhance prosocial behaviour (Cialdini & Kenrick, 1976; Fehr & Gächter, 2002; Ferguson, 2015). This section outlines altruistic punishment, negative state relief model and reluctant altruism.

5.3 Negative emotions motivate altruistic punishment

Negative emotions have been shown to be important in generating altruistic punishment (Koenigs & Tranel, 2007; Sanfey, 2003). The literature suggests altruistic punishment can be further decomposed into second party punishment where those affected by deviations from cooperation can punish the selfish party and third-party punishment is where an unaffected party can punish the selfish party (Fehr & Fischbacher, 2004b). Fehr, and Gachter, (2002) suggested that seeing free riding caused negative emotions, within co-operators, and these emotions triggered the decision to punish free riders. To test this idea, participants were given two hypothetical public goods games where only one player had displayed self-interested behaviour. Participants were then asked to rate their emotions (anger and annoyance) on a 1-7 scale. They found that when others had contributed a lot more than the self-interested player to the public good they displayed greater levels of negative emotions. They then extended this finding by providing another two hypothetical scenario's where participants were put in the place of being the self-interested player and asked to rate how they

expected others to feel towards them. This time they expected others to be angry with them for their self-interested contributions. Carpenter and Matthews, (2012) in a public goods game showed that self-interested contributions that violated social norms generated altruistic punishment through anger and indignation felt by second party punishers (participant involved in the public goods game) and third-party punishers (participant observing the public goods game with the option to punish). Finally, Nelissen & Zeelenberg, (2009) suggest that anger at the injustice of unequal distributions in an ultimatum game drives altruistic punishments. They manipulated the intentionality of the offer and responsibility of the punisher (i.e. one or two punishers) and found substantially more punishment occurs for intentionally unfair offers when there is only one punisher. If reluctant altruists act in a similar manner to altruistic punishers then we should expect reluctant altruists to feel strong negative emotions before they make their charitable decisions.

5.4 Cialdini's Negative State Relief Model

The negative state relief model suggests that the sight of harmed others induces a negative state which people are motivated to reduce (Cialdini, Darby, & Vincent, 1973). Performing an altruistic act is one of several ways that the negative state can be reduced with individuals choosing to perform the most available option to reduce their negative state. In a classic study, Cialdini et al., (1973) exposed participants to an aversive event (spilling note cards for a thesis) and then gives them either a relief task (where participants got money or approval) or no relief task (no money or approval). Next, participants had the opportunity to help a fellow student conduct telephone interviews. They found that those who did not take part in the relief task were significantly more likely to help conduct interviews. Cialdini and Kenrick, (1976) show that the negative state relief model is only effective for adults because they have been socialised to associate positive emotions with altruistic acts. For example, children who had negative states induced did not donate coupons to other students whereas adults did. Two important facets of the negative state relief model for reluctant altruism is a) negative emotions can be the motivator for prosocial behaviour and b) after

performing the prosocial act negative emotions can be reduced. If reluctant altruism involves a similar mechanism as the negative state relief model one would predict high negative emotion before the prosocial act and reduced negative emotions after donating.

5.5 Reluctant Altruism

Reluctant altruism is a preference to positively help in the face of free riding (Ferguson & Lawrence, 2016; Ferguson, 2015) therefore one would predict reluctant altruists would be more likely to donate and/or volunteer time when free riding is high. Seeing others free riding on worthy causes should make reluctant altruists feel negative emotions like anger, frustration, sadness etc. which motivates them to help (Ferguson & Lawrence, 2016). This means that reluctant altruists ought to feel negative emotions like sadness before making donations. It is not clear from prior studies whether the act of helping reduces reluctant altruists negative emotions, however, if reluctant altruism operates in a similar manner to the negative state relief model one would predict reduced negative affect after helping. Finally, all of the published studies on reluctant altruism have been in the field of blood donation where the prosocial act, donating blood, is a non-monetary donation (Evans & Ferguson, 2014; Ferguson & Lawrence, 2016; Ferguson, 2015; Ferguson et al., 2012). So far the prosocial measures in chapter two to four have been monetary therefore this study includes two non-monetary measures of prosocial behaviour: a follow-up task that participants can volunteer to take part in and hypothetical scenarios of willingness to volunteer. It is expected that reluctant altruists in the high free riding condition will be more likely to take part in the follow-up task and express high levels of willingness to volunteer in the hypothetical scenarios.

5.6 Current Study

The aim of this study is to explore two features of a reluctant altruist's response: first, are they more prone to help when others are receiving less support and second, how do reluctant altruists emotional response vary pre and post charitable donation. This study uses a mixed design with

participants either being told the charity has more (or less) volunteers than it was expecting. Measures of sadness and personal distress were taken before and after a charity dictator game where the participant could choose to donate as much or as little of three pounds to an international children's charity or keep it for themselves. Finally, participants completed a post-decision questionnaire which captured demographic, reluctant altruism and willingness to help information. We make four predictions:

1) Reluctant altruism should predict more frequent and higher levels of average donations to the children's charity with lower levels of support.

2) Reluctant altruism should predict higher levels of negative emotions in the pre-donation emotion measure.

3) Higher reluctant altruism scores might predict less negative emotions post-donation.

4) Higher reluctant altruism scores will predict increased willingness to do a follow-up study and assist hypothetically with other activities for charity.

5.7 Method

5.7.1 Sample.

Two hundred students were recruited from the University of Nottingham through convenience sampling. Participants were recruited to the study by placing posters up around campus so interested volunteers could get in touch. We also emailed out to different schools to invite them to forward an invite to participate in the study to their students who might be interested in taking part. Once interested participants got in touch a mutually convenient time was arranged to take part in the study. The sample contained 76 (37.81%) males and 123 (61.5%) females with 1 who preferred not to disclose gender. The mean age of participants was 21.88 years (SD = 4.02). Academic attainment ranged from those who have completed A levels (n=104, 51.74%), Undergraduate (n= 54, 26.87%), Masters (n=38, 18.91%), and PhD (n=2, 1%) with two participants preferring not to say. All

participants completed the experiment in the same computer laboratory space with dividers between each computer to ensure privacy of decisions. Participants were reminder not to interact or communicate with other participants during the experiment. Remuneration was the amount participants earned minus any money they donated to charity. All participants were remunerated at the end of the study using an anonymous remuneration system where the experimenter wrote on a letter the participant ID number and the amount they selected to keep for themselves. The envelopes where then placed on a table away from the experimenter ready for collection by the participant. This prevented the experimenter from linking remuneration to a participant identity.

5.7.2 Design.

The study was conducted through 5 sequential stages: money earning task, charity task manipulation, pre and post charity task questionnaire, charity task and post-decision questionnaire (see Figure 5.1). The first four stages are conducted through Psychopy and the post-decision questionnaire through Qualtrics (Peirce, 2007; Qualtrics, 2005).

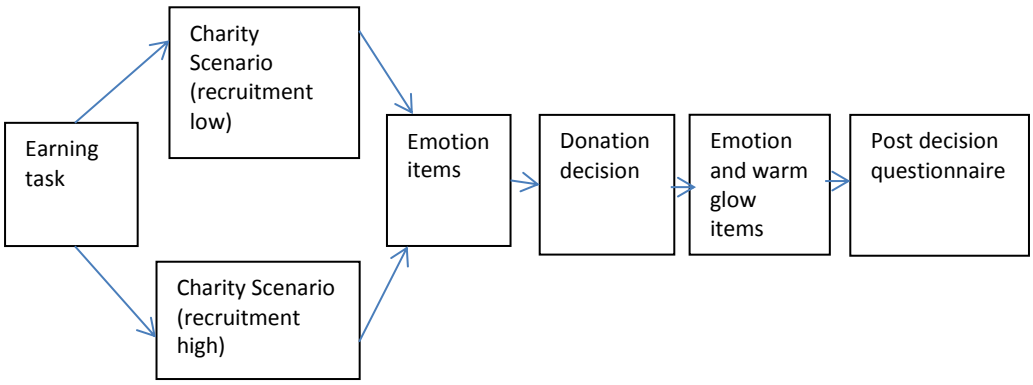


Figure 5.1. Flow of the main study

5.7.2.1 Money earning task.

Participants have five minutes to click as many 'zx' pairs as they can with participants who have 200 or more zx pairs after 5 minutes earning £3; those with less than 200 earning £1 (similar to Ariely, Bracha, & Meier, 2007). One hundred and ninety-nine participants earned £3 with the average number of 'zx' responses being 972.47 (SD = 249.18) and 1 participant earned £1.

5.7.2.2 Charity task manipulation.

A between subjects design was used with participants being randomly allocated to a charity scenario where the level of support for the charity is either high or low. For example, in the high support condition participants were told 'the charity had recently conducted a volunteer recruitment drive and was expecting to get 1000 volunteers and received 1500.' In the low condition, participants were told 'the charity had recently conducted a volunteer recruitment drive and was expecting to get 1000 volunteers and received 500.' In addition to this information, both conditions were given general information about what the charity did. For example, participants are informed that the charity 'works to provide health, nutrition, HIV and aids programs that are delivered through community-based programs in partner countries'. Furthermore, participants are also told how their donations could make a difference to a real-world problem. For example, participants are informed that 'every year around 7 million children die before their fifth year of diseases that could have been prevented. Millions of children contract an illness or die due to no access to basic healthcare treatments or suitable nutrition. These children could be saved. For example, just £3 could pay for life-saving diarrhoea treatment for 8 children'.

5.7.2.3 Pre and post charity task questionnaire.

Fultz, Schaller, and Cialdini, (1988) sadness and personal distress scale were administered pre and post donations (see Appendix L). Since we were only interested in negative emotions the empathy subscale in this questionnaire was not included. The sadness scale asked participants about how they felt right now on three items: 'sad', 'low-spirited' and 'heavy-hearted' (sadness scale pre-donations $\alpha = .78$; post donations $\alpha = .79$). The personal distress scale required participants to rate how they were feeling right now on three items: 'alarmed', 'worried' and 'uneasy' (sadness scale pre-donations $\alpha = .79$; post donations $\alpha = .79$). Both scales were on a 1-7 scale from 'Not at all' to 'Extremely.'

5.7.2.4 Charity task.

Participants had the option of donating as much or as little of their earned money as they wanted to the children's charity and/or keeping it for themselves. A fictitious children charity was used called 'International Children Charity' to avoid autobiographical experiences influencing donation preferences (Breeze, 2010). Any money donated to charity was sent to "Save the Children" and participants were informed of this at the end of the study.

5.7.2.5 Post-decision questionnaire.

The post-decision questionnaire collected: demographic, willingness to help the charity items and the reluctant altruism scale (see Appendix M).

5.7.2.5.1 Demographic Information.

Demographic information such as gender, age and level of education was collected (see Appendix M).

5.7.2.5.2 Willingness to help.

Willingness to help was measured by four items (i.e.'In the future, I would be willing to give up my time to help this charity') that were combined to create one sum score variable ($\alpha = .92$) (see Appendix M). Each of the four intention items is on a 1-10 scale from 'not at all' to 'completely'. There is also one item assessing the willingness to complete a follow-up study (yes/no).

5.7.2.5.3 Reluctant altruism scale.

The measure of reluctant altruism is composed of thirteen items across three subcomponents: lack of trust (made up of two items i.e. 'I can't trust others to help' and 'very few people help others these days'), moral anger (consisting of five items i.e. 'I get angry because others don't help those in need', 'I get frustrated that other people do not help those in need', 'I get ashamed that other people do not help others', 'I get upset by people's disregard of others in need', and 'I feel sad that people generally do not help each others') and a negative view of humanity (made of six items i.e. 'We live in a selfish society', 'I feel our society is uncaring', 'many people are only interested in

themselves these days', 'most people are selfish', 'it seems it is culturally acceptable these days to put self before others', and 'people these days consider their own needs before others'); total α = 0.86. All items a prefaced with the sentence "I would/do volunteer to help others because.." after which participants are asked to rate that item on a 1-7 scale from Strongly Disagree to Strongly Agree (see Appendix B). A total sum score of these items was used to give each participant a score on the reluctant altruism scale that is used in the subsequent analyses.

5.8 Procedure

Participants completed a money earning task where they got paid contingent on how many 'zx' pairs they clicked in five minutes (Ariely et al., 2007). Participants were then informed of the number of 'zx' clicks they made and how much they had earnt. Participants then read the charity task manipulation information with half of the participants being informed the charity has received more (less) support than expected). Participants are then asked to complete the pre-emotional items before making being given the choice of donating as much or as little of their endowment as they like to charity and or keeping it for themselves. Participants then complete the post emotional items and post-decision questionnaire.

Upon completion of the study participants were thanked for their time and paid any money kept. All money donated to charity was sent off to Save the Children once all the data for the study had been collected (see Appendix N for information, consent, and debriefing sheets).

5.9 Results

For correlation matrix of key measures used in this study see Table 5.1.

5.9.1 Does reluctant altruism predict a higher frequency and higher level of donations to charity with less support.

Table 5.2 shows that more people donated in the high support condition (89 out of 95, 93.68%) compared to the low support condition (92 out 105, 87.61%) however, this difference was not significantly different (χ^2 (1) = 1.49, p = .22). The results also suggest that more money was donated in the high support (M = 1.86, SD = 1.11, Md = 2.00) compared to the low support condition (M = 1.76, SD = 1.17 , Md = 1.50), however this difference was not statistically significant (t(197.58) = -0.58, p = .57).

Table 5.1 *Correlation matrix of key measures.*

	Charitable donations	Reluctant Altruism	Condition	Pre-Sadness	Pre-Personal Distress	Post-Sadness	Post Personal Distress	Intention to Help	Follow Up Study
Charitable donations	1.00								
Reluctant Altruism	0.04	1.00							
Condition	0.04	0.01	1.00						
Pre-Sadness	0.24**	0.28**	0.05	1.00					
Pre-Personal Distress	0.15*	0.17**	0.01	0.72**	1.00				
Post-Sadness	0.09	0.22**	0.02	0.63**	0.49**	1.00			
Post Personal Distress	0.05	0.08	-0.01	0.42**	0.58**	0.73**	1.00		
Intention to Help	0.20**	0.19**	-0.01	0.41**	0.51**	0.32**	0.28**	1.00	
Follow Up Study	-0.28**	0.08	0.08	-0.02	-0.02	0.01	0.07	-0.08	1.00

Table 5.2 Charitable donations by low vs high support conditions.

	n	% who donated	Means (SD)	Median
Low Support Condition	105	87.61%	£1.76 (1.17)	£1.5
High Support Condition	95	93.68%	£1.86 (1.11)	£2

To test hypothesis one that reluctant altruists were more likely to donate to charity with the highest level of free riding a logistic regression was conducted on whether a donation was made to charity (Yes/No). To identify if reluctant altruists donated more to the least supported condition a tobit regression model was performed to control for censored data i.e. 41.5% (83 out 200) gave £3.00 to charity. For both the logistic and tobit regression models each analysis is performed twice once with main effects (Model 1) and once with main effect (reluctant altruism and condition) plus the interaction term (reluctant altruism by condition) (Model 2). In all the analyses Reluctant Altruism is mean centred and Condition is contrast coded.

Neither logistic regression models were significantly better than a model with no predictors (Model 1 χ^2 (2) = 2.6, p = .27; Model 2 χ^2 (3) = 3.10, p = .37) (see Table 5.3). Condition (*OR* = 1.45, SE = 0.26, p = .15) and reluctant altruism (*OR* = 1.01, SE = 0.02 p = .43) did not significantly predict the frequency of donations to the children's charity in model 1. Similarly, reluctant altruism (*OR* = 1.01, SE = 0.02 p = .54) and condition (*OR* = 1.42, SE = 0.26 p = .17) were not significant predictors in model 2 and the interaction term between reluctant altruism and condition was also not significant (*OR* = 0.99, SE = 0.02 p = .58) suggesting reluctant altruists did not donate more frequently to the charity with low levels of support (hypothesis 1).

Table 5.3 *Logistic and Tobit regression looking at frequency and quantity donated to charity.*

	Model 1 OR (SE)	Model 2 B (SE)
Reluctant Altruism	1.01 (0.02)	1.01 (0.02)
Condition (Low (-1) vs High Support (1))	1.45(0.26)	1.42 (0.26)
Interaction		0.99 (0.02)

Note 10 Model 1 χ^2 (2) = 2.6, p = .27. Model 2 χ^2 (3) = 3.10, p = .37.

As Table 5.4 shows models one and two were not significant better than a model with no predictors (Model 1 χ^2 (2) = 0.93, p = .63; Model 2 χ^2 (3) = 1.2, p = .74). In model one neither reluctant altruism (*Coef* = 0.01, SE = 0.01 p = .47) nor condition (*Coef* = 0.06, SE = 0.08 p = .53) predicted more being donated to charity. Similarly, in model two neither reluctant altruism, condition nor the interaction term (reluctant altruism by condition) predicted more being donated

to charity (reluctant altruism *Coef* = 0.01, SE = 0.01 *p* = .47; condition *Coef* = 0.06, SE = 0.09 *p* = .52; interaction term *Coef* = -0.01, SE = 0.01 *p* = .58). This suggests that reluctant altruists did not donate more to the charity with the least support (hypothesis 1).

Table 5.4 *Tobit models looking at the frequency of donations to the children's charity*

	Model 1 B (SE)	Model 2 B (SE)
Reluctant Altruism	0.01 (0.01)	0.01 (0.01)
Condition (Low (-1) vs High Support (1))	0.06 (0.08)	0.06 (0.09)
Interaction		-0.01 (0.01)

Note 11. Model 1 χ^2 (2) = 0.93, *p* = .63. Model 2 χ^2 (3) = 1.2, *p* = .74.

5.9.2 Does reluctant altruism predict higher levels of negative emotions before donations?

To identify if reluctant altruists did have higher levels of negative emotions before making donations multiple regressions were conducted on the sadness and personal distress scales. For each scale, two regressions were performed one with main effects (model) and one with main effect plus the interaction term (reluctant altruism by condition) (model 2).

Table 5.5 shows that both models one and two were significant with reluctant altruism being a positive significant predict of increased sadness before donations were made (Model 1 F (2,197) = 8.46, *p* < .001, R^2 = .08; Model 2 F (3,196) = 6.16, *p* < .001). For everyone standardised unit increase in reluctant altruism, there was 0.28 increase in sadness before the donation. Condition and the interaction between reluctant altruism and condition were not significant predictors of pre-donation sadness.

Table 5.6 provides partial support for reluctant altruism predicting increase personal distress pre-donation. Reluctant altruism was a significant predictor of personal distress in model one (F (2,197) = 3.11, *p* < 0.5 R^2 = .031) with a one unit increase in reluctant altruism leading to a 0.17 increase in personal distress pre-donation. Reluctant altruism was also a significant predictor of

personal distress in model 2 (β = 0.17, SE = .013, p < .050) however, this model was not significantly better than a model with no predictors (F (3,196) = 2.069, *p* = .106).

Table 5.5 *Multiple regressions looking at whether reluctant altruism predicts sadness before making a charitable donation.*

	Model 1 β(SE)	Model 2 β (SE)
Reluctant Altruism	.28 (0.02) ***	0.28 (0.23) ***
Condition	.04 (0.26)	0.04 (0.26)
Interaction		-0.08 (0.23)

Note 12. Model 1 F (2,197) = 8.46, *p* < .001, R^2 = .08. Model 2 F (3,196) = 6.16, *p* < .001, R^2 = .09. *** = *p* < .001, ** = *p* < .01, * = *p*< .05.

Table 5.6 *Multiple regressions looking at whether reluctant altruism predicts personal distress before making a charitable donation.*

	Model 1 β (SE)	Model 2 β (SE)
Reluctant Altruism	0.17 (0.03) *	0.18 (0.03)*
Condition	0.01 (0.29)	0.01 (0.29)
Interaction		-0.01 (0.03)

Note 13. Model 1 F (2,197) = 3.11, *p* < 0.5 R^2 = .031, Model 2 F (3,196) = 2.069, *p* = .106, R^2 = .031. *** = *p* < .001, ** = *p* < .01, * = *p*< .05.

5.9.3 Does reluctant altruism predict less negative emotions after the donation?

Table 5.7 indicates that on average participants reported significantly less sadness after the donation than before (pre-donation sadness M = 11.95, SD = 3.76, post donation sadness M = 9.59, SD = 3.76; paired samples t-test (199) = 10.33, *p* < .001). Similarly, pre-donation personal distress was significantly higher than post donation personal distress (pre-donation personal distress M = 11.62, SD = 4.08, post donation personal distress M = 8.99, SD = 3.89; paired samples t-test (199) = 10.10, *p* < .001).

Table 5.7 *Sadness, and Personal distress scores before and after donations.*

	Pre Donation			Post Donation		
	M	*SD*	*Md*	*M*	*SD*	*Md*
Sadness scale	11.95	3.76	12	9.59	3.76	10

Personal Distress scale	11.62	4.08	12	8.99	3.89	9

To identify if reluctant altruism predicts changes in negative emotions caused by the act of making a charitable donation multiple regressions were performed on the difference between pre and post donation measures of sadness and personal distress. Three regression models were performed for both sadness and personal distress. Model one included three main effects (reluctant altruism, condition and amount donated to charity). Model two contained three main effect plus three 2 way interactions (reluctant altruism by condition, reluctant altruism by amount donated to charity and condition by amount donated). Model three included three main effects, three 2 way interactions and one 3 way interactions (reluctant altruism by condition and amount donated).

Table 5.8 shows that models one, two and three were not significant suggesting the models were no better than the empty model (taking the mean of the dependent variable). This suggest that those who score high on reluctant altruism do not feel any less sad after making charitable donations. Similarly, Table 5.9 shows that models one, two and three were not significant suggesting the models were no better than the empty model. This indicated that reluctant altruists do not feel any less personal distress after making charitable donation.

Table 5.8 *Multiple regressions exploring whether reluctant altruism predicts changes in sadness.*

	Model 1 β (SE)	Model 2 β (SE)	Model 3 β (SE)
Reluctant Altruism (RA)	0.06 (0.02)	0.13 (0.04)	0.11 (0.04)
Condition (C)	0.03 (0.23)	-0.07 (0.43)	-0.09 (0.42)
Charitable Donations (CD)	0.16 (0.20)*	0.16 (0.20)*	0.16 (0.20)*
C * CD		0.11 (0.20)	0.13 (0.20)
RA * CD		-0.08 (0.20)	-0.08 (0.20)
RA * C		-0.06 (0.20)	-0.30 (0.4)*
RA*CD*C			0.28 (0.02)*

Note 14. Model 1 F (3,196) = 2.12, p = .098 R^2 = .02, Model 2 F (6,193) = 1.34, p = .22, R^2 = .01, Model 3 F (7,192) = 1.75, p = .099, R^2 = .03 . * denotes p < .05.

Table 5.9 *Multiple regressions looking at whether reluctant altruism predicts changes in personal distress.*

	Model 1 β (SE)	Model 2 β (SE)	Model 3 β (SE)
Reluctant Altruism (RA)	0.11 (0.02)	0.02 (0.05)	0.01 (0.05)
Condition (C)	0.01 (0.26)	0.02 (0.49)	0.01 (0.49)
Charitable Donations (CD)	0.19 (0.23)	0.12 (0.23)	0.12 (0.23)
C * CD		-0.01 (0.23)	-0.00 (0.23)
RA * CD		0.01 (0.02)	0.10 (0.02)
RA * C		-0.00(0.02)	-0.13 (0.05)
RA*CD*C			0.15 (0.02)

Note 15. Model 1 F (3,196) = 1.79, p = .15 R^2 = .01, Model 2 F (6,193) = 0.97, p = 0.45, R^2 = 0.01, Model 3 F (7,192) = 0.98, p = 0.45, R^2 = 0.00

5.9.4 Does reluctant altruism predict the likelihood of doing a follow-up study and intentions to help the charity in the future?

To test whether reluctant altruists were more likely to volunteer to do a follow up study logistic regressions were performed. There were two logistic regression models: one with main effects (condition and reluctant altruism) (model 1) and one with main effects plus the interaction term (condition by reluctant altruism) (model 2). Table 5.10 shows that reluctant altruism (OR = 1.01, SE = 0.01, p = .28), condition (OR = 1.16, SE = 0.14, p = .29) and the interaction term (OR = 1.01, SE = 0.01, p = .69) did not significantly predict taking part in the follow up study.

To see if reluctant altruism predicted willingness to help multiple regression models were conducted with reluctant altruism, condition and the interaction term as predictors. Two models were conducted: main effects (model 1) and main effect plus the interaction term (model 2). Table 5.11 shows that reluctant altruism was a significant predictor in both model one and two with a one standardised unit increase in reluctant altruism leading to a .17 increase in willingness to help. Whereas, condition and the interaction term were not significant predictors of willingness to help (p > .57).

Table 5.10 *Logistic regression explores whether reluctant altruism predicts willingness to do follow up.*

	Model 1 OR (SE)	Model 2 OR (SE)

Reluctant Altruism	1.01 (0.01)	1.01 (0.01)
Condition	1.16 (0.14)	1.16 (0.14)
Interaction		1.01 (0.01)

Note 16. Model 1 $\chi^2(2) = 2.3$, $p = .32$, Model 2 $\chi^2(3) = 2.4$, $p = .49$.

Table 5.11 *Multiple regressions on whether reluctant altruism predicts intentions to help.*

	Model 1 B (SE)	Model 2 B (SE)
Reluctant Altruism	0.18 (0.05) **	0.19 (0.05)**
Condition	-0.01 (0.59)	-0.01 (0.59)
Interaction		0.04 (0.05)

Note 17. Model 1 F (2,197) = 3.60, $p < .05$ $R^2 = .04$. Model 2 F (3,196) = 2.49, $p = .06$, $R^2 = .037$. ** = $p < .01$.

5.10 Discussion

This study found no effect of condition or reluctant altruism on donations to charity. The study did find that those who scored high on reluctant altruism tend to have high sadness and personal distress before donations were made regardless of the condition they were in. Although levels of sadness and personal distress did reduce significantly after donations reluctant altruism did not predict this change. Finally, higher reluctant altruism scores did predict higher intentions to help but did not predict participation in the follow-up study.

5.10.1 Explaining the mixed effects of reluctant altruism on charitable donation, intentions to help and willingness to complete a follow-up study.

Reluctant altruism did not predict high levels of donations to the children charity in the low support condition (hypothesis 1) and did not predict participating in the follow-up study (hypothesis 4). However, high levels of reluctant altruism did predict increased intentions to help although this effect was not isolated to participant in the low support condition. One explanation for these mixed results is that the manipulation of low vs high support condition appears to have been unsuccessful. This view is supported by the fact that there was no significant difference found between the high

and low support condition in the frequency or quantity of donations given to the children's charity. Without an effective manipulation of the level of free riding to activate a reluctant altruist response one would expect no effect of reluctant altruism on donation or participation in the follow-up study.

The manipulation of levels of support may have been too subtle getting crowded out by the additional information participants were receiving about the children's charity. For example, participants read 'we were expecting to recruit 1000 new volunteers and got 500 (1500)' at the end of the page of information introducing participants to the children charity. In the first two chapters, the manipulation was more overt with participants being shown on a separate page entitled 'how much past participant have donated' two large pictures of charity jars 20% and 80% full of donated coins. The other potential issue with the manipulation is perhaps the level of free riding was too low in the low support condition (500 out of 1000 volunteers recruited) with the charity still receiving 50% of the volunteers it needed. It is difficult to design a manipulation that is effective whilst still being realistic and perhaps this manipulation might have felt realistic and the cause deserving but at the expense of being effective. Future research should be more explicit with higher levels of free riding to ensure activation of a reluctant altruist response.

5.10.2 Why did reluctant altruism predict negative emotions pre-donation but not predict reduced negative emotions post donations.

Reluctant altruism predicted higher levels of sadness and personal distress before the donation supporting hypothesis two. This is in line with the phenomenon of third-party punishment where negative emotions trigger altruistic punishment (Fehr & Fischbacher, 2004b; Fehr & Gächter, 2002). The finding is also supported by the negative state relief model which suggests that negative emotion can lead to prosocial behaviour as individuals seek to alleviate their negative emotions (Cialdini et al., 1973).

However, unlike the negative state relief model reluctant altruism did not significantly predict reductions in negative emotions post donation despite negative emotions being at lower levels post-

donation. One explanation for the null results could be a lack of power to detect the small effect that making a donation has on reducing negative emotions within reluctant altruists. Alternatively, perhaps negative emotions for reluctant altruist are a by-product of the negative views they hold about amount humanity and their general lack of trust in others to help (Ferguson & Lawrence, 2016). Therefore, although they have personally made a donation this will not make them feel better since they still believe in a selfish society and still do not trust others to help.

5.10.3 Limitations.

Self-report measures of emotions were used which is problematic for two reasons: first, it assumes that people know what they are feeling and can accurately report it (Fehr & Fischbacher, 2004b). Second, they will be truthful in their reports not letting demand characteristic or social desirability factors influence what they report (Orne, 1961). The advantage of self-report emotional measures is that they are cheap and can unlike more physiological measures like skin conductance response provide information about specific emotions being felt rather than just arousal (Ben-Shakhar, Bornstein, Hopfensitz, & van Winden, 2007).

5.10.4 Next Chapter.

This study was designed to identify if reluctant altruist would positively respond to high levels of free riding and explore reluctant altruist's emotional responses pre and post charitable donations. The study found that reluctant altruism did not predict charitable donations in the low support condition or predict increased likelihood of taking part in a follow-up study. Reluctant altruist did predict feeling stronger negative emotions pre-donation decision and did not predict a reduction in negative emotions post-donation. The next chapter reviews the finding consistent across chapter two to four that participants preferred to donate more money to the poorest charity/school. This finding is explained by reference to the underdog effect where people have a preference to support those at an underserved disadvantage.

Chapter 6

When the relatively poor prosper: The underdog effect on charitable donations.

6 Abstract [4]

In fundraising, it is common for the donor to see how much a charity has received so far. What is the impact of this information on a) how much people choose to donate and b) which charity they choose to donate to? Conditional cooperation suggests that people will donate to the charity that has received the most prior support, while the Underdog Effect suggests increased donations to the charity with the least support. Across 2 laboratory experiments, an online study (combined N = 494) and a qualitative survey (N = 60), a consistent preference to donate to the charity with the least prior support was observed. Thus, the Underdog Effect was supported. We suggest people will show a preference for the underdog if there are two or more charities to donate to, one of the charities is at a disadvantage and people have little pre-existing loyalty to either charity.

[4] Much of the content of this chapter is in the process of being published as Bradley, A., Lawrence, C., & Ferguson E. (2018). When the relatively poor prosper: The underdog effect on charitable donations. Nonprofit and Voluntary Sector Quartely. **Accepted**.

It is becoming increasingly common for charities to allow potential donors to be able to observe others' prior donations (Butt & Shah, 2012). It is believed that the visibility of previous donations provides social information that potential donors can use to help inform their own donation decisions. A number of studies examining this type of social information have shown that people have a preference to give to a charity/organization with a larger number of previous donations (Frey & Meier, 2004; Martin & Randal, 2008). However, many of these studies prevented direct comparison of information across charities by using between subjects designs, whereby participants were presented with information about either one charity or another (Frey & Meier, 2004; Martin & Randal, 2008). A more realistic scenario is that potential donors are able to compare information on previous donations across charities simultaneously. This is akin to online fundraising where donation information for a variety of charities can be compared. Therefore, we investigate whether, under this donation scenario, donors would show a preference to donate to either the most supported or the least supported charity. If participants do prefer the least supported charity, we ask: is this because they are motivated by the desire to make their donation have a bigger impact on the charity (the impact donor) or are they motivated by a preference to support those at a disadvantage (the underdog donor)? Theoretically, this paper explores the potential role of an underdog effect in charitable decisions. First, we review the theories that support the preference to give to a charity with greater prior support. We then review the theories supporting the preference to contribute to a charity with the least prior support. Finally, we explore how these preferences may be moderated by the observability of prior donations before outlining the current research.

6.1 Preferences for giving to a charity with greater support

Conditional cooperation suggests that there should be a positive association between the amount others have already contributed to a cause and how much another individual will contribute (Fischbacher, Gachter, & Fehr, 2001). That is, if a large number of people are known to have donated

to one charity compared to another, then conditional co-operators should be more likely to contribute to the charity with a greater number of prior donations. For example, Frey and Meier (2004) informed students that either 64% or 46% of past students contributed to two student funds. Those students were 2.3% more likely to donate to the charity to which they believed 64% of previous students had donated. A different, but related account, of why people might prefer to give to a charity with greater previous support has been proposed by Vesterlund (2003). Vesterlund (2003) suggests that individuals give to charities that already have high levels of contributions because they are perceived to be: (1) of higher quality, (2) more likely to use donations effectively, and (3) more likely to receive future donations.

6.2 Preferences for giving to a charity with least support

Duncan's (2004) 'Impact Philanthropy' model defines an alternative type of philanthropic donor, known as an impact donor. Impact donors derive satisfaction from knowing their contribution makes a real difference to the level of goods and/or services provided by a charity. If other donors have given substantially to a charity then, potentially, any additional donations will have a smaller effect on increasing the level of goods and/or services that the charity provides. To test this model empirically, Borgloh, Dannenberg, and Aretz, (2013), gave participants the option of donating to a charity that has a small (€40,000-300,000) or large (€5-11 million) annual revenue. They found that 73% of participants choose to give to the charity with the smaller revenue, which resulted in an additional €323 being donated to that charity. Borgloh et al (2013) suggested donations to the charity with a smaller revenue would have greater impact since the donors' contributions would have the largest effect on increasing the endowment of the charity.

An alternative explanation focuses on the 'Underdog Effect' where one favours a previous unaffiliated entity, which is perceived to be at an undeserved disadvantage relative to others (Vandello, Goldschmied, & Richards, 2007). The 'Underdog Effect' is a robust phenomenon observed in voting behaviour, brand loyalty, and sports spectators' choice of team (Goldschmied & Vandello,

2012; Goldschmied & Vandello, 2009; Shirai, 2017). The Underdog Effect may then be plausibly extended to charitable decision making, predicting that donors should give to the charity with the least revenue since that charity is at a relative disadvantage (i.e. less funding). Indeed, the concept of the underdog is highly accessible (Kim et al., 2008) and a lay conception of the underdog is overly optimistic regarding the likelihood of the underdog succeeding (Goldschmied & Vandello, 2012). However, if the charity with lower revenue were perceived to be at a deserved disadvantage due to squandering donations (i.e. high staffing costs) then it would not be perceived as an underdog.

6.3 Effects of Observability on Donations

An ongoing, prominent debate in the charitable donation literature is whether the observability of a donation act increases the amount donated (Jones & Linardi, 2012; Mason, 2016). The evidence for observability is mixed, with some researchers finding evidence that it increases donations, both inside and outside the laboratory (Andreoni & Petrie, 2004; Soetevent, 2005; van Leeuwen & Wiepking, 2013), whilst other researchers find no correlation between the level of observability and the amount donated (Dufwenberg & Muren, 2006; Jones & Linardi, 2012). Thus, studies 1 and 2 include an observability manipulation to contribute to the evidence on the effects of observability on donations.

6.4 Present research

From previous empirical findings and theoretical models, two key questions emerge. First, when comparing across charities, do people donate to the charity with the least prior support (e.g. impact donors or underdog donors) or do they favour a charity with more support (e.g. conditional co-operators or quality signalling). Second, if the least supported charity is preferred, which of the competing explanations ('Impact Model' or the 'Underdog effect') best explains the behaviour? Conversely, if the greater-supported charity is favoured, which explanation (conditional cooperation or quality signalling) is preferred? These questions are addressed in four studies.

6.4.1 Method.

6.4.1.1 Participants.

156 students were recruited from the University of Nottingham through convenience sampling. Four cases were dropped due to invalid responses (i.e. allocating more money to charity than their endowment) and one further case was dropped due to technical problems. The final sample of 151 students consisted of 61 males (40.4%), 89 females (58.9%) and one who wished not to disclose (0.7%). Participants completed the study in groups of between four and ten (M = 6.63, SD = 1.63), with each group bieng randomly assigned to conditions. Remuneration for the study was the amount participants earned minus the amount they chose to give to charity. The sample size, gender composition, average earnings and average donations are reported in Table 6.1.

Table 6.1 *Comparison of sample size, gender composition, average endowment and earnings across all four studies.*

	Study 1	Study 2	Study 3	Study 4
Initial Sample size	156	132	206	60
Gender composition (% female)	58.9%	54%	57.1%	Not collected
Endowment per person.	£3	£4	£ 10*	No Endowment
Mean Earnings per person (SD).	£2.09 (1.56)	£1.01 (£1.09)	£2.82 (£3.61)*	No Earnings
Mean amount donated per person (SD).	£1.90 (£1.56)	£1.98 (£1.09)	£7.22 (£3.58)	£10.49 (£10.91)
Proportion of donations (% of donors vs total potential donors)	76.67%	87.9%	89.83%	100%

Note 18. Numbers in Brackets are SD. * A Conditional lottery was used in Study 3 so one in ten participants had their decisions remunerated.

6.4.1.2 Design.

The study was a 2 (Observability: Private vs Public) by 3 (Degree of Support: 50:50 vs 20:80 vs 80:20) by 2 (the Distribution of Resources across 80:20 and 50:50) mixed design. Observability and Degree of Support are between subjects factors and the Distribution of Resources is a within-subjects factor. Following Ariely, Bracha, and Meier (2009) and Kataria and Regner, (2014)

observability was manipulated by informing participants in the *public condition* that they would be asked to read out their donation decisions at the end of the experiment to the rest of the participants in their group once everyone in their group had completed the study. Participants in the *private condition* were informed that their decisions would remain private and anonymous. *Degree of support* was manipulated via a screen entitled 'Donations made by participants so far'. On the screen, there were two clear perspex jars filled with money. Each was labelled with the name of a charity (British Heart Foundation: BHF or Cancer Research UK: CRUK). The degrees of support in the jars varied across three conditions: 1) BHF is 80% full and CRUK is 20% full, 2) BHF is 20% full and CRUK is 80% full and 3) BHF is 50% full and CRUK is 50% full (see Figure 2.2). The 50:50 condition was included to check whether one charity was preferred over another. *Distribution of Resources* is the amount of money in the jars within each of the three conditions (20%:80%, 80%:20%, 50%:50%).



Figure 2.2. An example of the 80% (most supported charity), 50% and 20% (least supported charity) full jars of coins.

6.4.1.3 Procedure.

The study was conducted in three sequential stages: (1) a money earning task, (2) a charity dictator game and (3) an online questionnaire. In the *money earning task,* participants pressed the 'z' then 'x' key in that sequence for a period of five minutes (following Ariely, Bracha, & Meier, 2007). Participants had been told that to earn £4 they must make 200 'zx' responses, which all the

participants did (zx responses: *M* = 962.62, *SD* = 247.49). The next screen informed the participants whether their donation would be *public or private*. Participants then saw a screen showing "Donations made by participants so far". Depending upon the condition they were in, the jars were either 80-20%, 50-50% or 20-80% full of coins. The donation screen displayed three slider scales. Each slider scale went from 0 pence to 400 pence with the slider moving in single penny increments. The three slider scales were labelled: "The British Heart Foundation", "Cancer Research UK", or "Self". Participants could donate as much or as little as they liked to BHF, CRUK or keep for themselves as long as total money allocated equalled 400 pence. This page also contained the pictures of the jars as a visual reminder. If participants were in the *public condition*, once everyone had completed the study, they each read out their donation decisions to the rest of the participants. The questionnaire collected data on gender, course of study, current level of study and two questionnaires: Moral Foundation Questionnaire (MFQ) and Reluctant Altruism scale. The MFQ and reluctant altruism scale are not of current interest so are not discussed further. Participants were reimbursed for any money they chose to keep and all charitable donations were given to the relevant charities.

6.4.2 Results & Discussion.

The donations in the charity dictator game were not normally distributed (Skewness and Kurtosis test: $\chi^2 = 992.86$, $p < .001$) therefore non-parametric methods were used (D'Agostino, Belanger, & D'Agostino Jr, 1990).

6.4.2.1 Charity Preference.

The 50:50 conditions were included to identify any preference bias for donating to either the BHF or CRUK. There was no significant difference in either the *amount* donated to the BHF (*M*= £0.81, *SD* = £0.84) or CRUK (*M*= £0.86, *SD* = £0.75; Wilcoxon Signed Rank test: $z = -1.26$, $p = .21$) or in terms of the frequency of donations to the BHF (Number Donated = 13) or CRUK (Number Donated = 16; Chi-Square Goodness of Fit test $\chi^2 = 0.31.$, $p = .58$). There was also no difference in the average

amount donated between the 20-80% condition and 80-20% charity conditions (Wilcoxon Rank Sum test: z = -1.42, p = .15).

6.4.2.2 Preference Based on Distribution of Resources.

As the 50:50 condition showed no charity preference effect, we compared the amount donated when a jar was 20% full compared to when a jar was 80% full regardless of charity. These analyses were run on the data from 105 participants in the 80:20 and 20:80 trials with those in the 50:50 trials removed. The charity with the least distribution of resources (20%) received more money (M = £1.64, SD = £1.08,) than the charity with a greater distribution of resources (80%) (M= £1.34, SD = £.98) (Wilcoxon Signed Rank test z = 2.89, p < .01; see Table 6.27). Over the course of the study, the charity with the least distribution of resources received an additional £30.12 (see Table 6.2).

6.4.2.3 Effects of Observability.

There was no significant effect of observability between donations in the public (M = £1.78, SD = £1.54) and private conditions (M = £2.02, SD = £1.59; Wilcoxon Rank Sum test: z = 0.79, p = .43).

Thus, the overall results showed a preference to donate to the least supported charity compared to the more supported charity and no effect of observability on donations.

6.5 Study 2

This study aims to replicate the findings of study 1 regarding preference for the charity with least support (with three design changes). First, to check that the lack of an observability effect was not due to a relatively small sample size, a large number of participants were recruited. Second, we reduce the amount earned in the earning task to £3. Third, we did not include the 50:50 condition because study 1 showed no charity preference bias.

6.5.1 Method.

6.5.1.1 Participants.

132 students from the University of Nottingham were recruited, via convenience sampling. Eight cases were dropped due to invalid responses (i.e., allocating more money than they earnt) leaving a final sample of 124 students which contained 55 males (44.4%), 67 females (54%) and two who wished not to disclose (1.6%). Participants completed the study in groups of between three and ten (M = 6.66, SD = 1.88), with each group being randomly allocated to a condition.

6.5.1.2 Design.

The study used a similar design to study 1 with a 2 (Observability: Public vs Private) by 2 (Degree of Support: 20:80 vs 80:20) by 2 (Distribution of Resources across 80:20) mixed design. The study consisted of three sequential stages: (1) money earning task, (2) charity dictator game (same as study 1) and (3) an online questionnaire. The questionnaire collected gender, educational attainment, past charitable behaviour, level of risk, level of trust and the reluctant altruism scale. The present research does not focus on these measures and they are not discussed further.

6.5.1.3 Procedure.

First, participants completed the money earning task where they were told that to earn £3 they must make 200 'zx' responses (zx responses: M = 966.14, SD = 241.7). All participants had over 200 zx responses and earned £3. The rest of the procedure is identical to study 1.

6.5.2 Results.

Donations to the charity dictator game were not normally distributed (Skewness and Kurtosis test: χ^2 = 27.46, p < .001) so nonparametric methods were used.

6.5.2.1 Charity preference.

There was no significant difference in either the *amount* donated to the BHF (M= £0.99, SD = £0.83) or CRUK (M= £1.00, SD = £0.84); Wilcoxon Signed Rank test, z = 0.01, p = .99) or in terms of the

frequency of donations to the BHF (Number Donated = 30) or CRUK (Number Donated = 33; Chi Square Goodness of Fit test, χ^2 = 1.8., p = .18). There was also no difference in the average amount donated between the 20-80% and 80-20% charity conditions (Wilcoxon Rank Sum test, z = -1.12, p = .26).

6.5.2.2 Preference Based on Distribution of Resources.

Table 6.2 shows that the charity with the least distribution of resources received significantly higher average donations (M= £1.25 SD = £0.91) than the charity with the greater distribution of resources (M= £0.75 SD = £0.72) (Wilcox Signed Rank test, z = 4.76, p <0.001). The charity with the least distribution of resources received £56.20 more than the charity with the greater distribution of resources.

6.5.2.3 Effects of Observability.

As in study 1, there was no effect of observability on average amounts donated (z = 0.11, p = .91) (private M = £2.01, SD = £1.08 vs public M = £1.97, SD = £1.11).

Table 6.2 *Average and total donations to Well and Poorly supported Charities in Study 1 and Study 2*

		Mean (SD)	Sum
Study 1	Least supported Charity (20%)	£1.64 (£1.08)	£120.31
	Well supported Charity (80%)	£1.34 (£0.98)	£90.19
Study 2	Least supported Charity (20%)	£1.25 (£0.91)	£151.45
	Well supported Charity (80%)	£0.75 (£0.72)	£95.25

6.5.2.4 Combined Analysis of Study 1 and Study 2.

Data from studies 1 and 2 (N = 266) were combined to see if a larger sample size could help identify the observability effect and to control for demographic variables (gender and past level of helping[1]) that may be affecting charitable donations. First, a multilevel negative binomial regression was performed to see if the distribution of resources and observability predicted the amount donated to charity. The multilevel model allowed us to account for the within-subject component of the design (participant can distribute their money across the 20% and 80% full jars). A negative binomial link was specified to account for the overdispersion present in the data (Conditional overdispersion =

2.49). Table 6.3 shows significantly higher donations went to the least supported charity (IRR = 0.68, SE = 0.1, $p < .01$) and no effect of observability was found (IRR = 1.00, SE = 0.15, $p = .97$). A multilevel logistic regression was conducted to explore if the distribution of resources and observability predicted the frequency of donations to charity. Table 6.4 shows significantly more people donated to the least supported charity (OR = 0.47, SE = 0.13, $p < .01$) whilst no effect of observability was found (OR = 1.23, SE = 0.13, $p = .62$).

Table 6.3 *A multilevel negative binomial regression model exploring the effect that the Underdog Effect has on donations made to charity during studies one and two.*

	Model 1	Model 2	Model 3
	IRR (SE)	IRR (SE)	IRR (SE)
20% vs 80% Charity (0 = 20%, 1 = 80%)	0.68 (0.1)**	0.68 (0.1)**	0.68 (0.1)**
Observability (0 = Private, 1= Public)		1.00 (0.15)	1.00 (0.15)
Gender (0 = Male, 1 = Female)			1.08 (0.16)
Past level of Helping			0.97 (0.06)
Study 1 or Study 2 (0 = Study 1, 1 = Study 2)			1.28 (0.19)

*Note 19.*IRR = Incident Rate Ratio's, SE = Standard Error, * = p < .05, ** = p < .01 .Model 1 $\chi^2(1)$ = 7.02, p < .01, Model 2 $\chi^2(2)$ = 7.02, p < .05, Model 3 $\chi^2(4)$ = 7.66, p = 060. N = 235.

Table 6.4 *A multilevel logistic regression model exploring the effect that the Underdog Effect has on the frequency of donations to charity during studies one and two.*

	Model 1	Model 2	Model 3
	OR (SE)	OR (SE)	OR (SE)
20% vs 80% Charity (0 = 20%, 1 = 80%)	0.47 (0.13)**	0.47 (0.13)**	0.47 (0.13)**
Observability (0 = Private, 1= Public)		1.14 (0.47)	1.23 (0.51)
Gender (0 = Male, 1 = Female)			1.92 (0.79)
Past level of Helping			0.94 (0.15)
Study 1 or Study 2 (0 = Study 1, 1 = Study 2)			1.71 (0.71)

Note 20. OR = Incident Rate Ratio's, SE = Standard Error, * = $p < .05$, ** = $p < .01$ .Model 1 $\chi^2(1) = 7.17$, $p < .01$, Model 2 $\chi^2(2) = 7.26$, $p < .05$, Model 3 $\chi^2(5) = 10.87$, $p = .054$. N = 235.

6.5.3 Discussion.

Both study 1 and study 2 extended the previous literature by showing that in a more naturalistic setting for crowd-sourcing where prior charitable donations are simultaneously observable, participants preference is to donate to the charity with the least prior support. Previous work by Borgloh et al., (2013) showed that when participants could review total annual revenue secured by charities they preferred to give to the poorer charity. Thus, we replicate the preference for a relatively under-resourced charity in a different funding context.

The findings of studies 1 and 2 also suggest that observability did not influence donating to a charity. This is at odds with the majority of the literature (Bereczkei, Birkas, & Kerekes, 2007; Haley & Fessler, 2005). However, the sample sizes were relatively small. As such, we combined the data from studies 1 and 2 giving a total N of 266 which is larger than sample sizes reported in other studies that found observability effects (Ariely et al., 2009, N = 161; Kataria & Regner, 2014, N = 185), however, the non-significant effect remained.

6.6 Study 3

Studies 1 and 2 showed that participants gave significantly higher amounts to the charity with the least prior support. It is possible that participants were donating to the less well-supported charity to maximise the impact of their donations, or due to the Underdog Effect. In this study, we try to tease apart these two accounts. To do this, an analogue of a threshold public good game is used where the charity will only receive donated money if a specified threshold is achieved (de Hoop, van Kempen, & Fort, 2012). The introduction of the threshold should only change the behaviour of a donor motivated to maximize impact versus support the underdog. Before the presence of a threshold, impact donors should give to the charity that has the least support to

maximize any increase in the charity's revenue (Borgloh, Dannenberg, & Aretz, 2013). For an impact donor, when the amount of support already given makes the specified threshold for a charity achievable, their donation will have a greater impact with respect to achieving the goal, than when the amount of support already given means the specified threshold is far from achievable. In contrast, donors motivated to help the underdog should be more likely to donate to the charity with the least prior support, even though their donation is likely to have little impact on the charity achieving its specified threshold. To test this, we set up a study whereby five schools all needed to reach the same specified threshold but varied in how close they are to achieving it. Any donor population will be heterogeneous and made up of both underdog and impact donors, amongst others. We can, therefore, estimate those who are impact donors and those who are underdog donors by identifying those who give the most to the school that is closest to achieving its specified threshold (impact donors) versus those who give to the school that is furthest away from the specified threshold (underdog donors). Thus, we can examine the relative proportion of impact vs underdog donors.

6.6.1 Method.

6.6.1.1 Sample.

206 participants from the University of Nottingham were recruited via convenience sampling to take part in an online study. The final sample was 184 participants, as 22 cases were dropped due to missing data on key items (e.g., discrete choice task). The final sample consisted of 78 males (42.3%), 105 females (57.1%) and one (0.6%) who preferred not to disclose. Remuneration was via a conditional lottery mechanism (see Fischbacher et al., 2001 for details) where participants had a one in ten chance of having their responses to the decision task remunerated. Participants either earned up to £10 that they could keep or donate (some, none or all) to a local school in the form of book tokens.

6.6.1.2 Design and Procedure.

Participants were shown a hypothetical crowd fundraising profile describing five schools' fundraising efforts to raise £130 to buy 10 fruit trees to plant on its school grounds (based on a real-life campaign[5]). Participants were informed that five schools were running exactly the same campaign but had raised different amounts of money, and at that point, all schools had only 2 weeks left to raise the remaining amount (see Table 6.5). One school (School B) had the least previous support (£10) and was the furthest from the specified threshold of £130 meaning no single donor could help them achieve it. One school (school C) was £10 away from the specified threshold, meaning one donor could make up the difference. Thus, contributions to schools B and C are key to establishing the relative proportion of the underdog and impact donors. Participants were informed that if a school did not raise the required £130 within a 2-week period they would not be able to buy the 10 fruit trees. From the presentation of stimuli, there is no reason to believe that one school is less deserving of a donation than another. For example, participants were informed that the participating schools were identical in size, Ofsted reports[6] and academic attainment. From this crowdfunding project, participants had to a) decide whether they would be willing to donate to one of the five schools (a discrete choice task) and if they decided to donate to one of the schools, then b) decide how much of a £10 endowment they would like to give or keep for themselves.

[5] The crowdfunding pages were from a project called Fruitshare which was a TV Campaign launched by Hugh Fearnely Whittingstall to get children growing fruit trees at schools across Britain. The campaign raised £13,790 with a total of 97 projects (CrowdFunder, 2013).

[6] Ofsted is an acronym well known in these samples for the 'Office for Standards in Education, Children's Services and Skills'. They inspect schools assessing the quality of education provision provided (see www.gov.uk/government/organisations/ofsted).

Table 6.5 *The amount raised by the five different schools over the first week of the campaign.*

The amount raised so far by the different schools are:
School A has raised £136.50
School B has raised £10.00
School C has raised £120.00
School D has raised £65.00
School E has raised £110.00

6.6.2 Results.

91 participants out of the 166 participants who donated to a school chose to donate (54.82%; see Table 6.6 and Figure 6.1*Figure **4.3***) to the school with the least previous support and furthest away from the specified threshold. A chi-square goodness of fit test, comparing the frequency of donations across the five schools against an expected frequency of chance (20%), indicated significant differences between the schools (χ^2 (4) = 144.81, p < .01). The school that had the least support, and was furthest from the specified threshold (School B), received a significantly higher number of donations than the school just below the threshold (School C, z = 8.18, p < .001) and all other schools (Bonferroni corrections were applied) (School A z = 12.96, p < .001; School D z = 6.75, p < .001), p < .001; School E z = 11.39, p < .001) (Sharpe, 2015). The total donated to the school that had raised the least (School B) was £688, which is more than double any other school (see Table 6.6). However, this school also had the second to lowest mean amount donated (M = £7.64 SD = £3.07), although a Kruskal-Wallis test showed there was no significant difference in the average levels of giving across the five schools (H (4) = 6.06, p = .20)

Table 6.6 *Average and Total donations to the five schools.*

Schools Target (£130.00)	Number who donated	Mean (SD)	Total Donations
School A (£136.50)	4	£9.63 (£0.75)	£38.50
School B (£10.00)	91	£7.64 (£3.07)	£688.00
School C (£120.00)	26	£8.69 (£2.20)	£226.00
School D (£65.00)	35	£8.34 (£2.63)	£292.00
School E (£110.00)	10	£6.60 (£3.31)	£66.00

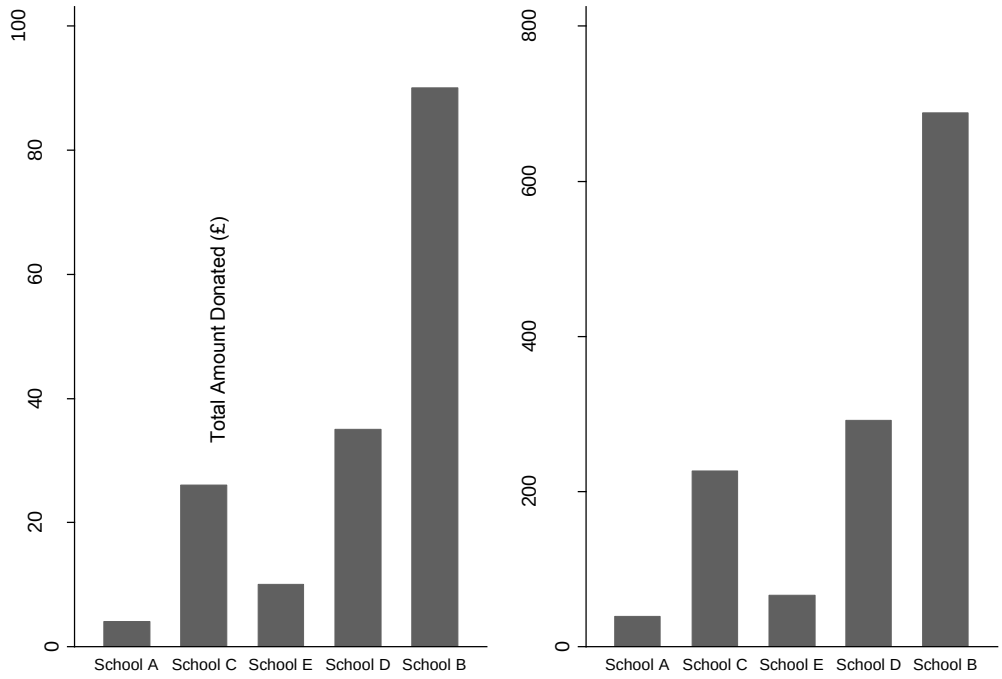


Figure 6.1. The total frequency and total amount (£) donated to each school.

6.6.3 Discussion.

The introduction of the threshold indicated that most donors had a preference to contribute to the school with the least previous support and furthest away from the specified threshold. These are underdog donors. A smaller proportion donated to the school nearest the threshold and these are impact donors. However, while this effect was found for the frequency of donations it was not found for the average amount donated. We offer two explanations of why this was the case. First, this study uses 'house money' rather than earned endowment leading to higher donations overall. Second, donors who want to maximize their impact must give £10 to push School C to the threshold, whilst donors wishing to support the least supported school cannot push it over the threshold with their contribution, hence they have more choice about the amount to donate.

6.7 Study 4

Study 3 provides some evidence that the preference for the least supported charity is due to the Underdog Effect. However, the Underdog Effect implies that there is an assumption that other potential donors are less willing generally to donate to the underdog. Thus, this study presents exactly the same scenario used in study 3 but as well as asking participants which school they would choose and how much they would donate, we ask participants which school they believe others would choose, and how much they expect others would be willing to donate. Open-ended free-response questions were also asked to assess why the participant chose to donate to the school they selected and why they expected other people to donate to the school they selected. If the Underdog Effect drives the preference for the least supported school, the open responses should include terms referring to its relative disadvantage (i.e. "has the least") (Vandello et al., 2007) whereas, if donations are due to impact donating, responses should include making a difference (e.g. "biggest impact") (Duncan, 2004). We choose a free-response format to avoid creating any demand characteristics and constraining participants within theoretical frameworks.

6.7.1 Method.

6.7.1.1 Sample.

60 Nottingham University students were recruited through convenience sampling.

6.7.1.2 Design and Procedure.

Participants were asked to read the same crowd fundraising scenario used in study 3.They were then asked to answer the following six questions: i) "what school do you think most people would give to?", ii) "how much do you think others would give?", iii) "why do you think most people would give to that school?" iv) "what school would you give to?", v) "how much would you give?" and vi) "why would you give to this school?". For each of the questions asking how much they expect themselves

or others to give there is no limit placed on how much they may choose to give unlike in study three where participants were limited to only making donations of £10 or less.

6.7.2 Results.

Four participants missed out a response to either: "what school do you think most people would give to" (N = 1) or "how much do you think others would give" (N=3) therefore, they were excluded from those analyses. Inter-rater reliability for the deductive content analysis on the qualitative responses was moderate ($\kappa = .58$, $z = 8.26$, $p < .001$) between the two raters. All disagreements were discussed between the two raters until an agreement was reached.

6.7.2.1 School Preference.

When asked about which school they believe others would choose and which school they would choose themselves, the largest group of participants (28 out of 59) showed a preference for the school with the least support and furthest from the threshold (see Table 6.7). A Chi-square goodness of fit tests on the frequency of choices in terms of the school they believe others would choose (χ^2 (4) = 38.37, $p < .01$) and for which school they would choose themselves (χ^2 (4) = 49.67, $p < .01$) was significant. A comparison across schools showed that more participants donated to the least supported school (School B) compared to the school just below the threshold (School C) ($z = 4.42$, $p < .05$), and more participants expected that others would also donate to School B compared to School C's ($z = 4.73$, $p < .05$). Furthermore, participants donated more to the least supported school than any other school (School A $z = 5.67$, $p < .05$; School D $z = 6.35$, $p < .05$; School E $z = 7.13$, $p < .01$) and expected others to do the same (School A $z = 3.65$, $p < .05$; School D $z = 5.69$, $p < .05$; School E $z = 6.05$, $p < .05$) These results replicate study 3 and indicate that the effect has a normative component.

Table 6.7 *Average and total donations to the five schools across what most people would do and what the participant would do.*

	What would most people do?	What would you do?

Schools Target (£130.00)	No. who donated	Mean (SD)	Total Donations	No. who donated	Mean (SD)	Total Donations
School A (£136.50)	11	£24.18 (£58.40)	£266.00	7	£8.71 (£5.53)	£61.00
School B (£10.00)	28	£15.16 (£19.88)	£424.50	33	£11.23 (£9.99)	£370.50
School C (£120.00)	8	£9.19 (£4.24)	£73.50	12	£7.58 (£3.65)	£91.00
School D (£65.00)	5	£16.40 (£27.42)	£82.00	5	£15.40 (£27.76)	£77.00
School E (£110.00)	4	£12.50 (£8.66)	£50.00	3	£10.00 (£8.66)	£30.00

6.7.2.2 Qualitative Analyses of Relatively Poor School Preference.

6.7.2.2.1 Responses to 'why do you think most people would give?'

Of those who gave to the most supported school (School A: already over the threshold), the majority (8 out of 12; 67%) focused on the fact that it had raised the most money (see Table 6.8). Whereas those who donated to the least supported school (School B) were concerned most with the relative disadvantage the school was at (24 out of 30; 80%). For example, one respondent wrote, "It is furthest away from the target." Those who donated to the school just below the threshold (School C) did so to a) make a difference (2 out of 8; 25%) and b) to help it reach its target (8 out 8; 100%). One participant wrote, "by donating the final £10 I feel like I am making a difference."

6.7.2.2.2 Responses to: 'why you gave to this school?'

Choosing the most supported school (School A) was partly explained by quality signalling, with 2 out of 7 (29%) focusing on the fact that it had raised the most. The dominant response for giving to the least supported school (School B) was due to its relative disadvantage (22 out of 33; 67%). For example, one respondent said, "They are furthest away from the total so I would want to help them more." Other motives for giving to the least supported school were a desire to make things equal (4 out of 33; 12 %) and wanting to make a difference (1 out of 33; 3%). The main reason for donating to

the school just below the threshold (School C) was the ease with which it could reach its target (10 out of 12; 83%). Only one respondent mentioned the desire to make an impact (1 out of 12; 8.33%).

Table 6.8 *Number and percentage of donors whose qualitative responses indicated Underdog, Impact donor or Equality motivations driving their choice of school.*

		Theories			
	Underdog	Impact Donor		Equality	Quality Signalling
Constructs	Relative Disadvantage	Making a difference	Easy Reach of Target	Equality	Quality Signalling
Examples	Least, Fewer etc.	Difference, Change etc.	Achieve, Closest etc.	Equal, Same etc.	Most raised.
Why would most people give? (N = 59)					
School A N = 12 (n (%))	0 (0%)	0 (0%)	0 (0%)	0 (0%)	8 (67%)
School B N = 30 (n (%))	24 (80%)	0 (0%)	0 (0%)	1(3.33%)	0 (0%)
School C N = 8 (n (%))	0 (0%)	2 (25%)	8 (100%)	0 (0%)	1 (13%)
School D N = 5 (n (%))	0 (0%)	0 (0%)	3 (60%)	0 (0%)	0 (0%)
School E N = 4 (n (%))	0 (0%)	0 (0%)	1 (25%)	0 (0%)	0 (0%)
Why did you give to this school? (N = 60)					
School A N =7 (n (%))	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (29%)
School B N = 33 (n (%))	22 (67%)	1(3%)	0 (0%)	4(12%)	0 (0%)
School C N = 12 (n (%))	0 (0%)	1 (8%)	10 (83%)	0 (0%)	1 (8.33%)
School D N = 5 (n (%))	0 (0%)	0 (0%)	3 (60%)	0 (0%)	0 (0%)
School E N = 3 (n (%))	0 (0%)	0 (0%)	1 (33%)	0 (0%)	0 (0%)

Note 21. Words used to record relative disadvantage were: Least/Fewer/ Lower/ Less/Furthest. The words Difference/Change/ Impact/Worthwhile were used to capture the construct Impact. Ease of target was measured by Achieve/ Closest/ Reach. Equality was captured by equal, same and similar. Quality signalling was captured by the term raised the most.

6.7.3 Discussion

These results replicated the effects found in study 3, that most people choose to donate to the least supported school compared to any other school. The open responses provide support for

the idea that participants gave to the least supported school because they were the underdog at a relative disadvantage. A small number of participants (4 out of 33; 12%) in response to why they, not most others, would give to the least supported school suggested they were motivated by equality so were donating to school B to reduce its shortfall in donations. This indicates that there are competing explanations for supporting the least supported school with the dominant motive being the Underdog Effect. An unusual finding in this data concerns the donations made to school A, which has already reached its target. Participants' qualitative responses revealed that people took the amount that 'school A' had already raised as a sign of its quality. This motivation is consistent with Vesterlund's, (2003) idea that contributions to charity can be perceived by potential donors as a sign of the charity's quality and thus make it appear more attractive for them to donate to. One caveat to the findings of the qualitative analysis is that self-report responses are subject to bias (i.e., demand characteristics). However, the strength of study 4 is that it allows us to move beyond inferring donor motivations from behavioural decisions alone, to directly recording motivations. Indeed, the results of the choice task replicate the results of study 3, thus we can have some confidence in the validity of the motivations reported.

6.8 General Discussion

In the absence of any specified threshold or when a threshold is a long way from being achieved the charity with least support benefits by receiving a higher level of average donations or a higher frequency of donations. This leads to the least supported charity receiving a nontrivial increase in total donations compared to the better-supported charity. This is important as many online fundraising campaigns set a threshold to be attained. Two possible explanations for the preference of selecting the charity/organization with the least support have been suggested (i.e. 'Impact Model' and the 'Underdog Effect'). The results provide support for the heterogeneity of preferences, with the Underdog Effect being the most likely explanation for giving to a charity with least support.

However, other studies find that the charity with greater support is preferred. Why is this? Studies that find a preference for giving to the more supported charity have focused on charity campaigns that may have an immediate benefit to the donors. The Frey and Meier (2004) study focused on students contributing to a student welfare scheme, the Shang and Croson (2009) study examined contributions from supporters/listeners to a local public radio station and Martin and Randal (2008) explored support to an art gallery by visitors. In all these examples the donor could immediately benefit and as such may be more inclined to help when they see others contributing as ultimately this will help them (i.e. they receive the hardship payments, their public radio station stays open, and their gallery stays open). In contrast, our study and the Borgloh et al. (2013) study do not have this immediate benefit to the donor. In the Borgloh et al. (2013) study, the charities were described in terms of general categories (e.g. medical research etc.) and as such, the participants would be less likely to know if they could personally benefit. In our studies, the charities were either specific medical charities (Cancer or Heart Disease), that young students are unlikely to have any immediate benefit from. Similarly, in the school's crowdsourcing study, the participants will have no immediate benefit from donating to the schools. So it may be the case that conditional cooperation operates when there is an immediate personal benefit favouring the better-supported charity and the 'Underdog Effect' is observed when there is no immediate personal benefit (Kim et al., 2008). Therefore, we hypothesize that a charity based 'Underdog Effect' will be maximal when (1) there is no threshold/ or a threshold that is unattainable by a single donation and (2) when donors do not directly benefit from their donations. This will be the case for a charity that is seen as deserving but disadvantaged with respect to resources.

6.8.1 Implications.

This paper is important because it shows that when people have social information of the levels of support a charity receives and can compare this information across multiple charities they prefer to donate to the least supported charity. This suggests that fundraisers should take care to

present their campaigns in the real world and online contexts where their charity will appear less supported compared to their competitors. Conversely, if a charity is well supported and cannot change the real world or online contexts in which it presents itself, it might benefit from highlighting aspects of its current situation that make it appear at an undeserved disadvantage relative to some of its competitors. One way this could be achieved is by developing an underdog biography (Nagar, 2017). The work of Paharia, Keinan, Avery, and Schor, (2011) shows that businesses that managed to develop an underdog biography enjoyed increased consumer purchasing and greater brand loyalty. Theoretically, this paper demonstrates that the underdog effect is an important and underexplored motivation that charities could target to increase support and enhance their revenues.

6.8.2 Next Chapter

The current study shows that a substantial number of people demonstrate an underdog preference supporting the charity with less support in the absence of any specified threshold or when a threshold is a long way from being achieved. This results in the least supported charity receiving considerably more in terms of total donations. However, the Underdog Effect, as a motivating factor, driving charitable decisions may be limited to contexts where charities are in competition or at the least easily comparable. Further work is needed to explore how factors that are known to influence donation decisions like charities effective use of resources, charities impact on the cause, perceived worthiness and their reputation moderate the Underdog Effect on charitable donations (Bekkers & Wiepking, 2010). In Chapter two and three there was no effect of observability on prosocial behaviour which is at odds with most, all though not all, of the literature on observability (Andreoni & Petrie, 2004; Hoffman et al., 1996; Adam Sparks & Barclay, 2013). The next chapter explores the overall effect of observability on prosocial behaviour with a meta-analysis of 117 articles.

Chapter 7

Observability affect on prosocial behaviour

7 Abstract [7]

The observation of behaviour is a key theoretical parameter underlying a number of models of prosociality. However, the empirical findings showing the effect of observability on prosociality are mixed. In this meta-analysis, we explore the boundary conditions that may account for this variability, by exploring key theoretical and methodological moderators of this link. We identified 117 papers yielding 134 study level effects (Total N = 788, 164) and found a small but statistically significant, positive association between observability and prosociality (*r* = .141, 95% CI = .106, .175). Moderator analysis showed that observability produced stronger effects on prosociality (1) in the presence of passive observers (i.e., people whose role was to only observe participants) vs perceptions of being watched, (2) when participants decisions were consequential (vs non-consequential), (3) when the studies were performed in the laboratory (as opposed to in the field/online), (4) when studies used repeated measures (instead of single games) and (5) when studies involved social dilemmas (instead of bargaining games). These effects show the conditions under which observability effects on prosociality will be maximally observed. We describe the theoretical and practical significance of these results.

[7] Much of the content of this chapter has been published as Bradley, A., Lawrence, C., & Ferguson, E., (2018). Observability Affect on Prosocial Behaviour. Proceedings B Royal Society. You can find this at: http://rspb.royalsocietypublishing.org/content/285/1875/20180116

There are a number of possible ultimate-proximate accounts for why altruism survives in the population (Mayr, 1961, 1963; Tinbergen, 1963). For example, kin selection and inclusive fitness offer an ultimate functional account of altruism that is enacted, at a proximate level, by mechanisms of kin-detection (Scott-Phillips, 2007; Scott-Phillips, Dickins, & West, 2011). Here, we explore functional level theories of altruism/prosociality that focus on the capacity of altruistic acts to signal desirable traits and qualities of the signaller (costly signalling theory, reciprocity and completive altruism). These desirable altruistic traits may provide a fitness advantage by being sexually selected (Miller, 2007) and/or increase the probability that the signaller will be helped in the future (Manfred Milinski, Semmann, & Krambeck, 2002b). Specifically, we focus on one key component of these functional accounts: the link between the observability of a prosocial act and the degree of prosociality displayed. We also explore the moderating effects of key theoretical mechanisms (e.g., possibility for repeat interactions).

A number of functional theoretical accounts propose that the survival of prosocial behaviour depends on the signalling of desirable traits. This is premised on these traits being observable. For example, cost signalling theory (CST) suggests observable acts signal the actor's qualities to potential mates (Smith & Bird, 2000). Furthermore, for reciprocity (either direct or indirect) to be effective in maintaining prosociality, others need to be aware of the prosocial behaviour either directly (e.g., directly observed) or indirectly (e.g., via gossip) (Nowak & Sigmund, 2005). However, the empirical literature, based on both laboratory and the field studies, offers mixed findings, with evidence that observability increases (Haley & Fessler, 2005; Lacetera & Macis, 2010), decreases (Lambarraa & Riener, 2015) or has no effect (Dufwenberg & Muren, 2006; Matland & Murray, 2015) on prosociality. We propose that this variability reflects the presence or absence of key theoretical design features, or mechanisms, that are required for the effect of observability on prosociality to emerge. These theoretical design features mark the *boundary conditions* for the emergence of

observability-prosociality effects. For example, displays of prosociality that have a consequential impact on the helper should lead to increased levels of prosocial behaviour. If the mechanism of consequentiality is not part of a study's design, effects of observability will be weaker or non-existent. We examine this as one of many theoretically mechanisms that should moderate the observability-prosociality link.

While the literature on one aspect of observability - the presence of images of "watching eyes" - on prosociality has been reviewed (Nettle et al., 2013; Northover et al., 2016; Sparks & Barclay, 2013), there is no systematic review of the effect that observability, in general, has on prosociality. Thus, a systematic review and meta-analysis of this literature to identify the boundary conditions for the observability-prosociality link is important for two reasons. First, given the importance of observability to theories of prosociality, a more nuanced understanding of boundary conditions will enhance our theoretical understandings. Second, while a number of charities use observability as a means to enhance revenues (Lacetera & Macis, 2010), the evidence is not clear as to how effective this is, or what features of manipulations positively impact fundraising.

7.1 Theoretical accounts of observability and prosociality

Below we outline the three main functional accounts of prosociality that rely on observability of prosocial behaviours: costly signalling theory (CST) (Smith & Bird, 2000; Zahavi, 1995), competitive altruism (Brief & Motowidlo, 1986; Nowak, 2007) and reciprocity (Nowak & Sigmund, 2005). CST suggests observability of costly prosocial acts is used to advertise to others their qualities as a potential partner or member of their group (Zahavi, 1995). Competitive altruism suggests that human competitiveness influences prosocial displays, with people competing to gain a good reputation through displays of their prosocial qualities (Barclay, 2004a; Barclay & Willer, 2007a).

With respect to reciprocity direct and indirect reciprocity can be distinguished (Milinski, Semmann, Bakker, & Krambeck, 2001). Direct reciprocity occurs where an individual (A) performs a generous act to help another (B) and B subsequently repays A (A helps B, B then helps A) (Nowak &

Sigmund, 2005). Indirect reciprocity comes in two forms: upstream and downstream (Nowak & Sigmund, 2005). In upstream reciprocity, an individual who has received help goes on to help others (A helps B, then B helps C) whereas downstream reciprocity occurs when a person who has helped others in the past has a higher likelihood of being helped by others in the future (A helps B, then C helps A) (Nowak, 2007). Upstream reciprocity is driven by the psychological mechanism of gratitude (B is grateful to A so helps C) and down-stream reciprocity by reputation building (B gains reputation from helping A and so is helped by C)(Ma, Tunney, & Ferguson, 2014; Nowak, 2007). For both direct reciprocity and down-stream indirect reciprocity reputation in the most likely mechanism operating and this requires that the prosocial act is observable either directly or via gossip.

The consistent prediction of these theories is that the effect of observability should be strongest, or only apparent when the display of prosociality increases the helper's reputation, status or attractiveness and helps them to attain positive future benefits. Although we do acknowledge that in specific contexts reputations for being prosocial could be taken advantage of (Irlenbusch & Ter Meer, 2013; Leibbrandt & López-Pérez, 2011), in the majority of situations it would yield positive future rewards (Jordan, Hoffman, Nowak, & Rand, 2013; Nowak, 2006). Thus, the observability-prosociality link should have clear boundary conditions that maximize the chances for observability to enhance reputation, status or attractiveness. In the meta-analysis we test this prediction directly and a number of other predictions (detailed below).

7.2 Defining prosocial behaviour, observability and different types of observation

Prosocial behaviour refers to a broad range of behaviours, efforts or intentions designed to benefit the welfare of individuals, groups, organizations or society (Brief & Motowidlo, 1986; Ma et al., 2014). Previous researchers have suggested that observability relates to the visibility of individuals' behaviours (Jerdee & Rosen, 1974). As a working definition, we suggest that the level of observability depends upon a) what information is revealed about an individual's identity (i.e., name, facial photograph etc.) and b) what is revealed about that individual's behaviour (i.e. whether they

made a donation or how much they donated). Using these two criteria, observability manipulations within the literature can be categorized at the point of the prosocial decision into one of three categories: perceived, pseudo and overt observability. Perceived observability refers to situations where actual information about both individual's identity and their prosocial behaviour is not observable. For example, the presence of images of "watching eyes" creates a subjective perception that someone is watching the individual with no actual transmission of identity or information about their behaviour (Haley & Fessler, 2005). Pseudo observability refers to situations where information about an individual's behaviour is observed (i.e. how much they donated) but no information about their actual identity is revealed at the point of the prosocial act. Instead, indirect identity information is revealed such as a participant ID number. While the ID number may be used to track who people are playing with over rounds, and how much they have donated, it does preclude people being able to infer the person's age or sex, for example. The participant also knows what information others know about them. For example, studies that compare single-blind conditions where an experimenter knows the participant's ID number and donation amount to double-blind control conditions (Hoffman, Mccabe, & Smith, 1996). Finally, overt observability relates to manipulations where both actual identity information (e.g., name, face) and donating behaviour are revealed to an audience at or after the point of decision and this is known to the participant before their decision is made. For example, Andreoni and Petrie (2004) used a PGG where each player had their name, photograph, and contribution displayed to all other players in the game.

7.3 Moderators of Observability

We outline predictions for five theoretical mechanisms that can moderate the observability and prosociality relationship (e.g., decisions with consequences,), as well as, examining several methodological moderators.

7.3.1 Theoretical Moderators

7.3.1.1 Type of Observability manipulation.

All theories (CST, competitive altruism and reciprocity models) predict that overt manipulations of observability, where there is the strongest opportunity to build a reputation, should lead to the highest levels of prosociality.

7.3.1.2 Observer type.

We categorize observers into four distinct levels: (1) no one is observing (includes perceived manipulations), (2) only an experimenter is observing, (3) peers are watching (other participants performing the experiment) and (4) passive observers are watching (individuals who are observing and but are not participants or experimenters). An important feature of reciprocity is that others have the ability to recompense a victim or punish a transgressor (Fehr & Henrich, 2003; Fehr & Fischbacher, 2003). Thus, we would expect that peers will have more of an effect on prosociality than having an experimenter watching, a passive observer, or having no observers (e.g. in the case of in the case of "watching eyes").

7.3.1.3 Decisions with Consequences.

We distinguish between consequence-free decisions and decisions with consequences. Consequence-free decisions are when the actor performs a behaviour (e.g. a financial allocation) expecting their behaviour not to influence how others will respond to them within the experimental protocol. Decisions with consequences occur where actors expect their behaviour to influence how others will respond towards them within the experimental protocol. Again all theories (CST, competitive altruism, and reciprocity) predict that effects of observability will be maximal with consequential decisions.

7.3.1.4 Single or repeated interactions.

Repeated interactions with the same person/people facilitate reputation building (Pfeiffer & Nowak, 2006). Thus, reciprocity theory would predict that repeated tasks involving multiple

interactions with the same individuals should lead to more prosocial behaviour if the acts are observable.

7.3.1.5 Bargaining and Social Dilemma games.

Social dilemmas are played with a group of people (e.g., public good games usually have 4 players) whereas, bargaining games tend to be played between two people (e.g., dictator games). The more players within the game, the larger the audience for the observed prosocial behaviour and the increased potential for reputation building (Hawkes & Bird, 2002). In addition, the structures of the two types of games vary. Social dilemmas involve a trade-off between short-term interest and the long-term collective interests, and bargaining games involve a trade-off between personal outcomes and the outcomes of others (Larrick & Blount, 1997). Thus, social dilemmas involve long-term consideration about one's contributions to a common resource and the opportunity to enhance one's reputation within a group. Bargaining games encourage more short-term profit-maximizing behaviour and offer less opportunity for reputation building. Thus, we predict a stronger effect of observability on prosociality in social dilemmas due to the larger audience and the longer reputation management that is needed.

7.3.2 Methodological Moderators

These moderators are not mechanisms per se, but rather reflect experimental design choices that may influence the observability-prosociality link.

7.3.2.1 Age.

There may be developmental trends on the impact of observability on prosociality, therefore, we include age as a continuous covariate. Evidence within children (< 12 years old) for observability effects on prosocial behaviour is mixed with some studies finding observable scenarios increase prosocial behaviour (Engelmann, Herrmann, & Tomasello, 2012; Leimgruber, Shaw, Santos,

& Olson, 2012) whilst others find no effect (Vogt, Efferson, Berger, & Fehr, 2015). We make no specific prediction about the effect of observability on prosociality in children.

7.3.2.2 Type of Payment.

Payment of participants can be done using a variety of different methods, for example, raffles, conditional lotteries, flat fees, etc. We categorized payments into three broad categories: no payment, one-off payment and performance-related pay (i.e. payment is conditional upon participant's decisions/behaviour). All theories would suggest that performance-related payments ought to lead to high prosocial behaviour under observability since it provides a clearer signal of generosity.

7.3.2.3 The context of study.

A number of papers suggest that the level of prosociality in the field is lower than in the laboratory (Galizzi & Navarro-MartÃ-nez, 2015; Winking & Mizer, 2013). Therefore, the context of the study might act to moderate the observability and prosociality relationship with field studies having smaller effects than laboratory studies.

7.3.2.4 Nature of Outcome.

When analyzing prosocial behaviour, researchers examine both the decision to give or not (Yes vs No) and how much to give, when giving is chosen (Engel, 2011). Nettle et al.'s, (2013) meta-analysis on the 'watching eyes effect' on prosocial behaviour found that while the presence of images of "watching eyes" seemed to affect the likelihood of donating (Yes vs No decisions) it did not affect the amount donated. We explore if this effect is observed in the wider observability literature.

7.3.2.5 Unearned vs earned endowments.

A number of studies show that when participants earn money during an experiment, as opposed to just simply receiving money (endowment/windfall), levels of generosity decrease (Cherry et al., 2002). As earned money entails property rights, donations signal a cost to that individual

which could constitute an honest signal (Hawkes & Bird, 2002). Thus we predict that effects of observability will be greater for earned compared to unearned endowments.

7.3.2.6 Measures of Outcome.

We investigate whether the measurement of prosocial behaviour involved objective measures (e.g., expenditure of money) or subjective measures (e.g., self or peer reported intentions to perform a prosocial behaviour). The intention-behaviour gap is well established (Ajzen, 1985), and intentions to help can be a cost-free means to enhance reputation. Therefore, we expect to see stronger observability effects on prosocial behaviour in studies assessing self-reported intentions than studies assessing behaviour. That is people will be more likely to say they will help when it does not cost them, especially when observed.

7.3.2.7 Type of Prosocial Behaviour.

The effects of observability have been researched over a variety of different prosocial activities: blood donation (Lacetera & Macis, 2010), donations to charity (Lacetera & Macis, 2010), donation to peers (Dufwenberg & Muren, 2006), volunteering time to charities (Bereczkei et al., 2007; Bereczkei et al., 2010a), performing effortful tasks to raise money for charity (Ariely et al., 2009) and voting (Matland & Murray, 2015). All models predict, to different extents, that social recognition occurs in proportion to the cost of generosity signalled (Bereczkei et al., 2010a). It could be argued that non-monetary forms of prosocial behaviour signal greater cost with respect to social impact (time and effort) since, at the point of donation, the amount of time given or blood that is donated incurs a known effortful cost, whilst the origin of the money being donated (windfall or effortfully earnt) is less transparent. Thus, while someone may incur effort and time to gain money, this effort is not necessarily specifically linked to prosociality – it may just be their everyday work. At the point of donation, donating money is relatively less effortful and time-consuming than volunteering or donating blood. Thus, we predict that observability will show a stronger effect on non-monetary prosocial acts compared to monetary ones.

7.4 Method

7.4.1 Search Strategy

Studies were identified through searching electronic databases, backward citation searches and contacting authors for unpublished data. Five electronic databases were searched: Web of Science, Psychinfo, Econ Papers, Taylor and Francis and the Applied Social Science Index and Abstracts (ASSIA). Searches comprised the combination of seven terms for observability (Observability, Visibility, Public, Reputation, Signalling, Anonymity, Image) and seven terms for prosociality (Money, Blood, Volunteer, Recycle, Altruism, Prosocial, Public Good). All searches were conducted from 25.11.15 to 31.03.17. A total of 11,339 articles were searched via titles and abstracts. One hundred and fourteen of the 11,339 articles were identified as being potentially relevant. Backward citation searching through the 114 records led to another 55 papers being identified (number of papers: 169). An email was then sent to first authors (n = 61) requesting any unpublished data which produced further 18 papers (total number of papers: 187). A reviewer recommended a further 15 papers (total number of papers: 202). The full text of the remaining 202 articles was inspected and 83 articles that did not fulfil our eligibility criteria (see below) were excluded.

7.4.2 Inclusion and Exclusion Strategy

The following inclusion and exclusion criteria were applied. First, studies had to include: (i) an observability manipulation (where the extent of participants actions and/or identity have been revealed, to some degree, to others whether actual or perceived), (ii) a control group (a group that received no manipulation or received manipulation that did not affect their observability) and (iii) a measure of prosocial behaviour (intentions or behaviour that benefited either an individual, group, organisation or society) (67/202 records did not match these criteria). A number of papers, especially those looking at indirect reciprocity, appear relevant to include but fail to provide a

control group or visibility manipulation hence cannot be used to generate effect sizes (i.e. 49–52). For example, in Milinski, Semmann, & Krambeck, (2002) all players in the indirect reciprocity game have their decision to give or keep publically displayed each round (no control group) or in Bó (2005) all players playing the prisoner dilemma games are anonymous to other players (no manipulation of visibility). Second, papers had to be written in English. Third, studies had to provide primary quantitative data (i.e. theoretical paper, simulations or qualitative papers were not included) (nine records did not match this criterion). We did not impose age restrictions on papers in the present review but included age as a continuous moderating variable instead. Fourth, no restrictions were placed on the years they were published or on publication type (i.e. working papers, theses were also included). Finally, papers were searched to remove duplicates (seven records were removed) and requests were sent to authors when not enough information to compute effect sizes were reported (two records were removed).

After applying all the inclusion and exclusion criteria, there were 117 papers with a total sample of 788,164, and 134 independent study level effects (independent effects that represent a study). *Figure 7.1* provides the information flow diagram as recommended by the PRISMA statement (Liberati et al., 2009) and Table 7.1 provides the characteristics of each included study.

Table 7.1. *The effect of Visibility on Prosocial Behavior.*

Author (k =134)	Year	N	Type of Observability	Description of Observability Manipulation	Type of Prosocial Behaviour	r	95% LL/ULCI
Alevy et al.,	2014	101	Overt	Announcing donations in front of other dictators vs double-blind.	Monetary	0.088	0.109/0.279
Alpízar & Martinsson	2013	1696	Overt	Donations to the national park made alone or in the presence of a group or passive observer.	Monetary	0.058	0.011/0.106
Alpizar, Carlsson, & Johansson-Stenman	2008	997	Overt	Asking the participant to make a donation and bring it back to the solicitor to be recorded vs making a donation and putting the envelope in a sealed ballot box.	Monetary	0.054	-0.009/0.115
Andreoni & Petrie	2004	60		Info (contribution but no identity information), photo (identity but no contribution information), photo and info (identity and contribution given)vs baseline condition (no identity or contribution),	Monetary	0.140	-0.118/0.381
Ariely, Bracha, & Meier	2009	77	Overt	Informed that they will have to announce how much they donated to charity vs no announcement.	Monetary	-0.314	-0.503/-0.097
Baillon, Selim, & van Dolder	2013	110	Perceived	Eyes vs control Images	Monetary	0.206	0.019/0.378
Barclay	2004	120	Pseudo	Contributions to PGG written on a blackboard with pseudonyms and informed of the subsequent economic game vs contributions recorded but no information of the subsequent economic game.	Monetary	0.209	0.031/0.374

Author (k =134)	Year	N	Type of Observability	Description of Observability Manipulation	Type of Prosocial Behaviour	r	95% LL/ULCI
Barclay & Barker Study 1.	2015	36	Overt	Donations are known (with and without partner choice) vs donation not known (control)	Monetary	0.459	0.154/0.684
Barclay & Barker. Study 2.	2015	36	Overt	Donations are known (with and without partner choice) vs donation not known (control)	Monetary	0.523	0.235/0.727
Barclay & Willer	2007	54	Pseudo	Participants are informed that their donation decisions will be made public to passive observer vs kept private.	Monetary	0.435	0.190/0.630
Barmettler, Fehr, & Zehnder	2012	201	Pseudo	Single vs double anonymous pay-out systems.	Monetary	0.043	-0.096/0.180
Bateson, Nettle, & Roberts	2006	48	Perceived	Eyes vs flower images above coffee honesty box	Monetary	0.364	0.089/0.587
Bateson et al., Study 1.	2015	284	Perceived	Eyes on a leaflet vs image of a lock on the leaflet. Leaflets placed over bike handlebars warning of the dangers of thieves.	Non-Monetary (Not littering)	0.327	0.219/0.427
Bateson et al., Study 2.	2015	313	Perceived	Eyes (large and small) on leaflet vs lock on leaflet placed over bike handlebars warning of the dangers of thieves.	Non-Monetary (Not littering)	0.183	0.073/0.288
Bereczkei, Birkas, & Kerekes	2010	187	Overt	Announcing volunteering intention to seminar group vs keeping volunteering intentions private.	Non-Monetary (Volunteering)	0.235	0.095/0.366
Bereczkei, Birkas, & Kerekes	2010	194	Overt	Announcing volunteering intention to seminar group vs keeping volunteering intentions private.	Non-Monetary (Volunteering)	0.164	0.023/0.298

Author (k =134)	Year	N	Type of Observability	Description of Observability Manipulation	Type of Prosocial Behaviour	r	95% LL/ULCI
Bereczkei, Birkas, & Kerekes	2007	214	Overt	Public offer of assistance in front of seminar group vs anonymous offers of assistance.	Non-Monetary (Volunteering)	0.279	0.151/0.399
Bihm, Gaudet, & Sale	1979	205	Overt	Lost letter technique. Observable if the car driver had passenger's vs driving alone.	Non-Monetary (Effort)	-0.082	-0.217/0.055
Binzel & Fehr	2013	36	Overt	The identity of the dictators was revealed after the donation decision was made vs identity kept anonymously.	Monetary	0.089	-0.247/0.405
Böhm & Regner	2013	58	Overt	Rankings of participants earning task performance would be known by others vs not known.	Non-Monetary (Effort)	0.336	0.085/0.547
Bohnet & Frey	1999a	224	Overt	Identity revealed to others (one way identification condition) and identity plus donation intentions (unrestricted communication condition) vs control condition (no identity revealed)	Monetary	0.605	0.514/0.682
Buhrmester, Goldfarb, & Cantrell	1992	238	Overt	Children informed their partner will find out how many tokens they gave vs double-blind condition.	Monetary	0.151	0.024/0.273
Burnham	2003	60	Overt	Dictators have their picture shown to the recipient vs no photo is shown in the control.	Monetary	0.108	-0.150/0.353
Burnham & Hare	2007	96	Perceived	Picture of a robot with eyes vs no picture of a robot with eyes.	Monetary	0.245	0.047/0.425
Cadsby, Servátka, & Song	2010	350	Pseudo	Single vs double blind	Monetary	-0.028	-0.133/0.077

Author (k =134)	Year	N	Type of Observability	Description of Observability Manipulation	Type of Prosocial Behaviour	r	95% LL/ULCI
Carbon & Hesslinger	2011	138	Perceived	Eyes vs flower images.	Non-Monetary (Prosocial Intentions)	0.050	-0.118/0.215
Carpenter & Myers	2010	320	Pseudo	Car numberplate proxy for image vs no car number plate.	Non-Monetary (Volunteering)	0.095	-0.015/0.203
Casal & Mittone	2014	144	Overt	Subject photos were displayed vs anonymity in the baseline and control conditions.	Monetary	0.145	-0.019/0.302
Chetty, Saez, & Sándor	2014	779	Overt	Names and length of time taken to review papers published on a website	Non-Monetary (Time reviewing Manuscripts)	-0.026	-0.096/0.045
Dufwenberg & Muren	2006	310	Overt	Dictator told they will either collect money on stage in front of other 1st-year economics students or in private.	Monetary	-0.216	-0.320/-0.107
Ekström	2012	408	Perceived	Eyes vs control image over supermarket recycling machines.	Monetary	-0.003	-0.100/0.095
Engelmann, Herrmann & Tomasello	2012	48	Overt	Children were watched by another unknown 5-year-old vs not watched in the private condition	Monetary	0.216	-0.072/0.471
Ernest-Jones, Nettle, & Bateson	2011	562	Perceived	Eyes vs control Image	Non-Monetary (Not Littering)	0.163	0.082/0.243

Author (k =134)	Year	N	Type of Observability	Description of Observability Manipulation	Type of Prosocial Behaviour	r	95% LL/ULCI
Everett, Faber, & Crockett**.** Study 1.	2015	29	Pseudo	In group identity and pay off shown.	Monetary	0.211	-0.169/0.540
Everett, Faber, & Crockett. Study 2.	2015	30	Pseudo	In group identity and pay off shown.	Monetary	0.176	-0.197/0.504
Fathi, Bateson, & Nettle	2014	123	Perceived	Picture of eyes vs no image of eyes.	Monetary	0.156	-0.022/0.324
Fehr & Schneider	2010	99		Eyes and trustee aware of trustors previous transfers.	Monetary	0.087	-0.113/0.279
Festre & Garrouste	2014	132	Pseudo	The observer is informed about how much the dictator gave.	Monetary	0.110	-0.062/0.276
Filiz-Ozbay & Ozbay	2014	288	Overt	Observers watch their performance.	Non-Monetary (Effort Task)	0.471	0.376/0.556
Fox & Guyer	1978	80	Overt	Identity (see each other through mirrors) and donation amounts visible (at the end of the round) vs no identity and donation information.	Monetary	0.312	0.099/0.498
Francey & Bergmuller	2012	60	Perceived	Eyes vs control Images.	Non-Monetary (Tidying up rubbish)	0.272	0.019/0.492
Franzen & Pointner	2012	177	Perceived	Randomized Response Technique vs double blind in DG.	Monetary	0.502	0.382/0.604
Gabriel, Banse, & Hug	2007	69	Overt	Experimenter in the room with them vs experimenter not in the room.	Monetary	0.474	0.268/0.639

Author (k =134)	Year	N	Type of Observability	Description of Observability Manipulation	Type of Prosocial Behaviour	r	95% LL/ULCI
Gächter & Fehr	1999	116	Overt	Participants had identity and contribution revealed and had to discuss their decisions with other group members vs never learn each other's identity (control).	Monetary	0.036	-0.148/0.217
Gerber, Green, & Larimer	2008	229451	Overt	Hawthorne group (informed researchers are watching), self-group (informed voting records are public and their household would be mailed with information of who voted), neighbours (list households and nearby households voting records with threat that vote record will be distributed to self and neighbour) vs control group (received no message)	Non-Monetary (Voting)	0.059	0.055/0.063
Gerber, Green, & Larimer	2010	359657	Overt	Past voting (showed participant all those in household who had voted), past absentation (showed all those in household who had not voted) vs control group (received no message),	Non-Monetary (Voting)	0.023	0.020/0.026
Grimalda, Pondorfer, & Tracer	2016	114	Overt	Big man (person of authority) was watching their allocations in the prisoner's dilemma vs no one watching	Monetary	0.067	-0.118/0.248
Haley & Fessler	2005	124	Perceived	Stylized eyes on the desktop of computer vs control image on the desktop of the computer.	Monetary	0.239	0.066/0.399

Author (k =134)	Year	N	Type of Observability	Description of Observability Manipulation	Type of Prosocial Behaviour	r	95% LL/ULCI
Hardy & Van Vugt Study 1.	2006	66	Pseudo	Feedback sheets detailed individual's contributions in the previous round vs no feedback sheets.	Monetary	0.193	-0.052/0.416
Hardy & Van Vugt Study 2.	2006	150	Pseudo	Feedback sheets detailed individual's contributions in the previous round vs no feedback sheets.	Monetary	0.210	0.051/0.358
Hauser, Hendriks, Rand, & Nowak	2016	646	Pseudo	See ID and contribution to PGG.	Monetary	0.336	0.267/0.403
Hoffman, Mccabe, & Smith	1996	157	Pseudo	Single vs Double-blind	Monetary	0.068	-0.089/0.223
Hoffman, McCabe, Shachat, & Smith	1994	60	Pseudo	Single vs Double-blind	Monetary	0.458	0.230/0.637
Horita & Takezawa	2014	44		Experimenter watching their decision vs participant remaining anonymous from the experimenter.	Monetary	0.026	-0.273/0.321
Huang, Liu, & Liu	2016	88	Overt	Decision and amount they donated released on the website vs private and confidential decision.	Non-Monetary (Intentions)	-0.124	-0.325/0.088
Hubbard et al.	2016	80	Overt	A passive observer would be observing their choices on public trials vs no observers in private trials.	Monetary	0.522	0.341/0.665
Hugh-Jones & Reinstein	2009	130	Pseudo	Donations made by players either revealed with player ID vs total number of contributions to the PG revealed (control)	Monetary	-0.124	-0.290/0.049
Iredale, Vugt, & Dunbar Study 1.	2008	30	Overt	Observer of the same or opposite sex vs no observer	Monetary	0.136	-0.236/0.473

Author (k =134)	Year	N	Type of Observability	Description of Observability Manipulation	Type of Prosocial Behaviour	r	95% LL/ULCI
Iredale, Vugt, & Dunbar Study 2.	2008	72	Pseudo	Decisions made public to other players vs decisions kept anonymous	Monetary	0.310	0.085/0.506
Izuma, Saito, & Sadato	2010	23	Overt	Video of two observers watching them	Monetary	0.532	0.153/0.774
Izuma, Matsumoto, Camerer, & Adolphs	2011	11	Overt	A passive observer would be observing their choices on public trials vs no observers in private trials.	Monetary	0.685	0.145/0.911
Jacquet, Hauert, Traulsen, & Milinski	2011	60	Overt	Top (honour) and bottom (shame) contributors had name published at the end of the study.	Monetary	0.571	0.372/0.403
Jerdee & Rosen	1974	180	Pseudo	The amount of profit earned by a participant is displayed on a blackboard vs kept private (control).	Monetary	0.284	0.144/0.413
Jolij & de Haan	2014	103	Perceived	Images of Eyes vs Flower images	Monetary	0.068	-0.127/0.258
Jones & Linardi	2014	150	Overt	A public ceremony of each participants donations to other participants vs no ceremony.	Monetary	0.115	-0.047/0.270
Karlan & McConnell Study 2.	2014	94	Overt	Name and amount donated by each participant wrote on the blackboard vs private 1st round decisions.	Monetary	0.252	0.052/0.432
Kataria & Regner	2015	185	Overt	Public ceremony of effort task performance (ranking and scores given)	Non-Monetary (Effort Task)	0.132	-0.013/0.271
Matsugasaki, Tsukamoto, & Ohtsuo Study 1.	2015	33	Perceived	Eyes on Posters (male or female) or Geometric patterns.	Monetary	-0.166	-0.482/0.188

Author (k =134)	Year	N	Type of Observability	Description of Observability Manipulation	Type of Prosocial Behaviour	r	95% LL/ULCI
Matsugasaki, Tsukamoto, & Ohtsubo Study 2.	2015	49	Perceived	Eyes on envelopes participants placed money in or geometric patterns on envelopes.	Monetary	-0.103	-0.374/0.183
Keller & Pfattheicher	2011	50	Perceived	Watching eyes or blank headed paper.	Monetary	-0.415	-0.621/-0.154
Kratky, McGraw, Xygalatas, Mitkidis, & Reddish	2016	270	Perceived	3d and 2d image of eyes vs control 2d/3d image of the plant	Monetary	0.087	-0.032/0.204
Kraus & Callaghan Study 2.	2016	676	Overt	Participants donation in DG were accompanied by their name and city they lived in (public condition)	Monetary	-0.051	-0.125/0.025
Kraus & Callaghan Study 3.	2016	361	Overt	Participants donation in DG were accompanied by their name and city they lived in (public condition)	Monetary	0.080	-0.024/0.182
Kurzban	2001	289		Identity information revealed vs no identity information revealed.	Monetary	0.237	0.126/0.343
Lacetera & Macis	2010	914	Overt	Public ceremony and name published in newsletter those who donate 50th,75th and 100th time.	Non-Monetary (Donate Blood)	0.145	0.081/0.208
Lamba & Mace	2010	55	Overt	Identity and donation revealed to other participants at the end.	Monetary	0.213	-0.056/0.452
Lambarraa & Riener	2015	357	Overt	Publicly announced name and size of donation	Monetary	-0.105	-0.207/-0.001
Laury, Walker, & Williams	1995	35	Pseudo	Single vs Double blind	Monetary	0.324	-0.011/0.593
Leimgruber, Shaw, Santos, & Olson	2012	32	Overt	Children either visible to partner or occluded from view of partner whilst making decisions	Monetary	0.554	0.255/0.757

Author (k =134)	Year	N	Type of Observability	Description of Observability Manipulation	Type of Prosocial Behaviour	r	95% LL/ULCI
Li & Riyanto	2017	244	Overt	High contributing donors were asked to stand up in front of the group and had a star placed on the seating plan so other knew where they were vs anonymous donations.	Monetary	0.066	-0.061/0.190
Manesi, Van Lange, & Pollet Study 1.	2016	148	Perceived	Eyes gazing straight at you, vs flowers image.	Non-Monetary (Effort task)	0.189	0.028/0.340
Manesi, Van Lange, & Pollet Study 2.	2016	113	Perceived	Eyes gazing straight at you, vs flowers image.	Non-Monetary (Effort task)	0.152	-0.034/0.327
Manesi, Van Lange, & Pollet Study 3.	2016	173	Perceived	Eyes gazing straight at you, vs flowers image.	Non-Monetary (Effort task)	0.082	-0.068/0.228
Martinsson & Villegas-palacio	2010	96	Overt	Three observability treatments that have been combined (revealing donation to an in-group, an outgroup or to both in-group and out-group). In each case participants stood up announced their ID and their donation amount. In the control both identity and amount donated are anonymous.	Monetary	0.102	-0.100/0.297
Mason	2016	4486	Overt	Names published in the newsletter vs names not published	Non-Monetary (intent to participate in fundraising campaign)	0.081	0.052/0.110

Author (k =134)	Year	N	Type of Observability	Description of Observability Manipulation	Type of Prosocial Behaviour	r	95% LL/ULCI
Matland & Murray	2015	60239	Perceived	Eyes on postcard reminding them to vote vs no postcard (control).	Non-Monetary (Voting)	0.006	-0.002/0.014
Mifune, Hashimoto, & Yamagishi	2010	140	Perceived	Stylized eyes vs green background on the computer.	Monetary	0.009	-0.158/0.174
Nettle et al.	2013	118	Perceived	Poster of eyes or University Logo	Monetary	0.100	-0.082/0.276
Noussair & Tucker	2007	24	Overt	Participant identity and contributions revealed vs kept private.	Monetary	-0.310	-0.634/0.107
Oda & Ichihashi	2016	8189	Perceived	Eyes on perspex box in Japanese tavern vs control image (butterfly)	Monetary	0.036	0.015/0.058
Oda, Niwa, Honma, & Hiraishi	2011	62	Perceived	Eyes vs no Image.	Monetary	0.284	0.037/0.498
Panagopoulos	2014	24531	Perceived	Voters showed postcard with eyes on vs control images.	Non-Monetary (Voting)	0.028	0.015/0.040
Panagopoulos	2014	5514	Perceived	Voters shown postcard with eyes on vs receive no postcard or postcard with control images.	Non-Monetary (Voting)	0.081	0.055/0.107
Panagopoulos	2010	19400	Overt	Postcards informing them their names may be published in local newspaper vs no postcard sent (control)	Non-Monetary (Voting)	0.020	0.006/0.034
Pedersen	2016	189	Perceived	Eyes vs message to complete the survey.	Non-Monetary (Completing Survey)	0.053	-0.091/0.194
Pfattheicher & Keller	2015	126	Perceived	Stylized Eyes printed on top of a sheet of paper vs no subtle cue of being watched.	Monetary	0.058	-0.118/0.231

Author (k =134)	Year	N	Type of Observability	Description of Observability Manipulation	Type of Prosocial Behaviour	r	95% LL/ULCI
Pfattheicher Study 2 Sample 1.	2015	100	Perceived	Picture of eyes vs no image of eyes.	Monetary	-0.064	-0.257/0.134
Pfattheicher Study 2 Sample 2.	2015	123	Perceived	Picture of eyes vs no image of eyes.	Monetary	0.116	-0.062/0.287
Piazza & Bering	2008	36	Overt	Receiver will inform the third party of their behaviour	Monetary	0.154	-0.184/0.459
Powell, Roberts, & Nettle	2012	51893	Perceived	Eyes vs control images of stars placed on charity buckets located at the end supermarket tills.	Monetary	0.451	0.444/0.458
Raihani & Bshary	2012	191	Perceived	Eyes vs control Image	Monetary	-0.141	-0.277/0.001
Reinstein & Riener	2012	122		Identity and donation revealed to other dictators vs No information revealed.	Monetary	0.137	-0.041/0.308
Rigdon, Ishii, Watabe, & Kitayama	2009	113	Perceived	Three dots configured like eyes vs three dots in a neutral configuration.	Monetary	0.174	-0.011/0.348
Roth	1995	287	Overt	Identity revealed (restricted communication) or identity and information revealed (unrestricted communication) vs no identity and donation information revealed (control condition).	Monetary	0.014	-0.102/0.130
Samek, Sheremeta, & Angeles	2015	205	Overt	Names and donation amounts vs no information in control.	Monetary	0.157	0.020/0.288
Samek & Sheremeta	2016	80	Overt	First name and photo displayed with the amount donated vs ID and amount in the control group.	Monetary	0.524	0.343/0.667
Samek & Sheremeta	2014	80	Overt	Name and picture with amount and rank vs no identity information and amount donation (control)	Monetary	0.561	0.389/0.695

Author (k =134)	Year	N	Type of Observability	Description of Observability Manipulation	Type of Prosocial Behaviour	r	95% LL/ULCI
Satow	1975	80	Overt	One way mirror with the experimenter behind the mirror and the participant table facing the mirror vs no one-way mirror and the table faced the door (control)	Monetary	0.294	0.079/0.482
Saunders, Taylor, & Atkinson	2016	1535	Perceived	Visible (eyes, faces, emotional faces) vs Control images(schematic inverted faces and black/white control squares)	Monetary	0.004	-0.046/0.054
Schmidt & Zultan	2005	48	Overt	No Communication (no communication with the recipient and no information about them), restricted communication (communication with recipient but unaware of the game they are about to play) and unrestricted communication (game specific instruction provided before the interaction with the recipient and before the game).	Monetary	0.079	-0.210/0.355
Sénémeaud et al.,	2017	454	Perceived	Picture of eyes on blood donation leaflet vs control image	Non-Monetary (blood donating)	0.179	0.088/0.266
Smith et al.,	2009	78	Overt	Informed they are visible to a second player and can also see the second player vs not visible to the second player.	Monetary	0.315	0.099/0.502
Sparks & Barclay	2014	124	Perceived	Eyes vs no Eyes	Monetary	0.034	-0.143/0.209
Sparks Study 1.	2010	106	Perceived	Eyes vs landscapes images.	Monetary	-0.102	-0.287/0.091
Sparks Study 2.	2010	83	Perceived	Eyes vs landscapes images.	Monetary	0.020	-0.196/0.235
Sparks Study 3.	2010	107	Perceived	Eyes vs landscapes images.	Monetary	-0.237	-0.408/-0.049
Tane & Takezawa	2011	40	Perceived	Eyes vs butterfly images	Monetary	-0.218	-0.496/0.100

Author (k =134)	Year	N	Type of Observability	Description of Observability Manipulation	Type of Prosocial Behaviour	r	95% LL/ULCI
Tane, & Takezawa	2011	40	Perceived	Eyes image vs blank screen	Monetary	-0.064	-0.3680.252
Thielmann, Heck, & Hilbig	2016	950	Pseudo	Single blind (public) vs Randomised response technique (control)	Monetary	0.148	0.085/0.209
Uziel & Hefetz. Study 1.	2014	72	Perceived	Priming private and public mindset through sentence completion	Monetary	-0.144	-0.363/0.091
Uziel, & Hefetz. Study 2.	2014	78	Perceived	Priming private and public mindset through sentence completion	Monetary	-0.011	-0.233/0.212
van Bommel, van Prooijen, Elffers, & van Lange	2014	80	Overt	Participant has a camera either watching them or bystander vs no camera or no bystander.	Non-Monetary (preventing crime)	-0.362	-0.539/-0.155
van Rompay, Vonk, & Fransen	2009	80	Overt	Security camera watching them vs no camera.	Non-Monetary (Effort Task)	0.332	0.121/0.514
van Vugt & Hardy 1.	2010	86	Pseudo	Decisions made public to other players vs decisions kept anonymous	Monetary	0.357	0.157/0.529
Van Vugt & Iredale **St**udy 1	2013	130	Overt	Observer watching contributions vs no observers watching.	Monetary	0.180	0.008/0.342
van Vugt, & Iredale. Study 2.	2013	47	Overt	Observer watching contributions vs no observers watching.	Monetary and Non Monetary	0.176	-0.117/0.441
Vogt, Efferson, Berger, & Fehr	2015	177	Perceived	Children watched by stylized eyes vs images of perpendicular lines.	Monetary	-0.035	-0.182/0.113
Wichman	1970	88	Overt	Identity revealed (see condition), and identity and donation revealed (unrestricted communication) vs control condition (no identity or donation information),	Monetary	0.248	0.040/0.435

Author (k =134)	Year	N	Type of Observability	Description of Observability Manipulation	Type of Prosocial Behaviour	r	95% LL/ULCI
Vrouwe	2014	95	Perceived	Male or female images of eyes vs abstract art images.	Non-Monetary (Number of essay corrected)	0.271	0.073/0.448
Wilson & Sell	1997	108	Pseudo	Announcement (players anonymous but ID is displayed with intention to donate to public pot), History (ID displayed with past contributions), Control (no announcements and no history displayed)	Monetary	-0.330	-0.489/-0.151
Xin, Liu, Yang, & Zhang	2016	235	Perceived	Image of three dots configured either like eyes or reversed like triangles.	Monetary	0.190	0.063/0.310
Xin, Liu, Yang, & Zhang	2016	50	Perceived	Image of three dots configured either like eyes or reversed like triangles.	Monetary	0.383	0.117/0.598
Xin, Liu, Yang, & Zhang	2016	60	Perceived	Image of three dots configured either like eyes or reversed like triangles.	Monetary	0.289	0.038/0.506
Yoeli, Hoffman, Rand, & Nowak	2013	1408	Overt	Sign up sheets either contained their name and residential address (visible) or anonymous code (Control)	Non-Monetary (participation in demand response system)	0.069	0.016/0.120

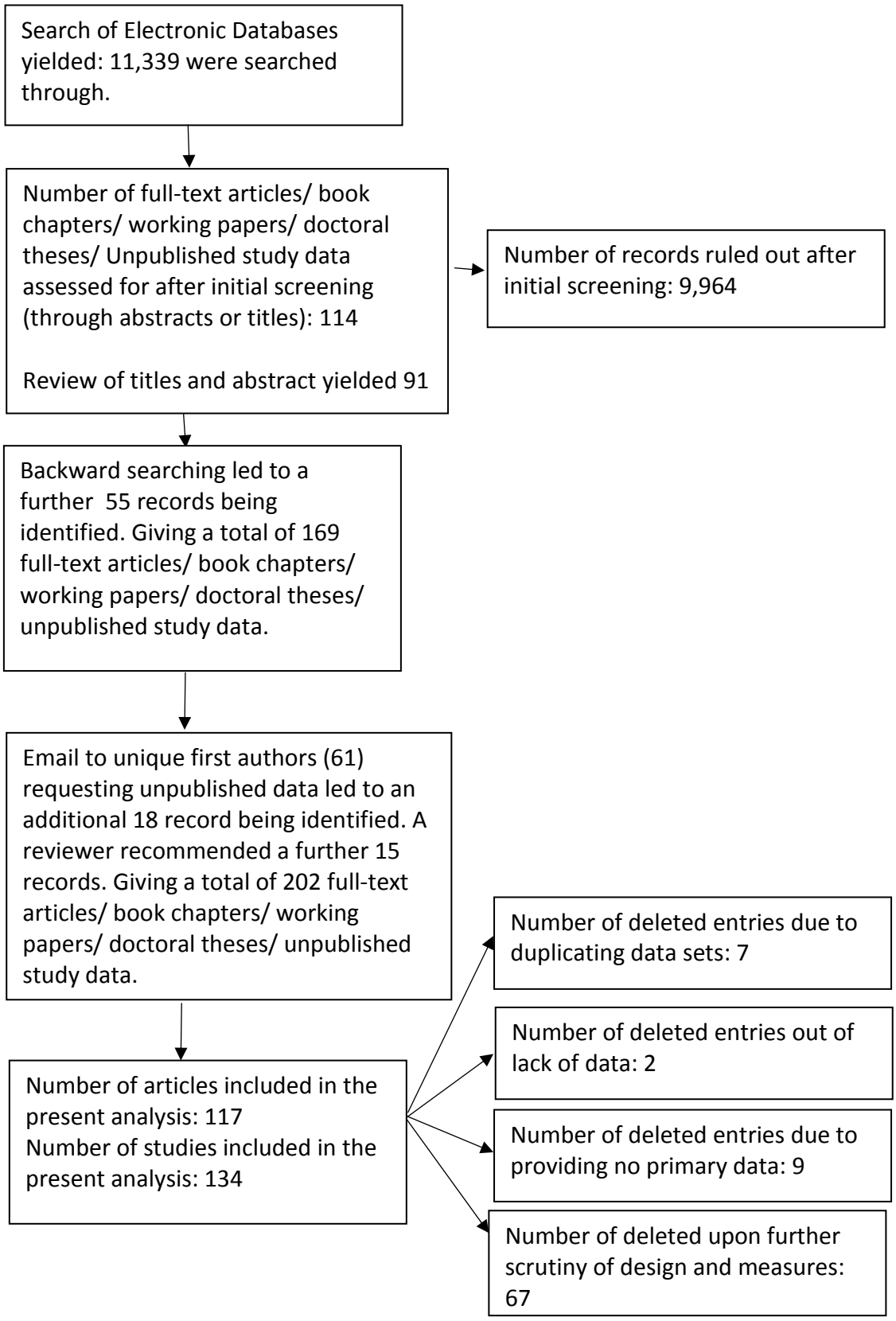


Figure 7.1 Prisma Flow diagram of the selection of studies process.

7.4.3 Coding Scheme.

See Table 7.2 for full details of the coding scheme.

7.4.3.1 Theoretical Moderators.

7.4.3.1.1 Type of Observability.

We conceptualised observability manipulations as falling into one of three categories: the 'sense of being watched' (perceived observability; k = 49), a unique identity reference that is viewed by others (pseudo observability; k = 20), and personal information (i.e. name, picture of face etc.; k = 60) viewed by others (overt observability).

7.4.3.1.2 Observer Type.

We investigated whether the type of observer influences the strength of the relationship between observability and prosociality. Observer type was coded into 4 categories: no-one watching (*k* = 49), experimenter observing behaviour (*k* = 12), peers watching behaviour (*k* = 45), and passive observer (an individual who is observing and is not a participant or experimenter) (*k* = 12).

7.4.3.1.3 Decisions with Consequences.

We coded whether the effect size in the observable conditions will influence how others (experimenter, peers or independent passive observer) respond towards the behaviour of the person being observed (the allocator). Decisions with consequences could be in the form of either a behavioural response or explicit evaluation (*k* = 24). Consequence-free decisions occur (when the participant is aware that the observer cannot actively influence the participant) (*k* = 110).

7.4.3.1.4 Single or repeated measures.

We coded whether the experiment was a single game including studies where the same single game is played with different people (stationary replication, see Camerer and Fehr, 2002)(*k* = 94), or repeated measures (same game with the same people) (*k* = 25).

7.4.3.1.5 Bargaining games and social dilemmas.

We coded for the type of economic game used: bargaining games (*k* = 74) and social dilemmas (*k* = 26). In bargaining games, agents decide how to divide some amount (e.g. Dictator Game) and in social dilemma games, individuals profit from being selfish unless everyone chooses the selfish option at which point everyone loses (e.g. public goods games).

7.4.3.2 Methodological Moderators.

7.4.3.2.1 Age.

We recorded the mean ages of participants when this was reported (Mean = 24.95, SD = 10.21, *k* = 65).

7.4.3.2.2 Type of payment.

To explore if the method of payment affected prosocial behaviour a moderator for the type of payment was coded which contained 3 categories: No payment (Base level; *k* = 18), one-off payment (*k* = 18), performance related payment (*k* = 80).

7.4.3.2.3 Context of Study.

We coded whether studies were performed in a laboratory (*k* = 99) or field setting (total *k* = 35; online = 7, field = 28).

7.4.3.2.4 Single vs Double Blind.

We assessed whether single or double-blind procedures were applied: coded as single-blind (*k* = 106), or double-blind (*k* = 18).

7.4.3.2.5 Nature of the outcome.

We coded whether the researchers examined behaviour in terms of whether to help or donate (*k* = 29) or how much to help or donate (*k* = 78).

7.4.3.2.6 Unearned vs earned.

Studies were coded to explore whether simply giving participants money (*k* = 91) or having participants earn their money (*k* = 10) moderated the observability - prosocial behaviour link.

7.4.3.2.7 Measures of outcome.

The measure of prosocial behaviour was coded as either objective (behavioural: *k* = 122), or subjective (self-reported or rated by a third party; *k* = 10).

7.4.3.2.8 Type of Prosocial Behaviour.

We examined if the effect of visibility on prosocial behaviour was the same when the decision involved monetary (*k* = 101) or non-monetary (*k* = 33) responses.

7.4.3.2.9 Aggregated data.

A number of studies only reported aggregated effects, therefore this was included as a potential moderator: Aggregated yes (*k* = 5) or no (*k* = 125).

Table 7.2. *Definition of Key Moderators*

Moderator	Working definition and codes	Examples from included samples
Theoretical Moderators		
Type of Observability Manipulation (*k* = 129	Observability manipulations were split into three: Perceived, Pseudo and Overt. Perceived observability induces the 'feeling of being watched' i.e. displaying eyes or priming observability (*k* = 49). Pseudo observable is where information that indirectly (e.g., ID number) reveals participants identity is visible (*k* = 20). Overt observability is where information directly related to participants identity (i.e. pictures, names, voices etc.) are revealed (*k* = 60).	An example of perceived observability: Haley and Fessler, (2005) displayed an image of eyes on the background of a pc whilst participants made donation decisions. An example of Pseudo observability: Wilson and Sell, (1997) assign an ID number to each participant that is then displayed to other players with their contributions amount. An example of overt observability: Samek and Sheremeta, (2014) in a public goods game displayed in the visible conditions name, picture and amount donated by each allocator.

Moderator	Working sefinition and codes	Examples from included samples
Type of Observer. (*k* = 118)	No one is watching(0) (*k* = 49) (i.e Perceived Observability manipulations), the experimenter can observer behaviour (1) (*k* = 12), peers involved in the experiment are aware of the allocators behaviour (2) (*k* = 45), a passive observer who is someone who is not participating in the study or involved in running the experiment instead they are usually just observing behaviour with no ability to punish or recompense others (3) (*k* = 12),	Haley and Fessler, (2005) no one is actually watching (0). Hoffman, McCabe, Shachat, and Smith, (1994) looks at whether the experimenter knowing about participants response effects influences behaviour (single vs double blind)(1). Bereczkei, Birkas, and Kerekes, (2007) offers of help in front of their seminar group(2). Izuma, Saito, and Sadato, (2010) had performance on a donation task observed by two actors (who were not experiments)(3). Alevy, Jeffries, and Lu, (2014) displayed information on the whiteboard so it was visible to other players and the experimental monitor(4).
Decisions with consequences vs Consequence free decisions (*k* = 134)	Consequence-free decisions refer to allocation decisions that are standalone and cannot impact how others respond to the allocator within the experimental protocol (0) (*k* = 110). Decisions with consequences refer to allocation decisions that could impact how others (fellow participants, experimenters or passive observers) respond to the allocator either in terms of behavioural responses or explicit evaluations within the experimental protocol (1) (*k* = 24).	Izuma et al., (2010) had participants in the visible condition that are told that the observers are completing an impression formation task about them whilst they complete a charity dictator game task.

Moderator	Working definition and codes	Examples from included samples
Methodological Moderators		
Type of payment (*k* = 116)	No payment (0) (*k* = 18), One-off payment (i. e. show up fee,) (1) (*k* = 18). Performance related payment (where earning vary on how participant do) (2) (*k* = 80) (if study has both show up fee and performance it is classified as performance)	Jerdee and Rosen, (1974) participants' were enrolled on business administration course and as such were not paid to take part (0)Carbon and Hesslinger, (2011) participants' were given course credits for taking part in the study (1). Kurzban, (2001) participants were paid $2 for turning up on time and 50 cents for every token they earned on average over the course of the 10 ten rounds in the public goods game (2).
Context of Study: Online, lab and field (*k* = 134)	Was the study conducted in the laboratory (0) (*k* = 99) or non-laboratory (field and online) (*k* = 35)	Pfattheicher, (2015) study 2 sample 2 used 123 participants recruited via amazon mechanical Turk and conducted online (1). Matland and Murray, (2015) look at the effect of eyes on American voters across a number of states (field study)(2). Hardy and Van Vugt, (2006) contains two relevant experiments both of which occur within the laboratory (3).
Single or Repeated Measures (*k* = 119)	Single measure is a situation where the allocation decision is made once with the same group of people or there are multiple one-off allocations with different people (i.e. stationary replications) (0) (*k* = 94). For repeated measures, the allocation decision must be made more than once with the same group of people (1) (*k* = 25).	Rege and Telle, (2004) use a public goods game with multiple session. In session 1-4 interactions are single (0) whilst in session, 4-12 interaction is repeated over 20 rounds (1).
Blind (*k* = 124)	Was the design single blind (1) (*k* = 106), or double blind (2) (*k* = 18).	

Moderator	Working definition and codes	Examples from included samples
Bargaining games or Social Dilemma's (*k* = 107)	Whether the economic game is a Bargaining Game (i.e., Dictator Game, Ultimatum game, Trust game etc) (*k* = 74) vs a Social Dilemma (i.e. Public goods games, Prisoner Dilemma or limited resource allocation game etc.) (*k* = 26).	Fehr and Schneider, (2010) one-shot trust game is an example of a bargaining game (0) whereas, Samek and Sheremeta, (2016)public goods game is an example of a social dilemma scenario (1).
Nature of Outcome: Helped and how much (*k* = 107)	Whether or not participant helps (*k* = 29) and if so how much the participants helped (*k* = 78).	Nettle et al., (2013) looked at whether the watching eyes effect influenced more whether people decide to donate as opposed to how much participants decide to donate.
Unearned or Earned Endowment (*k* = 101)	Whether the endowment was earned during the experiment (1) (*k* = 10) or freely given by the experimenter (0) (*k* = 91).	Nettle et al.,(2013) left £5 on a desk for participants (0). Satow, (1975) had participant earn money by answering word puzzles (1).
Measure of Outcome: Objective vs subjective (*k* = 132)	Objective (behavioural) (1) (*k* = 122) vs subjective (Self report and third party) (*k* = 10) (0)	Lambarraa and Riener, (2015). The outcome measure was the amount of money participants choose to keep or donate (1). Bereczkei, Birkas, and Kerekes, (2010) asked participants to self-report which charitable activities they would be willing to help with (0).van Rompay, Vonk, & Fransen, (2009) has experimenters, blind to the hypothesis, code participants helping behaviour after experimenter had dropped a pile of surveys (0).
Type of Prosocial Behaviour: Money vs other (*k = 134*)	Monetary (*k* = 101) (0) or Non-Monetary (e.g., effort, time) (*k* = 33)(1).	Receiving payment from a lab task (0) vs giving blood, voting or exert effort(1)(Ariely et al., 2009; Jones & Linardi, 2014; Lacetera & Macis, 2010; Matland & Murray, 2015).
Aggregated Data (*k* = 134)	Was the effect size generated from individual or group level data? Yes (*k* = 5) or No (*k* = 129) response.	Powell, Roberts, and Nettle, (2012) reported results per 000's customers (1).

7.4.4 Overview of the analysis

The effect sizes computed represent the difference between a control condition and an observability manipulation. Fischer's Zr was used for all the analyses, but for ease of interpretation, these are converted back to Pearson's r when reporting effects. The correlation coefficient r was computed using sample sizes and t values, χ^2 values, p values, means and standard deviations, as well as, 2 by 2 contingency tables. Effect sizes are all scored such that the higher the correlation the stronger the effect of observability on prosociality

A random-effects model was used to compute the overall effect size of observability on prosociality. A random-effects model was chosen a) because we are interested in making generalizable inferences about the effect, and b) given the variability in effects sizes between observability and pro-sociality it is unlikely that there is a single common effect hence assuming a distribution of effects is more appropriate (Borenstein, Hedges, Higgins, & Rothstein, 2010; Hedges & Vevea, 1998).

Many of the studies included in the meta-analysis had multiple effect sizes either due to multiple trial arms on one dependent variable or using the same dependent variable twice (e.g. in the "watching eyes" literature, the same dependent variable is used to assess *whether* a participant gives and *how much* they give) (e.g. Raihani and Bshary, 2012). Effect sizes that arise from the same study are not independent (pg. 191-195 Card, 2012) and can lead to an upward bias of population and study level variance estimates (see pg. 432, Hunter & Schmidt, 2004). To handle non-independence, effect sizes were aggregated using the Hunter and Schmidt (2004) method which combines within-study effects whilst taking account of the correlation in the within-study effects (Del Re & Hoyt, 2015; Hunter & Schmidt, 2004). Effect sizes that were independent received no corrections.

Cochran's Q test, a measure of homogeneity among effect sizes, was conducted to test whether the assumption that all effect sizes are estimating the same population mean is reasonable. If this test is significant it means that variability across effect sizes is more than would be expected by sampling error alone (Lipsey & Wilson, 2001). The interpretation of this test changes in mixed effects models where the observed variability in effect size, not accounted for by moderators, is larger than would be expected based on sampling variance alone (reported as *QE*). To measure the degree of heterogeneity, the inconsistency index (I^2) and tau squared (τ^2) were calculated. The inconsistency index indicates (as a percentage) how much of the total variability (heterogeneity plus sampling error) in effect sizes can be attributed to heterogeneity between the true effect sizes. For mixed effects, the interpretation changes slightly to how much of the unaccounted variability (made up of residual and sampling heterogeneity) can be explained by residual heterogeneity (Viechtbauer, 2010). Thus, large inconsistency index percentages in random effects models indicate that more of the variability is explained by differences among the true effect size, and in mixed effects models as more residual heterogeneity. Tau squared represents the amount of residual heterogeneity in the random/mixed effects models with larger tau squares indicating more residual heterogeneity.

Publication bias was assessed visually with a funnel plot (effect size plotted against the standard error) and statistically using Egger's Regression test (Egger, Davey Smith, Schneider, & Minder, 1997). Eggers regression test uses the effect size as the DV and the precision (inverse of the studies standard error) as the predictor in a simple regression model. If the intercept is significant, this means that small studies have different effects than large studies, suggesting publication bias. The Duval and Tweedie, (2000) trim and fill procedure was also applied. This approach works by assuming that symmetry within a funnel plot implies no bias. The trim and fill procedure trims extreme values and then fills in estimated values. This process is iterative and stops once symmetry has been achieved.

The trim and fill procedure gives an adjusted estimate of the effect size and indicates the number of potential missing studies.

To explore heterogeneity, mixed effect models are conducted using both theoretical and methodological moderators. To assess the overall effect of multiple moderators within mixed effects models, omnibus tests of all the model coefficients were conducted (referred to as QM). Effect sizes were calculated using Comprehensive Meta Analysis (Borenstein, Hedges, Higgins, & Rothstein, 2014) whilst all other analyses were conducted in R Studio (version 0.98.1062) using R (version 3.1.1) with the MAc and Metafor packages (Del Re & Hoyt, 2015; Viechtbauer, 2010). Both the Mac package and Metafor packages are reliable and have been used in meta-analyses previously (e.g. Horvath, Del Re, Fluckiger, & Symonds, 2011; Open Science Collaboration, 2015).

7.4.5 Coding frame reliability

The first and third authors created the initial coding framework. The first author coded all the studies. The first and third author discussed ambiguous cases and agreed on the final coding. The reliability of the coding framework was tested on a random sample of 33% of studies (*k* = 43) and a third rater (blind to initial coding) applied the framework. The tests of the reliability of the coding frame were applied to all codes except those that were objectively attained (i.e. unearned vs earned, Age, type of payment, context of study, bargaining games and social dilemmas, nature of the outcome, measure of the outcome, and aggregated data). The kappa coefficients indicate substantial or greater agreement (mean Kappa = .86, SD = . 13, min = .67, max = 1.00)(McHugh, 2012).

7.5 Results

7.5.1 Overall effects of observability on prosocial behaviour

For an overview of the effect sizes and 95% confidence intervals for each study see Table 7.1.

The analysis revealed a small positive and significant association between observability and prosociality r (r = .141, 95% confidence interval lower limit (LLCI)/upper limit (ULCI) = .101/.175). The results showed a substantial level of variation (*Q* (133) = 10883.758, *p* <.001) among the distribution of effect sizes which can be accounted for by the large amount of heterogeneity within the sampled studies (I^2 = 99.24; τ = .179; τ^2 = .032). 'Leave one out' sensitivity analysis was performed, where the model is run systematically leaving out one study each time. This showed the overall effect fluctuated slightly from r = .135 to r = .144, but to be stable. Trim and fill analysis and Egger's regression test indicated no publication bias

7.5.2 Moderators of Observability

In this section, we explore theoretical and methodological moderators that might account for some of the heterogeneity (See Table 7.3)

Table 7.3 *Univariate moderator analysis on the relationship between visibility and prosocial behaviour*

	QM	p value (two tailed)	*K*	N	Tau2	Standard Error	R	95% LLCI/ULCI
Type of Observability	3.575	.167						
Perceived			49	158,166	0.023	0.025	0.100	0.050/0.149
Pseudo Observable			20	3,876	0.028	0.044	0.167	0.081/0.252
Overt Observable			60	625,508	0.044	0.030	0.172	0.113/0.232
Type of Observer	13.246	0.004**						
None			49	158,166	0.023	0.025	0.100	0.050/0.149
Experimenter			12	362,668	0.028	0.056	0.200	0.090/0.309
Peers			45	8,158	0.046	0.035	0.137	0.085/0.224
Passive Observers			12	970	0.029	0.064	0.352	0.225/0.478
Decision with Consequences	7.365	0.007**						
Consequence free			110	785,244	0.026	0.018	0.119	0.084/0.154
Decisions with consequences			24	2,920	0.048	0.051	0.248	0.137/0.347
Single/Repeated	12.443	<0.001**						
Single			94	781,352	0.027	0.005	0.106	0.070/0.143
Repeated			25	3,026	0.037	0.046	0.269	0.179/0.358
Barging/Social Games	6.963	0.008***						

	QM	p value (two tailed)	*K*	N	Tau2	Standard Error	R	95% LLCI/ULCI
Bargaining games			74	20,968	0.030	0.024	0.119	0.072/0.165
Social Dilemma games			26	2,541	0.046	0.048	0.251	0.157/0.334
Methodological								
Age	0.219	0.639	65	347,981	0.021	0.002	-0.001	-0.005/0.003
Type of Payment	1.896	0.388						
No Payment			18	11,449	0.009	0.004	0.139	0.085/0.194
One off payment			18	1,882	0.035	0.051	0.080	-0.021/0.181
Performance Related payment			80	12,479	0.042	0.026	0.157	0.106/0.208
Context of Study	6.215	0.013*						
Lab			99	12,001	0.039	0.023	0.170	0.125/0.215
Non Lab			35	776,163	0.015	0.023	0.077	0.033/0.121
Blind/Double Blind	0.955	.328						
Blind			106	718,953	0.029	0.019	0.130	0.092/0.168
Double Blind			18	65,643	0.030	0.011	0.178	0.087/0.268
Nature of Outcome	0.419	.517						
Whether to help			29	709,212	0.026	0.033	0.131	0.066/ 0.196
How much to help			78	71,640	0.035	0.024	0.161	0.113/0.209
Unearned vs Earned	1.134	0.241						
Unearned			91	14,416	0.039	0.024	0.133	0.087/0.180
Earned			10	9,883	0.054	0.080	0.222	-0.065/0.379

	QM	p value (two tailed)	*K*	N	Tau2	Standard Error	R	95% LLCI/ULCI
Measure of Outcome	1.130	0.288						
Objective			122	784,237	0.033	0.019	0.146	0.109/0.18
Subjective			10	3,820	0.016	0.047	0.081	-0.100.172
Type of Prosocial Behavior	0.686	0.408						
Monetary			101	77,267	0.039	0.022	0.151	0.107/0.195
Non Monetary			33	710,897	0.016	0.005	0.115	0.067/0.163
Aggregated Data	3.597	0.058						
Not Aggregated			129	734,978	0.028	0.017	0.133	0.099/0.166
Aggregated			5	53,186	0.066	0.044	0.290	0.059/0.521

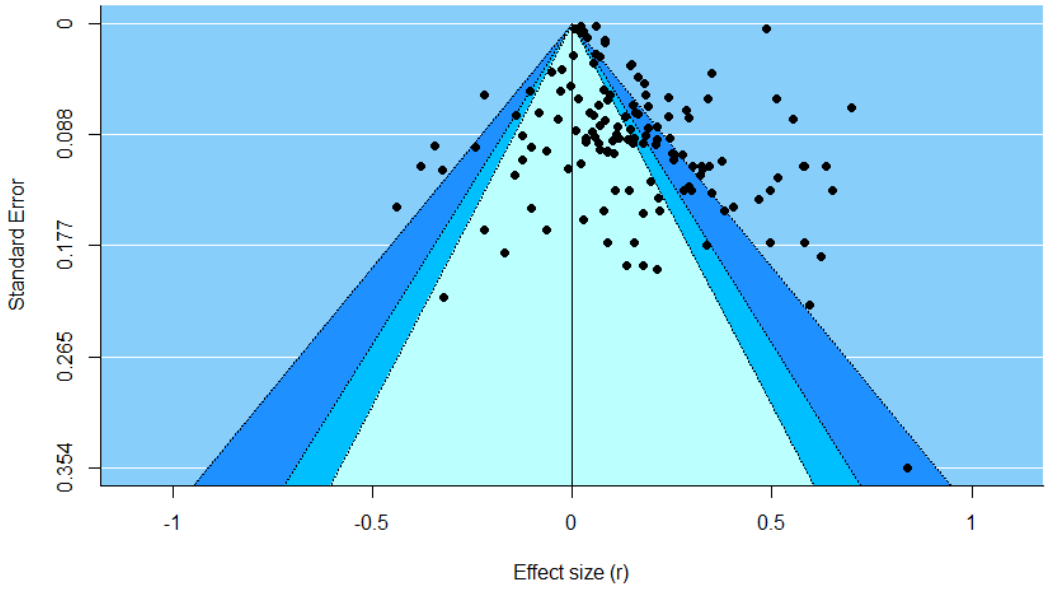


Figure 7.2. Funnel Plot of effect sizes by the standard error.

7.5.2.1 Theoretical moderators.

7.5.2.1.1 Type of observability manipulation.

While the effect of observability on prosociality was largest for overt manipulations (r = .172, LLCI/ULCI = 0.113/0.232, k = 60) followed by pseudo-observability (r = .167, LLCI/ULCI = 0.081/0.252, k = 20) and perceived observability (r = .100, LLCI/ULCI = 0.050/0.149, k = 49) manipulations, there was no overall significant difference across observability manipulations (QM (2) = 3.572, p = .167).

7.5.2.1.2 Observer type.

Observer type was split into three dummy coded variables using no observer (perceived manipulations) as reference: experimenter, peers, and passive observer. Observer type significantly moderated observability and prosocial behaviour (QM (3) = 13.246, p = .004) with passive observers (r = .352, LLCI/ULCI = 0.225/0.478, k = 12) having a significantly larger positive effect on prosociality than no observer (r = .100, LLCI/ULCI =

0.050/0.149, *k* = 49). All other observer types were not significantly different from having no observers (experimenter: *r* = .200, LLCI/ULCI = 0.090/0.309, *k* = 12; peers: *r* = .154, LLCI/ULCI = 0.085/0.224, *k* = 45). Passive observers also had a significantly larger effect on prosociality than peers (*QM* (1) = 7.30, *p* = .007). No other comparisons were significantly different.

7.5.2.1.3 Decisions with consequences.

Decisions with consequences had a significantly (*QM* (1) = 7.365, *p* = .007) larger effect on the link between observability and prosociality than decisions with no consequences (Decisions with Consequences: *r* = .248, LLCI/ULCI = 0.148/0.348, *k* = 24; Consequence-Free: *r* = .119, LLCI/ULCI = 0.084/0.154, *k* = 110).

7.5.2.1.4 Single or repeated measures.

Single vs repeated measure significantly moderated the link between observability and prosociality (*QM* (1) = 12.44, *p* < .001), with single studies having smaller effects (*r* = 0.106, LLCI/ULCI = 0.070/0.143, *k* = 94) than studies using repeated measures (Repeated: *r* = 0.269, LLCI/ULCI = 0.179/0.358, *k* = 25).

7.5.2.1.5 Bargaining games and social dilemmas.

The type of economic game (bargaining vs social dilemma) had a significant moderating effect (*QM* (1) = 6.963, *p* = .008), with social dilemmas having a larger effect (bargaining games: *r* = 0.119, LLCI/ULCI = 0.072 /0.165, *k* = 74; social dilemma games: *r* = 0.251, LLCI/ULCI = 0.157/0.344, *k* =26).

7.5.2.2 Methodological moderators.

7.5.2.2.1 Age.

The continuous variable of age had no moderating effect (*QM* (1) = 0.219, *p* = .639) on the observability and prosociality relationship (*r* = -0.001, LLCI/ULCI = -0.005/0.003, *k* = 65).

7.5.2.2.2 Type of payment.

While one off payments had the smallest effect on the link between observability and prosocial behaviour (r = 0.080, LLCI/ULCI = -0.021/0.181, k = 18) followed by no payment (r = 0.139, LLCI/ULCI = 0.085/0.194, k = 18) and performance related payment (r = 0.157, LLCI/ULCI = 0.106/0.208, k = 80), there was no significant overall difference across payment types (QM (2) = 1.896, p = .388). There was also no difference between one off payments and performance related payments (QM (1) = 1.816, p = .178).

7.5.2.2.3 Context of the study.

The study context (lab vs field) had a moderating influence on the observability - prosociality link (QM (1) = 6.215, p = .013), with laboratory studies having larger effects than non-laboratory studies (Laboratory: r = 0.170, LLCI/ULCI = 0.125/0.215, k = 99; Non laboratory: r = 0.077, LLCI/ULCI = 0.033/0.121, k = 35).

7.5.2.2.4 Single blind /double-blind.

There was no moderating effect (QM (1) = 0.955, p = .328) of single or double blind on the observability - prosociality link (Single Blind: r = 0.130, LLCI/ULCI = 0.92 /0.168, k = 106; Double Blind: r = 0.178, LLCI/ULCI = 0.087 /0.268, k = 18).

7.5.2.2.5 Nature of outcome.

There was no significant moderating effect of the nature of the outcome (QM (1) = 0.419, p = .517, Whether to give: r = 0.131, LLCI/ULCI = 0.066 /0.196, k = 29; How much to give: r = 0.161, LLCI/ULCI = 0.113/0.209, k = 78).

7.5.2.2.6 Unearned vs earned.

Whether the endowment was earned or unearned was not a significant moderator (QM (1) = 1.374, p = .241) of the link between observability and prosociality (Earned: r = .222, LLCI/ULCI = 0.065/0.379, k = 10; Unearned: r = .133, LLCI/ULCI = 0.087/0.180, k = 91).

7.5.2.2.7 Measures of outcome.

There was no significant moderating effect of subjective vs objective measures (*QM* (1) = 1.13, *p* = .288: subjective: *r* = 0.081, LLCI/ULCI = -0.010 /0.172, *k* = 10; objective: *r* = 0.146, LLCI/ULCI = 0.109/0.183, *k* = 122).

7.5.2.2.8 Type of prosocial behaviour.

The type of prosocial behaviour (monetary donations vs non-monetary donations) did not significantly moderate (*QM* (1) = 0.686, *p* = .408) the link between observability and prosocial behaviour (monetary: *r* = 0.151, LLCI/ULCI = 0.107 /0.195, *k* = 101; non-monetary: *r* = 0.115, LLCI/ULCI = 0.067/0.163, *k* = 33).

7.5.2.2.9 Aggregated data.

There was no significant moderating effect of aggregated vs non-aggregated data (*QM* (1) = 3.597, *p* = .058) however, studies that aggregated their data did have larger effects than non-aggregated data (non-aggregated: *r* = 0.133, LLCI/ULCI = 0.099 /0.166, *k* = 129; aggregated: *r* = 0.290, LLCI/ULCI = 0.059/0.521, *k* = 5).

7.5.3 Meta-Regression

A meta-regression was conducted on the significant moderators (See Table 7.4). The effect of using single or repeated measures was the only significant predictor suggesting that those studies that used repeated measure generally reported larger effects (r = .14, LLCI/ULCI =.003/.276).

Table 7.4 *Meta regression showing moderates of the observability and prosocial behaviour link.*

	B (SE)	95% Ci LL/UP
Intercept	0.103(0.040)	0.025/0.181 **
Type of Observer (Base = None)		
Experimenter	0.114(0.075)	-0.034/0.261
Peers	0.040 (0.062)	-0.082/0.162
Passive Observers	.171 (0.092)	-0.009/0.352
Decisions with Consequences	-0.024 (0.076)	-0.174/0.125
Context of Study (lab = 0, No lab =1)	-0.098 (0.061)	-0.217/0.022
Single/Repeated (Base = Single)	0.140 (0.070)	0.003/0.276 *
Bargaining (0) or Social Dilemma games (1)	0.017 (0.071)	-0.123/0.157
R^2	9.26%	

Note 22. * p <. 05. Model: QM (7) = 17.02, p = .017; QE (77) = 387.515, p < .001. k = 85. * .05, ** .01, ***.001.

7.6 Discussion

The last three decades of research on the relationship between observability and prosociality have provided mixed findings, and we suggest this is due to the inclusion or omission of key theoretical design features in the studies, that represent the key mechanisms facilitating the observability-prosociality link. These mark the boundary conditions for the observability-prosociality link and we report a meta-analytic review to examine these. In this review, we found observability had overall a small positive association with prosociality (r = .141). Four mechanisms of the decision-making context moderated this relationship. Three are consistent with predictions from CST, competitive altruism and reciprocity theory: (1) in contexts where participants make decisions with consequences for themselves (decisions that could influence how others respond to them), the effect of observability is larger, (2) repeated games have larger effects on the observability-prosociality link than single games, and (3) the effect of observability in social dilemmas was larger than in bargaining games. The fourth mechanistic finding, that the presence of passive observers strengthened the observability and prosociality link, is not consistent with theory. Finally, one methodological moderator was significant: the effect of observability was larger in laboratory studies than in field studies.

To contextualize the theoretical and practical interpretations of these findings, we should refer to the limitations of this meta-analysis. First, we applied mixed effects models which can be overly conservative (Voss, Kramer, Basak, Prakash, & Roberts, 2010) due to an overestimation of the sample error variance. This leads to confidence intervals that are too wide, and as a result, the amount of information gained from the meta-analysis is reduced (Overton, 1998). However, adopting mixed effects model makes sense since it assumes a degree of systematic variation (moderators) and some random population variation (Voss et al., 2010).

Second, the majority (80%, *k* = 94) of the studies in this meta-analysis come from western, industrialized countries, therefore, caution is needed when generalizing the effects of visibility on prosocial behaviour beyond western, educated, industrialized, rich and demographic societies (Henrich et al., 2010).

Third, most of the studies (73%, *k* = 99) within the meta-analysis are experimental, with random allocation to condition and exogenous manipulations of observability which allows tentative inferences to be made regarding the causality of observability on enhancing prosocial behaviour.

7.6.1 Theoretical Implications

The main contribution of the meta-analysis is to identify the boundary conditions for the observability-prosociality link. While we show that observability has a small positive and significant effect on prosociality, importantly we show that this varies significantly as a function of key mechanistic moderators suggested by theory (CST, competitive altruism, and indirect reciprocity)

Moderator analyses showed that different types of observability manipulations (perceived, pseudo and overt) all have a small positive effect on prosocial behaviour, with

slightly larger effects in pseudo and overt manipulations. Northover et al., (2016) in their meta-analyses on the "watching eyes" effect reported no overall effect of images of watching eyes on prosociality which is not comparable with the small effect of perceived visibility we report here. This is due to our index of perceived visibility including studies that use manipulations other than watching eyes (Franzen & Pointner, 2012a; Uziel & Hefetz, 2014). For example, Uziel & Hefetz, (2014) used a sentence completion task priming either a private or public mindset. In addition, Northover et al., (2016) excluded some studies that are included in the current meta-analysis. For example, Northover et al., (2016) excluded studies that reported their findings at aggregated levels (e.g. Powell, Roberts, & Nettle, (2012) report results per 1000's of customers). The effect of perceived manipulations could be susceptible to individual differences such as sensitivity to conformity and social pressure (Jost, van der Linden, Panagopoulos, & Hardin, 2018; Panagopoulos & Van Der Linden, 2016).

Three findings are consistent with predictions that observability enhances prosociality: (1), in contexts where participants make decisions with consequences for themselves, (2), repeated games and, (3) in social dilemmas.

The present findings indicate that decisions with consequences have a positive moderating influence on the observability-prosociality link compared to consequence-free decisions. In studies where decisions had consequences, a participants' performance on one economic game could influence how others responded to them in a subsequent game (Andreoni & Petrie, 2004; Barclay & Willer, 2007a). Alternatively, participants' previous contribution history were made observable to others (Samek & Sheremeta, 2014). This finding makes sense theoretically from cost signalling, competitive altruism or indirect reciprocity perspectives because, in circumstances where there are imminent future rewards, allocators should wish to positively advertise their co-operative qualities

to increase the likelihood of being the beneficiary of those rewards (T Bereczkei et al., 2007; Hawkes & Bird, 2002). Theoretically, the only danger of generosity in public context, where the observer knows that allocators are acting generously to secure future rewards, is that the signal could be perceived to be dishonest and could cast doubt over the cooperative qualities being signalled (Barclay & Willer, 2007a).

Repeated measure games had a stronger positive effect than single games. This can be explained from an indirect reciprocity perspective since repeated measure games allow individuals to build up reputations over time through consistent generous behaviour (Nowak & Sigmund, 1998). This benefits individuals with good reputations, since they will be likely to receive more cooperative behaviour from others in the future (Pfeiffer & Nowak, 2006). Repeated interactions also build up a history of generous or selfish behaviour which can be used by others to more confidently judge whether this individual is someone whom they wish to interact with (Pfeiffer & Nowak, 2006).

The results also showed that social dilemma games had a stronger effect on the observability-prosociality link compared to bargaining games. This effect could be attributable to social dilemmas providing greater opportunity to build reputations than bargaining games. For instance, social dilemma games, like the public goods game, are often played with multiple players (typically four players) whilst bargaining style games are often dyadic. Therefore, a typical public goods game under observable conditions allows a player to signal their cooperation to three other players whilst a typical dictator game gives the opportunity to signal their altruism to one other player.

Not predicted by theory, we found that observer type was a substantial moderator of prosocial behaviour with passive observers (someone who is not participating in the experiment nor conducting the study) having a stronger effect on the observability-prosociality link than having no actual audience (the sense of being watched). While not predicted by theory this moderating effect may be due to the high

level of scrutiny allocators experienced during studies using passive observer designs (Izuma et al., 2010). For example, in Filiz-Ozbay and Ozbay (2014)'s study, observers stood directly behind participants, watching them during a PGG. Theoretically, this is interesting as it suggests that it is not just the question of whether a behaviour is observable, but also the intensity of observation that matters. Following the suggestion of one of the reviewers, an alternative explanation of the passive observer effect concerns the intensity and ambiguity of the observer's role. This may cause the participant to question what would happen if they met the observer outside of the laboratory context. Due to the intensity of observation, the observer is likely to remember them beyond the experiment and might use their impression of them during the experiment to influence how they behaviour towards the participants in the real world.

There was one methodological moderator with laboratory studies having a stronger effect on the observability-prosociality link compared to non-laboratory studies. It is not unusual for there to be a disparity between behaviour within the laboratory or conducted within the field (Falk, Meier, & Zehnder, 2013; Galizzi & Navarro-MartÃ-nez, 2015). A possible explanation for this result is that manipulations of observability within the laboratory can be more tightly controlled, will be less subject to the influence of extraneous variables and hence more be effective than is possible within the field.

7.6.2 Practical Implications

The main finding that observability enhances prosocial behaviour suggests that charities should continue to use observability manipulations as part of their fundraising strategies. In addition to charities, private organisation and public bodies should consider using observability manipulations as they have been found to affect a wide range of prosocial behaviour like increasing voter turnout, donating blood, volunteering and littering (Bateson et al., 2015; Bereczkei et al., 2007; Lacetera & Macis, 2010;

Panagopoulos, 2014b). The moderator analyses suggest that certain features of observability manipulations are likely to produce larger effects. For example, framing the donation decision for the donor as a decision with consequences rather than as a consequence-free decision should enhance the impact of visibility on prosocial behaviour. This can be illustrated using the example of "The Ice-Bucket Challenge". Individuals were nominated publicly via social media to make a decision with a consequence: Either they donated to the charity and performed the ice bucket challenge (enduring water and ice thrown over themselves) or they refused and did not take part with the subsequent risk of losing face or reputation in front of peers on social networking sites (Agerström et al., 2015).

7.6.3 Next Chapter

Charities and researchers have shown a lot of interest in the effects of observability on prosocial behaviour. The main substantive finding of the current meta-analysis was the small positive effect that visibility had on prosocial behaviour. Furthermore, this meta-analysis also revealed that studies which used particularly close observations of behaviour and gave allocators decisions with consequences tended to have the largest effects on pro-sociality. The final chapter of this thesis reviews the main findings and outlines the limitations and practical implications of the current research.

General Discussion

8 Overview of the main findings from the thesis.

This thesis was designed to explore and develop four core components of reluctant altruism: i) do reluctant altruists give more under observable conditions, ii) do reluctant altruists show a positive response to high free riding contexts, iii) do reluctant altruists demonstrate higher levels of less trusting prosocial behaviour and finally, iv) do reluctant altruists display more negative emotions pre and post prosocial behaviour. In addition, to exploring reluctant altruism, the underdog effect was applied to explain why across the first three experimental chapters the least supported charity/school was preferred (chapter six). Finally, a meta-analysis was conducted to clarify the mixed findings within the literature on the role that observability has on prosocial behaviour. Below we provide an overview of the main findings before giving a more detailed discussion of the findings across the chapters, highlight potential implications of these results, address limitations of the current research and outline future research directions.

Chapters two and three found no effect of observability on reluctant altruists donating more to charity (i). There were mixed findings for reluctant altruist's responses to free riding with chapter two and three finding no preference for reluctant altruists to donate to the least supported charity despite a successful manipulation (ii). Chapter four reported mixed results with decision task one indicating that reluctant altruism donated less to schools regardless of the levels of free riding whereas decision task two found that reluctant altruists donated more to the School earlier in the fundraising campaign when it had received less money (higher levels of free riding). Chapter five showed no effect of reluctant altruism on donations to the least supported charity possibly due to an unsuccessful manipulation of levels of free riding. Chapter three found that reluctant altruists did not demonstrate more distrusting helping behaviour as predicted (iii).

Chapter five demonstrated that reluctant altruists feel more negative emotions before the donation event but do not feel less negative emotions or positive emotions after the donation event as might be suggested by theories like the Negative State Relief model or warm glow (iv). Chapter six finds that the underdog effect is a good explanation for the preference to donate to the charity/school with the least support as found in chapters two, three and four. Finally, the meta-analysis showed a small positive effect of observability on prosocial behaviour. We now discuss each of these main findings in more detail.

8.1 Observability and reluctant altruism

The previous literature on reluctant altruism has hypothesised that reluctant altruists might donate more under observable conditions to signal to others the worth of a particular charitable cause in the hope that others will begin contributing towards it (Ferguson & Lawrence, 2016). On this basis, we predicted in Chapters two and three that reluctant altruists would donate more in observable conditions, as opposed to, private conditions. However, Chapter two and three found no effect of reluctant altruists donating more in observable conditions. Below we describe two possible explanations for this null result.

One potential explanation for this result is the fact that in both chapters there was no difference in the amount donated to the observable vs private condition suggesting that the manipulation of observability was ineffective. Public ceremonies where participants are informed pre-donation that they will have to stand up and announce their donations at the end of the experiment are common practice and have been successfully utilised in the observability literature before (Ariely et al., 2009; Tamas Bereczkei et al., 2010a; Jones & Linardi, 2014). It is possible that participants might have doubted whether they would actually have to stand up and read out their donations results. It is also possible that participant might not have cared whether anonymous

strangers, who they are unlikely to meet again, knew about whether they donated the money to charity or kept it for themselves. For example, Binzel & Fehr, (2013) show that dictators gave more to recipients who were friends than strangers with the effect being stronger under conditions of observability.

Another plausible explanation is a lack of power since the meta-analysis in chapter seven shows that the effect of observability on prosocial behaviour is small (r = 0.14). However, chapter six shows that even when the results of studies one and two are combined with a total sample of 266 there was still no effect of observability on donations. Post hoc power analysis conducted in G power indicated that for the combined analysis there was a power level of 71% (assuming $\alpha = .05$, N = 266, d = .27) which is a little low (Faul, Erdfelder, Lang, & Buchner, 2007; Rossi, 1990). The meta-analysis in chapter seven also shows that the effects of observability on prosociality are stronger when there is more opportunity for reputation building with consequential decision (i.e., the decision will affect how others respond to you later in the experiment), social dilemma's (vs bargaining games) and repeated measures design. Whereas, chapters two and three used a one-shot, bargaining game with little opportunity to build reputation or signal to others which might have made the observable condition less attractive to reluctant altruists. Future research looking at reluctant altruism and observability should use a larger sample, and adopt an experimental design that facilitates signalling/reputation building through the use of consequential decisions and a repeated measures design.

8.2 Reluctant altruists positively respond to free riding

A key feature of being a reluctant altruists is acting positively in contexts of high free riding (Ferguson, 2015; Ferguson & Lawrence, 2016). This prediction was tested over chapter's two to five with mixed results. Chapters two and three found reluctant altruism did not predict donations to the least support charity despite participants, on the whole,

showing a preference to support the least supported charity. Chapter four using the hypothetical crowd fundraising scenario showed reluctant altruists did not predict donating to the least supported school but did predict donating to a school earlier in the fundraising campaign. Finally, chapter five found no support for reluctant altruism donating more to the least supported charity.

One potential explanation for these mixed results is that the actual manipulation of levels of free riding was not substantial enough to activate reluctant altruism. For example, in chapters two and three even the least supported charity still had a jar twenty percent full of coins and in chapter five the least supported charity had raised fifty percent of the volunteers it required. This view is supported by the fact that in the published literature reluctant altruism has only been found in the area of blood donations where the levels of free riding are very high (i.e., above 90%) (Evans & Ferguson, 2014; Ferguson, Atsma, de Kort, & Veldhuizen, 2012). In hindsight, the only manipulation where free riding was sufficiently high was in chapter four were School B (decision task one) and School C (decision task two) had very high levels of free riding (School B £10 out £130 and School C had £0 out £130).

Another issue to consider is how explicit and clearly displayed the levels of free riding are in the experimental manipulations. In chapter two and three, the pictures of the jars full of coins do not clearly quantify the level of free riding the charities are experiencing. Whereas, in chapter four and five the introduction of a threshold or target that the charity is trying to reach more clearly show the level of free riding the cause is experiencing. The difficulty with the manipulation in chapter 5 is that the free riding information is presented after a page full of text about the charity which might have made the manipulation less salient to participants.

In summary, to produce more effective manipulations of free riding in the future, studies should use manipulations that depict high levels of free riding and be explicit

about the level of free riding that a charity is experiencing. Careful attention is required to a design a manipulation that on the one hand looks authentic whilst being explicit enough that participant process the information.

8.3 Reluctant altruism and low levels of trust

In the literature on trust and prosocial behaviour, it is usually the case that there is a positive relationship with higher levels of trust leading to higher levels of prosocial behaviour (Anderson et al., 2004; Kuhne, 2012; Sonderskov, 2011). Whereas, for reluctant altruists, it is hypothesised to be a lack of trust in others to help that energise reluctant altruists to perform altruistic acts (Ferguson & Lawrence, 2016). To test this idea in chapter three we designed our own measure of trust in others to help and found that reluctant altruism did not predict less trusting helping behaviour.

As highlighted by previous research trust is a difficult concept to define and measure (Nannestad, 2008) with a number of related constructs like altruism, risk and reciprocity often influencing decisions as well as one's level of trust (Cox, 2004; Etang et al., 2012; Houser, Schunk, & Winter, 2010). When measuring a lack of trust in others to help within a reluctant altruists the idea that others are not helping needs to be activated so there should be a manipulation of the level of free riding by others which was not present within our trust game or the standard BDM trust game(Berg et al., 1995). Without this manipulation of free riding, it is possible that reluctant altruists would not perceive the need to help it and would therefore not take the less trusting option of donating all their money directly to Macmillan. Future research on reluctant altruism and trust should always ensure that a manipulation of the levels of free riding is conducted to activate a reluctant altruist to help.

8.4 Reluctant altruism and negative emotions

Reluctant altruist's as well as not trusting others to help should feel negative emotions like anger, frustration and sadness towards others that are not help which should energise them to perform altruistic behaviour (Ferguson & Lawrence, 2016; Eamonn Ferguson, 2015). Both the negative state relief model, strong reciprocity and reluctant altruism predict that negative emotions will be higher before making donations. Chapter five demonstrates that reluctant altruists were more negative before making charitable donations. However, the negative state relief model and warm glow theory would predict that there ought to be more positive emotions and less negative emotions post charitable donations (Andreoni, 1990; Cialdini et al., 1973). Results in chapter five indicate that reluctant altruists do not have reduced negative emotions post charitable donations. This is an interesting and novel finding that even after making donations reluctant altruists do not feel any less negative emotions than before making the donation. This finding stands in contrast to warm glow and a number of papers that document the effect that charitable donations increase happiness and well-being (Aknin, Mayraz, et al., 2014; Anik, Aknin, Norton, & Dunn, 2009; Dunn et al., 2008).

8.5 Final thoughts on Reluctant Altruism

This thesis over the course of four experimental studies has found little evidence to support the idea that reluctant altruism predicts charitable donations. Although we know from the literature that reluctant altruism is a predict of blood donation we have found no evidence to suggest that reluctant altruism is a predictor of charitable donations. Researchers who strongly wish to pursue the idea that reluctant altruism is a motivating factor behind charitable donations should learn from the mistakes present within this theses. In particular, they should aim to have large samples than the current research,

and should try to create effective manipulations of free riding and ensure that the charitable cause is clearly a deserving and worthy project to donate too.

8.6 The underdog effect and donations to the least supported charity/school

Over the course of chapters two, three and four an interesting pattern of results emerged whereby the charity/school with the least consistently received more donations with higher total donations and in most cases higher average donations to. To further explore this effect, we conducted a fourth qualitative study that replicated chapter four and again found a preference to donate to the least supported school. The qualitative responses revealed that support for the less well-supported charity was primarily due to the lack of funding it had received so far. In chapter six, it is argued that the best explanation for this pattern of results is the Underdog Effect where donors prefer to give because the charity/school is at an undeserved disadvantage. This is an important finding since it is the first time that the Underdog effect has been applied to the area of charitable decision making and the evidence appears to suggest that it could be used by charities to enhance their fundraising revenues.

8.7 Observability on prosocial behaviour

Given the two null results of the effect that observability has on prosocial behaviour in chapters two and three and the mixed findings in the literature surrounding the true effect of observability on prosocial behaviour we decided to conduct a meta-analysis to clarify the effect of observability on prosocial behaviour in chapter seven (Fehr & Schneider, 2010; Matland & Murray, 2015; Northover et al., 2016). The meta-analysis revealed the observability has a small positive effect on prosocial behaviour ($r = .14$). This in line with a number of prominent theories like reciprocity, indirect reciprocity and costly signalling theory (Hawkes & Bird, 2002; Nowak, 2006). The meta-analysis also highlighted a number of theoretical and methodological moderators like passive observers,

consequential decisions, social dilemmas and repeated measures designs that increased the strength of the observability and prosociality link. A common theme among these moderators is the way in which they facilitate reputation building for example, in repeated measures designs each player builds up a history of cooperative/selfish behaviour. The concept of reputation building underpins cost signalling theory and indirect reciprocity with the availability and knowledge of others reputation being central to people's decision of whether to cooperate with a given individual or not (Nowak & Sigmund, 2005; Nowak & Sigmund, 1998; Zahavi, 1995). Therefore, any features of a study's design that allows individuals to build reputations and observe the reputation of others before co-operating with them should lead to a stronger effect of observability on prosocial behaviour.

An unexpected finding from the meta-analysis was the strong effect that passive observers, individuals who are not taking part in the study nor conducting it, had on moderating the observability-prosocial behaviour link. Closer inspection of the studies that used passive observers showed that the level of scrutiny of those making a decision was very high with observers often standing or sitting unnaturally close behind participants whilst they were taking part in the experiment (Hubbard et al., 2016; Izuma et al., 2010). For example, Iredale, Vugt, & Dunbar, (2008) had an observer seated just behind the right shoulder of participants whilst they played a charity dictator game. Future research could develop mechanisms to help explain why the level of scrutiny might have such a strong effect on the relationship between observability and prosocial behaviour.

8.8 Implications of the underdog effect and observability

This thesis has two main practical implications for charities. The first is that charities could use the underdog effect-- a preference for charity/organisation at an underserved

disadvantage-- to increase the revenue they earn from charitable donations. Chapter six shows that over the course of four studies participants preferred to donate (frequency and quantity) to the charity/school with the least support when donors did not have any strong pre-existing loyalties. Paharia, Keinan, Avery, & Schor, (2011) showed that businesses that developed biographies based on undeserved disadvantage and passion/determination to succeed enjoyed increased brand loyalty and consumer purchases. The results from Chapter six suggest that the development of underdog biographies for charities could also be effective and is an area worthy of further research.

The second finding of this thesis that is applicable to charities is the small positive effect between observability and prosocial behaviour found in chapter seven. A number of charities do alter the observability of donations in an attempt to increase prosocial behaviour. For example, the British legion gives donor's poppies to wear, universities publish names of donors in newsletters and blood donors receive awards at public ceremonies (Karlan & McConnell, 2014; Lacetera & Macis, 2010; The British Legion, 2016). With the rise of online fundraising and social networking sites, it is now even easier for charities to give donors the option of making their contributions observable to their family and friends (Institute of Fundraising, 2013). The results of the meta-analysis suggest that increasing the observability of donors should lead to small increases in the amount donated to charity. This result validates the practice of charities using observability to enhance charitable donations although it does suggest that the effect of observability are perhaps smaller than practitioners and researchers might have expected.

8.9 Limitations

One limitation to reluctant altruism as a useful altruistic preference is that it is limited in application to areas where there are very high levels of free riding. That means there

might be lots of good causes that need monetary donations or volunteers to help which will not receive assistance from reluctant altruist since others are already helping it in sufficient numbers. Another angle that needs to be disentangled is the level of support that a charity receives and the level of support it needs to achieve its target. It could be the case that one charity has low levels of support but can still achieve its target whilst, another charity has a much larger level of support but not be close to achieving its target. For example, a charity might have five donors who donated collectively £100,000 more than it aimed to fundraise whereas, another charity might have 100 donors but might still not be close to achieving its target. Would reluctant altruists successfully differentiate between the charity which had little support but had already achieved its target and the charity with a lot more support, in terms of donor numbers, but had not achieved its target?

One practical limitation of the current research is all of the experimental samples consisted entirely of university students. It is unclear how well university student's behaviour in the charity dictator game, trust game and hypothetical crowd fundraising scenarios would reflect the behaviour of the general population. For example, Engel, (2011) in a large meta-analysis on behaviour in the dictator game found that students tend to give less than non-students and Johnson & Mislin, (2011) in a meta-analysis of behaviour in trust games found that students showed lower levels of trustworthiness (amount returned from trustee to trustor).

Finally, the experimental chapters in this theses make frequent use of economic games which have been criticised for being artificial and lacking ecological validity to capture true prosocial behaviour (Bardsley, 2005, 2008). They are also open to the possibility of framing effects or artefacts from the design of the experiment altering/misrepresenting behaviour (Alevy et al., 2014; Brañas-Garza, 2007). However, a

number of large-scale studies show that behaviour in the laboratory is consistent with behaviour in the field (Bekkers, 2007; Benz & Meier, 2006; Fischbacher et al., 2012).

8.10 Future Directions

Future research on reluctant altruism needs to find a manipulation of free riding that can consistently activate a reluctant altruist response. Lessons from this thesis suggest that an effective manipulation of free riding levels would need to a) clearly highlight high levels of free riding (90% or greater) by others and b) present this information explicitly whilst maintaining the credibility of the manipulation (i.e., avoiding participants thinking this information is not real). Another lesson from the thesis is that sample sizes required to explore reluctant altruism need to be much larger than is typical in social psychology or behavioural economics research since the effect size of reluctant altruism is probably relatively small.

Future research on the underdog effect within charitable decision making could explore the effect that underdog biographies could have on charitable donations to charity. For example, providing a short history of charity that has suffered setbacks and overcome adversaries but still faces suffers from undeserved disadvantages trying to support its cause at the present could be an appealing message that would attract donations.

Finally, the meta-analysis highlighted how certain moderators that increased opportunities for reputation building like consequential decision making, repeated designs and social dilemma games (vs bargaining games) could all strength the observability-prosocial behaviour link. Future work should look at how these moderators could be included in charitable interventions to enhance the effect that observability has on increasing prosocial behaviour. An example of combining the power of social relationships and observability is the very successful fundraising campaign known as the

‘ice bucket challenge’ (Agerström et al., 2015). The ice bucket challenge involved donors recording themselves pouring a bucket of cold ice water over themselves, donating to charity and then share that video on social media as proof of completing the challenge. They then tag other friends to accept the ice bucket challenge.

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10 Appendices

Appendix A. Chapter 2 Information sheet and Consent form

School of Psychology
Information Sheet

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

Title of Project: Charitable decision making
Ethics Approval Number:603R
Researchers: Alex Bradley
Supervisors: Professor Eamonn Fergusson
Contact Details lpxab6@nottingham.ac.uk

Public Information sheet.

This is an invitation to take part in a research study looking at the determinants of helping behaviour.

Before you decide if you wish to take part, it is important for you to understand why the research is being done and what it will involve. Please take the time to read the following information carefully.

If you participate, you will first be asked to complete a simple computer based tasks where you have the opportunity to earn money. You will then be given the money you have earned in the task and asked whether you would like to donate some, none or all of that money to one or both of the two charity options or alternatively, keep it for yourself. Note if you do decide to donate money to a charity it will be sent off to that charity at the end of the study. Next, you will be asked to complete a series of questionnaires exploring the decisions you made (what reasons guided your behaviour to give or keep the money), attitudes to helping (helping others at a cost to yourself), and your moral beliefs (beliefs about what is the right way to treat others). Finally, you will be asked to **inform the other participants** who you are completing the study with of your donation decision. Note that you don't have to disclose any personal information like name or course of study just your participant id and how much you gave to charity and kept for yourself.

The whole procedure will last around 25 minutes.

Participation in this study is totally voluntary and you are under no obligation to take part. You are free to withdraw at any point before or during the study, but we will still use your data up to that point. All data collected upon completion of the study will be kept confidential and used for research purposes only. It will be stored in compliance with the Data Protection Act.

As part of this research is online, you should be aware there is the risk of intrusion by outside agents, i.e., hacking, and therefore the possibility of being identified.

If you have any questions or concerns please don't hesitate to ask now. We can also be contacted after your participation at the above address.

If you have any complaints about the study, please contact:
Stephen Jackson (Chair of Ethics Committee)
stephen.jackson@nottingham.ac.uk

The University of Nottingham
UNITED KINGDOM • CHINA • MALAYSIA

School of Psychology
Information Sheet

Title of Project: Charitable decision making
Ethics Approval Number:603R
Researchers: Alex Bradley
Supervisors: Professor Eamonn Fergusson
Contact Details lpxab6@nottingham.ac.uk

Private information sheet.

This is an invitation to take part in a research study looking at the determinants of helping behaviour.

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If you participate, you will first be asked to complete a simple computer based tasks where you have the opportunity to earn money. You will then be given the money you have earned in the task and asked whether you would like to donate some, none or all of that money to one or both of the two charity options or alternatively, keep it for yourself. Note if you do decide to donate money to a charity it will be sent off to that charity at the end of the study. Finally, you will be asked to complete a series of questionnaires exploring the decisions you made (what reasons guided your behaviour to give or keep the money), attitudes to helping (helping others at a cost to yourself), and your moral beliefs (beliefs about what is the right way to treat others).
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School of Psychology
Consent Form

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

Title of Project: Charitable decision making?
Ethics Approval Number: 603R
Researcher(s):Alex Bradley (lpxab6@nottingham.ac.uk)
Supervisor(s): Professor Eamonn Fergusson
*(*Eamonn.Ferguson@nottingham.ac.uk*)*

The participant should answer these questions independently:

Have you read and understood the Information Sheet? YES/NO

Have you had the opportunity to ask questions about the study?
YES/NO

Have all your questions been answered satisfactorily? YES/NO

Do you understand that you are free to withdraw from the study?
YES/NO
(at any time and without giving a reason)

I Do you give permission for my data from this study to be shared with other researchers provided that my anonymity is completely protected. YES/NO

Do you agree to take part in the study? YES/NO
"This study has been explained to me to my satisfaction, and I agree to take part. I understand that I am free to withdraw at any time."

Signature of the Participant: Date:

Name (in block capitals)

I have explained the study to the above participant and he/she has agreed to take part.
Signature of researcher: Alex J Bradley Date:

Appendix B. Chapter 2 Post decision questionnaire including demographic, Reluctant Altruism and Moral Foundations questionnaire.

What is your age? _____

What is your course of study? _____

What is your level of current study? (Please circle) Undergraduate, Masters, PhD

<u>*Questions exploring what factors dictated their donation decisions*</u>.
Please select how much you Disagree (1) or Agree (5) with the following statements?

Perception of others donations

I donated to the charity which had the least donations.
Strongly Disagree 1 2 3 4 5 Strongly Agree

I gave to the charity that other people had given the most to.
Strongly Disagree 1 2 3 4 5 Strongly Agree

When I gave I tried to even out the different amounts already donated, so both charities would receive the same amount.
Strongly Disagree 1 2 3 4 5 Strongly Agree

Personal Motives

I donated as I did to the charities because they have in some way touched my life/family's life.
Strongly Disagree 1 2 3 4 5 Strongly Agree

I donated to the charity which I have had personal encounters with.
Strongly Disagree 1 2 3 4 5 Strongly Agree

I donated to the charity that I knew most about.
Strongly Disagree 1 2 3 4 5 Strongly Agree

I gave because one day in the future the charity might benefit me in some way.
Strongly Disagree 1 2 3 4 5 Strongly Agree

Personal Values

I gave to the charity that has values that align with my own
Strongly Disagree 1 2 3 4 5 Strongly Agree

I gave to the charity because they share a similar outlook on what is important in the world to me
Strongly Disagree 1 2 3 4 5 Strongly Agree

I donated to the charity that supports the cause/s that I feel are most important to me
Strongly Disagree 1 2 3 4 5 Strongly Agree

I gave to the charity that does the work, that for me, most needs to be done in this world

Strongly Disagree 1 2 3 4 5 Strongly Agree

Worthiness/Needs

I donated to the charity that was most deserving.

Strongly Disagree 1 2 3 4 5 Strongly Agree

I donated to the charity which was most worthy.

Strongly Disagree 1 2 3 4 5 Strongly Agree

I gave to the charity whoes cause really needs help at the moment.

Strongly Disagree 1 2 3 4 5 Strongly Agree

I donated to the charity that is struggling to keep up with all the people who need their help.

Strongly Disagree 1 2 3 4 5 Strongly Agree

Reputation

I supported the charity that I think is the least popular.

Strongly Disagree 1 2 3 4 5 Strongly Agree

I gave to the charity that has the best reputation.

Strongly Disagree 1 2 3 4 5 Strongly Agree

I gave to the charity because I didn't think others would give to it.

Strongly Disagree 1 2 3 4 5 Strongly Agree

Perceived Efficacy

I donated to the charity which I believed would do the most good to others.

Strongly Disagree 1 2 3 4 5 Strongly Agree

I donated to the charity that I believed would have the biggest impact on another's life.

Strongly Disagree 1 2 3 4 5 Strongly Agree

I donated to the charity that I believed would make the most effective use my donation.

Strongly Disagree 1 2 3 4 5 Strongly Agree

Demand Characteristics

I gave because I didn't want the experimenter to think badly of me.

Strongly Disagree 1 2 3 4 5 Strongly Agree

I gave because others might think badly of me if I kept all the money

Strongly Disagree 1 2 3 4 5 Strongly Agree

I donated because I felt obliged to give due to the context of being in an experiment.

Strongly Disagree 1 2 3 4 5 Strongly Agree

The structure of the experiment seemed to imply that I should donate

Strongly Disagree 1 2 3 4 5 Strongly Agree

Norms

I donated as it felt like everyone else did.

Strongly Disagree 1 2 3 4 5 Strongly Agree

I donated because I thought other people would donate.

Strongly Disagree 1 2 3 4 5 Strongly Agree

I donated to the charity because it felt like that is what I ought to do.

Strongly Disagree 1 2 3 4 5 Strongly Agree

Didn't give to charity:

Money Issues

I didn't give to charity because I needed the money.

Strongly Disagree 1 2 3 4 5 Strongly Agree

Things are tight money wise so I didn't donate

Strongly Disagree 1 2 3 4 5 Strongly Agree

Selfish motives

I worked hard for the money therefore didn't want give to it away.

Strongly Disagree 1 2 3 4 5 Strongly Agree

There is no personal benefit to me so why would I give.

Strongly Disagree 1 2 3 4 5 Strongly Agree

I don't believe in supporting charities in general.

Strongly Disagree 1 2 3 4 5 Strongly Agree

I already support my chosen charity/charities.

Strongly Disagree 1 2 3 4 5 Strongly Agree

Problems with the Charities

I didn't like the charities on offer.

Strongly Disagree 1 2 3 4 5 Strongly Agree

I don't think the charities were very deserving.

Strongly Disagree 1 2 3 4 5 Strongly Agree

In my opinion neither charity has a good reputation

Strongly Disagree 1 2 3 4 5 Strongly Agree

I have had bad experiences with those charities.

Strongly Disagree 1 2 3 4 5 Strongly Agree

Crowding out

I didn't give because the charities on offer already receive so much money and support anyway.

Strongly Disagree 1 2 3 4 5 Strongly Agree

I thought that others would give so they don't need my money as well.

Strongly Disagree 1 2 3 4 5 Strongly Agree

I didn't give because my small donation wouldn't have made that much difference to the charity anyway.

Strongly Disagree 1 2 3 4 5 Strongly Agree

I would/do volunteer to help others because….	Strongly Disagree						Strongly Agree
I cannot trust others to help	1	2	3	4	5	6	7
Very few people help others these days	1	2	3	4	5	6	7
I get frustrated that other people do not help those in need	1	2	3	4	5	6	7
I get angry because others do not help those in need	1	2	3	4	5	6	7
I am ashamed that other people do not help others	1	2	3	4	5	6	7
I get upset by people's disregard of others in need	1	2	3	4	5	6	7
I feel sad that people generally do not help each others	1	2	3	4	5	6	7
I feel sympathy for those in need	1	2	3	4	5	6	7
I feel our society is generally uncaring	1	2	3	4	5	6	7
I want to set an example to others that helping others is a good thing to do	1	2	3	4	5	6	7
Many people are only interested in themselves these days	1	2	3	4	5	6	7
Reluctantly many people do not want to help others	1	2	3	4	5	6	7

It makes me feel good about myself	1	2	3	4	5	6	7
It makes me feel proud	1	2	3	4	5	6	7
It is the right thing to do	1	2	3	4	5	6	7
Someone has to	1	2	3	4	5	6	7
I can show others that I am a good and kind person	1	2	3	4	5	6	7
Most people are selfish	1	2	3	4	5	6	7
It seems culturally acceptable these days to put self before others	1	2	3	4	5	6	7
People these days consider their own needs before others	1	2	3	4	5	6	7
We live in an "I am alright Jack" society	1	2	3	4	5	6	7
We live in a selfish society							
We live in a society where everyone tried to help each other							
I may need help myself one day							
We all may need help at some time in our lives							
Helping others in need is the basis of a good society							

*Bold indicates items included on the Reluctant Altruism Scale.

When do you decide whether something is right or wrong, to what extent are the following considerations relevant to your thinking? Please rate each statement using this scale:

[0] = not at all relevant (This consideration has nothing to do with my judgments of right and wrong) through to [5] = extremely relevant (This is one of the most important factors when I judge right and wrong)

	not at all relevant	not very relevant	slightly relevant	somewhat relevant	very relevant	extremely relevant
Whether or not someone suffered emotionally	0	1	2	3	4	5
Whether or not some people were treated differently than others	0	1	2	3	4	5
Whether or not someone's action showed love for his or her country	0	1	2	3	4	5
Whether or not someone showed a lack of respect for authority	0	1	2	3	4	5
Whether or not someone violated standards of purity and decency	0	1	2	3	4	5
Whether or not someone was good at math	0	1	2	3	4	5
Whether or not someone cared for someone weak or vulnerable	0	1	2	3	4	5
Whether or not someone acted unfairly	0	1	2	3	4	5
Whether or not someone did something to betray his or her group	0	1	2	3	4	5
Whether or not someone conformed to the traditions of society	0	1	2	3	4	5
Whether or not someone did something disgusting	0	1	2	3	4	5
Whether or not someone was cruel	0	1	2	3	4	5
Whether or not someone was denied his or her rights	0	1	2	3	4	5
Whether or not someone showed a lack of loyalty	0	1	2	3	4	5
Whether or not an action caused chaos or disorder	0	1	2	3	4	5

Whether or not someone acted in a way that God would approve of	0	1	2	3	4	5

Part 2. Please read the following sentences and indicate your agreement or disagreement:

	Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
Compassion for those who are suffering is the most crucial virtue	0	1	2	3	4	5
When the government makes laws, the number one principle should be ensuring that everyone is treated fairly	0	1	2	3	4	5
I am proud of my country's history	0	1	2	3	4	5
Respect for authority is something all children need to learn	0	1	2	3	4	5
People should not do things that are disgusting, even if no one is harmed	0	1	2	3	4	5
It is better to do good than to do bad	0	1	2	3	4	5
One of the worst things a person could do is hurt a defenceless animal	0	1	2	3	4	5
Justice is the most important requirement for a society	0	1	2	3	4	5
People should be loyal to their family members, even when they have done something wrong	0	1	2	3	4	5
Men and women each have different roles to play in society	0	1	2	3	4	5
I would call some acts wrong on the grounds that they are unnatural	0	1	2	3	4	5
It can never be right to kill a human being	0	1	2	3	4	5
I think it's morally wrong that rich children inherit a lot of money while poor children inherit nothing	0	1	2	3	4	5
It is more important to be a team player than to express oneself	0	1	2	3	4	5

If I were a soldier and disagreed with my commanding officer's orders, I would obey anyway because that is my duty	0	1	2	3	4	5
Chastity is an important and valuable virtue	0	1	2	3	4	5

Appendix C. Chapter 2 Debriefing sheets (public and private conditions)

EXPERIMENTAL DEBRIEFING INFORMATION-PUBLIC CONDITION

School of Psychology
University of Nottingham

Name of Experimenter: Alex Bradley

Email of Experimenter: lpxab6@nottingham.ac.uk

Name of Supervisor: Eamonn Ferguson

Email of Supervisor: Eamonn.Ferguson@nottingham.ac.uk

Title of Experiment: Charitable decision making.

Background/Hypothesis:
Recent research done by Professor Fergusson here at the University of Nottingham discovered a new altruistic preference called "reluctant altruism". Reluctant altruism can be thought of as helping because you know it is morally right to do so and you don't trust others enough to help hence feel compelled to help yourself. A typical finding with the prosocial literature is that reputation building plays a role in motivating altruistic behaviour. This study uses two manipulations to identify if reputation building plays a role in reluctant altruism: first, by changing whether the donation context is private or public and second by changing the average perception of other participant's donations.

This study aims to identify if reputation building motivates reluctant altruists. This study has two hypotheses: first, those who score higher on the reluctant altruists scale should donate more in the public condition and second, those with higher scores on the reluctant altruism scale donate more when the perceptions of others donating are low.

Design and Dependent Measures:

A 2 (visibility: Private vs Public) X 3 (perceived donations by others:80:20, 20: 80, 50:50) between subjects design will be used. The final independent variable is the participant's total score on the reluctant altruist scale. The dependent variable is the amount donated to charity.

Intended Analysis:

First, a regression analysis will be conducted with three independent variables: visibility (dummy coded with private as the base comparison), perceived donations by others (dummy coded with the 50:50 condition as the base comparison) and reluctant altruist total score with the amount given to charity

as the dependent variable. The type of regression model will be determined by the distribution of the dependent variable. This analysis so far will tell us whether visibility, perceived donation and reluctant altruist scores predict donations to charity. To see if reluctant altruists give more in the private condition and to test if reluctant altruists give more when perceived donation of others is low moderation analyses will be conducted.

Ethical Information: Please could you refrain from discussing your and especially other participant's donation decisions after the completion of the study in order to protect as much as possible the confidentiality of yours and others data. Thanks in advance for your cooperation with this matter.

The jars shown in the experiment representing past participants donations were actually pre-set amounts chosen in advance (see design). This was important as it allowed us to see if the perception of others donating behaviour was taken into account whilst participants made their donation decisions.

You happened to be in a condition where you told others about your decisions. This is only one condition and the other did not do this part. So please do not tell other people about the condition used in this study so as not to damage the experimental results.

Final considerations: If you did decide to donate money to a charity your donation will be sent to that charity at the end of the study.

Useful Reading:
Ferguson, E., Atsma, F., de Kort, W., & Veldhuizen, I. (2012). Exploring the pattern of blood donor beliefs in first-time, novice, and experienced donors: differentiating reluctant altruism, pure altruism, impure altruism, and warm glow. *Transfusion*, *52*(2), 343–55. doi:10.1111/j.1537-2995.2011.03279.x

EXPERIMENTAL DEBRIEFING INFORMATION-PRIVATE CONDITION

School of Psychology
University of Nottingham

Name of Experimenter: Alex Bradley
Email of Experimenter: lpxab6@nottingham.ac.uk

Name of Supervisor: Eamonn Ferguson
Email of Supervisor: Eamonn.Ferguson@nottingham.ac.uk

Title of Experiment: Charitable decision making?

Ethical Information:

Background/Hypothesis:
Recent research done by Professor Fergusson here at the University of Nottingham discovered a new altruistic preference called “reluctant altruism”. Reluctant altruism can be thought of as helping because you know it is morally right to do so and you don’t trust others enough to help hence feel compelled to help yourself. A typical finding with the prosocial literature is that reputation building plays a role in motivating altruistic behaviour. This study uses two manipulations to identify if reputation building plays a role in reluctant altruism: first, by changing whether the donation context is private or public and second by changing the average perception of other participant’s donations.

This study aims to identify if reputation building motivates reluctant altruists. This study has two hypotheses: first, those who score higher on the reluctant altruists scale should donate more in the public condition and second, those with higher scores on the reluctant altruism scale donate more when the perceptions of others donating are low.

Design and Dependent Measures:

A 2 (visibility: Private vs Public) X 3 (perceived donations by others:80:20, 20: 80, 50:50) between subjects design will be used. The final independent variable is the participant’s total score on the reluctant altruist scale. The dependent variable is the amount donated to charity.

Intended Analysis:

First, a regression analysis will be conducted with three independent variables: visibility (dummy coded with private as the base comparison), perceived donations by others (dummy coded with the 50:50 condition as the base comparison) and reluctant altruist total score with the amount given to charity as the dependent variable. The type of regression model will be determined by the distribution of the dependent variable. This analysis so far will tell us whether visibility, perceived donation and reluctant altruist scores predict donations to charity. To see if reluctant altruists give more in the private condition and to test if reluctant altruists give more when perceived donation of others is low moderation analyses will be conducted.

Ethical Information:
The jars shown in the experiment representing past participants donations were actually pre-set amounts chosen in advance (see design). This was important as it allowed us to see if the perception of others donating behaviour was taken into account whilst participants made their donation decisions.

Final considerations: If you did decide to donate money to a charity your donation will be sent to that charity at the end of the study.

Useful reading:
Ferguson, E., Atsma, F., de Kort, W., & Veldhuizen, I. (2012). Exploring the pattern of blood donor beliefs in first-time, novice, and experienced donors: differentiating reluctant altruism, pure altruism, impure altruism, and warm glow. *Transfusion*, *52*(2), 343–55. doi:10.1111/j.1537-2995.2011.03279.x

Appendix D. Chapter 3 Information (public and private) and Consent sheet

School of Psychology
Information Sheet

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

Title of Project: Identifying the circumstances surrounding charitable donations

Ethics Approval Number: Ref 713
Researchers: Alex Bradley
Supervisors: Professor Eamonn Fergusson
Contact Details lpxab6@nottingham.ac.uk

This is an invitation to take part in a research study looking at the circumstances surrounding charitable donations.

Before you decide if you wish to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully.

If you participate you will be asked to complete a simple computer based task where you have the opportunity to earn money. You will then be given the money you have earned in the task and asked whether you would like to donate some, none or all of the money to the two charities or keep it for yourself (decision task A). Note if you do decide to donate money to a charity it will be sent off to that charity at the end of the study. There will then be another decision making task (decision task B) where you have to choose how to allocate the money between a charity and another participant. You will also be asked to **inform the other participants** who you are completing the study with of your participant id and donation decisions to either the two charities or yourself from the first decision task (decision task 1). Note that you don't have to disclose any personal information like your name just your participant id and how much you gave to charity/ies and kept for yourself. The exact order of decision task A and B may change depending on the condition you are in. Finally, you will be asked to complete a series of questionnaires collecting: demographic information, exploring the decisions you made (what reasons guided your behaviour to give or keep the money) and looking at your attitudes to helping.

The whole procedure will last around 20 minutes.

Participation in this study is totally voluntary and you are under no obligation to take part. You are free to withdraw at any point before or during the study, but we will still use your data up to that point. All data collected upon completion of the study will be kept confidential and used for research purposes only. It will be stored in compliance with the Data Protection Act.

As part of this research is online, you should be aware there is the risk of intrusion by outside agents, i.e., hacking, and therefore the possibility of being identified.

If you have any questions or concerns please contact me at the email address above address.

If you have any complaints about the study, please contact:
Stephen Jackson (Chair of Ethics Committee)
stephen.jackson@nottingham.ac.uk

School of Psychology
Information Sheet



The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

Title of Project: Identifying the circumstances surrounding charitable donations
Ethics Approval Number : Ref 713
Researchers: Alex Bradley

Supervisors: Professor Eamonn Fergusson
Contact Details lpxab6@nottingham.ac.uk

This is an invitation to take part in a research study looking at the circumstances surrounding charitable donations. Before you decide if you wish to take part, it is important for you to understand why the research is being done and what it will involve. Please take the time to read the following information carefully.

If you participate you will be asked to complete a simple computer based tasks where you have the opportunity to earn money. You will then be given the money you have earned in the task and asked whether you would like to donate some, none or all of that money to the two Charites or keep it for yourself (decision task A). Note if you do decide to donate money to a charity it will be sent off to that charity at the end of the study. There will be another decision making task (decision task B) where you have to choose how to allocate the money between a charity and another participant. The exact order of decision task A and B may change depending on the condition you are in. Finally, you will be asked to complete a series of questionnaires collecting: demographic information, exploring the decisions you made (what reasons guided your behaviour to give or keep the money) and looking at your attitudes to helping.

The whole procedure will last around 20 minutes.

Participation in this study is totally voluntary and you are under no obligation to take part. You are free to withdraw at any point before or during the study, but we will still use your data up to that point. All data collected upon completion of the study will be kept confidential and used for research purposes only. It will be stored in compliance with the Data Protection Act.

As part of this research is online, you should be aware there is the risk of intrusion by outside agents, i.e., hacking, and therefore the possibility of being identified.

If you have any questions or concerns please contact me at the email address above address.

If you have any complaints about the study, please contact:
Stephen Jackson (Chair of Ethics Committee)
stephen.jackson@nottingham.ac.uk

School of Psychology
Consent Form

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

Title of Project: Identifying the circumstances surrounding charitable donations.

Ethics Approval Number:

Researcher(s):Alex Bradley (lpxab6@nottingham.ac.uk)
Supervisor(s): Professor Eamonn Fergusson
*(*Eamonn.Ferguson@nottingham.ac.uk*)*

The participant should answer these questions independently:

Have you read and understood the Information Sheet? YES/NO

Have you had the opportunity to ask questions about the study? YES/NO

Have all your questions been answered satisfactorily? YES/NO

Do you understand that you are free to withdraw from the study? YES/NO
(at any time and without giving a reason)

I Do you give permission for my data from this study to be shared with other researchers provided that my anonymity is completely protected. YES/NO

Do you agree to take part in the study? YES/NO
"This study has been explained to me to my satisfaction, and I agree to take part. I understand that I am free to withdraw at any time."

Signature of the Participant: Date:

Name (in block capitals)

I have explained the study to the above participant and he/she has agreed to take part.

Signature of researcher: Date:

Appendix E. Chapter 3 Demographics, Risk Aversion, Expectation of Beliefs, Trust and Deservingness Items.

1. What is your participant id? _____

The following, are questions about your personal background.

2. What is your sex?

Female ☐
Male ☐
Rather not say ☐

3. How old are you? _____ Or Rather not say

4. Please indicate your highest level of education attained?

No formal qualification ☐
GCSEs or Equivalent ☐
A Levels or Equivalent ☐
Undergraduate degree ☐
Master's degree ☐
Doctoral degree ☐
Medical degree ☐
Rather not say ☐

5. Are your close family members involved in any form of charity work? (e.g. fund-raising)

Yes ☐
No ☐
Rather not say ☐

6. Have you ever considered giving up your time to help others by volunteering for charitable work?

Yes ☐
No ☐
Rather not say ☐

7. Have you ever done community/charity work? Y / N please tick appropriately:

a. I have taken part in fund-raising events. ☐
b. I have donated blood. ☐
c. I have helped in an old peoples care home. ☐
d. I have helped in a children's home. ☐
e. Donated money ☐
f. Helped in a hospital ☐
g. Others (please specify) ☐

8. Would you donate money to charity if:

a. It came from your salary ☐

b. Personal donations from savings ☐
c. You gave to a registered charity street collector ☐
d. You had to go to a post/office or bank to do so ☐
e. Would you like to give directly to a person such as a homeless person on the street ☐

Risk Aversion measure

This study adopts the general risk question used in the Socio Economic Panel survey which has been behaviourally validated in a large scale study (Dohmen et al., 2005). The single item is on a 1 ("Unwilling to take risks") to 11 ("Fully prepared to take risks") scale.

"Are you generally a person who is fully prepared to take risks or do you try to avoid taking risks?"

Unwilling to take risk									Fully prepared to take risk	
0	1	2	3	4	5	6	7	8	9	10

Expectations of Beliefs measure

Please indicate how much money you would expect the trustee to send to charity for every amount received.

For example, say the person in Nottingham receives £1.50 (i.e. University student sent 50p which was then multiplied by 3), how much would you expect this person to pass on to charity?

Next the person in Nottingham receives £3.00 indicating the university student sent £1, how much would you expect this person to pass on to charity? Etc.

Note the amount sent to charity cannot be less than zero or greater than the amount received.

Received (£)	**Amount sent to Charity (£)**
0.75	
1.50	
2.25	
3.00	

*Adapted from Sapienza et al., (2013).

Survey Measures of Trust

World Value Survey Item

Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?

Most people can be trusted
Can't be too careful
Don't Know

General Social Survey (GSS)

GSS fair

"Do you think most people would try to take advantage of you if they got a chance, or would they try to be fair."

Would take advantage of you
Would try to be fair

GSS help

"Would you say that most of the time people try to be helpful, or that they are mostly just looking out for themselves?"

Try to be helpful
Just look out for themselves

GSS trust

"Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?"

Most people can be trusted
Can't be too careful

Deservingness Questions

In the task where you could donate to two charities or yourself please select how much you Disagree (1) or Agree (5) with the following statements motivating your donation decisions?

I donated to the charity that was most deserving.
Strongly Disagree 1 2 3 4 5 Strongly Agree
I donated to the charity which was most worthy.

Strongly Disagree 1 2 3 4 5 Strongly Agree
I gave to the charity whoes cause really needs help at the moment.
Strongly Disagree 1 2 3 4 5 Strongly Agree
I donated to the charity that is struggling to keep up with all the people who need their help.
Strongly Disagree 1 2 3 4 5 Strongly Agree

Appendix F. Chapter 3 Trust Game Instructions

In this decision-making task, you will be paired with another person from Nottingham. The experimenter will select this person from a public engagement event like the research café (held in the contemporary art gallery in town) and will request they're participation in a brief experiment. Note this person will **not** be a member of staff or student of this university.

It's important to note that you will never know their identity and they will never know yours.

Your partner will be shown the instructions in the box below:

Instructions for Participants selected from Nottingham.

You will shortly receive an amount of money.

Your job is to decide how much of this amount, you would like to keep for yourself and how much you would like to donate to Macmillan Cancer Care.

Any money that you choose to send to Macmillan Cancer Care will be sent to Macmillan Cancer Care and any money you choose to keep will be yours at the end of this experiment.

If you wish to donate the money to Macmillan Cancer Care please leave the money in the envelope and return it to the experimenter. If you would like to keep the money please place it somewhere safe on your person and return to the experimenter for a debriefing.

Please indicate the amount you choose to keep and the amount you choose to donate below:

The amount you choose to keep: **The amount you choose to donate:**

£_____._____ **£**_____._____

What you have to do:

You have £1 you can allocate as much or as little as you like to either go directly to Macmillan Cancer Care and/or pass on to someone randomly selected from Nottingham.

If you give money straight to Macmillan Cancer Care it will be sent once all the data from this study has been collected. Any money you give to the person in Nottingham will be **multiplied by three and given to the person in Nottingham**. This person then has the decision of passing on some, none or all of the money to Macmillan Cancer Care or keeping some, none or all of it for themselves.

An example to aid understanding:

A participant from Nottingham University receives £1 they choose to give £0.50 to Macmillan Cancer Care directly and give the other £0.50 to the person randomly

selected from the research cafe. The £0.50 selected to go directly to Macmillan Cancer Care will be sent off directly to Macmillan Cancer Care once all the data has been collected for this study – along with the money that all participants in the study wish to donate to Macmillan Cancer Care. The £0.50 passed onto the Nottingham participant is multiplied by three (i.e. becomes £1.50). The person from Nottingham then decides how much of the £1.50 to keep and how much to give to Macmillan Cancer Care.

In front of you, there should be two envelopes and two bits of paper. One envelope and piece of paper will have on it 'Direct to Macmillan Cancer Care' and the other will have on it 'To the other participant'. Please, can you fill out how much you would like to give direct to Macmillan Cancer Care and how much you would like to give to the other participants putting the right bits of paper into the correct envelopes.

*Adapted from McEvily, Radzevick, & Weber (2012).

Appendix G. Chapter 3 Debriefing sheets (public and private conditions)

EXPERIMENTAL DEBRIEFING INFORMATION-PUBLIC CONDITION

Name of Experimenter: Alex Bradley	Email of Experimenter: lpxab6@nottingham.ac.uk
Name of Supervisor: Eamonn Ferguson	Email of Supervisor: Eamonn.Ferguson@nottingham.ac.uk

Title of Experiment: Identifying the circumstances surrounding charitable donations.

Background/Hypothesis: This study is interested in discovering whether the visibility of the donation act influences reluctant altruists, type of altruistic

preference, to donate more in public (i.e. announces donations to other participants) than in private (i.e. tells no one about their donations).

A previous study found that those who scored high on reluctant altruism gave more in the public condition than those who scored lower on reluctant altruism. This study aims to replicate this finding and second tries to explain this finding by looking at whether it could be due to different levels of trust.

Design and Dependent Measures:

2 (level of support received by charity, 20:80 vs 80:20) x 2 (visibility, public vs private) between subjects design. The independent variables are the visibility of the donation act, Reluctant altruism scores and trust scores. The dependent measure is the frequency of participants who give to the poor (20%), rich (80%) or give equally to both charities.
Payment:

Upon completion of the study, you will be given the amount that you choose to keep for yourself instead of giving to charity. If you did decide to donate money to a charity your donation will be sent to that charity at the end of the study.

Ethical Information: Please could you refrain from discussing your and especially other participant's donation decisions after the completion of the study in order to protect as much as possible the confidentiality of yours and others data. Thanks in advance for your cooperation with this matter.

The jars shown in the experiment representing past participants donations were actually pre-set amounts chosen in advance (see design). This was important as it allowed us to see if the perception of others donating behaviour was taken into account whilst participants made their donation decisions.

You happened to be in a condition where you told others about your decisions. This is only one condition and the other did not do this part. So please do not tell other people about the condition used in this study so as not to damage the experimental results.

Finally, if you would like a copy of the final paper/report then please get in touch with me on lpxab6@nottingham.ac.uk and that will be sent out to you once it has been completed.

Useful Reading:
Evans, R., & Ferguson, E. (2014). Defining and measuring blood donor altruism: a theoretical approach from biology, economics and psychology. *Vox Sanguinis*, *106*(2), 118–26. doi:10.1111/vox.12080
Ferguson, E., Atsma, F., de Kort, W., & Veldhuizen, I. (2012). Exploring the pattern of blood donor beliefs in first-time, novice, and experienced donors: differentiating

reluctant altruism, pure altruism, impure altruism, and warm glow. *Transfusion*, *52*(2), 343–55. doi:10.1111/j.1537-2995.2011.03279.x

Thank you for all your time and effort.

EXPERIMENTAL DEBRIEFING INFORMATION-PRIVATE CONDITION

Bradley lpxab6@nottingham.ac.uk

Name of Supervisor: Eamonn Ferguson

Email of Supervisor: Eamonn.Ferguson@nottingham.ac.uk

Title of Experiment: Identifying the circumstances surrounding charitable donations.

Background/Hypothesis: This study is interested in discovering whether the visibility of the donation act influences reluctant altruists, type of altruistic preference, to donate more in public (i.e. announces donations to other participants) than in private (i.e. tells no one about their donations).

A previous study found that those who scored high on reluctant altruism gave more in the public condition than those who scored lower on reluctant altruism. This study aims to replicate this finding and second tries to explain this finding by looking at whether it could be due to different levels of trust.

Design and Dependent Measures:

2 (level of support received by charity, 20:80 vs 80:20) x 2 (visibility, public vs private) between subjects design. The independent variables are the visibility of the donation act, Reluctant altruism scores and trust scores. The dependant measure is the frequency of participants who give to the poor (20%), rich (80%) or give equally to both charities.
Payment:

Upon completion of the study, you will be given the amount that you choose to keep for yourself instead of giving to charity. If you did decide to donate money to a charity your donation will be sent to that charity at the end of the study.

Ethical Information:
The jars shown in the experiment representing past participants donations were actually pre-set amounts chosen in advance (see design). This was important as it allowed us to see if the perception of others donating behaviour was taken into account whilst participants made their donation decisions.

Finally, if you would like a copy of the final paper/report then please get in touch with me on lpxab6@nottingham.ac.uk and that will be sent out to you once it has been completed.

Useful Reading:
Evans, R., & Ferguson, E. (2014). Defining and measuring blood donor altruism: a theoretical approach from biology, economics and psychology. *Vox Sanguinis*, *106*(2), 118–26. doi:10.1111/vox.12080
Ferguson, E., Atsma, F., de Kort, W., & Veldhuizen, I. (2012). Exploring the pattern of blood donor beliefs in first-time, novice, and experienced donors: differentiating reluctant altruism, pure altruism, impure altruism, and warm glow. *Transfusion*, *52*(2), 343–55. doi:10.1111/j.1537-2995.2011.03279.x

Thank you for all your time and effort.

Appendix H. Chapter 4 Crowd fundraising instructions

In this part of the experiment, you will first be given a crowdfunding scenario which is then followed by two decision tasks related to this scenario. The scenario itself is a project to raise £130, to allow a school to buy some fruit trees. It should be noted that this scenario is hypothetical but was inspired by a real life crowd fundraising project.

Task one: You will be given £10 to spend in this task. You will have to make two decisions a) which school you would like to donate to and b) how much of the £10 (some, none or all) you would like to donate.

Task two: In the second task you will be asked to examine a school's fundraising campaign as the amount changes over time. You will be asked to decide at each time point if you would like to donate and how much.

Before you continue to the scenario it's important to understand how you may be paid for this study. Payment for this study is based upon a conditional lottery, meaning that 10% of participants will be randomly selected, from decision task 1 (below), to be remunerated. Thus out of the 200 participants, 20 responses will be selected and remunerated. In that task you will be given £10 to donate some, none or all of it to a school or alternatively yourself. Any money you give to school will go to a local school. Any money you choose to keep shall be paid to you via amazon vouchers to your email once all the data for the study has been collected. An example is provided to make this clearer:

If in task 1 you decide to give £5 to a School and keep £5 for yourself and you are randomly selected you will receive £5 via an amazon gift sent to your email. The remaining £5 is sent to the randomly selected school in the local area. Thus treat your decisions as real; as if you may be chosen.

It is very important that you treat your decision as if it will be the one selected. If your decision is not selected unfortunately you will not receive any money.

Information about crowdfunding.

Crowdfunding is a good way of raising money for charity or a good cause, by asking large numbers of people for a small amount of money. Crowdfunding works by allowing those seeking money for charity or a good cause, to set up a profile of their project on a website where members of the public can, if they wish, choose to donate to the project.

Scenario: Fundraising for Fruit Trees

"We need you to help us raise **£130** which will enable our school to have a pack of 10 fruit trees, which we can plant in our school grounds to help to teach our pupils the importance of growing their own produce**.**

We believe this project is beneficial to all our pupils. We will be able to educate on sustainable and local produce and by planting our own trees we will be able to do this with our very own produce. Just one pack will provide us with 10 fruit trees including four apples, two pears, two plums, one quince and one medlar. The fruit trees are two years old and will fruit next year.

With your help we can get all our pupils involved with a great project and show them how much benefit 10 trees can make to our school. We can use the fruit in our canteen and allow children to eat it during the school day. This also promotes healthy eating.

Please support us and help our school start a sustainable project with real educational benefit.

If we exceed our target, we will use all the extra funds for environmental projects going on at the school, minus the 5% crowd funder admin fee."

*Scenario adapted from: http://www.crowdfunder.co.uk/campaign/fruitshare/page/27

Several schools, which are identical in terms of size, Ofsted reports and public attainment, have set up their own crowd funding profile identical to this one. Each school has been running their campaigns for one week and they have two weeks before the project ends. The table below shows how much each of the schools has raised so far.

The amount raised so for by the different schools are:
School A has raised £136.50
School B has raised £10.00
School C has raised £120.00
School D has raised £65.00
School E has raised £110.00

In this study you will be given £10.00. In task 1 you can choose a school to donate some, none or all of this money to (if you do not wish to donate to any school then please select the option "None"). If you chose a school in the first task you will be asked to indicate how much (some, none or all) of this money to donate to that school.

Decision Task 1 part A.

The amount raised so for by the different schools are:
School A has raised £136.50
School B has raised £10.00
School C has raised £120.00
School D has raised £65.00
School E has raised £110.00

-Reminder of how much each school has raised so far.

Your first task is to select which school you would like to donate to; if you do not wish to donate to any school then please select the option “None”.

School A

School B

School C

School D

School E

None

Decision Task 1 part b.

The amount raised so for by the different schools are:
School A has raised £136.50
School B has raised £10.00
School C has raised £120.00
School D has raised £65.00
School E has raised £110.00

-A reminder of how much each school has raised so far.

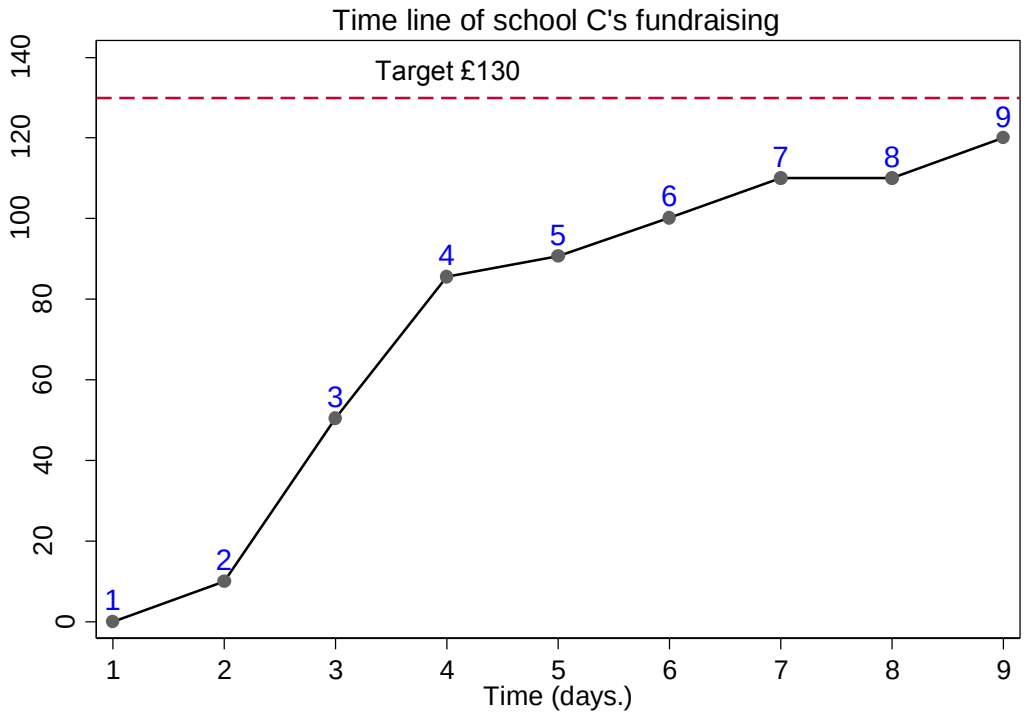
In this study, you will be given £10.00. In the table below you can choose to donate some, none or all of this money to the school you choose above (assuming you didn't select ‘None’). If you did select ‘None’ please give all £10 to the ‘Donate to Self’ box and put 0 in the ‘Donate to School’ box. Note you must spend all £10.00.

	Donate to School	Donate to Self
[Insert Option selected from previous question]		

Decision Task 2

Imagine that you choose School C. In the scenario above School C managed to raise £120 which took them 9 days to do.

Below is a time line of School C's fundraising progress over these 9 days.



Imagine that you wanted to support this school. Imagine you have £10 you could give some none or all of the money to a school. Examine each time point and the amount raised. At each time point indicate (1) if you would be willing to help and (2) if so how much. It is important that you treat each time point as a unique time point without knowledge of what future donations will be and that each decision is an independent decision about the allocation of your £10. So for example, examine time point 1 and decide if you'd want to help and if so how much of your £10 you would give. Then look at time point 2. Treat this as a new decision, independent of what you have done for time point 1 and decide if you'd want to help and if so how much of your £10 you would give. Repeat this for all time points up to time point 9.

Time Points	Willingness to help	How much will you give
Point 1	☐	☐
Point 2	☐	☐
Point 3	☐	☐
Point 4	☐	☐
Point 5	☐	☐

Point 6		
Point 7		
Point 8		
Point 9		

Appendix I. Chapter 4 Demographics

Please Enter Your Participant ID in the box below:
(The number on the little bit of paper given to you at the start of the study)
_____

The following, are questions about your personal background.

1. What is your sex? F / M

2. How old are you? _____

3. Please indicate your highest level of education attained?
No formal Qualifications
CGSEs
A Levels
Undergraduate degree
Masters degree
Doctoral Degree
Medical Degree

4. Are your close family members involved in any form of charity work? (e.g. fund-raising) Y / N

5. Have you ever considered giving up your time to help others by volunteering for charitable work? Y / N

6. Have you ever done community/charity work? Y / N please tick appropriately:

a. I have taken part in fund-raising events. ☐
b. I have donated blood. ☐
c. I have helped in an old folks home. ☐
d. I have helped in a children's home. ☐
e. Donated money ☐
f. Helped in a hospital ☐
g. Others (please specify) ☐

7. Would you donate money to charity if:
a. It came from your salary
b. Personal donations from savings

c. You gave to a registered charity street collector
d. You had to go to a post/office or bank to do so
e. Would you like to give directly to a person such as a homeless person on the street

Appendix J. Chapter 4 Information sheet and Consent form

School of Psychology
Information Sheet

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

Title of Project: Identifying the circumstances surrounding charitable donations
Ethics Approval Number : Ref 714
Researchers: Alex Bradley
Supervisors: Professor Eamonn Fergusson
Contact Details lpxab6@nottingham.ac.uk

This is an invitation to take part in a research study looking at the circumstances surrounding charitable donations.

Before you decide if you wish to take part, it is important for you to understand why the research is being done and what it will involve. Please take the time to read the following information carefully.

If you participate, you will first be asked to complete a short questionnaire capturing demographic information (i.e. age, gender, education etc.) and previous charitable giving. Next, you will be given a crowdfund raising profile to read. Then you will be given two tasks to complete where you can choose to donate some money to yourself or to a school. Finally, you will be asked to complete a short questionnaire assessing your beliefs about altruism.

Payment will be done via a lottery where 10% of participants' who take part will be randomly selected for payment. Thus out 200 participants collected for the study 20 participants will be remunerated. If you are chosen your payment will depend upon how you allocated your money in task one. For example, if you are randomly selected and in task 1 you kept £5.00 to self and gave £5.00 to a school, you would receive £5.00 and £5.00 would be donated to a randomly selected local school. Payment will be organised once all the participants have been collected for this study. Remuneration will take the form of amazon vouchers for participants and book tokens for a school.

The whole procedure will last around 10-15 minutes.

Please do not complete this online study on your mobile as the formatting of some of the questions will be wrong. It is best to do it on a desktop or laptop with Qualtrics maximized across the entire screen.

Participation in this study is totally voluntary and you are under no obligation to take part. You are free to withdraw at any point before or during the study, but we will still use your data up to that point. All data collected upon completion of the study will be kept confidential and used for research purposes only. It will be stored in compliance with the Data Protection Act.

As this research is online, you should be aware that there is the risk of intrusion by outside agents, i.e., hacking, and therefore the possibility of being identified.

If you have any questions or concerns please contact me at the email address above address.

If you have any complaints about the study, please contact:
Stephen Jackson (Chair of Ethics Committee)
stephen.jackson@nottingham.ac.uk

School of Psychology
Consent Form



Title of Project: Identifying the circumstances surrounding charitable donations.

Ethics Approval Number: Ref 714
Researcher(s):Alex Bradley (lpxab6@nottingham.ac.uk)
Supervisor(s): Professor Eamonn Fergusson
*(*Eamonn.Ferguson@nottingham.ac.uk*)*

The participant should answer these questions independently:

Have you read and understood the Information Sheet?

YES/NO

Do you understand that you are free to withdraw from the study? (at any time and without giving a reason)

YES/NO

Do you give permission for my data from this study to be shared with other researchers provided that my anonymity is completely protected.

YES/NO

Do you agree to take part in the study?

YES/NO

*"By **clicking** to go the next page you are consenting to take part in this study and agree that this study has been explained to your satisfaction. You also understand that you are free to withdraw at any time."*

Appendix K. Chapter 4 Debriefing Information.

EXPERIMENTAL DEBRIEFING INFORMATION

Name of Experimenter: Alex Bradley	Email of Experimenter: lpxab6@nottingham.ac.uk
Name of Supervisor: Eamonn Ferguson	Email of Supervisor: Eamonn.Ferguson@nottingham.ac.uk

Title of Experiment: Identifying the circumstances surrounding charitable donations.

Background/Hypothesis:
A number of studies show that as the opportunities for prosocial behaviour (behaviour intended to benefit others) increases the less likely prosocial behaviour is (Ernst Fehr & Fischbacher, 2003; Panchanathan et al., 2013; Wiesenthal et al., 1983). However, a recent discovery of an altruistic preference known as reluctant altruism is challenging the idea that prosocial behaviour decreases as the opportunities to be prosocial increase. In fact, reluctant altruists should be motivated to help more when others aren't helping and should help less when a lot of people are helping. For example, reluctant altruism is a useful predictor of first time and novice blood donations which is an area typically associated with high rates of free riding (Eamonn Ferguson et al., 2012)

This study was designed to explore reluctant altruism in two ways: first by identifying if reluctant altruists do indeed support the school that receives less support and second to identify the level of support at which reluctant altruists start donating to a less supported school.
Higher scores on the reluctant altruism scale should predict giving to the school that has raised the least.
High scores on reluctant altruism out to predict choosing early periods on the timeline.
Design and Dependent Measures:

Task one has a 5 level (The amount collected so far by school: School A £136.50, School B £10.00, School C £120.00, School D £65.00, School E £110.00) within subjects design. The dependent variable is the amount donated to a school.
Task two has a 10 level (Timeline of fundraising campaign: Point 1, Point 2, Point 3, Point 4, Point 5, Point 6, Point 7, Point 8, Point 9 and No preference) within subjects design. The dependent variable is the point on the time line selected.
Payment:

Payment will be done via a lottery where 10% of participants' responses to task one will be chosen. If you are chosen your payment will depend upon how you allocated your money in task one. For example, participant X was randomly selected and in task 1 participant X gave £5.00 to self and £5.00 to School Z. Thus participant X would receive £5.00 and £5.00 would be donated to a randomly selected local school. Payment will be organised once all the participants have been collected for this study and will take the form of amazon vouchers for participants and book tokens for a school.

To see an example of the real life scenario that inspired the hypothetical scenario used please go to http://www.crowdfunder.co.uk/st-thomas-more-high-school-buxton/.

Finally, if you would like a copy of the final paper/report then please get in touch with me on lpxab6@nottingham.ac.uk and that will be sent out to you once it has been completed.

Useful Reading:
Fehr, E., & Fischbacher, U. (2003). The nature of human altruism. *Nature*, *425*, 785–791. doi:10.1038/nature02043
Ferguson, E., Atsma, F., de Kort, W., & Veldhuizen, I. (2012). Exploring the pattern of blood donor beliefs in first-time, novice, and experienced donors: differentiating reluctant altruism, pure altruism, impure altruism, and warm glow. *Transfusion*, *52*(2), 343–55. doi:10.1111/j.1537-2995.2011.03279.x
Thank you for all your time and effort.

Appendix L. Chapter 5 Pre and Post Emotion Measures.

After reading about the children's charity, how do you feel now:

	Not at all					Extremely	
Uneasy	1	2	3	4	5	6	7
Worried	1	2	3	4	5	6	7
Soft-hearted	1	2	3	4	5	6	7
Sad	1	2	3	4	5	6	7
Alarmed	1	2	3	4	5	6	7
Compassionate	1	2	3	4	5	6	7
Heavy Hearted	1	2	3	4	5	6	7
Sympathetic	1	2	3	4	5	6	7
Low spirited	1	2	3	4	5	6	7
Tender	1	2	3	4	5	6	7
Happy	1	2	3	4	5	6	7

Having read about the children charity, how do you feel now towards those that saw the poster but did not help:

	Not at all					Extremely	
Angry	1	2	3	4	5	6	7
Frustrated	1	2	3	4	5	6	7
Ashamed	1	2	3	4	5	6	7
Upset	1	2	3	4	5	6	7

I think that donating the money to charity will:

	Not at all					Extremely	
Make me feel good about myself	1	2	3	4	5	6	7
Make me feel emotionally positive	1	2	3	4	5	6	7
Make me a feeling of warm-glow	1	2	3	4	5	6	7

Having completed the donation task, how do you feel now:

	Not at all					Extremely	
Uneasy	1	2	3	4	5	6	7
Worried	1	2	3	4	5	6	7
Soft-hearted	1	2	3	4	5	6	7
Sad	1	2	3	4	5	6	7

Alarmed	1	2	3	4	5	6	7
Compassionate	1	2	3	4	5	6	7
Heavy Hearted	1	2	3	4	5	6	7
Sympathetic	1	2	3	4	5	6	7
Low spirited	1	2	3	4	5	6	7
Tender	1	2	3	4	5	6	7
Happy	1	2	3	4	5	6	7
Proud	1	2	3	4	5	6	7
A warm glow	1	2	3	4	5	6	7
Content	1	2	3	4	5	6	7

Having completed the donation task, how do you feel now towards those that saw the poster but did not help:

	Not at all					Extremely	
Angry	1	2	3	4	5	6	7
Frustrated	1	2	3	4	5	6	7
Ashamed	1	2	3	4	5	6	7
Upset	1	2	3	4	5	6	7

I donated the amount of money I did because:

	Not at all					Extremely	
It made me feel good about myself	1	2	3	4	5	6	7
It made me feel emotionally positive	1	2	3	4	5	6	7
It gives me a feeling of warm-glow	1	2	3	4	5	6	7

Appendix M. Chapter 5 Demographics, Hypothetical Willingness to Help items and Willingness to take part in Follow up study item.

The following, are questions about your personal background.

1. What is your participant id? _____

2. What is your sex? F / M

3. How old are you? _____

4. Please indicate your highest level of education attained?

No formal qualification
GCSEs or Equivalent
A Levels or Equivalent
Undergraduate degree
Master's degree
Doctoral degree
Medical degree

Control Scale

Why did you choose to divide the money between yourself and charity in the way you did?
- Please indicate the extent to which each explains your reasons

a) I did not like this charity

Not at all						Completely
1	2	3	4	5	6	7

b) I would prefer to give to another favourite charity of mine

Not at all						Completely
1	2	3	4	5	6	7

c) I already give to other charities

Not at all						Completely
1	2	3	4	5	6	7

d) I need the money myself

Not at all						Completely
1	2	3	4	5	6	7

f) I believe that charity starts at home

Not at all						Completely
1	2	3	4	5	6	7

g) I like this charity

Not at all						Completely
1	2	3	4	5	6	7

i) I would feel guilty if I didn't

Not at all						Completely
1	2	3	4	5	6	7

j) Its morally right to give to charity

Not at all						Completely
1	2	3	4	5	6	7

l) I might need the help of this charity in the future

Not at all						Completely
1	2	3	4	5	6	7

m) Members of my family have been helped by this charity in the past

Not at all						Completely
1	2	3	4	5	6	7

n) I believe that the work of this charity is of great importance to the future of our society

Not at all						Completely
1	2	3	4	5	6	7

o) I believe that the work of this charity will fulfil the health needs of our future society

Not at all						Completely
1	2	3	4	5	6	7

p) Others know I support this charity

Not at all						Completely
1	2	3	4	5	6	7

q) I think it is a worthy charity and I want to tell people I have helped it

Not at all						Completely
1	2	3	4	5	6	7

s) The amount of money was too trivial to keep anyway

Not at all						Completely
1	2	3	4	5	6	7

t) I wanted to make sure that the charity got a fair share of the money I was given

Not at all						Completely
1	2	3	4	5	6	7

Hypothetical willingness to help the charity.

Please indicate the extent to which you agree with the following statements:

1) In the future, I would be willing to give up my time to help this charity.

Not at all									Completely
1	2	3	4	5	6	7	8	9	10

2) If I had spare time, I would like to help this charity.

Not at all									Completely
1	2	3	4	5	6	7	8	9	10

3) In the future, I would be willing to help this charity with fundraising.

Not at all									Completely
1	2	3	4	5	6	7	8	9	10

4) If I had spare time, I would be willing to help this charity with administrative tasks

Not at all									Completely
1	2	3	4	5	6	7	8	9	10

If you would like to help this charity more, would you be willing to come back and do a 10 minute study that require rating of their new recruitment posters?

Yes ☐
No ☐

If yes, please talk to the experimenter at the end to arrange a convenient time.

Appendix N. Chapter 5 Information, Consent, and Debriefing sheets.

School of Psychology
Information Sheet

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

Title of Project: Exploring the contexts of charitable behaviour for reluctant altruists.
Insert Ethics Approval Number or Taught Project Archive Number Ref 878
Researchers: Alex Bradley (*lpxab6@nottingham.ac.uk*)
Supervisors: Professor Eamonn Ferguson (Eamonn.Ferguson@nottingham.ac.uk)

This is an invitation to take part in a research study on how the contexts surrounding charitable donations effects charitable behaviour.

Before you decide if you wish to take part, it is important for you to understand why the research is being done and what it will involve. Please take the time to read the following information carefully.

If you participate, you will first be given the opportunity to earn some money by completing a money earning task. You will then be asked to read over a scenario describing a Children's Charity after which you will be asked to complete some items measuring emotions. Next, you will have the opportunity to allocate as much or as little of the money earned from the earning task to yourself or to the charity you read about. This decision will be made in and kept private. Once you have made your decision you will be asked to complete another emotions measure and some additional questionnaires measuring demographic and control information.

The whole procedure will last 20-25 minutes

Participation in this study is totally voluntary and you are under no obligation to take part. You are free to withdraw at any point before or during the study. All data collected will be kept confidential and used for research purposes only. It will be stored in compliance with the Data Protection Act.

As an online participant in this research, we are obliged to make you aware that there is always a potential risk of intrusion by outside agents, for example through hacking, and therefore the possibility of being identified.

If you have any questions or concerns please don't hesitate to ask now. We can also be contacted after your participation at the above address.

If you have any complaints about the study, please contact:
Stephen Jackson (Chair of Ethics Committee)
stephen.jackson@nottingham.ac.uk

School of Psychology
Consent Form

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

Title of Project: Exploring the contexts of charitable behaviour for reluctant altruists.
Ethics Approval Number or Taught Project Archive Number: Ref 878
Researcher(s): Alex Bradley (*lpxab6@nottingham.ac.uk*)
Supervisor(s): Professor Eamonn Ferguson (Eamonn.Ferguson@nottingham.ac.uk)

The participant should answer these questions independently:

Have you read and understood the Information Sheet? YES/NO

Have you had the opportunity to ask questions about the study? YES/NO

Have all your questions been answered satisfactorily? YES/NO

Do you understand that you are free to withdraw from the study? YES/NO
(at any time and without giving a reason)

I give permission for my data from this study to be shared with other researchers provided that my anonymity is completely protected. YES/NO

Do you agree to take part in the study? YES/NO

"This study has been explained to me to my satisfaction, and I agree to take part. I understand that I am free to withdraw at any time."

Signature of the Participant: Date:

Name (in block capitals)

I have explained the study to the above participant and he/she has agreed to take part.

Signature of researcher: Date:

[redacted]

Name of Experimenter: *Alex Bradley*
Email of Experimenter: lpxab6@nottingham.ac.uk

Name of Supervisor: *Professor Eamonn Ferguson*
Email of Supervisor: Eamonn.Ferguson@nottingham.ac.uk

Title of Experiment:
Exploring the contexts of charitable behaviour for reluctant altruists.

Background/Hypothesis:
Reluctant altruist are those who perform altruistic acts (behaviour that benefits others but incurs a cost upon oneself) because they don't trust others to help, hold negative beliefs about others and have a tendency to feel negative emotions when they see others not helping a worthy cause (E Ferguson, 2015). This study was designed to test whether reluctant altruist would indeed help charities high on worthiness.

Design and Dependent Measures:

A between subjects design was used with the independent variable deservingness of charity (High vs Low). You were randomly assigned to assess either 10 posters high on deservingness (illustrating activities that saved lives or met basic needs i.e. providing clean water) or low on deservingness (depicting activities that were non-essential i.e. buying sports equipment). The dependent variable is the items assessing willingness to help.

Intended Analysis:
A multiple regression will be conducted on the sum score of willingness to help items with the predictors of condition (high or low deservingness), reluctant altruism scores (a scale you completed in the main study) and an interaction term (condition x reluctant altruism score). If the interaction term is significant with high scores of reluctant altruism predicting willingness to help in the high deservingness condition this will support our hypothesis.

Useful Reading:
Ferguson, E. (2015). Mechanism of altruism approach to blood donor recruitment and retention: a review and future directions. *Transfusion Medicine*, 1–16. doi:10.1111/tme.12233