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GUILT AND THE EMOTIONAL UNDERPINNINGS OF HUMAN PRO-SOCIALITY

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Abstract

Pro-social acts are at the core of human relationships and proper functioning of society. Still, human pro-sociality is seen as unique, reaching beyond the kinship-based helping that is found in other species, such as primates. This uniqueness of human pro-sociality is recognised as closely related to another phenomenon specific to humans, and crucial for the maintenance of social relationships; namely, the presence of moral emotions. This thesis investigated emotional underpinnings of human pro-sociality after moral or social transgressions. The particular focus was placed on guilt – the emotion seen as most prototypical morally, and anger, its’ often under-studied relative. These two emotions have a unique standing in the context of the pro-sociality following from transgressions. They are associated with the perception of harm, injustice and norm violation that are core to transgression situations, and an action tendency to improve such situation, which behaving in a pro-social manner can be seen as. Nevertheless, only a few studies have examined guilt and anger jointly, in the context of pro-sociality, which stresses the need for an investigation of their relative influences. This thesis aimed to fill this gap in the literature.

Chapter 1 introduces the topic of emotions and its role for pro-sociality, starting with the initial concept of emotions as the continuum of positive and negative affect, followed by more recent conceptualisation of emotions, in terms of their specificity and uniqueness. A particular emphasis is placed on the place of guilt and anger in the family of moral emotions, and their specific characteristics. Moreover, the role of pro-sociality as a mood-enhancing method is discussed, which might be used to suggest that guilt-based pro-sociality might not be so strongly relationship-focused, as presented in the literature.

Chapter 2 presents a meta-analytical investigation of guilt and its role for pro-sociality. In this section, 112 studies were combined, providing an estimation of the medium effect size for the relationship between guilt and pro-sociality. Potential moderators were investigated as well, with a majority of them demonstrating no significant effects. Interestingly though, religiosity

was found as a significant moderator of the guilt-pro-sociality relationship, with less religious countries showing a stronger effect size. The potential factors explaining this finding were presented. The link between guilt and self-punishment was also considered, providing more evidence that actions following from guilt might be seen as a mood enhancing strategy (at least when there is no option for repayment of one's wrongdoing).

Chapter 3 describes an experimental study investigating the association between moral transgression and subsequent pro-sociality. The charity dictator game was used as the opportunity for moral transgression. It was shown that moral transgression could lead to both increased and decreased pro-sociality, depending on the underlying emotional mechanism. Specifically, moral transgression via guilt led to increased pro-sociality, whereas via anger, to decreased pro-sociality. Some contextual factors (e.g., eyes prime, earning for oneself versus a charity) that could moderate which effect would prevail were examined. This result explains inconsistent findings reported previously in the literature. Additionally, it was shown that guilt does not always directly affect pro-sociality, as it might be followed by anger, and this sequential mechanism might negatively affect subsequent pro-sociality. Lastly, it was demonstrated that the effect of guilt and anger, following from a transgression, did not expand beyond the first pro-social opportunity, in line with the notion of pro-sociality as a mood-enhancing method.

Chapter 4 introduces an experimental study aimed at the further exploration of the mechanism between guilt, anger, and subsequent pro-sociality. A context of failing one's partner in a computer game was used to trigger moral emotions. The role of self-blame was also explored. Self-blame was predicted to act as the mechanism linking guilt with increased pro-sociality, whereas anger (a proxy of other-blame) was found to be the mechanism linking guilt with decreased pro-sociality. Some contextual factors, related to the perception of fairness, which could moderate which effect would prevail, were examined. Lastly, it was demonstrated that the effect of guilt did not expand beyond the first pro-social opportunity, in line with the notion of pro-sociality as a mood-enhancing method.

Chapter 5 builds on the results in the previous section, by introducing manipulative intent as a factor determining the mechanism underlying the association between guilt, anger, and subsequent pro-sociality. A context of blood donation appeal was used to trigger moral emotions, making this study more applicable to the outside world. Contrary to the predictions, low rather than high manipulative intent in the appeal was shown to be the context where guilt led to decreased pro-sociality, via anger. The relationship between guilt and increased pro-sociality via responsibility (a proxy of self-blame) was significant under both levels of the manipulative intent present. Factors potentially explaining these findings are presented. This study provides evidence that the links between guilt and responsibility (self-blame) are not readily affected, whereas the connection between guilt and anger depends on situational context.

Chapter 6 presents findings of the investigation into the lab-field correspondence in the pro-sociality domain, together with an examination of the possibility of a significant association of trait guilt and cost/risk perception of pro-social behaviours. Following from Piliavin's cost-reward model, it was predicted that higher propensity of guilt-prone individuals to help might be based on their lowered appraisal of cost-risk of pro-social behaviours. Trait guilt was not related to cost-risk appraisals of pro-social behaviours though, suggesting that other mechanisms might be underlying the relationship between trait guilt and pro-sociality. Secondly, the issue of generalising findings from lab studies to real-life instances of pro-sociality was explored. The results have shown that pro-social behaviours used in labs were not equivalent (i.e., less costly and risky) to those in the real world. Pro-sociality appeared to be a non-unidimensional construct, which should be taken into account when investigating it in the future.

Chapter 7 provides a general discussion of the results presented in this thesis, with the emphasis on their role in the field of emotions and human pro-sociality. Some implications of the present findings for charitable organisations and some avenues for future studies were presented as well.

The findings presented in this thesis provide novel and exciting insight into the field of emotions and pro-sociality, in the context of transgression. The results suggest that even though guilt is widely studied in the context of pro-sociality, and has a robust effect on pro-sociality, anger should not be treated with less interest and attention in this regard. It was also shown that these two emotions are highly interrelated, co-occur in the context of transgression, and both have the potential to affect pro-sociality subsequent to transgression. The contextual factors, such as manipulative intent, appear to have a particular role in determining whether decreased or increased pro-sociality would occur after a violation, and which emotional mechanism would unfold. Therefore, neglecting one of these emotions in studies undermines the possibility of better understanding the emotional underpinnings of human pro-sociality. Thus, more research is warranted in the future. The similar research effort is needed for better understanding of the construct of pro-sociality itself, as human pro-sociality takes many forms which, as was shown, do not create a unidimensional construct. Thus, generalising findings from single instances of pro-social behaviour to general pro-sociality seems biased (especially to the high-cost behaviours), and this issue should be tackled in future research.

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Plautus famously said that “Nothing is more wretched than the mind of a man conscious of guilt”. This saying was true for me at some points of my PhD, when feelings of guilt for not knowing everything and not being good enough of a researcher were taking over. However, due to a helpful hand of many people I managed to complete my studies and stop feeling guilty for not knowing everything that is there to know.

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This work is dedicated to my late grandparents. They did not manage to see me complete my studies, but they were the most supportive people, who believed in me and were proud of my scholar achievements every step of the way. I know you are pleased right now as well.

Declaration

I, Natalia Katarzyna Stanulewicz, declare that this thesis and the work presented in it are the results of my own research. This thesis was wholly written while I was registered as a PhD Psychology student at the University of Nottingham, under the supervision of Prof. Eamonn Ferguson, and Dr Richard J. Tunney.

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Chapter 2

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Preface

The potential impact of emotions on behaviour was rejected at the beginnings of psychological research, as they were seen as fleeting, unimportant elements of life, with relatively subjective, and thus non-measurable, expression. As psychology progressed, the role of emotions has become more vivid and finally acknowledged. These beginnings were not easy though, with decades of research concentrating efforts on quantifying and observing effects of two broadly defined emotional dimensions – positive and negative affect (PA and NA, respectively). Indeed, the research examining positive and negative affect has shed great insight into the associations between human emotions and other processes, whether cognitive or behavioural. However, there was still something lacking, another step awaiting to be taken, in order to develop the understanding of emotions further. This step was a change of focus from general NA and PA and their relationships with other psychological phenomena, to the study of specific, discrete emotions (e.g., Zeelenberg & Pieters, 2006). In the last few decades, researchers have started to acknowledge that emotions should be investigated in finer detail, as even though some emotions can be characterised by same valence (e.g., negative), their impact on psychological phenomena is unique. Consider anger and sadness as an example of two negatively-valenced emotions. When thinking about unique processes (e.g., cognitions, attention) and actions (e.g., revenge-seeking for anger, and mood-improvement for sadness), no one should doubt that these emotions need to be treated separately. By examining emotions as unique entities, researchers can develop more specific and detailed knowledge, which hopefully can aid understanding of humans.

Currently, the psychology of emotions is dedicated to studying emotions like anger, joy, disgust, anxiety, shame, pride, and their unique contributions to human's life. An emotion that started unveiling itself as important to determining behaviour is guilt. This emotion, even though not classified as a basic one, has a special meaning, as it has been linked with both adaptive and moral phenomena. Specifically, it has been studied in relevance

to human pro-social and cooperative behaviour. I decided to dedicate most of my PhD to investigate when and why guilt leads to pro-social and not so pro-social consequences and what role anger can play in this, with a hope of advancing psychology of guilt-based pro-sociality. I hope you will enjoy this journey, which is summarised within the pages of this thesis, with me.

Chapter 1

1.0. General Introduction

Pro-social acts are at the core of both human relationships and the good functioning of society. People help each other on a daily basis, whether in terms of monetary support (e.g., charitable donations), offering time (e.g., to do shopping for an older person), or in a myriad of other ways that bring benefits to others. It has been estimated that in 2015, more than 2 billion people worldwide engaged in helping a stranger (CAF World Giving Index, 2015). Still, human pro-sociality is seen as unique, reaching beyond the kinship-based helping that is found in other species, such as primates (Silk & House, 2011). This uniqueness of human pro-sociality is seen as closely related to another phenomenon specific to humans, and crucial for the maintenance of social relationships – the presence of moral emotions (Haidt, 2003).

Most researchers differentiate at least four moral emotions; namely, guilt, shame, pride, and embarrassment (also called self-conscious emotions, e.g., Tangney, Stuewig, & Mashek, 2007). Some authors have started adding anger (i.e., moral outrage; Nelissen & Zeelenberg, 2009a), contempt, compassion, gratitude, elevation (e.g., Haidt, 2003) and disgust, among others, to this list (e.g., Hutcherson & Gross, 2011; Ivan, 2015). It is still the case though that guilt and shame have been presented as the exemplary moral emotions (e.g., de Hooze, 2013), and been studied widely in the pro-social (see chapter 2) and antisocial contexts (Tangney, Stuewig, & Martinez, 2014), offending (Svennson, Weerman, Pauwels, Bruinsma, & Bernasco, 2013), risky behaviours (Stuewig & Tangney, 2007; Stuewig, Tangney, Kendall, Folk, Meyer, & Dearing, 2015) and bullying (Olthof, 2012). Even though numerous studies have investigated the role of guilt and shame in human pro-sociality and morality, no consistent link has been found. Both guilt and shame have been found to lead to pro-social, as well as anti-social outcomes. For shame, some

factors potentially explaining its dual nature has been demonstrated (e.g., Leach & Cidam, 2015), but the similar case did not seem to happen for guilt. Thus, there is a clear need for more research on the topic of guilt-based pro-sociality, aimed at investigating this discrepancy found for the effects of guilt. This need for deeper understanding of the role of guilt in pro-sociality domain stems from both practical and theoretical reasons. First, the advantage of the knowledge is based on discovering and describing nuances of the effects, especially the boundary conditions of an effect, which is missing in the case of guilt and pro-sociality. Second, the intuitive association between guilt and pro-sociality is often used by charity organisations in order to attract funding and volunteering, which might be a risky strategy if the effects of guilt are not quite well understood. Therefore disentangling the complexity of the relationship between state guilt and pro-sociality is of paramount importance for the development of affective science and advancement of fundraising techniques.

Following from this, the overarching aim of this thesis was to explore the relationship between guilt and pro-sociality and establish mechanisms linking the two, together with contextual factors influencing this link. I focus on guilt, out of the two, as this emotion for decades has been seen as the prototypical moral emotion (often considered more moral than other emotions: Tangney et al., 2007) that leads to pro-social outcomes and guides moral behaviour (de Hooze, 2012; 2013; Haidt, 2003; Tangney & Dearing, 2002). In comparison, shame “*can easily go awry*” (Tangney et al., 2007, p. 5). The validity of this claim is not so certain anymore, as a rise in the number of studies showing that guilt might lead to reduced pro-sociality has been observed (e.g., de Hooze, Nelissen, Breugelmans, & Zeelenberg, 2011). Moreover, it has been found that shame, considered the “ugly emotion” (e.g., Tangney, 1991) can, just as guilt, lead to pro-sociality (e.g., de Hooze, Breugelmans, & Zeelenberg, 2008; Miklanek, 2013; Panagopoulos, 2010; Tangney et al., 2014). The results showing pro-social effects of shame seem to be especially true when investigating shame in more details (e.g., when considering its

specific appraisals: Gausel, Vignoles, & Leach, 2016), and when failure that brought up shame is considered reparable (Cibich, Woodyatt, & Wenzel, 2016; Leach & Cidam, 2015). Adding to that the fact that the arguments used to highlight guilt's higher moral standing can be questioned (Teroni & Bruun, 2011) suggests that it seems plausible that the link between guilt and pro-sociality has not been examined thoroughly yet, and that the possibility of presence of darker side of guilt (i.e., leading to decreased pro-sociality) should be examined more. The findings that showed guilt as not leading to pro-sociality highlight the need for further inquiry. All of the above is thus suggesting that the relationship of guilt with pro-sociality might be more complicated than previously thought.

Regarding mechanism behind the state guilt-pro-sociality relationship, previous research suggested that pro-social effects of guilt might be linked to feelings of responsibility (Basil, Ridgway, & Basil, 2006; Berndsen & Manstead, 2006; Fisher & Exline, 2006), which I revisit in this dissertation. To the best of my knowledge no research has indicated what might be the pathway linking guilt and decreased pro-sociality, a relationship that has been hinted at in everyday life (Callan, 2016) and the literature (e.g., Tangney, 1995). Indeed, triggering guilt by charitable organisations is popular (Huhmann & Brotherton, 1997), but the effects can often be contrary to those expected (Hudson, 2013; Uncultured, 2011). Even though a study by Huhmann and Brotherton (1997) found that 85% of charity ads used guilt as a manipulation technique, some campaigners are starting to raise awareness that using guilt in charity adverts is controversial, and does not lead to pro-sociality, but rather might cause a loss of potential donors (Uncultured, 2011).

In this thesis, I present a series of studies demonstrating the relationship between guilt and both increased and reduced pro-sociality, and test the potential mechanisms, relying on feelings responsibility (self-blame) and anger, respectively. Specific hypotheses are proposed and discussed in the respective chapters. Here, I begin by presenting a general overview of the research on negative and positive affect and pro-sociality, which demonstrates how the field of emotions has changed with time,

followed by a section on the emergence and the position of guilt research in the current emotion and pro-sociality literature. I finish with insight into whether what we know about pro-sociality from the lab studies can be generalised to the world outside the laboratory walls.

1.1. From Affect to Pro-Sociality

There is a large body of research examining factors that influence human pro-sociality. The affective factors that have been widely researched in the literature as those influencing pro-sociality are positive and negative affect (e.g., Salovey & Rosenhan, 1989). The most prominent theories based on these affects include The Cost-Reward Model (Piliavin, Rodin, & Piliavin, 1969), the Warm-Glow Giving Model (Andreoni, 1989), the Negative-State Relief Model (Cialdini, Darby, & Vincent, 1973) and the Empathy-Altruism Hypothesis (Batson, Duncan, Ackerman, Buckley, & Birch, 1981). The first three of these theories examine pro-social behaviour from the perspective of human tendency to avoid or try to alleviate negative affect, and maintain or attain positive affect (seen as an egoistic approach), whereas the last one focuses more on empathy that when present leads to pro-social behaviour, irrespectively of costs or reward of helping, and thus a more altruistic approach to helping. The first three theories took the “self” as a reference point, specifically focusing on how the emotional state of the helper changes due to pro-social behaviour enacted, whereas in the Empathy-Altruism Hypothesis, “other” is considered as the reference point, focusing on the changes in the mood and the situation of the person in need of help.

Even though all these theories have provided great insight into the emotional factors underlying human pro-sociality, this insight was rather general. Specifically, what was explored was related to broad categories of affect (i.e., mostly positive and negative, or broadly defined sadness: Cialdini’s model), and not to the specific emotions that people experience in everyday life. One exception might be the Empathy-Altruism Hypothesis, which focuses on a more specific state, but even empathy is seen as a broad construct, consisting of empathic concern, distress,

perspective taking and fantasy proneness (Davis, 1980). Below, I describe some evidence for the link between state NA and PA, and pro-sociality, together with a short description of the models presented above that aimed to explain why such relationships appear.

1.1.1. The Negative Affect and Pro-Sociality

During decades on research relating affect to pro-sociality some studies have shown that state Negative Affect (NA) increases pro-sociality (e.g., Cialdini et al., 1973; Donnerstein, Donnerstein, & Munger, 1975; Job, 1987). The evidence supporting the positive association between negative affect and pro-sociality stems from various studies which have shown that people in NA were more pro-social than those in neutral mood or PA. For example, Job (1987) showed that individuals who experienced their sports team losing (therefore highly likely experienced some NA), mailed more lost letters back than those whose sports team had won (thus possibly experienced PA). In a similar vein, Donnerstein et al. (1975) showed that pictorially induced NA increased helping offered to a graduate student (i.e., help with an experiment) when compared to neutral or positive affect.

However, others found that NA decreases (e.g., Moore, Underwood, & Rosenhan, 1973; Underwood, Froming, & Moore, 1977) or does not affect pro-sociality (e.g., Harris, Benson, & Hall, 1975; Holloway, Tucker, & Hornstein, 1977; Rosenhan, Underwood, & Moore, 1974), providing a contrasting evidence. The relevant examples of NA leading to reduced pro-social behaviour come from studies with both children (e.g., Chapman, Zahn-Waxler, Cooperman, & Iannotti, 1987; Moore et al., 1973) and adults (e.g., Cunningham, Schaffer, Barbee, & Smith 1986; Kidd & Marshall, 1982). For instance, Chapman et al. (1987) observed children's response to incidences of distress and noticed that those with positive affect expression (who were believed to experience PA) helped more than those displaying negative or neutral expressions (considered to be in NA). Likewise, Moore et al. (1973) demonstrated that

children in sad mood gave less money to other children, thus were less pro-social, than those in neutral or happy conditions.

A similar finding was observed for example in a field study (North, Tarrant, & Hargreaves, 2004), where adult participants in a gym were exposed to uplifting (PA inducing) or annoying (NA inducing) music, and afterward asked to distribute some leaflets for a charity. The results showed that those who listened to the uplifting music offered help significantly more than those in the other condition. Some more examples come from other studies that found that exposure to loud noise, potentially linked with NA, reduced people's helpfulness (i.e., help offered to a person in need) (Mathews & Canon, 1975; Page, 1977).

The above suggests that the effects of state NA are not straightforward and thus more research is needed to uncover why and when state NA leads or does not lead to increased pro-sociality. One of ways of dealing with the issue of varied effects of the general NA is to examine it in more fine detail and focus on specific emotions that might be the driving force of one's behaviour. Another is to try to explore moderating effects of this non-consistent relationship between NA and pro-sociality, such as contextual or person-related factors. I describe few examples of those below.

1.1.2. The Boundary Conditions of Affect-Induced Pro-Sociality

As presented above, there are many findings showing that NA does not always lead to increased pro-sociality, which would suggest a presence of moderators of this effect or some boundary conditions. The boundary conditions that have been observed seem to come mostly from studies where there were other ways of improving one's mood (Schaller & Cialdini, 1988), or where helping task was unpleasant (Shaffer & Graziano, 1983). For example, in a study by Schaller and Cialdini (1988), participants were in a depressed mood and were expecting a type of an event that was supposed to follow an opportunity to perform a pro-social act, depending on the condition. That is, they expected exposure to an (i) neutral event, (ii) humorous event; or (iii) a chance to help another (not

target) individual. It was observed that participants in NA demonstrated enhanced helping, but only if they did not expect another opportunity to enhance their mood to follow the helping opportunity, suggesting a boundary condition for pro-social effects of NA.

Similarly, Schaffer and Graziano (1983) demonstrated that the rates of helping of those in NA depended on the emotional consequences of the helping task. Namely, if the helping task was unpleasant, and thus could not improve one's mood, then the offers of help decreased, whereas the reverse was true for a pleasant task, as doing a pleasant task possesses mood alleviating qualities. Likewise, Cunningham et al. (1986) showed that NA was linked to increased helping with another task (for no credit), when compared to a control condition, but only when the helping task was described as fun and interesting (and not when described as boring and dull). These two examples are once again showing that the relationship between NA and pro-sociality might be more complex than previously thought and that there might be more factors in play determining the effects of negative affect on pro-social behaviour.

These results have provided basis for a theory that was aimed at explaining when NA (specifically sadness) would or would not lead to increased pro-sociality, specifically, the Negative State Relief model of Cialdini et al. (1973). However, the Cost-Reward model (Piliavin et al., 1969), as well as the Warm-Glow Giving model (Andreoni, 1989; 1990) have also something to add to this perspective. They are described in the following sections.

1.1.3. The Negative State Relief

The Negative State Relief Model (NSR; Cialdini et al., 1973) presents a claim that individuals help in order to enhance their mood. It is not necessarily the main motive behind pro-social behaviours, but the authors claimed that performing a pro-social act is associated with some mood enhancement. The NSR model (Cialdini et al., 1973) suggests that people in negative mood are more likely to help, as helping will alleviate their negative mood, and consequently make them feel better. There is a

lot of support for the NSR model (e.g., Manucia, Baumann, & Cialdini, 1984; Schaller & Cialdini, 1988; Shaffer & Graziano, 1983). For example, in one study Cialdini et al. (1973) showed that individuals who committed a transgression, or observed it, were more pro-social than those in control condition.

However, more recent studies that looked into specific emotions, belonging to the negative affect group, did not find results in line with the NSR (e.g., Batson, Batson, Griffitt, Barrientos, Brandt, Sprengelmeyer, & Bayly, 1989; Carlson & Miller, 1987; Miller & Carlson, 1990; Mitchell, Brown, Morris-Vilagran, & Vilagran, 2001), highlighting the need to investigate specific emotions separately, and not as a continuum of NA-PA. Indeed, even Cialdini himself and his colleagues suggested that sadness, distress, and empathy are qualitatively different and should be examined separately (Fultz, Schaller, & Cialdini, 1988).

It is worth highlighting though that Cialdini et al. (1973) suggested that guilt fits well within the NSR model, but the authors claimed as well that it is the general NA and not guilt that would be decreased after performing a pro-social act. They also suggested that being exposed to a positive event (decreasing NA), even when one performed a transgression, would reduce helping (e.g., Schaller & Cialdini, 1988). In this thesis I will propose a different view. Specifically, that guilt has a special standing when it comes to leading to pro-social acts (at least in a transgression situation). If one commits a transgression, it is guilt that leads to pro-social behaviour, and guilt that decreases after performing a pro-social act.

I would also argue, however, that not only sadness but also other negative emotions (specifically, guilt) might function in the way suggested by this model. This claim has been already presented by Estrada-Hollenbeck and Heatherton (1998). If it is the case that people indeed use pro-social opportunity to alleviate their NA, and if Cialdini's model applies to guilt, then there should be a clear positive relationship between state guilt and pro-sociality, but only for the first, and not the subsequent,

pro-social act (assuming that individuals are not informed about this second opportunity). Whether that is the case, was examined in this thesis.

1.1.4. The Cost-Reward Model

As suggested above NSR model seems to explain well why people help or fail to do so when in NA. However, the history of trying to understand the general topic of human helpfulness started even before that, when Piliavin et al. (1969) presented their Cost-Reward model. This model claimed that individuals faced with an emergency situation requiring help calculate costs and benefits of helping vs non-helping and decide on the action that presents a more beneficial ratio to them (i.e., do I get more benefits and fewer costs if I help or if I do not help?). Multiple studies have supported this model by showing, for example, that with increase in costs of helping the rate of helping decreases (Batson, 1987; Clark, 1976; Dovidio, 1984; Hedge & Yousif, 1992; Shotland & Stebbins, 1983; Van de Kragt, Dawes, & Orbell, 1988; cf. Bloom & Clark, 1976). Additionally an increase in cost of non-helping increases helping (Fischer et al., 2011). Nevertheless, there is also evidence suggesting that the effect of cost might be outweighed by emotional state of the potential helper, especially if they feel responsible (e.g., Stephens, Cooper, & Kinney, 1985) or empathic (e.g., FeldmanHall, Dalgleish, Evans, & Mobbs, 2015; Paciello, Fida, Cerniglia, Tramontano, & Cole, 2013). Indeed, Stephens et al. (1985) observed that when individuals felt socially responsible for helping a disabled person (high-cost scenario) they helped significantly more (even though the high cost) than they helped a non-disabled person (a situation when they did not feel socially responsible). Similar was the situation for those who were high rather than low on trait empathy; they helped more the needy person even in the high-cost situation (FeldmanHall et al., 2015).

The fact that responsibility outweighs the effects of the cost of helping on pro-sociality is crucial for the idea presented in this thesis: That guilt, which is strongly associated with feelings of responsibility (e.g., Basil et al., 2006), should lead to increased pro-sociality. Whether that is

always the case, and whether some contextual factors can affect this relationship is examined in this thesis.

1.1.5. The Warm-Glow of Giving

Another model that can be used to support a positive relationship between guilt and pro-sociality is the warm-glow giving model (WGG; Andreoni, 1989). This model focuses on a specific type of pro-sociality, namely charitable giving, and suggests that individuals engage in charity not only to increase the well-being of others (i.e., altruistic motive) but also (or mostly) due to some utility that they receive from the act of giving (i.e., warm-glow). This utility is understood as a positive feeling, a form of personal satisfaction for “having done the right thing.” Like the NSR model (Cialdini et al., 1973) presented above, the WGG also suggests that pro-social acts are an effect of impure altruism. Specifically, they stem from both altruistic and egoistic (i.e., obtaining warm glow) motives. Numerous studies provided support for the WGG model (e.g., Ferguson, Taylor, Keatley, Flynn, & Lawrence, 2012; Imas, 2014; Luccassen & Grossman, 2017; Menges, Schroeder, & Traub, 2005). For example, Ferguson et al. (2012) found that warm glow rather than empathic concern was a significant predictor of blood donors’ behaviour (i.e., charitable giving and blood donation). However, some support for pure altruism motive has also been noted (e.g., Harbaugh, Mayr, & Burghart, 2007).

The fact that pro-social behaviour produces some utility is well-established. Individuals who behave pro-socially might obtain not only warm-glow, as suggested by Andreoni (1989), but also boost their self-esteem (e.g., Laible, Carlo, & Roesch, 2004), well-being (e.g., Layous, Nelson, Oberle, Schonert-Reichl, & Lyubomirsky, 2012; Weinstein & Ryan, 2010), or decrease depressive symptoms (e.g., Schwartz & Meir Sender, 1999). This beneficial effect of helping for the benefactor can be observed at very early age (age of 2 years: Aknin, Hamlin, & Dunn, 2012). This might suggest that individuals in state NA might be especially responsive to the potential helping opportunities, as rewarding properties of pro-sociality that seem ingrained in human nature might be what they

are motivated by (at least partially). This model also seems to support the view that guilt should lead to increased pro-sociality. Is it only positive emotions that increase after a pro-social act, or does it also decrease guilt? Some light is shed on this in chapter 5.

1.2. The Positive Affect and Pro-Sociality

Like with the case of NA, the results for PA and pro-sociality are not very straightforward. PA has been shown to increase and decrease pro-sociality, when compared to control conditions, in a multitude of studies (e.g., see meta-analysis by Carlson, Charlin, & Miller, 1988). For example, Isen, Clark, and Schwartz (1976) showed a positive association between PA and pro-sociality. In their study, they compared helping (i.e., calling in the name of the experimenter to someone and passing a message) with receiving a wrong call, of those who received a small packet of stationery (PA induction), and those who did not (neutral mood). Some other studies have provided similar results by showing that exposure to a pleasant fragrance and receipt of a gift (both inducing PA) were linked to an increased pro-sociality (i.e., a willingness to help an experimenter with an uncompensated task) (Baron & Thomley, 1994). Similarly, it was observed that individuals in a self-referencing PA were more helpful (i.e., completed more items on a test as a favour to the researcher) than those in a neutral state or the other-referencing PA (Rosenhan, Salovey, & Hargis, 1981).

Some contradictory results were found for PA and pro-sociality in the same manner as they were found for NA, though. Indeed, Donnerstein et al. (1975) did not find a positive association between PA and helping a graduate student by participating in their experiment; this association was only significant for NA. Also, Conway, Rogelberg, and Pitts (2009) observed a positive association between PA and helping, but only for those with high trait altruism, suggesting a potential moderating factor for the relationship between affect and pro-sociality.

Finally, some evidence exists showing that even for those in PA, the rate of helping changes depending on the mood compatible

characteristics of the helping task (Isen & Simmonds, 1978). Specifically, in a study by Isen and Simmonds (1978) the rate of helping was higher for those in PA when compared to the neutral condition, but only if the task was pleasant. To add more support to this notion, it was observed by Schaffer and Graziano (1983) that pleasant vs unpleasant consequences of helping affected both: helping when in NA and PA, and that its effect on individuals in PA was even stronger than for those in NA (Forest, Clark, Mills, & Isen, 1979).

These findings can be explained well by the mood management motive explored in the NSR model (Cialdini et al., 1973) and those examining PA, suggesting that people can use the helping opportunity to manage their mood; that is, to alleviate NA and maintain PA. The contradictory findings that do not agree with this pattern might stem from some moderating factors, but also from the fact that PA was not delineated into specific emotions in the studies referred to. The importance of differentiating specific emotions have started being highlighted (e.g., Shiota et al., 2014) and results in accordance with it started occurring (e.g., Karsh & Eyal, 2014).

Helping not only seems to be beneficial for alleviating NA, but also for maintaining PA. Many studies have found that people induced to feel good (e.g., by obtaining a cookie, finding a dime in a telephone box) were more likely to help than those in a neutral mood (Isen, 1970; Isen & Levin, 1972), results that are similar to those when comparing people in NA to those in neutral mood state. It was suggested that by not helping PA would reduce, and thus PA maintenance can be a motivation behind helping when in PA. Thus, it can be concluded that performing pro-social acts might function as a mood management technique, helping to alleviate NA and maintain PA (Carlson et al., 1988). This view of affect-based pro-sociality proposed that helping stems from selfish rather than altruistic motives. However, whether this mood management theory is similarly predictive and valid for specific emotions raises a new question: will guilt specifically be decreased due to a performance of a pro-social act, or will this effect only be valid for state NA? It might well be, as claimed by

Cialdini et al. (1973), that helping decreases NA but not guilt, shame or anger. But without studying links between pro-sociality and specific emotions, it will not be possible to answer such questions definitively. In this thesis, I look into the links between guilt and pro-sociality and provide data that help with addressing such questions (see chapter 5).

1.2.1. The Model of Positive Affect and Pro-Sociality

Not all of the models present human pro-sociality through the lenses of self-interest (for a review of altruistic and pseudo-altruistic models of pro-sociality see Feigin, Owens, & Goodyear-Smith, 2014). An alternative view is that pro-sociality is driven by an altruistic motive (Batson et al., 1981). This hypothesis suggests that under some circumstances, people help due to an altruistic motivation rather than self-interest and that the mechanism that allows for that is the empathic concern. Specifically, they suggest that when one empathizes with a victim, the pro-social act performed is purely altruistic, as it is the state of the victim that matters and not of the helper for the initiation of help. This model is described in more details below.

1.2.1.1. The Empathy – Altruism Hypothesis

The Empathy-Altruism Hypothesis (Batson et al., 1981; Batson, 1991) states that empathic concern (a positive affective state of sympathy, compassion, and tenderness: Batson, 1991) leads to pro-social behaviours, regardless whether there are any benefits for the helper involved. In other words, if one experiences empathic feelings toward another person, particularly due to them being in an aversive situation, one will react in a helpful manner, with the end goal of improving the other person's well-being. A myriad of studies have provided evidence supporting the pro-social, or even altruistic, role of empathy (e.g., Batson, Dyck, Brandt, Batson, Powell, McMaster, & Griffitt, 1988; Batson et al., 1989; Batson et al., 1997; Dovidio, Allen, & Schroeder, 1990; Edele, Dziobek, & Keller, 2013; Stocks, Lishner, & Decker, 2009; Williams, O'Driscoll, & Moore, 2014). For example, Edele et al. (2013) found that individuals who scored high on two empathy measures (i.e., Interpersonal Reactivity Index: Davis,

1983, and the Multifaceted Empathy Test: Dziobek et al., 2008) offered more money in a dictator game than those who scored lower.

Even though empathic concern has been linked consistently to pro-social behaviour, its role is not so one-dimensional, as some negative effects of empathic concern have been reported as well. For example, just as is the case for guilt (presented later), empathic concern has been linked with pro-sociality that was at the expense of common good (Batson, Ahmad, Yin, Bedell, & Johnson, 1999; Batson, 2012; Oceja, 2008). In one study (Batson, Klein, Highberger, & Shaw, 1995), participants who were induced to feel empathy toward a particular person violated the fairness principle, and allocated an unfairly high amount of resources to the person they felt empathic towards, and unfair amounts to the others. This result shows that empathic concern might at times not be as moral as predicted (i.e., violate justice, fairness principles), just like has been suggested for the case of guilt-based pro-sociality (deHooe et al., 2011) (which I will come back to later).

Lastly, the Empathy-Altruism Hypothesis is not so far away from the NSR model, as it was shown that sometimes people choose to avoid feeling empathic if they know that a request for help will be presented (Shaw, Batson, & Todd, 1994). This evidence suggests that people might be avoiding empathy and consequently helping in order to protect their emotional state, exactly as suggested by Cialdini et al. (1973). To strengthen this claim, Schaller and Cialdini (1988) showed that even for participants who were induced to feel empathy, the expectation of a mood-enhancing activity eliminated the increased helping which is normally observed in the case of empathy.

When following the E-A model, it seems that it could be applied to the relationship between guilt and increased pro-sociality, as both of these relationships have been suggested to be driven by the focus on the other person, rather than oneself. Specifically, E-A hypothesis suggests that the state of the person in need triggers empathic concern, whereas Baumeister, Stillwell, and Heatherton (1994) have claimed that guilt serves a

relationship-enhancing function and that it is focused on the wellbeing of the other person in such a relationship. Whether this is the case is not certain, and it is difficult to differentiate between selfish and selfless motives for guilt-based pro-sociality. Some insight for this might be given by observation of change in emotions after being pro-social, which is examined in this thesis (see chapter 5).

1.3. The Issues With General Affect Research

As presented above, in both PA and NA related literature the results regarding pro-sociality are mixed (e.g., Carlson & Miller, 1987), and thus require more research that would determine the circumstances that suggest when affect leads to increased or decreased pro-sociality. Some suggested that this could be achieved by more fine-grained hypotheses that are based on discrete emotions (i.e., a categorical approach) rather than general affect (i.e., valence-approach: Van Kleef, De Dreu, & Manstead, 2010; Zeelenberg & Pieters, 2006).

Indeed, general negative affect has been argued to be a too broad construct that combines different emotions that might lead to differential behavioural outcomes. When examined together these emotional affects blend and their effects are difficult to predict (e.g., Lerner & Keltner, 2000; Neiss, 1988). As stated by Zeelenberg and Pieters (2006, p.118): *“Specific emotions provide precise behavioural guidance, which cannot be traced back to their overall positive or negative valence.”* Indeed, the specificity of emotions approach is currently advocated in various areas of psychology, such as judgement (e.g., Horberg, Oveis, & Keltner, 2011; Tiedens & Linton, 2001), work life (Fisher & Ashkanasy, 2000), marketing (e.g., Chitturi, Raghunathan, & Mahajan, 2007), memory (Levine & Burgess, 1997), or even political participation (Valentino, Brader, Groenendyk, Gregorowicz, & Hutchings, 2010). This more detailed way of looking at emotions rather than affect is particularly beneficial, as it allows for generation of more specific predictions linked to discrete affective human experiences (Lazarus, 1993), and its validity has been supported by numerous studies (e.g., Angie, Conelly, Waples, &

Klignyte, 2011; Clore & Huntsinger, 2007; Lench, Flores, & Bench, 2011; Lerner & Keltner, 2000; Zeelenberg, Nelissen, Breugelmans, & Pieters, 2008).

It is not only that studying general affect hurts specificity of affect-based predictions, but it also does not reflect reality. As illustrated by Neiss (1988), people may feel elated, challenged, enraged, or helpless – but they are never just in PA or NA. In other words, the richness of human emotional life cannot be downgraded to one dimension, especially that intuitively people differentiate various emotions, often irrespectively of their culture or language (e.g., Ekman, 1992; Wallbott & Scherer, 1986).

Another reason in favour of the specificity of emotions approach comes from the presence of mixed and bivalent feelings (e.g., feeling happy and sad about the same event, or experiencing *Schadenfreude*, respectively). Such emotions cannot be classified when using the valence approach. Also, many researchers already use measures containing specific emotions, but then combine them into an index of general affect (Zeelenberg & Pieters, 2006). Even though this might appear as a simple approach, knowing what specific emotion to focus on, and then investigating it, appears as a more straightforward way of measuring emotions and their influences.

Different researchers have supported the specificity approach by arguing that all negative and positive moods are not equal, even though presenting the same valence, as they are linked with different behavioural outcomes, convey different information and prime different goals (e.g., Raghunathan & Pham, 1999). To illustrate this point, consider for example that guilt is strongly linked with reparative action tendency, but shame with withdrawal (e.g., Tangney et al., 2007), even though they have the same valence and even belong to the same family of emotions. Knowing this, it is easy to imagine that if studying the effect of NA and having triggered these two emotions together the relations obtained might be difficult to explain; that is, if guilt is more salient then pro-social behaviour might be observed, but if having shame as the more salient one

it might be withdrawal and decreased pro-sociality that takes place. In short, studying specific emotions allows for disentangling the role between affect, behaviours and other phenomena, and demonstrates the links between them in a more clear way, allowing for the creation of more nuanced hypotheses and advancement of the psychological research.

In summary, studying specific emotions provides explanatory superiority over the valence approach. Therefore, looking at emotions as an aggregate (for example as NA or PA) presents an issue, as this does not allow for noticing these unique emotion-behaviour relationships (e.g., Griskevicius, Shiota, & Nowlis, 2010; Zeelenberg & Pieters, 2004; 2006). This might partially explain (in addition to the moderating factors that are already established) why the general NA and PA in regards to pro-sociality have presented mixed findings. It also provides a strong rationale for why we need, as researchers, to go beyond the valence approach when studying emotions. Strong words supporting such a change of perspective in the emotion field came from Solomon and Stone (2002, p.431) who said: *“The analysis of emotions in terms of valence, while it recognises something essential about emotions [...] is an idea that we should abandon and leave behind. It serves no purpose but confusion and perpetrates that worst old stereotypes about emotion, that these are simple phenomenon unworthy of serious research and analysis.”* Therefore, in this thesis, I focused on examining effects of the specific emotion of guilt and anger, rather than studying the role of NA.

1.4. Is the Uniform View on Pro-Sociality Correct?

A similar issue might also apply to the construct of pro-sociality. Pro-sociality is a very broad concept including various behaviours (e.g., helping, sharing, cooperating, etc.), intentions and attitudes. Even the definition of pro-sociality differs between different authors (e.g., Eisenberg, 1992; Hay, 1994; Rose-Krasnor, 1997), adding probably to the various results found in pro-sociality research.

These differences in the way pro-sociality has been defined might reflect one's view of pro-sociality as a uniform or multiform construct.

Some authors have argued that looking at various categories and examples of pro-social behaviour, rather than seeing it as a uniform might be beneficial for research, providing a more nuanced picture of the relationships between specific emotions and specific types of pro-sociality. Indeed, few recent studies have proposed that pro-sociality consists of qualitatively different aspects. For example, Böckler, Tusche, and Singer (2016) showed that pro-sociality should be discussed in terms of self-reported, altruistically-, norm-, and strategically – motivated pro-sociality. However, it needs highlighting that this study used only pro-social behaviours that were tested in experimental settings, and thus might lack some ecological validity (i.e., Wilhelm, Kaltwasser, & Hildebrandt, 2017). Nevertheless, another study, which used every day examples of pro-social behaviours in order to determine the structure of pro-sociality demonstrated that pro-sociality can be split into three dimensions: (i) planned, formal vs spontaneous, informal, (ii) serious vs non-serious, and (iii) giving, indirect vs doing, direct help (Pearce & Amato, 1980), once again, suggesting qualitatively different forms of pro-sociality.

Others have argues that pro-sociality can be divided into helping, caring and sharing (Dunfield, Kuhlmeier, O’Connell, & Kelley, 2010), and showed that these different forms of pro-sociality seem not to be correlated, suggesting their independence. Others suggested that pro-sociality should be based on the resources given, such as money, time, or human tissue (Lee, Piliavin, & Call, 1999), but that the same model (i.e., identity theory) can explain all of these forms of pro-sociality well, suggesting that they might be more similar than different. A similar argument that people present a “cooperative phenotype,” because their decisions in cooperative contexts are highly correlated, even if separated by long time delays was presented recently (i.e., Peysakhovich, Nowak, & Rand, 2014). This suggests that pro-sociality might be a domain-general and temporally stable construct, and thus should be easily applicable to varied forms and contexts.

Thus, considering the above, it is uncertain whether pro-sociality should be seen as a uniform or diverse construct. All of these findings,

even though they present somewhat different factors that come under the umbrella term of pro-sociality, suggest that researchers should examine various types of pro-sociality, but that they should be generalizable from one form to another. In the light of this conflicting finding, in this thesis I examine various forms of pro-sociality, but follow a general definition of pro-sociality, combining them all. Some insight into the factor structure of pro-sociality is provided in Chapter 6. The definition of pro-sociality that I follow, was proposed by Hay (1994, p. 33), who defined it as: *“any action that, as it happens, benefits others, or promotes harmonious relations with others, even if there is no sacrifice on the actor’s part and even if there is some benefit to the actor”*.

Until now, I focused on the general affect and its role for pro-sociality, concluding that examining specific emotions might be a way forward to advance psychological research. Now, I will move towards discussing the literature that already looked into the links between pro-sociality and specific emotion of guilt.

1.5. From General Affect to Specific Emotions: The Emergence of Guilt Research

Nowadays, research focus has moved from utilizing the valence approach (i.e., studying positive and negative affect) towards specificity approaches such as appraisal-tendency (examining effects of specific emotions such as guilt; Lerner & Keltner, 2000) and studying the effects of these emotions on pro-sociality and other phenomena. This change in focus made the study of emotions a hot topic in psychology (Peters, Västfjäll, Gärling, & Slovic, 2006). A multitude of studies provide evidence that specific emotions trigger unique action tendencies, are related to unique appraisals (Lerner & Tiedens, 2006), motivations (e.g., Raghunathan & Pham, 1999), and influence behaviours in specific ways (e.g., memory recall: Levine & Burgess, 1997), even if they belong to the same valence family of emotions. All of this highlights the need to examine unique effects separately, and not in terms of general affect, or general pro-sociality. For example, Raghunathan and Pham (1999) showed

that, while anxiety motivates individuals to reduce uncertainty, sadness (another negative emotion) primes a goal of reward replacement. More importantly, researchers seem to agree that specific emotions have specific evolutionary-based functions; for example, that guilt together with shame and embarrassment evolved to direct one's moral conduct (Joyce, 2006), and that they evolved to help people dealing with unique real-life problems, adding more support for the specificity approach to emotions. The role of these specific emotions, with a focus on a group of moral emotions, and how do these emotions differ are described below.

1.5.1. What Are Moral Emotions?

Guilt has become one of the most widely studied specific emotions in recent years. Maybe not to the point of emotions like joy or sadness (when searching journal Emotion, the number of results obtained for joy, sadness, and guilt were the following: 28, 108, and 13)¹ but this is possibly due to more difficulties with manipulating guilt when compared with for example joy, rather than difference in the importance of these emotions (e.g., Tracy & Robins, 2004a). Guilt has been depicted as prototypical moral emotion, mainly on the basis that it leads to pro-social outcomes, which makes it crucial, similarly to empathy, for functioning and thriving of society (e.g., Tangney et al., 2007), and why investigating its effects is of paramount importance.

1.5.2. Typology of Moral Emotions

The moral emotions according to Haidt (2003) can be more or less moral, depending on how much self-interest is there in the eliciting event, and how pro-social is the action tendency associated with that emotion (see Fig 1.1). As such, each emotion might be more or less, or not at all, moral, given certain circumstances. As presented in Figure 1.1, Haidt (2003) suggested that guilt and anger can be characterised as similar emotions, as they present a similar level of pro-sociality of their action tendency and the disinterestedness of their elicitors. Nevertheless, it needs

¹ The search was performed in August 2016.

mentioning that anger, as discussed by Haidt (ibidem), is a reaction to the harm done to other rather than self. It is the latter that I examine in this thesis. However, what the graph in Fig. 1.1 seems to demonstrate is that specific emotions, rather than general affect, should be examined in regard to pro-sociality, as they relate to pro-sociality differently. This adds more weight to the view that only by studying specific emotions the advancement of the understanding of human emotions and their outcomes might occur.

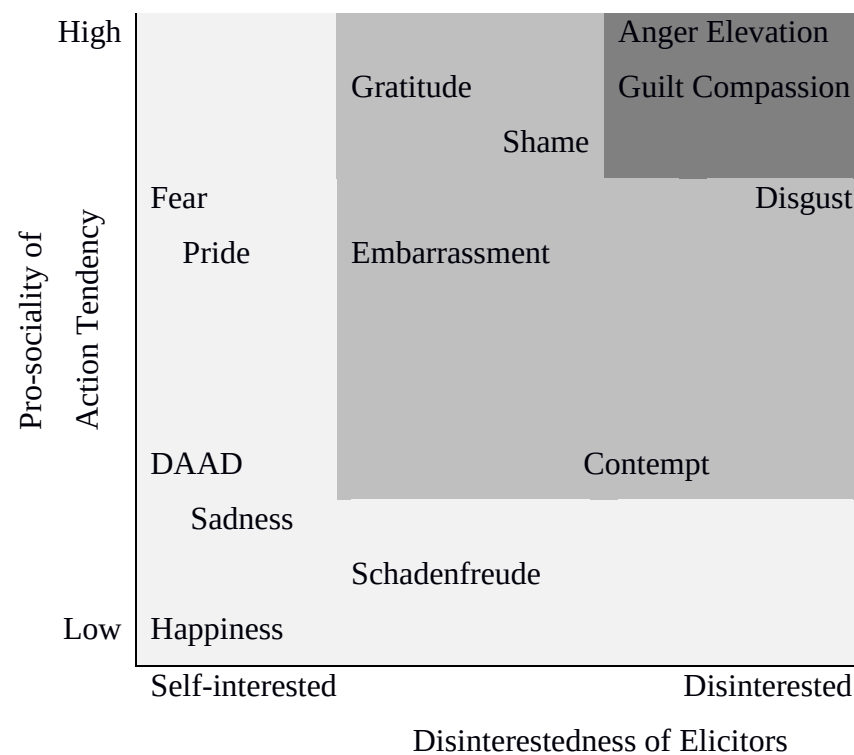


Fig 1.1 Structure of moral emotions according to Haidt (2003), based on two dimensions: (i) pro-sociality of action tendency (high vs low) and (ii) disinterestedness of elicitors (high vs low). Note. DAAD = distress at another's distress. More prototypical moral emotions are suggested to be placed in the right top corner. This figure was adapted from Haidt (2003), page 854.

Another important point that is stemming from Fig. 1.1 is that anger and guilt seem to be triggered by similar elicitors (i.e., the perception of harm; see also Gray & Wegner, 2011). This point needs

highlighting as, in this thesis (Chapter 3 to 5), I will present the view that guilt and anger (directed at others) are strongly related in a situation of moral transgression. Even though the anger I focus on does not belong to the model presented by Haidt (2003), I would argue that, due to its role in dealing with injustice, it should have some moral standing after all. I come back to the role of anger later in this Chapter.

1.5.3. Evolutionary Perspective on Moral Emotions

It needs stressing, that moral emotions are seen as stemming from reciprocal altruism, a tit-for-tat strategy that was evolutionary beneficial for those involved (e.g., Segal & Sobel, 2007; Trivers, 1971; 2006). This strategy is beneficial only if those involved do not deviate. Human beings are seen as particularly sensitive to potential and past deviations from the norm of reciprocity (e.g., free-riding; Andreoni, 1988), as this can inform about risks of cooperating with “uncertain” individuals. Those “uncertain” individuals will be associated with a bad reputation (e.g., Fehr, 2004), which might save those who do not deviate from being exploited (e.g., Han, Pereira, & Lenaerts, 2015). It is suggested that modern society uses many tools to protect cooperation from exploitation; for example, punishment strategies (e.g., Bowles & Gintis, 2002; Rand, Ohtsuki, & Nowak, 2009), or passing information about the reputation concerns (e.g., Nakamaru & Kawata, 2004). The emotions that are triggered by events such as moral and cooperation transgressions are often at the core of moral conduct. Therefore, I would claim that anger directed at injustice from others toward oneself should also be seen as a moral emotion as, in the long run, it can inform society about the acts of those who transgressed against the agent.

1.5.4. Families of Moral Emotions

Still, it is guilt that is classified as both self-conscious and most moral emotion. The family of self-conscious emotions, which are derived due to their self-related mechanisms, includes guilt, shame, pride, and embarrassment (Fisher & Tangney, 1995; Tangney & Tracy, 2012). The same emotions, with a few additional ones, have been classified also as the family of moral emotions, those that respond to moral violations and motivate moral behaviour.

According to Haidt (2003), moral emotions consist of two major families: (i) the other-condemning: contempt, anger, and disgust (CAD); (ii) the self-conscious (SCE): guilt, shame, embarrassment; and two minor families: (iii) the other-suffering: compassion, and (iv) the other-praising: gratitude and elevation. Below, I briefly describe SCE and CAD emotions, with emphasis on their unique characteristics and differences/similarities to guilt.

According to Rozin, Lowery, Imada, and Haidt (1999) CAD and SCE families are the most relevant to morality and pro-sociality, as they *“motivate the individual to want to fit in, to behave in a culturally acceptable fashion, and to avoid harming people”* (p. 574). When SCE family emotions are self-relevant, the CAD family also reflects the concern for social order, but the focus is on others rather than the self, specifically moral transgressions committed by others.

The family of the self-conscious emotions (SCE) is based on their association with self-assessment (whether explicit or implicit). It has been shown that only animals with the capability for self-awareness display emotional reactions that might be interpreted as precursors of SCE (e.g., Hart & Karmel, 1996), and that human infants do not experience these emotions until their self develops (Mitchell, 2002). Indeed, in order to occur, all the SCEs require a developed self that one can assess based on one's actions and inactions, with respect to social and personal norms and values (Buss, 2001; Tracy & Robins, 2004a). Apart from self-awareness, SCE are supposed to involve two more cognitive processes: (i) other-

awareness, and (ii) social-norm awareness (Beer, 2007), which are not necessary for other types of emotions.

Following the appraisal theory (Lazarus, 1966), if the actions of one's self are appraised as positive (e.g., improve one's well-being), then the SCE of pride arises; however, when one's actions are against the norms and appraised negatively, then it is guilt, shame or embarrassment that arise, indicating that one's self was somewhat involved in a transgression. As stated by Tangney and Tracy (2012): "*Together, SCE function to provide immediate and salient feedback on our social and moral acceptability – our worth as human beings*" (p. 447). In other words, SCE motivate people to achieve their goals and to behave in a moral and socially appropriate way when doing so.

Below, I present each of the SCE separately, with a short comment on the similarity between the emotion in question and guilt – the main focus of this thesis. However, as only guilt and anger are the focus of this thesis (cf. Chapter 5), the sections on other emotions are presented in much less detail. I present them briefly, as in study presented in Chapter 5, I examine whether only the level of guilt and anger or also other emotions (e.g., pride) change after performing a pro-social act.

1.5.4.1. The Self-Conscious Emotions Family

1.5.4.1.1. Guilt and Shame

Guilt and shame are often seen as interchangeable by lay people, which is understandable, as they often co-occur and are shown to reduce the chance of aggressive or immoral actions (Abell & Gecas, 1997). Researchers, however, differentiate between them, because of a few properties that make them separate, and because they may lead to different behavioural outcomes. In essence, shame is considered to be a reaction to the public rather than private transgressions, with the latter being the case for guilt (Lewis, 1971). Secondly, shame is linked to withdrawal, escaping and hiding, and it can be related to both moral and non-moral domains, whereas guilt is supposed to lead to reparative actions (e.g., confession,

apology, repayment) due to moral transgressions specifically (Smith, Webster, Parrott, & Eyre, 2002). Lastly, shame is reflecting whole self as morally-dubious (e.g., Lewis, 1971), indicating the more strongly aversive character of shame, whereas guilt is reflected in the negative evaluation of a wrongful act. Not all of these distinctions obtained empirical support though (i.e., public vs. private; Tangney et al., 1994). Some research has even concluded that both shame and guilt can be elicited by the same event type (Tracy & Robins, 2006), making their separation even more difficult. Still, shame in the literature has been presented mostly in terms of withdrawal or even aggression, whereas guilt has been presented as the more adaptive emotion, leading to pro-social outcomes (Tangney, Wagner, Fletcher, & Gramzow 1992).

It is worth noting, though, that such a strong differentiation stems from research investigating mostly trait level of guilt and shame, and thus should not be directly applied to the state guilt and shame, as the literature suggests that affect measured as trait is often orthogonal to each other, whereas state affect (e.g., guilt and sadness) is correlated with each other (e.g., Diener, Smith, & Fujita, 1995; Vansteelandt, Van Mechelen, & Nezlek, 2005; Zelenski & Larsen, 2000). Another feature of the trait-based research on guilt is that it is often based on measurement methods, which have been critiqued as biased (e.g., Fontaine, Luyten, De Boeck, & Corveleyn, 2001; Giner-Sorolla, Piazza, & Espinosa, 2011; Luyten, Fontaine, & Corveleyn, 2002). Some evidence for this stems from some recent works that started showing that shame might be as moral as guilt, if not mistaken with inferiority or condemnation (Gausel et al., 2016), or externalisation of blame (Tangney et al., 2014). Tangney (1991, 1995) has claimed that guilt is more moral as it leads to pro-social outcomes (via the acceptance of responsibility), whereas shame might easily lead to an opposite effect – aggression, with the mediating mechanism being the externalization of blame (e.g., Stuewig, Tangney, Heigel, Harty, & McCloskey, 2010). Due to the fact that this thesis focuses on state rather than trait guilt (cf. Chapter 6), there should not be an issue with shame negatively affecting the link between guilt and pro-sociality, which in trait-

based research is dealt with by accounting for effects of trait shame. Here, I do not investigate or control for shame, due to the reasoning presented above.

1.5.4.1.2. Embarrassment

Embarrassment is an emotion close to guilt and shame, which has been supported by some neuroimaging studies, showing same brain areas as active (e.g., Takahashi et al., 2004). However, it differs from the other two due to being experienced when personal limitations are exposed publically, and because it is less intense than shame (e.g., Kroll & Egan, 2004). Nevertheless, guilt, shame and embarrassment frequently occur together and can be triggered by similar sort of situations (Lewis, 1971; Tangney, Miller, Flicker, & Barlow, 1996b). What differentiates embarrassment from guilt is that it is believed to possess an observable signature; namely, blushing and specific body posture, which is not the case for guilt (Keltner, 1995; Tracy & Robins, 2004b; Tracy, Robins, & Schriber, 2009).

1.5.4.1.3. Pride

Pride is suggested to function in order to promote behaviours that are in accord with social standards, which increases one's social standing and inclusion within one's social group (Tracy, Shariff, & Cheng, 2010). Pride is argued to increase the probability of achievements in social domains. Due to its reinforcing properties, pride increases socially valuable behaviours, and subsequently one's self-esteem. Pride is suggested to possess two facets, one with more of a moral standing (authentic) that leads to pro-social acts, and one that leads to seeing oneself as better than others (hubristic), and therefore to conflict and aggression (Tracy & Robins, 2007; Wubben, De Cremer, & van Dijk, 2012). Pride is experienced in situations when one compares their behaviour to a set of standards, norms or goals, and realizes that one succeeded. In comparison, guilt and shame occur when the comparison of one's behaviour with some standards and norms leads to a conclusion that

one failed to meet them or broke them (Lewis, 2008). Whether pride arises due to a pro-social act performed after a transgression is addressed in Chapter 5.

The aforementioned emotions constitute the SCE family, which is closely related to the CAD family, but with the difference in focus (self vs other).

1.5.4.2. The CAD Family

The emotions in the CAD family are specifically focused on violations of cooperation committed by other people, which trigger the abovementioned emotions and action tendencies linked to them, for example, punishment. The CAD emotions have been shown to differ from each other as they reflect a violation of specific moral codes of community, autonomy, and divinity, introduced by Shweder and colleagues (1997), as relevant for contempt, anger, and disgust, respectively (Rozin et al., 1999). Some opposite views (e.g., relating anger to divinity) have been presented (e.g., Royzman, Atanasov, Landy, Parks, & Gepty, 2014). Below, a short presentation of three emotions constituting CAD is given.

1.5.4.2.1. Contempt

Contempt is believed to be a mixture of anger and disgust (Plutchik, 1980), which is elicited by incompetent actions of others and result in a negative attitude toward them, and seeing them as morally inferior. It was found to lead to social exclusion and rejection of those who behaved in a morally dubious way, for example of a corrupt politician or of people who are considered as less capable than the self (e.g., Fischer & Roseman, 2007; Hutcherson & Gross, 2011; Izard, 1977). Both contempt and disgust toward someone has been suggested to mark such individuals as those who pose a threat of potential harm and should be avoided (Hutcherson & Gross, 2011). These authors also suggest that contempt and disgust are closely related but might be differentiated by their subject: immorality in the case of disgust and incompetence in the case of

contempt. Despite these distinctions, all CAD emotions are highly correlated and are often labelled interchangeably by lay people and researchers (e.g., Shioiri, Someya, Helmeste, & Tang, 1999).

1.5.4.2.2. Anger (at Others)

Even though anger might appear very distant from guilt, some have suggested that guilt can be considered as anger directed at oneself (Breggin, 2015). Anger is often seen as immoral emotion, linked with hostility and aggression, especially in aggressive individuals (Hortensius, Schutter, & Harmon-Jones, 2012; Tiedens, 2001), as well as with attack (Harmon-Jones & Allen, 1998). It can, however, be a moral emotion, especially when it is triggered by appraisals of injustice, unfairness, and immorality. Anger often leads people to demand justice for others, which has to be differentiated from demanding revenge in order to be seen as moral (Haidt, 2003; Scherer, 1997). Indeed, various studies have shown that people who were in an angry state were willing to incur costs in order to punish betrayal (e.g., de Quervain et al., 2004; O’Gorman, Wilson, & Miller, 2005). Not only anger (referred to as empathic anger), but guilt (i.e., over not punishing norm violations) as well has been shown to be sufficient to lead to third-party punishment (Nelissen & Zeelenberg, 2009a), suggesting that they may play a similar role for pro-sociality.

Out of the CAD family, anger is proposed to be the most moral, as it leads to direct actions aimed at repairing moral violations or making the violators repair their wrongdoings, and it is followed by less morally prototypical disgust and contempt (Haidt, 2003; Hutcherson & Gross, 2011). It was, however, shown to be the most intense when the violation was directed at self, and less intense when the violation was directed at others, even friends (Hutcherson & Gross, 2011), suggesting that its role might be limited. Anger, even though belonging to a different family than guilt, has been linked to guilt, by finding that anger expression of one person, in a social context, triggers guilt in the target of this expression. In a similar fashion, an expression of disgust has been found to cue experience of shame in the target of disgust expression (Giner-Sorolla &

Espinosa, 2010). A similar statement about the correspondence between guilt-anger and shame-disgust pairs has been made by other theorists as well (Nussbaum, 2004; Roseman, 1984). In this thesis, I will propose and investigate the reverse relationship; namely, that experience of guilt might cue anger, but this time, within the same person (see chapter 3 to 5).

This proposition is at the core of the studies presented in Chapters 3 to 5, where I investigate whether both guilt and anger (at others) are related to moral transgressions, and whether anger following from guilt (i.e., being manipulated to feel guilty) can be a mechanism linking guilt with decreased rather than increased pro-sociality. The rationale for these claims is presented in the respective chapters.

1.5.4.2.3. Disgust

Even though there are few forms of disgust that researchers differentiate (e.g., distaste, core disgust, or interpersonal: Rozin, Haidt, & McCauley, 2008), here I focus on moral disgust, as this is the type of disgust that relates to morality. Disgust is suggested to start off as an evolutionary strategy that, for example, protects one from consuming rotten food that might be dangerous (Lewis, 1971). Here, such food evokes a repulsive bodily reaction. When put in a similar social perspective, moral disgust can be seen as a form of a negative, repulsive reaction towards morally-relevant stimuli, especially for acts that are seen as immoral. For example, in Western culture, this might be eating a dog (Haidt, Koller, & Dias, 1993). More universally such acts can also include cruelty, racism, and brutality (Bloom, 2004). What differentiates disgust from guilt, might be, the fact that disgust has a universally recognised facial expression (Ekman, 1993; Rozin, Lowery, & Ebert, 1994), which is not the case for guilt. Importantly, their action tendencies also differ, as guilt leads to approach and repayment, whereas disgust leads to repulsions, and distancing oneself from immorality (Frijda, Kuipers, & ter Schure, 1989).

In summary, the review of moral emotions presented here, suggests the differences and similarities as important for differentiating between

specific emotions. Understanding how guilt relates to other moral emotions provides a good start to the discussion of guilt as a separate entity, which follows in the next paragraph.

1.6. Guilt - Negative Emotion With Positive Effects

Guilt, in this thesis, is operationalised as a feeling that arises: *“when people do what they should not do or do not do what they should do in the ethical-moral realm...”* (Mosak, 1987, p. 288). Therefore, guilt is portrayed as an emotional experience, distinguishable from the more stable disposition to feel guilty, occurring after a transgression (whether real or hypothetical). Following this definition, guilt in this thesis was induced in participants: who decided to take money that belonged to a charity (Chapter 3), who failed to help their anonymous partner in a task (Chapter 4), and who were exposed to a blood donation appeal (Chapter 5). The rationale for also examining anger stems from the fact that some manipulations of state guilt (e.g., charity appeals) have been seen to backfire, and thus leading to reduced pro-sociality (Chang & Chen, 2010). Therefore, it is likely that these emotions are more strongly related than previously thought.

1.6.1. Guilt as a Prototypical Moral and Pro-Social Emotion

The emotion of guilt presents a sort of curiosity, as on the one hand it is unpleasant to the person experiencing it, but on the other hand, it seems to be linked with positive outcomes, such as pro-sociality, repayment, and apologizing (see chapter 2). From an evolutionary perspective, guilt has evolved in humans as it plays an important role in the survival of the species and thriving of the society (Breggin, 2015; Haidt, 2003). Taking the social functionalist approach, it can be said that guilt evolved to enhance reproductive fitness (Keltner, Haidt, & Shiota, 2006). Guilt, as with other moral emotions, is suggested to act as a commitment device, motivating behaviour that is costly in the short-term but will bring benefits in the long-term, such as cooperation (Rand & Nowak, 2013). This approach suggests that guilt evolved to help strive in an ultra social society, which presents many challenges, such as

cooperation and exploitation of it. Guilt has been suggested to be an emotion that arises in order to motivate an individual to repair their own transgression of reciprocity. A very close emotion appearing in a situation of cooperation deviance is anger, which functions to motivate others to repair their transgression. It has been suggested that guilt is present in modern societies as it protects the society from exploitation by individuals. It is also likely that anger evolved to protect from exploitation by others.

Baumeister et al. (1994) proposed that guilt fulfils mainly a relationship-enhancing function; that is, it protects and enhances one's close relationships, by triggering apologising, making amends, or avoiding transgressions due to anticipated or experienced guilt. This function relates well to the main elicitors of guilt: (i) transgression against others, (ii) self-regulatory failure, and (iii) no fault relationship threats, strongly linked with failing others and following one's self-interest (<http://emotionresearcher.com/the-functions-of-guilt/>). This relationship-enhancing function might be more closely linked to episodes of guilt within close relationships, which was suggested by a study where participants were asked to describe their guilt episodes (Baumeister, Stillwell, & Heatherton, 1995b). It was found that 93% of these episodes engaged someone close. Based on these results, Baumeister et al. (1995b) proposed that guilt is specifically attuned to relationship threats, and encouraging people to change their behaviour in a pro-relationship fashion.

Another argument for the relationship-focused function of guilt comes from the claim that it is mostly in the context of close relationships where manipulating guilt in others in order to obtain some relationship benefits (e.g., attention) happens (Baumeister et al., 1995b). Using guilt as a method of influence might however sometimes backfire (e.g., lead to resentment: Baumeister et al., 1995b). Nevertheless, guilt does lead to pro-sociality towards strangers, sometimes towards people that one will never have contact with again (e.g., in typical Dictator Game experiments: Xu, Begue, & Bushman, 2012; Xu, Begue, Sauve, & Bushman, 2014), and

thus the relationship-enhancing function is possibly not the only role guilt plays.

In short, guilt seems also to function as an internal punishment system that motivates individuals to repair their wrongdoings (also called “self-recrimination” function: James, 2011; Joyce, 2006), but also as an indicator that the person experiencing guilt respects norms and commitment to their relationships (Baumeister et al., 1944; Frank, 1988). Interestingly as guilt does not possess a specific facial expression, it does not appear to function as a communication tool. The fact that someone feels guilty must be interpreted from other factors, for example, a behaviour aimed at correcting one’s wrongdoing. Such a behaviour if interpreted in a positive light by others might bring benefits to both the wrongdoer (e.g., a less harsh punishment: Darby & Schlenker, 1989; Wooten, 2009) and the relationship. As suggested by Baumeister et al. (1994, p. 247): “*Feeling guilty is a way of showing that one cares.*” How strongly guilt is linked to pro-sociality, is investigated and presented in chapter 2, which reports a meta-analysis focused on their relationship.

1.6.2. Does Guilt Always Lead to Pro-Sociality?

Is it possible than that, even though guilt is considered a prototypical moral emotion, this stance might be exaggerated, and like with other negative emotions, guilt might not always lead to pro-social behaviour. Some initial support for such a case has been presented by Xu et al. (2014a), who showed that people who alleviated their guilt by other means than helping (i.e., hand-washing) were less pro-social when an opportunity for behaving in a pro-social way arose, compared to their counterparts. These results are in keeping with those presented for NA earlier. That said, even though guilt might not always be pro-social (as presented above), it seems to be even more problematic when it is absent.

1.6.3. When Guilt Is Lacking

Strong evidence into how relevant guilt is for morality and pro-sociality comes from studies on individuals with psychopathic tendencies,

who are described as those who lack feelings of guilt, remorse or empathy (Hare, 1999). It is suggested that psychopaths have a diminished ability to experience guilt and other moral emotions, which is supposed to be one of the underlying factors of their antisocial behaviours and moral insensitivity (Blair, Jones, Clark, & Smith, 1995). Even at early life stages, ability to experience guilt has been shown to prevent from disruptive development, such as conduct disorder (Kochanska, Barry, Jimenez, Hollatz, & Woodard, 2009), which is seen as a predictor of psychopathy (Burke, Loeber, & Lahey, 2007). All of this evidence supports the moral standing of guilt.

1.6.4. The Darker Side of Guilt

It would be rather short-sighted to assume that guilt, whether trait or state, promotes only beneficial outcomes. The claim that guilt might possess a darker side stems from research linking guilt (especially at elevated levels) to psychopathology (e.g., O'Connor, Berry, & Weiss, 1999) and reduced pro-sociality. Multiple findings demonstrate that increased levels of guilt are related to psychopathology in the form of depression (Kim, Thibodeau, & Jorgensen, 2011), OCD (e.g., Shafran, Watkins, & Charman, 1996; Shapiro & Stewart, 2011), or PTSD (Lee, Scragg, & Turner, 2001). Indeed, irrational guilt is seen as a core element of OCD (e.g., Shapiro & Stewart, 2011). Similarly, other negative phenomena such as self-punishment (Nelissen & Zeelenberg, 2009b), reactance to persuasive communications (Graton, Ric, & Gonzalez, 2016; Quick, Kam, Morgan, Montero Liberona, & Smith, 2015), defensive information processing (Agrawal & Duhachek, 2010) and anger/hostility (Mistry & Latimer-Cheung, 2014; Turner & Underhill, 2012) were linked to guilt feelings. What is important though, is the fact that in the studies cited above, it was not guilt per se, but guilt in a specific context (e.g., when repayment was not an option: Nelissen & Zeelenberg, 2009b) that led to some negative outcomes. This suggests that investigating situational cues is crucial for understanding when guilt might lead to negative, or not so positive outcomes. Therefore, in this thesis, I explore factors that might

determine when guilt leads to increased, and when to decreased pro-sociality. This is presented in Chapters 3 to 5.

To give an example of why context might matter, consider the following study where mothers of children who did not meet physical activity requirements were presented with guilt appeals – their intention to support their child’s PA was negatively affected (Mistry & Latimer-Cheung, 2014). It is highly possible that they felt manipulated by such an advert, and therefore guilt rather than to increased compliance, led to reactance. Similarly, another study showed that when participants were induced to feel guilty and offered a chance to be pro-social, if the pro-social suggestion was made blatantly this led to reactance, and therefore decreased helping (Graton, Ric, & Gonzalez, 2016). These studies seem to be suggesting that guilt, just like pride (e.g., Tracy & Robins, 2007), might possess two facets, one pro-social and one less so. I will return to this proposition in chapters 4 and 5.

Lastly, as mentioned previously, recent studies of de Hooge et al. (2011) found that guilt might lead to treating unfairly a third party when dividing resources between the agent, the harmed person and the third party, and thus its moral character might be not as pure as previously thought. This result brings guilt closer to empathy, discussed previously, which was also shown to lead to an unfair division of resources between three parties.

1.6.5. Mechanisms Behind the Effects of Guilt

The mechanisms of guilt-based pro-sociality have not been explored extensively yet (Teper, Zhong, & Inzlicht, 2015). Few studies that looked at this have suggested that it is the feeling of responsibility that mediates effects of guilt (Basil et al., 2006; Kaiser & Shimoda, 1999; Miceli, 1992), sometimes also referred to as attribution of self-blame (Voth & Sirois, 2009). These studies suggest that if responsibility is absent, even though feelings of guilt occur, they will not impact one’s pro-sociality. Evidence for that is provided by the study by Basil et al. (2006), where responsibility mediated the link between guilt and pro-sociality

fully. In their two studies, guilt appeals were used in order to trigger charitable intentions and donations. It was observed that when responsibility was taken into account the effect of guilt on pro-sociality became insignificant. This suggests that guilt and responsibility are highly related, but also that responsibility is the driving force of the relationship between guilt and pro-sociality.

The impact of responsibility on pro-social behaviours has been highlighted previously, for example, in the diffusion of responsibility theory (Darley & Latane, 1968), showing that as the number of emergency bystanders increased, the likelihood of help decreased, which was due to people feeling less responsible for providing help. Guilt was not explored in the theory of Darley and Latane (1968), but it provides a good illustration of the crucial role of responsibility in helping to occur. It should not surprise, though, that guilt and responsibility are seen as very close constructs (e.g., Caprara, Manzi, & Perugini, 1992). However, more research is needed examining whether responsibility mediates the link between guilt and increased pro-sociality and whether this is true under various contextual conditions. Therefore, I explore the mechanism linking guilt and pro-sociality via responsibility in this thesis in order to replicate and expand it. If indeed, this link is present under various contextual conditions, this would support the strong ties between guilt and responsibility. To add more insight into whether it is responsibility or other causality-related factors that drive the positive link between guilt and pro-sociality, I also explore whether self-blame, a construct close to responsibility, serves the same role. Blaming oneself might be seen as a more negative construct than responsibility. Therefore, it might be that self-blame would not mediate the link between guilt and increased pro-sociality. However, if both responsibility and self-blame serve a similar role, then I should be able to observe their mediating effects.

Some researchers, however, have suggested that pro-sociality is not the only way of dealing with one's guilt and that other-blaming, or denying one's responsibility might also occur when feeling guilty (Rogers, Miller, Mayer, & Duval, 1982). Indeed, Rogers et al. (1982) showed that

people high in state NA helped more, but only when blaming oneself, but not the others. Similarly, Basil et al. (2006) hinted at the idea that instilling a feeling of responsibility through a guilt-based advert is necessary for pro-sociality to occur. Following from this, I propose that a mechanism through other-blaming, and thus not accepting one's responsibility, which theoretically should trigger anger and hostility (e.g., Quigley & Tedeschi, 1996), might be the mechanism responsible for reduced pro-sociality when feeling guilty. Indeed, it was found that those who express anger after a failure in a collaborative task were assessed as blaming other for the failure, whereas those who expressed guilt were judged as self-blaming (Karasawa, 2001). Therefore, in this thesis, I examine whether anger (a proxy of other-blame) mediates the link between guilt and decreased pro-sociality. The focus is placed on anger, as, like suggested beforehand, the typology of moral emotions (Haidt, 2003) demonstrates that they are closely linked, and I presume that they are likely to be triggered in a similar context. Secondly, it is emotions that are characterised by action tendencies rather than cognitions, which supports the choice of anger rather than other-blame as the mediating mechanism. I am not aware of studies that examined whether guilt might lead to other-blaming and anger, which could produce decreased pro-sociality. Therefore, this thesis is the first to examine this proposed mechanism. A similar mechanism has been mentioned in the case of shame though, where shame was linked with anger and hostility, at both trait (e.g., Hejdenberg & Andrews, 2011; Tangney et al., 1992) and state level (Elison, Garofalo, & Velotti, 2014; Thomaes, Stegge, Olthof, Bushman, & Nezlek, 2011; Thomas, 1995). Working on the assumption that guilt and shame are closely related, and that shame might also lead to increased pro-sociality (e.g., de Hooze et al., 2008; de Hooze, Zeelenberg, & Breugelmans, 2010; de Hooze, 2014; Panagopoulos, 2010), I propose that for guilt reduced pro-sociality might also occur. The mechanism that might explain this would rely on other-blaming and therefore anger/hostility and should be evident at least under some circumstances. What might be these circumstances will be examined in Chapter 4 and 5.

1.7. Gaps in the Literature

Even though emotion research has been thriving for a few decades now, there is still a lot of aspects that need investigating when it comes to relationships between moral emotions and morality, and more specifically there is a need to study specific emotions such as guilt and their role for pro-sociality. A recent review in the field suggested that the research on the effects of emotions on moral behaviours is limited (Teper et al., 2015).

One of the other aspects that are also problematic and need tackling is the overreliance on attitudinal rather than behavioural measures of pro-sociality. Even though this limitation might be applicable to many fields of psychology, in the field of morality and pro-sociality it has a special standing, as these domains examine phenomena that are socially desirable, which might lead people to endorse morality when it is not costly (i.e., in the form of self-report), but to do otherwise in the real-life. Teper et al. (2015) have recently argued that, while we know a lot about the role of moral emotions for moral judgements, this is not the case for moral behaviours. The same story appears to be true for research on pro-sociality, which often utilises non-behavioural measures. To tackle this issue, in this thesis I investigate pro-social behaviours by measuring people's willingness to perform pro-social acts (e.g., sending a letter) and actual behaviours (e.g., charity donation), rather than just relying on the self-report based measures of pro-sociality. Such an approach should provide knowledge that is applicable to actual behavioural acts rather than just pro-social intentions or attitudes. It is well-known that the relationship between self-report and actual moral behaviour is not very strong (e.g., Blasi, 1980), enough to mention the attitude/intention-behaviour gap in the moral field (e.g., Epley & Dunning, 2000; Teper, Inzlicht, & Page-Gould, 2011). Due to the fact that this discrepancy between people's attitudes or intentions and behaviours exist, it is not possible to generalise the findings stemming from attitude-based research to pro-social behaviours. Measuring pro-social intentions or attitudes might be also problematic from another point of view; namely, they represent characteristics that are socially desirable, and thus, their measure can be biased (e.g., Sintov &

Prescott, 2012). Therefore, to shed some light on the role of moral emotions, specifically, guilt and anger, for pro-social behaviours, in this thesis I utilise many examples of real behavioural pro-social acts.

Second, a great deal of research on guilt and its relations with pro-sociality is based on trait rather than state guilt, which does not allow for examination of mechanisms linking state guilt and pro-social acts. This limitation is tackled in this thesis, with the use of guilt induction techniques. As suggested previously, trait guilt measures might be biased into measuring the adaptive side of guilt, and therefore examining real-life emotions should allow for observation of unbiased effects of guilt on subsequent behaviours, and provide more evidence for the role of state guilt for pro-sociality.

It is in great hope that research reported in this thesis will inform future investigations and contribute to the change that is needed in a field that has focused on self-report, general affect and trait guilt for far too long (Baumeister, Vohs, & Funder, 2007a). The findings of this thesis, apart from being theoretically-informative, have a potential of being informative for charitable organisations relying on emotional appeals in order to attract charitable behaviour. Finally, they also might provide insight into the use of guilt within social interactions, especially close relationships. The potential and the risk when relying on guilt-based persuasion techniques need investigating, and hopefully, some insight into both of these topics will be provided by this thesis.

1.8. Overview of the Present Research

In summary, it has been argued that great amount of literature on pro-sociality concentrated on relationships between general affective state, which might cause problems, as specific emotions (e.g., guilt) has been established as triggering specific and often contradictory action tendencies (e.g., repayment for guilt versus readdressing justice for anger). Similarly, some studies have shown that guilt leads to pro-social outcomes, but others suggest otherwise. Therefore this thesis investigates how strongly and under what circumstances guilt leads to pro-social outcomes.

1.8.1. Guilt and Pro-Sociality: Combined Evidence

Firstly I conducted a meta-analysis in order to establish the average effect found between guilt and pro-sociality, and examined whether various factors might moderate this association, and thus suggest under what circumstances guilt leads to pro-social outcomes.

1.8.2. Manipulating State Guilt and Observing Subsequent Pro-Sociality

Following from the meta-analysis, three experimental studies were conducted, examining the effects of state guilt on pro-sociality. These studies utilise various methods of manipulating state guilt (e.g., being asked to donate to a charity, failing a co-player in a task, reading a blood donation advert), and various methods of measuring pro-sociality (e.g., monetary donation, help with sending a letter, willingness to complete an additional study), in order to establish how generalisable are the pro-social effects of guilt. The contextual factors are varied as well, in order to examine their effect on the mediating mechanisms presented. As reviewed earlier, the effects of guilt on pro-sociality or general affect, seem to vary depending on contextual cues. Therefore, I examine their role in this thesis, to shed more light onto what might determine the effect of guilt.

1.8.3. Extending Pro-Social Results From the Lab to the Real-World and the Mechanism of Trait Guilt

In the last experimental chapter, I look into the issue of generalisability of the results obtained in the lab to the real-world, as this has been suggested to be problematic in the pro-sociality field, especially regarding the use of economic games as a measure of pro-sociality. As an economic game is used in study 3, I examined how well results based on pro-social acts performed in the lab can be translated to the real-world pro-social behaviours. I also shed some light onto whether trait guilt is linked to pro-sociality by investigating its links with appraisals of cost and risk of helping, following from the cost-reward model presented earlier (Piliavin et al., 1969).

Chapter 2

Acting on Guilt: A Meta-analytic Review of Guilt-Based Pro-Sociality

Chapter Overview

Guilt is conceptualised as a moral emotion that increases the likelihood of a pro-social behaviour. While such a link is commonly reported, the findings were not always consistent, and guilt has also been linked to self-punishing behaviour. In the current meta-analysis, I explore theoretical and methodological moderators that might affect the strength of the relationship between guilt and pro-sociality. Results combining 120 effect sizes, from 74 articles, demonstrated that guilt was reliably and positively related to pro-sociality (publication bias adjusted $r = .24$). This relationship was moderated by a number of theoretically important constructs: level of religiosity (estimated at country level), direct (at the target of transgression) vs non-direct pro-sociality, guilt manipulation types (e.g., charity appeals) and trait vs state assessment. The association was weaker in religious countries, for non-direct pro-sociality, charity appeals and trait guilt. Exploring results from additional 5 effect sizes (4 articles) demonstrated that guilt was reliably related to self-punishment. It has also been highlighted that guilt is more strongly linked to self-punishment than pro-social acts, which might suggest that actions to alleviate guilt might be primarily self-serving (at least when considering situations involving strangers).

2.0. Introduction

Guilt is an interpersonal, self-conscious, moral and social emotion (Baumeister et al., 1994; Tangney, 2002). Psychological theories state that people feel guilty when they commit a moral or social transgression (Tilghman-Osborne, Cole, & Felton, 2010) and the person believes that they “*should have thought, felt, or acted differently (with implications of responsibility, wrongdoing, and/or insufficient justification)*” (Kubany & Watson, 2003, p.53). Thus, guilt is an unpleasant state, experienced as a “*sense of regret, remorse, tension, and anxiety about being culpable and punishable for an offence, a failure of duty, or conscience*” (Ferguson, 1999, p.308; cf. Zeelenberg & Breugelmans, 2008 for difference between guilt and regret). Furthermore, researchers differentiate “everyday” from pathological/chronic guilt (Eisenberg, 2000; Estrada-Hollenbeck & Heartherton, 1998; Kubany & Watson, 2003), with the latter contributing to psychological problems, such as OCD (Shapiro & Stewart, 2011), depression (Alexander, Brewin, Vearnals, Wolff, & Leff, 1999; O’Connor et al., 1999) and PTSD (Kubany, 1994). By contrast, the common guilt is predominantly seen as yielding positive outcomes such as the increased likelihood of pro-social behaviour through (1) reparations and (2) setting things right (see Brown, Gonzalez, Zagefka, Manzi, & Cehajic, 2008; Iyer, Leach, & Crosby, 2003; Yu, Hu, Hu, & Zhou, 2014), and is the focus of this review.

Even though guilt is experienced as an unpleasant state (e.g., Ellsworth & Smith, 1988; Xu et al., 2014b), it generates positive outcomes via reparations (Baumeister, Reis, & Delespaul, 1995a), making amends (e.g., Schmader & Lickel, 2006; Tangney, 1993), and victim appeasement (even in children: Vaish, Carpenter, & Tomasello, 2011). Research has shown that adults and children (Darby & Schlenker, 1989) perceive displays of guilt and remorse positively (e.g., Stearns & Parrott, 2012) and that such displays decrease the level of punishment the wrongdoer would obtain (e.g., Darby & Schlenker, 1989; Wooten, 2009). Therefore, displaying and acting on guilt seems to produce positive outcomes for both the wrongdoers (e.g., lesser

punishment) and their victims (e.g., compensation), and thus guilt seems to function to ensure social harmony.

Even though, a large body of research shows that guilt as a state (e.g., de Hooge, 2012, Elgaaied, 2012; Xu et al., 2014a) and a trait (Dunlop, Lee, Ashton, Butcher, & Dykstra, 2015; Morgan & King, 2012) is associated with pro-sociality, little is known about the strength of this relationship and factors potentially influencing it. Indeed, effect sizes reported in the literature are heterogeneous. Some studies demonstrated large effects ($g = 1.75$; Elgaaied, 2012), whereas others showed considerably smaller ones ($g = .30$; Carlo, McGinley, Davis et al., 2012). Such differences might stem from different designs (cross-sectional versus experimental), different types of pro-sociality being measured (e.g., involving time, money or blood; Lee et al., 1999), or different types of samples used (i.e., students vs non-students), to name few. Nevertheless, an investigation examining these factors has not been undertaken yet. This highlights the need for a research effort aimed at systematising the role of guilt for pro-sociality and was addressed in this chapter.

Understanding the strength of the association between guilt and pro-sociality has not only great value for the development of psychological literature on guilt and pro-sociality, but it also presents potential applications for charitable organisations that often focus on guilt-appeals in order to obtain donations (e.g., Basil, Ridgway, & Basil, 2008; Bennet, 1998). Knowing whether charitable appeals based on guilt are less or more effective than other ways of inducing guilt to affect charitable behaviour, might help in designing more successful methods of charitable appeal. Second, the knowledge about the effectiveness of different guilt-inducing methods and guilt measures should also aid future researchers pondering about the type of design to use in their guilt related studies.

2.1. Pro-Sociality

In this review, pro-sociality was defined in terms of behaviours and intentions to help others (individuals, groups, organisations). These behaviours

included a variety of forms, from a donation of resources such as money (e.g., Harris et al., 1975), or human tissues (e.g., Schwartz, 1970), to spontaneous acts like informing a passer-by about their broken shopping bag (Regan, Williams, & Sparling, 1972). These can be measured both in the laboratory and in the field (Harris et al., 1975; McKay, Herold, & Whitehouse, 2013; Regan et al., 1972; Cunningham, Steinberg, & Grev, 1980). The pro-sociality construct incorporated in the current study also included offering an apology (Tignor & Randall Colvin, 2016), as obtaining an apology and thus being able to forgive offers some level of benefits to the victim (Toussaint, Williams, Musick, & Everson, 2001; Wilson, Milosevic, Carroll, Hart, & Hibbard, 2008), and is seen as a reparative act linked to guilt (e.g., McGarty et al., 2005; Tangney, 1990).

2.2. Mechanisms Linking Guilt to Pro-Sociality

2.2.1. The Moral Barometer: Concurrent vs Anticipated Guilt

The positive link between guilt and acting pro-socially has been investigated for decades. It is due to the links between guilt, moral and pro-social acts, that guilt is characterised as possessing moral character and being the “good” emotion (Haidt, 2003; Tangney et al., 2007). Thus, it is proposed that guilt functions as a moral barometer, providing feedback on one’s actual and anticipated behaviour (Ioannou et al., 2013; Tangney et al., 2007), functioning by two mechanisms: concurrent (i.e., present) and anticipated guilt (based on remembered guilt episodes). Concurrent guilt pushes people towards choosing the moral option next time they face a similar situation, whereas anticipated/remembered guilt deters them from doing something wrong at the moment. Both current and anticipated/remembered guilt were found to increase not only moral (e.g., not cheating: Kouchaki, Gino, & Jami, 2014; honesty: Cohen, Panter, & Turan, 2012) but also one’s pro-social behaviour (Estrada-Hollenbeck & Heatherton, 1998). Whether the type of guilt (current vs anticipated/remembered) relates to pro-sociality with different strength is unknown, and was thus explored in this review.

2.2.2. Direct (Victim-Related) vs Non-Direct (Non-Victim Related) Pro-Sociality

Even though the universal view appears to be that guilt promotes pro-sociality in general, some have suggested that pro-social effects of guilt occur only if there is an opportunity to make amends directly to the victim (e.g., Cryder, Springer, & Morewedge, 2012), and thus it is claimed that guilt functions to remedy specific transgressions. These authors also proposed that only repaying specific transgression might reduce one's guilt and repair one's reputation or self-perception, which would be the motives driving pro-social effects of guilt, according to some (e.g., an extension of NSR model: Cialdini et al., 1973). However, because guilt is an unpleasant state that people are motivated to decrease (Estrada-Hollenbeck & Heatherton, 1998), it would be reasonable to assume that there would be more than one specific way of achieving that. This appears to be true, even in the face of the observation that majority of research has focused on the role of guilt in situations where pro-social acts were indeed benefitting the injured party directly (e.g., Carlsmith & Gross, 1969; Millar, 2002; Rawlings, 1968). Nevertheless, other studies have provided evidence that guilt has a potential of triggering helpfulness toward third parties, who were not injured by the wrongdoing (e.g., Carlsmith & Gross, 1969, study 2; Darlington & Macker, 1966), which suggests that guilt produces general pro-social actions. But, whether the difference in the direction of pro-sociality (i.e., direct – victim-related vs non-direct – non-victim related) affects the strength of the link between guilt and pro-sociality is unknown, and was also explored in this review. I propose that direct pro-sociality should show a stronger association with guilt, as such pro-sociality allows for making complete amends, whereas a non-direct pro-social act does not. Also, a prominent view depicts guilt as functioning mainly to restore relationships that might have been endangered by a transgression (which I refer to as the relationship-serving function: Baumeister et al., 1994; Tangney et al., 2007). This claim suggests that only behaving in a pro-social manner towards one's victim would satisfy this function, and thus it is highly possible that direct pro-sociality will show a stronger association with guilt than non-direct pro-sociality. This is not to say that non-direct pro-social actions might

not benefit the wrongdoer to some degree; for example, by reducing some of their guilt, or repairing their self-image (McMillen, 1971). Nevertheless, non-direct pro-sociality might be the option of choice, especially when repaying one's wrongdoing directly (making amends with the victim) is impossible or difficult. Indeed, previous research has shown that when making amends required facing the victim, this reduced one's pro-sociality (Freedman, Wallington, & Bless, 1967). This last finding might suggest that the opposite effect might take place – that is, that the non-direct pro-sociality might be related stronger to guilt than direct pro-sociality. Nevertheless, taking into account that guilt is seen predominantly as promoting making amends, I predicted that direct pro-sociality would relate to guilt stronger than non-direct pro-sociality.

2.2.3. Self-Punishment

Self-punishment was operationalised as any behaviour or intention aimed at punishing oneself, whether in the form of decreasing one's well-being, status, position, or denying pleasure, by one's own actions, in the context of one's transgression. The examples of self-punishing behaviours could then be: reducing one's money or points' allocation (e.g., Nelissen & Zeelenberg, 2009b), allocating oneself electric shocks (Inbar, Pizarro, Gilovich, & Ariely, 2013) or choosing a more boring task to perform rather than more interesting options. Walster, Berscheid and Walster (1970) suggested that self-punishment can be seen as a means of restoring equity between the wrongdoer and their victim, but it can also be seen as a way of dealing with one's guilt (e.g., Nelissen & Zeelenberg, 2009b).

In accordance with the cost-benefit model of helping (Piliavin, Dovidio, Gaertner, & Clark, 1981), guilt-triggered pro-sociality might not only be focused on the victim's wellbeing, but also on the costs/benefits of such an act to the wrongdoer. It was observed previously, that when describing transgressions, perpetrators had a tendency to transform these to be more self-serving than the real stories were (e.g., Baumeister, Stillwell, & Wotman, 1990). Indeed, recent research has shown that guilt, when one has no opportunity to repay one's wrongdoing, leads to self-punishment (Nelissen &

Zeelenberg, 2009b), and that self-punishment reduces guilt (Nelissen, 2012; Bastian, Jetten, & Fasoli, 2011). This provides evidence that managing one's emotional state (self-serving motive) might be more important to the wrongdoer, than making amends with the victim of one's transgression (relationship-serving motive). This view fits with Mosher (1980, p.602), who claimed that guilt is a "*generalised expectancy for self-mediated punishment for violating an internalised moral standard*". Which motive is stronger (i.e., self vs relationship-serving) is unknown though. To add some insight into this debate, therefore I also reviewed studies that investigated the link between guilt and self-punishment, which I treated as fulfilling the self-serving function, and compared its strength with the effect size found for the guilt and direct pro-sociality (which fulfils the relationship-serving function).

2.3. Other Factors Influencing the Guilt – Pro-Sociality Association

2.3.1. Pure Guilt vs Impure Guilt

Guilt is closely related to shame (e.g., Lester, 1998; Tangney, Miller, Flicker, & Barlow, 1996a; Tangney, & Stuewig, 2004; Tibbetts, 2003), and even though they frequently co-occur (Ferguson, Brugman, White, & Eyre, 2007), a lot of effort has been put into differentiating them (Eisenberg, 2000; Tangney, 1995, 1998; Tangney et al., 2007). Theoretically, guilt is described as possessing three attributes that distinguish it from shame. First, guilt is believed to relate to approaching rather than avoidance tendency (e.g., Caplovitz-Barrett, Zahn-Waxler, & Cole, 1993; de Hooge, Zeelenberg, & Breugelmans, 2007; Tangney, 1995; but see Schmader & Lickel, 2006). Second, guilt is a private rather than public emotion. Third, shame is self-focused, and guilt behaviour-focused (Amodio, Devine, & Harmon-Jones, 2007; Hosser, Windzio, & Greve, 2008; Lewis, 1971; Tangney et al., 1992; Tangney, 1998). Thus, guilt is experienced when a person concentrates on "what they did", rather than "what they are" (e.g., Scheff, 2000). However, some authors stressed the similarity of guilt and shame with respect to their links with pro-sociality (e.g., Rees, Klug, & Bamberg, 2015). This is suggesting that there might be no difference between the strength of the

association between pro-sociality, impure (i.e., guilt fused with shame)- and pure-guilt (guilt non-fused with shame).

2.3.2. Cultural Norms of Religiosity

Cultural norms are known to affect people's pro-social tendencies (Trommsdorff, Friedlmeier, & Mayer, 2007; Henrich et al., 2005; Knafo, Schwartz, & Levine, 2009), as well as emotional responses (e.g., Chiao, 2011). Norms linked to religiosity seem particularly pertinent to the guilt-pro-sociality association. That is, guilt has been shown to give rise to desires to confess, apologise and repair wrongdoing (Baumeister et al., 1994; Tangney, 1991; 1995). In a lot of religions, such desires can be satisfied by attendance at religious services. In church, people can deal with their guilt by confession and apology. Therefore, it can be expected that desires to confess, apologise and repair wrongdoing would decrease when/if they had been satisfied during a religious service. Thus, it can be argued that the probable guilt alleviation due to confessing could be linked to the observed decrease in pro-sociality afterwards (e.g., Carlsmith, Ellsworth, & Whiteside, 1968 as cited in Stice, 1992; Regan, 1968 as cited in Stice, 1992; Salovey & Rosenhan, 1989). Partial support for this comes from a study by Harris et al. (1975), showing that men were significantly more pro-social before entering the church than after leaving it. As I did not possess data on the individual level of participants' religiosity among the studies in this review, I used country's level religiosity as the estimation for this analysis. It was predicted that country's level of religiosity would affect the strength of effect size between guilt and pro-sociality in a negative way.

2.4. Other Meta-Analyses and the Current Meta-Analysis

The current meta-analysis was designed to address some of the problems and questions regarding the association between guilt and pro-sociality. I am aware, however, of three other meta-analyses that examined guilt and behaviours closely related to pro-sociality.

First, Carlson and Miller (1987) investigated the relationship between guilt and pro-sociality and found a strong association between the two (r

=.50). While an important first step, it only included 11 studies and did not provide any moderation analyses. Two more recent meta-analyses have investigated the role of guilt in interpersonal adaptiveness (also referred to as a pro-social orientation: Tignor & Randall Colvin, 2016), and compliance (Boster, Cruz, Manata, DeAngelis, & Zhuang, 2016).

Tignor et al.'s (2016) meta-analysis combined measures of hostility, empathy, forgiveness and morality to assess what they termed "adaptiveness", and focused only on trait guilt. Boster et al.' (2016) meta-analysis focused on studies that "... include a measure of behavioural compliance or helping behaviour" (ibidem, p.56), making it rather non-specific to pro-sociality. This is because the compliance construct used by Boster et al. (2016) aggregated behaviours that might not be considered pro-social (e.g., signing a petition to double tuition: Brock & Becker, 1966). In comparison, this current study was designed to look at both trait and state guilt, and to examine specifically pro-sociality, which was operationalised broadly as a construct that incorporates variety of intentions and behaviours, but only those that focus on helping or benefiting another person or a group (Eisenberg & Fabes, 1998; Eisenberg & Mussen, 1989). Additionally, while Boster et al. (2016) investigated only experienced guilt, I compared studies using anticipated/remembered, concurrent and trait guilt, providing a more nuanced and complete picture of the association between guilt and pro-sociality. I also examined a number of key theoretical moderators such as direct vs non-direct pro-sociality. Thus, the current meta-analysis offers a more nuanced and specific picture of the relationship between guilt and pro-sociality than previous meta-analyses.

2.4.1. Aims of the Current Meta-Analysis

To sum up, the current evidence on the role of guilt in pro-social behaviour is abundant, but not integrated. The vast range of the effect sizes found in the literature does not allow for a clear and confident statement about the predominant effect that guilt has on pro-sociality. This paper aimed at filling this gap and had two main goals: (1) to establish the robustness of the effect size, and (2) to investigate potential moderators, both theoretical and methodological, of the relationship between guilt and pro-sociality. The

rationale behind the moderators included in this review is followed by the applications of the knowledge provided by this study.

2.5. Moderators Potentially Influencing the Strength of Guilt – Pro-Sociality Relationship

As there are methodological differences between studies (e.g., whether pro-sociality was measured as an objective or subjective outcome), I examined how these moderate the link between guilt and pro-sociality. Each of the potential moderators is described in the following section.

2.5.1. Theoretical Moderators

The first group of moderators of interest was derived from the theories about guilt and pro-sociality. Five key theoretical moderators are explored as discussed below: (i) the moral barometer (concurrent vs anticipated guilt), (ii) direct vs non-direct pro-sociality, (iii) self-punishment (iv) pure vs impure guilt (shame-fused vs shame-free), (v) cultural norms of religiosity, plus two additional ones (i) pro-sociality type (e.g., money, time), and (ii) target of pro-sociality (individual vs groups).

2.5.1.1. The Moral Barometer: Concurrent vs Anticipated Guilt

Previous research has assessed either: concurrent (in-situ) guilt, non-in-situ guilt (anticipated or remembered guilt), or trait guilt. The non-in-situ techniques were criticised recently for relying on participants' "ought to" knowledge (i.e., people's implicit theories of emotion; Lench et al., 2011; Parkinson & Manstead, 1993; Robinson & Clore, 2002), rather than on their actual emotional experiences. To add to this debate, taking into account that people overestimate their feelings of guilt and shame (van Dijk, van Dillen, Rotteveel, & Seip, 2017), and that the role of emotions is to provide feedback, rather than to directly impact behaviour (Baumeister et al., 2007a), it can be claimed that anticipated/remembered emotions should influence behaviour more strongly than concurrent emotions. This is why, when comparing studies that used in-situ versus non-in-situ guilt induction techniques, I expected to

observe a bigger effect size for the relationship between guilt and pro-sociality for studies using non-in-situ guilt.

Finally, the principle of trait activation proposes that: “...*the behavioural expression of a trait requires arousal of that trait, by trait-relevant situational cues*” (Teet & Guterman, 2000, p.398). That is, when the situational cues are not relevant or strong enough, even though one possesses a tendency to be, for example, helpful, this trait would not be activated. Thus, I predicted that studies using trait guilt measures would produce a weaker association with pro-sociality than studies using concurrent or non-in-situ guilt (i.e., state).

2.5.1.2. Direct vs Non-Direct Pro-Sociality

As described above, researchers can distinguish between direct pro-sociality (a pro-social act directed at the same person that was wronged), from non-direct pro-sociality (the type of helpfulness when the wronged person and the beneficiary of a pro-social act are different). As guilt is characterised mainly as serving a relationship-maintaining function (e.g., Baumeister et al., 1994; Caprara, Barbaranelli, Pastorelli, Cermak, & Rosza, 2001), I predicted that direct pro-sociality should display stronger effect size with guilt than non-direct pro-sociality.

2.5.1.3. Pure Guilt vs Impure Guilt

As stated above, while the theoretical distinction of guilt and shame suggests they are different, when it comes to predicting pro-sociality there may well be no difference.

2.5.1.4. Cultural Norms of Religiosity

Religiosity has been found to relate positively to pro-social traits (e.g., Saroglou, 2002; Saroglou, Delpierre, & Dernelle, 2004). Here, I investigated whether religiosity (assessed at country level) affects the association between guilt and pro-sociality. Based on the reasoning presented above, it was predicted that country's level of religiosity would decrease the guilt-pro-sociality effect size, as in highly religious countries attendance at masses and

asking God for forgiveness might reduce people's guilt, and subsequently their drive to behave pro-socially.

2.5.1.5. Pro-Sociality Type

People may be pro-social in a multiple of ways: donating time, money, health-related objects such as blood, and tangible assets (Lindenmeier, 2014). Some authors have argued that the degree of pro-sociality might depend on the type of contribution required. For example, it was found that asking for time rather than money can increase the level of donations (Liu & Aaker, 2008; see also Bauer, Bredtmann, & Schmidt, 2013). Similarly, when assuming that the importance of donating human tissues is higher than the importance of the other types of donations and that people feel greater guilt when declining more important requests, the link between guilt and tissue donation should be stronger than for the other types of donation. Indeed, previous research showed that more salient help requests are more likely to be met, especially when one is in a negative mood and feeling responsible (Rogers et al., 1982). Therefore, I presumed that similar effect might be true for the guilt-pro-sociality link, that is, a stronger effect for the donation of human tissues. To investigate whether the type of donation influenced the strength of the guilt-pro-sociality link the studies were divided into the categories suggested by Lindenmeier (2014): (i) asking for money, (ii) asking for time, (iii) asking for blood, bone marrow, and (iv) other forms of helping.

2.5.1.6. Target of Pro-Sociality

Pro-sociality can be directed at different targets, such as known/unknown individual, an organisation/group such as charity or nation, or more global targets like Nature. Previous research has found that different processes underline pro-social behaviour directed at different types of beneficiaries (McNeely & Meglino, 1994). It was also suggested that people empathise and help more when presented with stories that have an individual "face" rather than are a part of a bigger group (Slovic, 2007). As one key function of guilt is relationship maintenance, I predicted that pro-sociality directed at known, rather than unknown, individuals would result in larger

effect size. It was also hypothesised further that guilt would produce a stronger relationship with pro-sociality when directed towards individuals in general, rather than organisations or Nature. The literature on compassion fade would corroborate this reasoning, as it shows that pro-sociality is the highest for a single individual and that it decreases with decreasing identifiability of the targets (e.g., Västfjäll, Slovic, Mayorga, & Peters, 2014; Markowitz, Slovic, Västfjäll, & Hodges, 2013), which would be the case for organisations and Nature, when compared with individuals.

2.5.2. Methodological Moderators

A number of key methodological factors that could influence the strength of the relationship between guilt and pro-sociality were also investigated: (i) type of guilt manipulation, (ii) objectiveness of the pro-sociality measure, (iii) sex of the sample, (iv) study population, (v) presence of manipulation check, (vi) continent where the study was conducted, and finally (vii) number of citations, and year of publication.

2.5.2.1. Type of Guilt Manipulation

The six main types of manipulations that have been used to induce guilt are scenarios, autobiographical recall, charity appeals, withholding information from a researcher, failing another person in a task, and breaking/disturbing something. I was interested in examining which type of manipulation would show the strongest effect with guilt, as this might offer crucial knowledge for future research and charity organisations. Berndsen, van der Pligt, Doosje and Manstead (2004) observed, that intensity of guilt increased as a function of the level of negative interpersonal consequences (i.e., harm). Thus, following from that it was predicted that manipulations based on causing direct harm to another person would display the largest effect size, followed by withholding information, which is an act of non-direct harm, with hurting object rather than person producing the least harm, and thus showing the smallest effect. The difference between guilt triggered by withholding information and failing someone in a task might stem from the different position that these transgressions take on the active/passive harm

continuum. Passive acts (omissions) have been considered as less morally wrong than the active ones (commissions: Baron & Ritov, 2004; Cushman, Young, & Hauser, 2006; Spranca, Minsk, & Baron, 1991). Finally, manipulations based on virtual harm (scenarios and autobiographical recall) were hypothesized to demonstrate effects smaller than the ones based on “real” in-lab harm.

2.5.2.2. Objectiveness of Pro-Sociality Measure

Subjective outcomes were classified as those based on self-reports, peer-reports, and intentions. Objective outcomes were categorised as those that included actual pro-social behaviour such as donating money. It was predicted that subjective outcome would have a larger effect size than the objective one, because people help less when costs are high (Wagner & Wheeler, 1969; Weyant, 1978), and it can be argued that subjective outcomes are by design lower in cost than objective outcomes.

2.5.2.3. Sex

In general women are more guilt-prone (e.g., Cohen, Wolf, Panter, & Insko, 2011; Else-Quest, Higgins, Allison, & Morton, 2012; Silfver, 2007b), and also more pro-social (e.g., Simmons & Emanuele, 2007; Wilson & Kahn, 1975) than men. Thus, it was expected that predominately female samples would show larger effect sizes than predominately male samples.

2.5.2.4. Study Population

As students are the most common pool of subjects (e.g., Gallander Wintre, North, & Sugar, 2001), it is important to establish whether the study population affects the strength of the relationship between guilt and pro-sociality. Student samples were found to differ from non-student samples in previous research (see Peterson, 2001), and a debate on using WEIRD samples raises issues of generalisation (Henrich, Heine, & Norenzayan, 2010). Some evidence suggests that students might demonstrate increased levels of pro-sociality when compared to non-student samples (e.g., Falk, Meier, & Zehnder, 2013), but it is not clear if this is related to guilt. Thus, I explored if

student vs non-student sample makes a difference for the guilt-pro-sociality relationship.

2.5.2.5. Presence of Manipulation Check

Some researchers have argued that including manipulation checks may reduce effect size, by making participants aware of the study goals, and thus they should not be included in the experimental studies (e.g., Kidd, 1976). So, I explored whether the presence of manipulation check affected the strength of the relationship between guilt and pro-sociality.

2.5.2.6. Continent

Similarly, for methodological reasons, I investigated whether continent where the study was run, influenced the strength of the guilt-pro-sociality association.

2.5.2.7. Number of Citations, and Year of Publication

Finally, I examined whether the number of citations and the year of publication had an impact on the association between guilt and pro-sociality. This was purely an exploratory analysis.

2.6. Methods

2.6.1. Information Retrieval Process

The literature search was performed between June 2014 and September 2016. The following databases were searched for any articles dealing with guilt (any operationalisation) and helping (any operationalisation): Web of Science, PsycInfo, PubMed and Google Scholar. I also searched through the reference lists of the relevant articles. The keywords that were used while searching through the databases were *guilt*, *guilt-proneness*, *guilty*, in combination with *prosociality*, *pro-sociality*, *prosocial*, *pro-social*, *helping*, *helpfulness*, *helpful*, *prosocial behaviour*, *prosocial behavior*, *pro-social behaviour*, *pro-social behavior*, *charity*, *charitable*, *donating*, *donation*, *volunteering*, *giving*, *altruism*, *altruistic*, *morality*, *moral*, *unethical*, *ethical*,

economic game, decision-making, philanthropy, and lastly self-punishment. Initial search based on titles and abstracts resulted in N=256 potentially relevant articles. Any duplicates were removed (N=2). The full texts of the remaining articles were analysed, and any entries that did not meet the eligibility requirements (see below, N=161) were removed at this stage. The entries that measured cooperation rather than helping were also removed, as well as ones that measured collective guilt (see Figure 2.1.). As pro-sociality is defined here as benefitting other rather than oneself, cooperation might not necessarily fit this conceptualisation, as cooperation is often also about material benefits to the self (Eisenberg & Miller, 1987). Secondly, as collective guilt is based on somewhat different mechanisms than personal guilt (e.g., identification with a group that committed wrongdoing; Wohl & Branscombe, 2005; Wohl, Branscombe, & Klar, 2006) and believed to be a distinct emotion (Doosje, Branscombe, Spears, & Manstead, 1998), I also did not include studies that measured collective guilt in relation to pro-sociality. Authors of the articles with data sets that had missing statistical information, or of the entries that full texts could not be acquired were contacted. The articles of authors that did not respond and the information could not be acquired in any other manner were excluded at this point.

2.6.2. Eligibility Criteria

The following eligibility criteria were applied. To start with I narrowed the search to the articles (i.e., not undergraduate projects, Master's or PhD theses) written in English, with quantitative data, published or unpublished. I did not include unpublished dissertations, as this would increase the rate of duplicates found and could hinder the quality of the meta-analysis. Second, the studies needed to use adult samples. This is because children's understanding of guilt changes with their development and because their pro-sociality is limited. Moreover, all the studies had to include a measure of guilt (emotion or disposition) and pro-sociality (intention, behaviour, attitude, cognition) or at least a measure of the link between these two (e.g., I included studies that manipulated but did not measure guilt). 78 papers met these eligibility requirements (4 relating to guilt and self-punishment: Inbar et al., 2013;

Nelissen & Zeelenberg, 2009b: studies 1 and 2; Nelissen, 2012; Wallington, 1973), and provided 125 (5 relating to guilt and self-punishment) unique study effect sizes. Figure 2.1 provides the information flow diagram based on PRISMA Statement (Liberati et al., 2009).

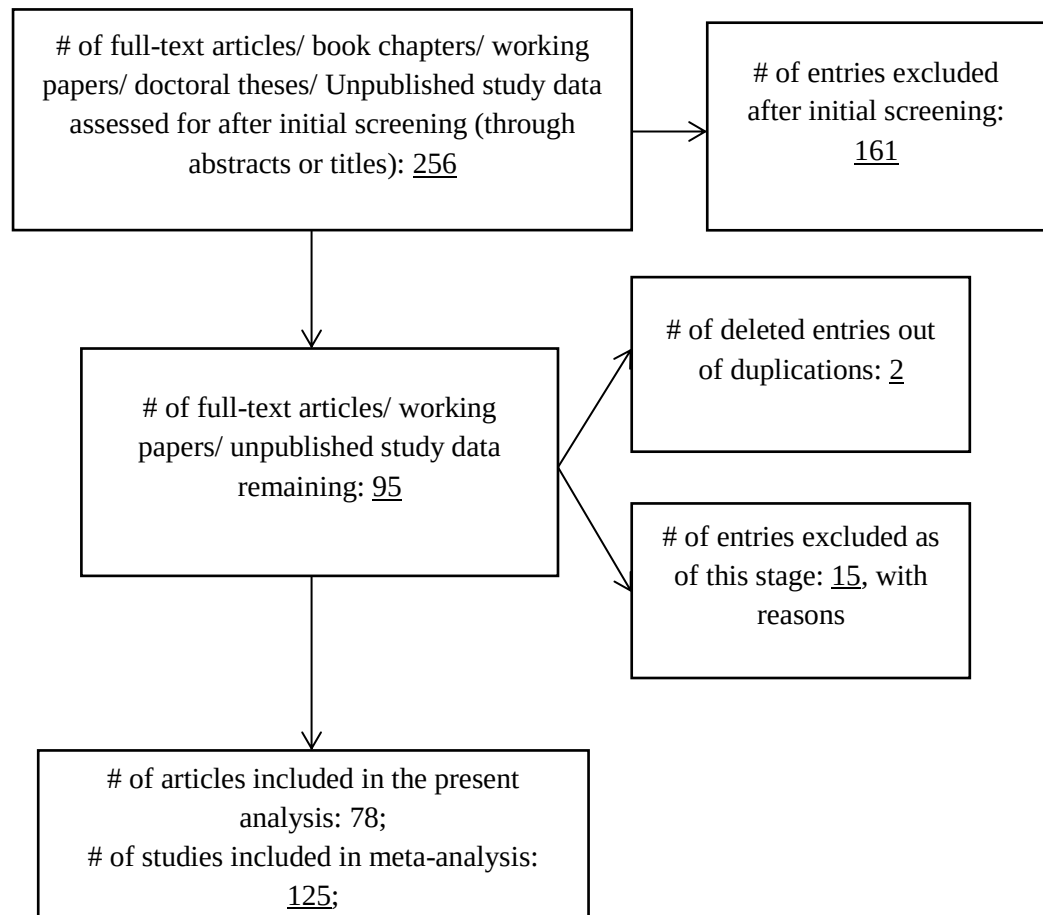


Figure 2.1 Flow diagram of information through different phases of the present review, based on PRISMA Statement (Liberati et al., 2009).

2.6.3. Coding of Studies

The way the studies were coded is explained below, and presented in Appendix 2.1.

2.6.3.1. The Moral Barometer: Concurrent vs Anticipated Guilt

The current meta-analysis examined studies that consisted of a measure of guilt and pro-sociality. Guilt can be divided into either concurrent or “non-in-situ” experience (based on anticipated/imagined or recalled guilt

events). Therefore, I compared whether these two types of guilt affected the guilt- pro-sociality link. Studies were coded in regard to whether they were triggering concurrent guilt (k=59) or non-in-situ guilt (k=53). Some studies did not manipulate guilt at all, but measured disposition to feel guilty (e.g., Cohen et al., 2011), together with measuring one's self-reported pro-sociality (k=7), such as proclivity to apologise (Dunlop et al., 2015) or one's intention to use public transport (Bamberg, Hunecke, & Blobaum, 2007).

2.6.3.2. Direct vs Non-Direct Pro-Sociality

As it was hypothesised that direct pro-sociality would display stronger link with guilt than non-direct pro-sociality, *direct pro-sociality* (k= 68) was classified as any act directed at repaying harm done directly to a wronged person. The category of non-direct pro-sociality (k=40) included studies where pro-social acts were not directed at the victim but some other target.

2.6.3.3. Pure Guilt vs Impure Guilt

The type of measure that was used to assess guilt was divided into three categories: (i) "shame-free" (pure, k=52), (ii) shame-fused (impure, k=11), or (iii) guilt, including remorse or regret (k=13). Studies measuring guilt-proneness were not included in this analysis. As "shame-free" guilt I classified 1-item measures (e.g., "I feel guilty": Amodio et al., 2007), or other measures that seemed to evoke only a feeling of guilt (e.g., measures included item "wrong": Wang, 2011). Shame-fused measures were those that included shame within their items. Finally, measures that included feelings of remorse or regret created the last category, as regret is described in the literature as separate emotion by some (e.g., Berndsen et al., 2004).

2.6.3.4. Cultural Norm of Religiosity

Lastly, the effect that religiosity level of a country where the study took place had on the guilt and pro-sociality relationship was examined. Religiosity level was obtained from Gallup International Survey (see Table 2.1). In this survey citizens of different countries were asked whether they considered themselves a religious person. The percentage of people that

answered this question with “Yes” was used as the estimate of country’s religiosity. Data were from 2014. The mean level of religiosity in the current sample was equal to 43.69% (SD=13.56), meaning that on average in present sample almost half of the respondents saw themselves as religious.

Table 2.1 Religiosity level of countries included in the meta-analysis (based on Gallup International Survey).

Country	Religiosity level
USA	56
Australia	34
Belgium	44
Canada	40
China	7
Denmark	42
France	40
Germany	34
India	76
Israel	30
Netherlands	26
Slovenia	x
Spain	37
Taiwan	x
UK	30

Note. X – no data available. Religiosity level was obtained from Gallup International Survey. Data retrieved August 2016, from <http://www.washingtonpost.com/blogs/worldviews/files/2015/04/WIN.GALLUP-INTERNATIONAL-RELIGIOUSITY-INDEX.pdf>. Data are from 2014.

2.6.3.5. Pro-Sociality Type

For this analysis, the studies were divided based on what resources were allocated to others: (i) money (k=49), (ii) time (k=30), (iii) human tissue (k=5), or (iv) other resources (k=36). The last category has accumulated forms of helping that did not fit into the previous categories (e.g., prejudice

reduction: Amodio et al., 2007; intention to apologise: Riek, Luna, & Schnabelrauch, 2014). The category of money requests included mostly acts of charitable donations (e.g., toward one's game partner: Xu et al., 2012). Time requests were most commonly directed at a researcher or a student in need (e.g., Freedman et al., 1967). Studies that included a request of human tissues were mostly based on one's inclination to register as a donor (e.g., Wang, 2011).

2.6.3.6. Target of Pro-Sociality

It was coded whether the pro-social outcome was directed at an individual, an organisation, or Nature/Humanity. Pro-social outcomes directed at an individual (k= 58) were the most common category, followed by pro-social acts toward an organisation (k=33) and acts benefiting Nature/Humankind (k=22). In few studies, I was not able to categorise the target, as it was not clearly specified (k=7). That was the case, for example, when pro-sociality was measured as one's general pro-social tendency (Carlo et al., 2012; de Hooge et al., 2007, study 2; Johnson et al., 1989). Pro-social acts directed at individual were based on situations when, for example, a participant could donate some money toward their victim or some other player (e.g., de Hooge et al., 2011). Pro-social acts of donating money aimed at a charity (e.g., World Vision: Lwin & Phau, 2011), or other organisation (e.g., student's summer research fund: Regan, 1971), were classified as organisation-directed. Lastly, acts like using public transport or buying organic food were categorised as directed at Nature/Humankind, as they can be considered as environmental-friendly and benefitting whole Humanity.

Second, it was also coded whether the pro-social acts directed at individual were toward a known (k=32) or an unknown individual (k=26). Known individual was present mostly in studies where help was directed toward the researcher. As help directed at an unknown individual I classified studies where participants had no previous contact (e.g., anonymous Dictator Game: Nelissen et al., 2007), or a very short contact with the target (e.g., where the target asked personally for help, like blood donation, but there was

no previous contact between them and the subject: Darlington & Macker, 1966).

2.6.3.7. Guilt Manipulation Type

All of the experimental studies were further coded depending on the type of manipulation used. Six main types of guilt manipulations used in the literature are: (i) scenarios, (ii) autobiographical recall, (iii) charity appeals, (iv) withholding information from a researcher, (v) failing other person in a task, and (vi) disturbing or breaking something (an object or a situation). Studies using scenario-based methods (k=24), typically describe a story in which protagonist makes a wrongful act. Autobiographical recall is a similar method for triggering guilt (k=15), as it also triggers non-in-situ emotions, but is based on one's personal past actions. Another type of manipulation was labelled "charity appeals" (k=9). Studies using charity appeals present people with a charitable appeal (e.g., a video ad presenting worse off kids: Lwin & Phau, 2011), which is supposed to trigger guilt. The last three types of manipulation were classified as strictly experimental, where participants are actively engaged in a behaviour that caused harm to another person. The harm itself was directed at other person (i.e., failing other person – k=12 and withholding information – k=7) or at an object of another person (i.e., breaking/disturbing something – k=8).

2.6.3.8. Objectiveness of Pro-Sociality Measure

The *objective measure* category (k= 39), covered studies where pro-social act was an actual behaviour such as picking up dropped papers (Cunningham et al., 1980). Studies that measured an intention to help (e.g., statement of how many phone calls one was happy to make, without making the calls at the end: Cialdini et al., 1973) were included in the *subjective measure* category (k=81), together with outcomes based on self-report measures of one's past (e.g., one's frequency of pro-environmental behaviour; Onwezen, Antonides, & Bartels, 2013) or future (e.g., intention not to waste food: Ahn, Kim, & Aggarwal, 2014) pro-social behaviour, or a general tendency to behave pro-socially (e.g., general pro-social tendency scale: de

Hooge et al., 2007). The subjectivity of these pro-social outcomes is based on the fact that they were subject to memory and self-presentational biases, and as such there was no objectivity to them.

2.6.3.9. Sex

Studies were classified based on what percentage of the sample was female. To be certain about the impact of gender on the link between guilt and pro-sociality, in this analysis, I divided studies into samples that consisted of: 100% females (k=13), 100% males (k=8), or were balanced (k=26). As balanced I classified samples that were 50% $\pm$ 5% female.

2.6.3.10. Study Population

Studies were divided into two categories: those that used students (k=77) as their subjects, and those that used non-students (k=37) as their subject-population.

2.6.3.11. Manipulation Check Presence

As the presence of manipulation check might influence the link between guilt and pro-sociality, I coded experimental studies based on whether they contained a manipulation check (k=60) or not (k=33).

2.6.3.12. Continent

Altogether data from 15 countries were included in this project. The majority of the studies took place in *North America* (i.e., Canada and the United States, k=69), followed by *Europe* (e.g., UK, Belgium, Germany etc., k= 35), *Asia* (e.g., China, Taiwan, India k= 6), and *Australia* (k=1). There were a few studies coded as *International* (k=7), which were described as taking place online or being conducted cross-culturally. Two studies did not provide this information.

2.6.3.13. Number of Citations, and Year of Publication

Citation data were obtained for all of the published studies by searching through the “Time cited” metrics—accurate as of 17th August 2016

available at Web of Science, and Google Scholar if I could not locate an article on the Web of Science. The most cited article among included papers was work of Cialdini et al. (1973), cited 222 times (according to Web of Science). I also analysed the effect of the year of publication of the sampled data ($M = 2011$, $SD = 17.36$) on the relation between guilt and pro-sociality. The range of years that was included in the current analysis spanned from 1960s (Darlington & Macker, 1966) till summer 2016 (Torstveit, Sütterlin, & Lugo, 2016). Lastly, I estimated the year for unpublished studies by using the year in which the papers became available online, or the year in which the studies were conducted.

2.6.4. Obtaining Effect Sizes

All of the results were converted into correlation coefficient as the effect size estimate. In majority of cases r was obtained directly from the study's results (i.e., for correlational studies) or by transforming it from standardized mean difference scores or p values and sample sizes. I also computed r for studies that used group-designs, mostly by calculating standardized mean differences (i.e., Cohen's d), or using t -values, χ^2 values, or if nothing else was available p -values and sample size. All were coded such that a *positive* effect size would represent a *positive* association between guilt and pro-sociality.

The random-effects model was applied. Based on the fact that included studies were not identical functionally (e.g., used various methods of triggering guilt, various samples, various pro-social outcomes), the choice of the random-effects model seemed to be appropriate, as it treats the differences in the effect of interest, from study to study, as random population effects rather than chance (e.g., Riley, Higgins, & Deeks, 2011). Moreover, random-effects models are less subject to the influence of studies with large samples, as they do not put such a big weight on them as the fixed-effects models do. Lastly, the random-effects model is the one that allows for generalisation of the findings to different scenarios, possessing much higher utility for the purposes of this review than the fixed-effects model would have had (Borenstein, Hedges, Higgins, & Rothstein 2010; Card, 2012). As presented

later, this assumption had its supporting evidence in the size of inconsistency index and Q-statistic. All of the analyses were performed with the use of the Comprehensive Meta-Analysis software package (Borenstein, Hedges, Higgins, & Rothstein, 2004).

2.6.4.1. Addressing Statistical Dependence

Some of the studies, included in this meta-analysis, provided more than one measure of the link between guilt and pro-sociality. I observed studies that reported multiple measures of pro-sociality together with one measure of guilt (e.g., Basil et al., 2006), all based on the same sample of participants. To tackle, the non-independence issue here, the common strategy of averaging such multiple effect sizes and using the average as the effect size of interest was followed. If a study presented data comparing effects of guilt, for a guilt and control condition that was different than neutral (e.g., positive affect), I used only the comparison with neutral affect. A similar solution was not applied if a study was reporting effect sizes by sub-sets of participants, for example, separately for females and males (Johnson et al., 1989), or for two different cities (Bamberg et al., 2007), as such sub-sets can be treated separately (see Card, 2012, p.197). Such a procedure was described as justified if the statistical tests were carried out on separate samples of people (e.g., Cooper, 2009), which was true in the present case. The number of such cases being treated as separate was equal to 11 (9.32% of all cases).

All of the categorical univariate moderator analyses (e.g., study type, guilt measure) and the meta-regression analyses for the continuous moderators (e.g., number of citations) were conducted with the application of a mixed-effects model, which combines fixed and random-effects (Card, 2012). It should be stated that mixed-effects models possess a risk of being too conservative and therefore prone to the Type II-errors (Balliet & Van Lange, 2013; Lipsey & Wilson, 2001).

2.7. Results

2.7.1. Overall Analyses

The first goal of this review was to establish the estimate of the average strength of the relationship between guilt and pro-sociality. The list of effect sizes representing the association between guilt and pro-sociality, together with sample size are displayed below (Table 2.2). The analysis revealed a moderate positive association between guilt and pro-sociality: $r = .30$ (95% LLCI = .268, 95% ULCI = .327; $p < .001$). Even though the link between guilt and pro-sociality was moderate, the range of observed effect sizes was diverse, ranging from $r = -.08$ (Silverman et al., 1979, study 2) to $r = .68$ (Yu et al., 2014) ($T^2 = 0.020$; $I^2 = 75.89$; $Q(119) = 493.63$, $p < .001$).

Table 2.2 Sample size, effect size estimate and country of the studies measuring guilt-pro-sociality link.

Author (year)	n	r	Country/medium
Agnihotri, Krush, Singh (2012)	125	.14	India
Ahn, Kim, Aggarwal (2014) study 2	104	.32	USA
Amodio, Devine, Harmon-Jones (2007)	37	.42	USA
Bamberg, Hunecke, Blobaum (2007)a	437	.14	Germany
Bamberg, Hunecke, Blobaum (2007)b	517	.37	Germany
Basil, Ridgway, Basil (2006) s1	40	.50	USA
Basil, Ridgway, Basil (2006) s2	97	.20	USA
Basil, Ridgway,	1049	.10	USA

Basil (2008)			
Boster, Mitchell,			
Lapinski et al.	60	.41	USA
(1999)			
Carlo, McGinley,			
Davis et al. (2012)	207	.15	USA
Carlsmith, Gross			
(1969) s1	40	.52	USA
Carlsmith, Gross			
(1969) s2	40	.31	USA
Chang (2010)	466	.30	Taiwan
Chang (2014)a s1	80	.29	Taiwan
Chang (2014)a s2	80	.02	Taiwan
Chang (2014)a s3	49	.01	Taiwan
Cialdini, Darby,			
Vincent (1973)	68	.31	USA
Cristofari, Guitton			
(2014)	119	.18	Internet
Cryder, Springer,			
Morewedge (2012)	123	.46	USA
s1			
Cryder, Springer,			
Morewedge (2012)	24	.45	USA
s2			
Cryder, Springer,			
Morewedge (2012)	139	.12	USA
s3			
Cryder, Springer,			
Morewedge (2012)	104	.44	USA
s4			
Cryder, Springer,			
Morewedge (2012)	270	.25	USA
s5			

Culiberg (2014)	367	.10	Slovenia
Cunningham, Steinberg, Grev (1980) s1	30	.44	USA
Cunningham, Steinberg, Grev (1980) s2	80	.26	USA
Dahl, Honea, Manchanda (2005)	103	.19	USA and Canada
Darlington, Macker (1966)	26	.63	USA
De Hooge (2012) s1	55	.60	Netherlands
De Hooge (2012) s2	137	.33	Netherlands
De Hooge (2012) s3	194	.21	Netherlands
De Hooge (2012) s4	124	.38	Netherlands
De Hooge (2012) s5	109	.34	Netherlands
De Hooge, Nelissen, Breugelmans et al. (2011) pilot1	33	.38	Netherlands
De Hooge, Nelissen, Breugelmans et al. (2011) pilot2	83	.28	Netherlands
De Hooge, Nelissen, Breugelmans et al. (2011) pre-pilot	62	.45	Netherlands
De Hooge, Nelissen, Breugelmans et al. (2011) s1	74	.39	Netherlands
De Hooge,	143	.33	Netherlands

Dunlop, Lee, Ashton, Butcher, Dykstra (2015)	200	.46	Australia and Canada
Elgaaied (2012)	276	.66	France
Freedman, Wallington, Bless (1967) s1	62	.26	USA
Freedman, Wallington, Bless (1967) s2	67	.30	USA
Freedman, Wallington, Bless (1967) s3a	32	.50	USA
Freedman, Wallington, Bless (1967) s3b	66	.27	USA
Ghorbani, Liao, Caykoylu et al. (2013)	261	.47	USA
Gino, Pierce (2009) s1	178	.19	USA
Gino, Pierce (2009) s2	164	.15	USA
Gneezy, Imas, Madarasz (2014)s1a	57	.44	USA
Gneezy, Imas, Madarasz (2014)s1b	36	.18	USA
Gneezy, Imas, Madarasz (2014)s2	80	.39	USA
Graton, Ric, Gonzalez (2016)	85	.44	France
Harris, Benson,	114	.25	USA

Hall (1975)			
Hibbert, Smith, Davies et al. (2007)	100	.26	UK
Ilies, Peng, Savani et al. (2013)a	71	.24	USA
Ilies, Peng, Savani et al. (2013)b	85	.02	USA
Johnson, Danko, Darvill et al. (1989)a	607	.09	Internet
Johnson, Danko, Darvill et al. (1989)b	445	.22	Internet
Katz, Glass, Lucido et al. (1979) s1	22	.36	USA
Katz, Glass, Lucido et al. (1979) s2a	18	.60	USA
Katz, Glass, Lucido et al. (1979) s2b	19	.65	USA
Katz, Glass, Lucido et al. (1979) s3	57	.23	USA
Ketelaar, Au (2003) s2	36	.54	USA
Konecni (1972)	123	.18	Canada
Konoske, Staple, Graf (1979)	60	.25	USA
Lelieveld, Van Dijk, Van Beest et al. (2012) s1	114	.19	Denmark
Lelieveld, Van Dijk, Van Beest et al. (2012) s2	143	.17	Denmark
Lindsey (2005)	146	.33	USA

Lu, Schuldt (2015)	719	.09	USA
Lwin, Phau (2011)	267	.17	Australia
McKay, Herold, Whitehouse (2013)	36	.50	UK
McMillen (1971)	44	.25	USA
McMillen, Austin (1971)	80	.36	USA
Millar (2002)	125	.18	USA
Morgan, King (2012)	245	.13	USA
Nelissen, Leliveld, van Dijk et al. (2011) s2	63	.28	Netherlands
Noel (1973)	80	.09	USA
O'Malley, Andrews (1983)	60	.29	x
Onwezen, Antonides, Bartels (2013)	617	.42	Netherlands
Onwezen, Bartels, Antonides (2014)a	806	.35	Internet
Onwezen, Bartels, Antonides (2014)b	3048	.32	Internet
Park, Meyvis (2012) s1a	180	.17	USA
Park, Meyvis (2012) s1b	144	.18	USA
Park, Meyvis (2012) s2	123	.29	USA
Park, Meyvis (2012) s3	124	.21	USA
Park, Meyvis (2012) s4	107	.23	USA

Park, Meyvis (2012) s5	146	.27	USA
Park, Meyvis (2012) s9	223	.16	USA
Polman, Ruttan (2012)	263	.12	USA
Rawlings (1968)	40	.31	USA
Regan (1971)	27	.63	USA
Regan, Williams, Sparling (1972)	40	.37	USA
Rees, Klug, Bamberg (2015)	114	.48	Germany
Riek (2010)	42	.58	USA
Riek, Luna, Schnabelrauch (2014)	166	.28	USA
Riordan, Dunaway, Haa, James, Kruge (1984)	50	.21	USA
Rotella, Richeson (2013) s1	39	.79	USA
Schwartz (1970)	144	.21	x
Schwartz, David (1976)	72	.30	Israel
Silverman, Rivera, Tedeschi (1979) s1	40	.47	USA
Silverman, Rivera, Tedeschi (1979) s2	53	-.08	USA
Smith, Haugtvedt, Petty (1994)	198	.37	USA
Steenhaut, van Keenhove (2005) s2	160	.26	Belgium
Steenhaut, van	120	.23	Belgium

Keenhove (2006) s1			
Steenhaut, van	78	.29	Belgium
Keenhove (2006) s2			
Torstveit, Sütterlin,	568	.21	Internet
Lugo (2016)			
Wang (2011)	309	.61	USA
Xu, Begue,	47	.44	France
Bushman (2012)			
Xu, Begue,	44	.45	France
Bushman (2014)			
Xu, Begue, Sauve,	94	.30	France
Bushman (2014)			
Yu, Hu, Hu, Zhou	24	.68	China
(2014)			
Zemack-Rugar,			
Bettman,	176	.21	USA
Fitzsimons (2007)			
s2a			
Zemack-Rugar,			
Bettman,	165	.15	USA
Fitzsimons (2007)			
s2b			
Overall	20199	.30	

Similarly, I computed the average effect size found for the link between guilt and self-punishment (see Table 2.3). The average effect size was large and positive: $r = .45$ (95% LLCI = .29, 95% ULCI = .59), showing that guilty individuals have a tendency to punish themselves also. When comparing this effect with the average effect size for guilt and direct pro-sociality ($r = .32$), I observed a significant difference between the two ($p = .015$), suggesting that self-serving function of guilt (i.e., alleviating guilt) is stronger than the relationship-serving function (at least for this set of studies).

Table 2.3 Effect size estimates, sample sizes and self-punishment measure for studies measuring guilt and self-punishment.

Authors	Estimated ES (<i>r</i>)	Sample size	Self-punishment measure
Inbar et al. (2013)	.35	27	Administering electric shocks to oneself
Nelissen & Zeelenberg (2009) s1	.30	46	Not joining ski trip (scenario)
Nelissen & Zeelenberg (2009) s2	.65	62	Deducing bonus points (raffle) from oneself
Nelissen (2012)	.54	28	Willingness to administer electric shocks to oneself
Wallington (1973)	.36	96	Administering electric shocks to oneself
Average ES	.45	259	

Note. ES (effect size) was estimated from the article data, including reading graph data.

2.7.2. Publication Bias

To assess the likelihood that the strength of the relationship between guilt and pro-sociality could have been overestimated because of the presence of publication bias in the literature, a funnel plot of the relevant effect sizes was generated (Figure 2.2). Based on the visual inspection of the plot it was concluded that the risk of the publication bias affecting present findings existed (Egger, Smith, Schneider, & Minder, 1997). To estimate the impact of the overestimation of the strength of the effect size between guilt and pro-sociality I used Duval and Tweedie's (2000) trim and fill procedure that estimated the number of imputed studies to be 28 (all being lower than the average effect size). When accounting for these, the adjusted mean effect size

decreased slightly to $r = .24$ (95% LLCI = .20, 95% ULCI = .27; $p < .001$), but remained significant. This analysis confirmed the presence of publication bias, but it also showed that accounting for the missing studies did not affect the mean effect size strongly.

The same analysis was repeated in order to examine potential publication bias for studies investigating guilt and self-punishment. Duval and Tweedie's (2000) trim and fill procedure estimated the number of imputed studies to be equal zero, suggesting no effect of publication bias on the relationship strength between guilt and self-punishment.

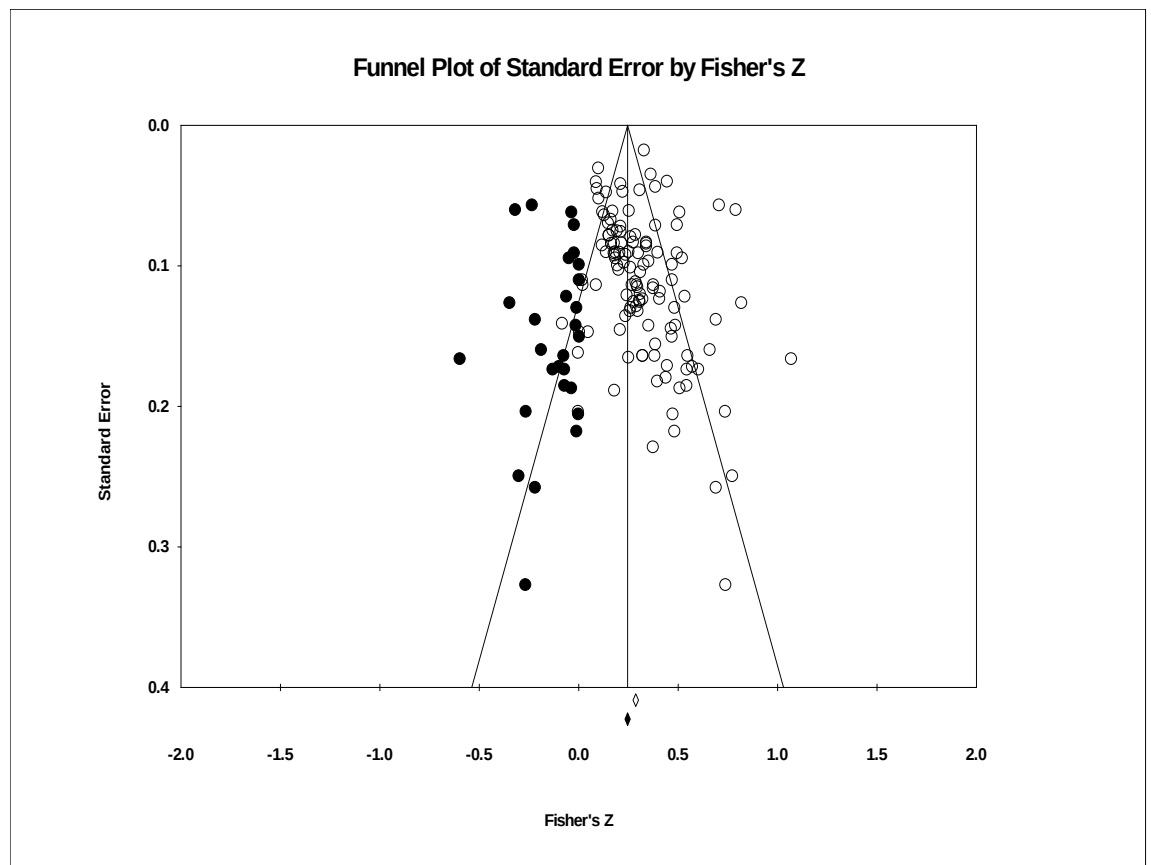


Figure 2.2 Trimmed and filled funnel plot for studies investigating guilt and pro-sociality relationship. Note. 28 estimated missing studies are added on the left side of the plot (filled circles). Adjusted $r = .24$, 95% CI [.20, .27], $p < .001$

2.7.3. Theoretical Moderators

The results of the moderator analyses are depicted in Table 2.4. There all the results of the moderators are presented, demonstrating that the majority of the effects were not significant.

2.7.3.1. The Moral Barometer: Concurrent vs Anticipated Guilt

Firstly, it was examined whether the specific method used to induce guilt moderated the relationship between guilt and pro-sociality. The results, once again, showed a potential difference in effect size between anticipated (non-in-situ) guilt ($k=53$) - $r = .31, p < .001$ (95% LLCI=.27, 95% ULCI=.36), laboratory in situ inductions (i.e., concurrent guilt; $k=59$) - $r = .29, p < .001$ (95% LLCI=.25, 95% ULCI=.33), and trait guilt - $r = .20, p = .001$, (95% LLCI=.08, 95% ULCI=.31), $Q(2) = 5.62, p = .060$. The difference between guilt measured as trait and concurrent guilt approached significance, $Q(1) = 3.74, p = .053$, whereas the difference between trait guilt and non-in-situ guilt was significant, $Q(1) = 5.61, p = .018$. That is, trait guilt displayed weaker association with pro-sociality than both concurrent and non-in-situ guilt. Moreover, the results followed the predicted pattern, starting with the weakest link between trait guilt-pro-sociality, followed by concurrent guilt-pro-sociality, and the strongest for the non-in-situ guilt-pro-sociality association.

2.7.3.2. Direct vs Non-Direct Pro-Sociality

It was coded whether the pro-social outcomes were directed at the victim of one's transgression (i.e., direct pro-sociality) or someone else, not related to transgression (i.e., non-direct). The results demonstrated a significant difference between these two types of pro-sociality outcomes, $Q(1) = 5.40, p = .02$. That is, studies that included *direct* pro-social outcomes ($r = .32, p < .001$; 95% LLCI=.28, 95% ULCI=.36) reported stronger association between guilt and pro-sociality than did studies which were based on the non-direct pro-social outcomes ($r = .25, p < .001$; 95% LLCI=.21, 95% ULCI=.29).

2.7.3.3. Pure Guilt vs Impure Guilt

It was coded whether state guilt was measured as shame-free guilt (pure), guilt with regret and remorse, or shame-infused guilt (impure). The link between guilt and pro-sociality overall did not differ in strength depending on what measure of guilt was used: pure ($r = .34, p < .001$; 95% LLCI=.29, 95% ULCI=.39), with regret, remorse ($r = .27, p < .001$; 95% LLCI=.19, 95% ULCI=.34) or impure ($r = .25, p < .001$; 95% LLCI=.14, 95% ULCI=.35), $Q(2) = 4.46, p = .11$. Due to strong claims in the literature regarding the difference between shame and guilt in regard to pro-sociality, I also directly compared these two indices, but they also showed no significant difference, $Q(1) = 2.77, p = .10$.

2.7.3.4. Cultural Norm of Religiosity

This analysis was a mixed-effects meta-regression with the method of moments. Based on the religiosity level, it was observed that there was a significant effect of country's religiosity on the strength of the association found between guilt and pro-sociality ($B = -0.003, p = .02$). The more religious the country, the weaker was the link found there for guilt and pro-sociality association.

2.7.3.5. Pro-Sociality Type

Based on this moderator analysis it was observed that there was not an overall effect of pro-sociality type (excluding other type) on the strength of the guilt and pro-sociality link, $Q(2) = 2.89, p = .24$.

2.7.3.6. Target of Pro-Sociality

It was coded whether the pro-sociality reported was directed at an individual, an organisation, or Nature/Humanity. The analysis revealed that there was no significant difference between guilt and pro-sociality across these groups: $r = .31, p < .001$ (95% LLCI=.27, 95% ULCI=.35) for individual target; $r = .27, p < .001$ (95% LLCI=.21, 95% ULCI=.34) for pro-sociality directed at group, and $r = .32, p < .001$ (95% LLCI=.25, 95% ULCI=.38) for humankind/nature as target; $Q(2) = 1.11, p = .57$. Thus, it can be concluded

that the target of pro-sociality did not have an impact on the strength of the relationship between guilt and pro-sociality.

Subsequently, it was examined whether the link between guilt and pro-sociality depended on the type of the individual in need of help (i.e., known or unknown to the participant). This analysis revealed that familiarity with the target did not impact the strength of the link between guilt and pro-sociality ($Q(1) = .31, p = .58$), with correlations for a known individual placed at the level of $r = .30, p < .001$ (95% LLCI=.25, 95% ULCI=.35), and at $r = .32, p < .001$ (95% LLCI=.26, 95% ULCI=.38) for an unknown individual.

2.7.4. Methodological Moderators

Below are presented the results for the moderator analyses focused on the methodological factors.

2.7.4.1. Guilt Manipulation Type

It was examined, whether any of the guilt induction techniques influenced effect sizes. The guilt induction methods were divided into the following categories: (i) scenarios ($k=24$), (ii) autobiographical recall ($k=15$), (iii) charity appeals ($k=9$), (iv) withholding information from researcher ($k=7$), (v) failing other person in a task ($k=12$), and (vi) disturbing or breaking something ($k=8$). There was a trend for an overall difference: $Q(5) = 10.36, p = .066$. Based on pair-wise comparisons between these categories it was established that the strongest relationship between guilt and pro-sociality was found for the method relying on failing other person ($r = .41, p < .001$; 95% LLCI=.31, 95% ULCI=.50), followed by the method relying on a participant breaking or disturbing something ($r = .33, p < .001$; 95% LLCI=.20, 95% ULCI=.44). These two methods showed a significantly stronger effect sizes [$Q(1) = 9.33, p < .01$ for failing other person; and $Q(1) = 3.85, p = .050$ for breaking something] but only when compared with charity appeals ($r = .21, p < .001$; 95% LLCI=.11, 95% ULCI=.32). Charity appeals displayed the weakest strength for guilt and pro-sociality link (see Table 2.4). No other significant differences were found.

2.7.4.2. Objectiveness of Pro-Sociality Measure

When comparing the summary effect size for studies that were coded as measuring pro-sociality in an objective way ($r = .29, p < .001$; 95% LLCI=.26, 95% ULCI=.33) or subjective way ($r = .30, p < .001$; 95% LLCI=.24, 95% ULCI=.34), there was no significant moderating effect, $Q(1) = .10, p = .75$.

2.7.4.3. Sex

The comparison of the effect sizes between 100% female ($r = .30, p < .001$; 95% LLCI=.20, 95% ULCI=.40) and 100% male ($r = .31, p < .001$; 95% LLCI=.18, 95% ULCI=.42) samples showed no significant difference, $Q(1) = .003, p = .96$.

2.7.4.4. Study Population

Based on the analysis comparing the guilt and pro-sociality effect size for studies relying on student ($r = .31, p < .001$; 95% LLCI=.28, 95% ULCI=.35) versus non-student ($r = .28, p < .001$; 95% LLCI=.23, 95% ULCI=.34) samples, there was no significant difference, $Q(1) = .76, p = .38$. This, together with the other results of the moderation analyses is summarised below in Table 2.4.

Table 2.4 Summary of the univariate categorical moderator analyses on the effect size between guilt and pro-sociality.

Theoretical moderators	r	95% CI	k	N	I^2
The moral barometer					
non-in-situ	.31 ^c	[.27, .36]	53	12156	81.20
concurrent	.29 ^d	[.25, .33]	59	10137	58.80
trait	.20 ^{cd}	[.08, .31]	7	2397	77.67
Direct vs. non-direct pro-sociality					
Direct (same target)	.32*	[.28, .36]	68	13573	80.20

Non-direct (different target)	.25*	[.21, .29]	40	4225	45.12
Pure guilt vs. impure guilt					
pure	.34	[.29, .39]	52	7014	80.21
shame-fused	.25	[.14, .35]	11	1479	72.38
with regret, remorse	.27	[.19, .34]	13	6537	86.64
Pro-sociality type					
money	.28	[.24, .32]	49	4390	61.59
time	.33	[.26, .40]	30	2314	70.97
human tissue	.41	[.19, .59]	5	685	87.05
other	.28	[.23, .33]	36	10945	81.69
Target of pro-sociality					
individual	.31	[.27, .35]	58	4871	50.01
organisation	.27	[.21, .34]	33	4581	78.39
humankind/nature	.32	[.25, .38]	22	8602	91.52
Known vs. unknown target					
known	.30	[.25, .35]	32	2492	39.87
unknown	.32	[.26, .38]	26	2379	59.61
Methodological moderators	<i>r</i>	<i>95% CI</i>	<i>k</i>	<i>N</i>	<i>I</i> ²
Guilt manipulation type					
scenarios	.29	[.23, .35]	24	3093	64.16
autobiographical recall	.32	[.23, .40]	15	1586	67.19
charity appeal	.21 ^{a,b}	[.11, .32]	9	1847	55.98
withholding information	.27	[.12, .40]	7	389	38.51
failing other person	.41 ^a	[.31, .50]	12	726	47.19
disturbing/breaking something	.33 ^b	[.20, .44]	8	443	0
Objectiveness of pro-sociality					

	objective	.29	[.24, .34]	39	3353	48.97
	subjective	.30	[.26, .33]	81	16846	81.05
Sex						
	100% female	.30	[.20, .40]	13	559	53.39
	100% male	.31	[.18, .42]	8	483	0
	balanced	.27	[.21, .32]	26	9045	82.63
Study population						
	students	.31	[.28, .35]	77	7688	65.86
	non-students	.28	[.23, .34]	37	11313	85.82
Manipulation check presence						
	present	.31	[.27, .35]	60	7097	71.83
	absent	.27	[.23, .31]	33	2350	11.43
Continent						
	Europe	.34	[.29, .39]	35	4856	75.48
	North America	.29	[.25, .33]	69	8231	72.31
	Asia	.26	[.08, .43]	6	848	83.08

Note. r – correlation coefficient; CI – confidence intervals, k – number of effect sizes, N – sample size, I^2 – inconsistency index; a, b indices indicate significant difference when multiple comparisons made; ^a $p < .01$; ^b $p < .05$; ^c $p = .018$; ^d $p = .053$ [#] $p \leq .076$ (two-tailed).

2.7.4.5. Manipulation Check Presence

The analysis comparing experimental studies that used manipulation check ($r = .31$, $p < .001$; 95% LLCI=.27, 95% ULCI=.35) on their guilt inductions with studies that did not ($r = .27$, $p < .001$; 95% LLCI=.23, 95% ULCI=.31) revealed no significant difference, $Q(1) = 1.99$, $p = .16$.

2.7.4.6. Continent

A moderate, positive relation between guilt and pro-sociality was observed across continents: *Europe* ($r = .34, p < .001$; 95% LLCI=.29, 95% ULCI=.39), followed by *North America* ($r = .29, p < .001$; 95% LLCI=.25, 95% ULCI=.33) and *Asia* ($r = .26, p < .001$; 95% LLCI=.08, 95% ULCI=.43). As there was only one study from Australia, it was not included in the analyses. However, the differences between these countries were non-significant, $Q(2) = 2.48, p = .29$.

2.7.4.7. Number of Citations, and Year of Publication

These were subjected to a mixed-effects meta-regression with the method of moments in order to examine their impact on the strength of the link between guilt and pro-sociality. It was analysed whether the number of citations that a study possessed would influence the strength of the link between pro-sociality and guilt. This statistic was obtained for all of the studies included, through the Web of Science, or Google Scholar's "Times cited" option (if the first source did not possess this information). The results displayed a non-significant moderating effect of the number of citations ($B = -.00007, p = .88$). Finally, it was examined if the year of publication did moderate the effect size estimates. There was no evidence that the year of the publication would have any impact on the effect size estimate ($B = .0006, p = .59$).

2.8. Discussion

Analyses with over 20000 participants demonstrated a positive, significant and moderate association between guilt and pro-sociality ($r = .30$; publication bias adjusted $r = .24$). While this guilt-pro-sociality link was robust to methodological moderators, it did vary as a function of a number of theoretical moderators. Key, among these, was the cultural norm of religiosity, direct vs non-direct pro-sociality, self-punishment and state vs trait guilt. The types of guilt manipulation used in the literature also influenced the size of this association. Specifically, it was observed that guilt induction method of

charity appeals showed the lowest strength of guilt and pro-sociality. I explore these in more detail below.

2.8.1. Cultural Norm of Religiosity

The finding that in more religious countries the guilt pro-sociality link was weaker might be surprising at first. Whereas Decety et al. (2015) showed that religiosity might negatively affect pro-sociality, this review shows that religiosity might also have an attenuating effect on the relationship found between feeling guilty and behaving pro-socially. I suggest that the weaker strength of the guilt pro-sociality link, in more religious countries, emerges because in more religious countries attending religious services and thus seeking forgiveness is a common practice, which should have an attenuating effect for the guilt-pro-sociality relationship. The World Values Survey data (<http://ns.umich.edu/new/releases/1835-study-identifies-worldwide-rates-of-religiosity-church-attendance>) showed, indeed, that the countries that were considered more religious in this study, demonstrated higher rates of church attendance (e.g., USA and Belgium – 44% attends church weekly, India – 42%), and reverse for less religious ones (e.g., China – 9% attends church weekly). Therefore, the absolution gained in church or during personal prayer might decrease one's motivation to behave pro-socially (when feeling guilty) elsewhere. Further research efforts are needed to support this claim, but this analysis suggests that this is a fruitful new avenue for future research.

2.8.2. Direct vs Non-Direct Pro-Sociality

A significant stronger effect of guilt on pro-sociality was observed for direct vs non-direct pro-sociality. This suggests that guilt might be considered mainly an emotion leading to direct pro-social behaviour. On the first look, this finding might be perceived as demonstrating that guilt serves mainly the relationship-serving rather than self-serving function. However, I would argue that this difference in strength might appear due to direct rather than non-direct pro-sociality reducing guilt more. If this is the case, then guilt-based pro-sociality (even direct one) should be seen as driven more by a potential guilt reduction (self-serving function) rather than the concern over the

relationship with the victim (at least when the wronged person is not personally close, which is the case in majority of the studies included here). This seems especially plausible as it was found that self-punishment (motivated fully by guilt reduction) was related to guilt more strongly than direct pro-sociality. I am not saying, however, that the concern with the victim's wellbeing does not influence the transgressor, but that this concern might be of secondary importance. A study by de Hooge (2012) indirectly supports this claim, by showing that when another person repaired transgressor's wrongdoing, the person who transgressed did not feel like repaying the harm anymore and that their guilt decreased.

2.8.3. Self-Punishment

The review allowed for comparing the evidence regarding the self-serving and relationship-serving functions of guilt. It was observed that the link between guilt and self-punishment (satisfying purely self-serving motive) was significantly stronger than the link between guilt and direct pro-sociality (assumed to satisfy the relationship-serving motive). This might suggest that pro-social behaviours enacted by individuals feeling guilty might stem more from their desire to punish themselves and alleviate their guilt, rather than their focus on the relationship-maintenance. However, the comparison of the effect sizes for self-punishment and pro-sociality stems from separate studies, and thus I cannot say that when an individual has a choice between self-punishment and pro-social behaviour they would choose one over the other. I am also not convinced that the direct pro-sociality is mainly related to the relationship-serving motive (as suggested by Baumeister et al., 1994), as making amends requires some form of self-sacrifice (e.g., giving away one's money), and thus is in certain extent a self-punishing behaviour. Future studies need to address this gap in the literature, by using within-subject designs and offering a choice between these two types of behaviours, and examining what and when directs the choices of guilty individuals. Might it be cost? Hopefully future will tell. Nevertheless, similar suggestions for the crucial role of self-serving motive have been made regarding the link between personality trait consistently linked with pro-sociality – agreeableness (Batson, Bolen, Cross,

& Neuringer-Benefiel, 1986). Thus, it is possible that also for guilt self-serving motive might play a strong role. Future studies should also examine whether stronger link for guilt and self-punishment would occur in different context, for example when the transgressor does not need to face the victim to repay their wrongdoing, or when the victim is a close other. In this review, none of the studies used close others as the target of pro-sociality, and thus I can only hypothesise regarding this. I presume that guilt-based pro-sociality directed at close other might be motivated more by the relationship- rather than self-serving motive, due to the long-term consequences of not amending one's relationships with close others. Lastly, as the number of studies examining self-serving function of guilt was limited, future research will be required to determine the reliability of the effect size estimated in this review.

2.8.4. Guilt Appeals

When compared with other methods, charity appeals had the smallest effect size. The observation that charity appeals displayed the weakest link for guilt and pro-sociality, might stem from the fact that such appeals are rather explicit. Explicitness (i.e., manipulative intent) has been found to affect the effectiveness of guilt messages negatively – triggering less positive message reactions (Reinhart, Marshall, Feeley, & Tutzauer, 2007; Renner, Lindenmeier, Tscheulin, & Dreves, 2013), or decreased charity donations (Hibbert, Smith, Davies, & Ireland, 2007). This finding presents potential implications for charitable organisations and health-related campaigns that use guilt appeals. Specifically, because such appeals appear to be the weakest trigger of pro-social behaviours (when compared to other guilt manipulations), organisations using these appeals might consider applying different methods of appeal. A good start might be considering the level of manipulative tone present in such appeals, and adjusting this to the potential target group. This thought is followed later on (Chapter 5). It might be also advisable to apply methods of charitable appeal that are based on triggering other emotions than guilt, such as gratitude, which has been found to promote pro-sociality (Bartlett & DeSteno, 2006; Ma, Tunney, & Ferguson, 2017). If deciding on using guilt-based appeals it would be advised to develop and apply some

reactance-inoculation strategies (e.g., Richards & Banas, 2015), which were shown to protect against counter-persuasive effects of persuasive appeals (which guilt can be classified as: O’Keefe, 2002) in health domain.

2.8.5. Non-in-Situ, Concurrent vs Trait Guilt

Finally, both non-in-situ and concurrent guilt demonstrated slightly stronger effect size for guilt and pro-sociality than trait guilt. This finding is similar to the results found for another emotion – gratitude, which related with pro-sociality less strongly as a trait rather than as a state (Wood, Maltby, Stewart, Linley, & Joseph, 2008). The Negative State Relief model (Schaller & Cialdini, 1988) might be extended to suggest that pro-sociality is driven by one’s desire to reduce guilt. Thus, trait guilt, as a more stable instantiation of guilt, should demonstrate a weaker relationship with pro-sociality.

It is also possible that the weaker effect of trait guilt on pro-sociality, as measured by most commonly used inventories (i.e., TOSCA: Tangney, Wagner, & Gramzow, 1989; GASP: Cohen et al., 2011), might be due to people’s emotion regulation strategies. Such a suggestion was found for empathy and pro-sociality. That is, even though in general trait empathy leads to pro-sociality, this association does not work for individuals with a high tendency for cognitive reappraisal (Lockwood, Seara-Cardoso, & Viding, 2014). Following from that, it can be suggested that even highly guilt-prone people, should they have a high tendency for cognitive reappraisal, would be less pro-social than those with lower guilt proneness and lower tendency to reappraise. This might be especially plausible as high guilt-prone people might have more opportunities to practice and develop an emotion regulation strategy for dealing with guilt. One might have argued that the same coping strategy should have affected state guilt. However, it needs highlighting that it is often the case that a pro-social opportunity is presented to participants feeling guilty straight after the guilt manipulation. Such a timeline leaves little time for potential induction of coping mechanisms.

Lastly, trait guilt measures appear not to be measuring trait guilt, understood as high frequency of experiencing guilt (which is the case for, for

example, trait anger: Deffenbacher et al., 1996; or trait anxiety: Spielberger, 1985), but rather as action tendencies (Giner-Sorolla et al., 2011) theoretically derived from guilt feelings (e.g., apologising). This may account for the weaker association between trait guilt and pro-sociality when compared to state guilt. Future studies should investigate whether trait guilt operationalisation similar to the one for trait anger shows different association with pro-sociality than the current operationalisation. This topic needs investigating further.

2.8.6. Stability of the Guilt-Pro-Sociality Link

Most of the moderating factors analysed (excluding trait vs state guilt, guilt manipulation type, direct vs non-direct pro-sociality and cultural norms of religiosity) had no significant impact on the effect size found for guilt and pro-sociality, suggesting that this relationship is relatively stable and immune to various influences. Even though some researchers have argued that people are more motivated to help individuals rather than to help a group/organisations (e.g., Kogut & Ritov, 2005; Slovic, 2007), and that using shame-fused measures of guilt (e.g., Ahn et al., 2014; Chang, 2014; Cristofari & Guitton, 2014), or using student samples biases the results (e.g., Falk et al., 2013), this review did not find support for the impact of any of these aspects on the strength of the association found between guilt and pro-sociality. I am not suggesting, however, that the abovementioned factors do not affect other phenomena. It might be a specific case of guilt and pro-sociality being so strongly associated with each other that not many, even established moderating factors, have a moderating effect.

2.9. Limitations

Lastly, I want to acknowledge that there are some limitations to this study, starting with the fact that quality of any meta-analysis depends on the quality of the studies included. Saying that none of the studies included did raise any concerns regarding their research quality. Other weakness of the paper is the fact that most of the studies that were included came from WEIRD societies (Henrich et al., 2010), and thus the results might not generalise

beyond populations with a similar social structure. Nevertheless, the evolutionary roots of guilt, as an emotion deterring from hurting others (e.g., Gilbert, 2003), suggest that its links with pro-sociality should be ubiquitous. Apart from this caveat, it needs addressing that as the studies included in this work were both of correlational and experimental nature, no clear conclusions about causality can be made. However, as the studies that manipulated guilt experimentally showed a positive effect of guilt on pro-sociality, I would argue that, in such cases, guilt was the cause of increased pro-sociality. Finally, as the random-effects and mixed effect models were applied in the moderator analyses, it needs highlighting that these models are known for their over-conservativeness (Balliet & Van Lange, 2013), which possibly affected the results presented. These models, however, are more suited for the data with variations in effect size, which was the case in this study.

2.10. Conclusions

This meta-analysis established a moderate strength relationship between guilt and pro-sociality, showing that guilty people are indeed pro-social and that this effect does not appear to depend on the methodological aspects of studies such as sample type, gender ratio, or type of guilt measured. Overall, the results suggested that guilt might be one of the emotions underlying human pro-sociality, and supported its role as a moral barometer – directing people towards good deeds and moral choices. Whether the relationship-serving motive of guilt is the main drive of guilt-based pro-sociality is not so certain though. It appears that guilt-based pro-sociality might be driven by self-serving motive, rather than the concern for the victim's wellbeing (at least when the victim is a stranger). The moderation analyses resulted in few recommendations for future and showed that majority of ways of studying guilt-pro-sociality link should allow for observation of this phenomenon. Charity organisations using appeals based on guilt might need to consider the use of other types of appeals, though.

Chapter 3

Moral Emotions and Pro-Sociality: Differential Effects of Guilt and Anger

Chapter Overview

What are the consequences of immoral actions? Previous research has shown that those who morally transgress are more likely to behave in a pro-social fashion, which was termed as the transgression-compliance paradigm. This paradigm was however put in doubt by a non-replication study (Noel, 1973) that did not find a positive effect of transgression on subsequent pro-social behaviour. In order to shed some light on these contradictory findings, this study examined whether participants (n=122) would behave in a more or less pro-social fashion after committing a transgression. By manipulating more public vs private context, and whether the money that participants earned were thought of as their own or belonging to a charity, but subsequently adapting this ownership, varied conditions of transgression were established. Subsequently, it was analysed whether participants' transgression influenced their decision in two unrelated pro-social acts and whether this effect could be explained by emotional mechanisms (via guilt, and anger). The focus was placed on guilt and anger, for few reasons: (i) guilt was suggested to be the driving force of the transgression-compliance paradigm; (ii) both guilt and anger are transgression-related emotions, (iii) they present action tendencies that can predict increased vs decreased pro-sociality, respectively; (iv) and finally, only a few studies compared their effects, highlighting the need for investigating their relative influences more. Guilt stemming from transgression was suggested to lead to increased pro-sociality, whereas anger was supposed to lead to decreased pro-sociality. The results confirmed these hypotheses and showed that even though guilt and anger are emotions of the same valence, they have an opposing effect on people's pro-sociality. This study revealed that there seems to be a risk of reduced pro-sociality if anger

rather than guilt arises in people due to a transgression, or if guilt is followed by anger. The results are discussed concerning theories of emotion specificity, and real-world implication for charitable organisations that require pro-social donations.

3.0. Introduction

3.1. Effects of Moral Transgression

Many studies have shown that committing a moral transgression increases subsequent pro-sociality (e.g., Cojoc & Stoian, 2012; Katzev, Edelsack, Steinmetz, Walker, & Wright, 1978), as well as compliance with the experimenter's requests (e.g., Carlsmith & Gross, 1969; Freedman, Wallington, & Bless, 1967; McMillen, 1971; McMillen, Jackson, & Austin, 1974; Tedeschi & Riordan, 1981). For example, in a study by Carlsmith and Gross (1969) participants who delivered painful electric shocks to a confederate were more likely to later offer help with phoning people and asking for their signatures on a petition, than the participants who did not shock the confederate. Similarly, increased helpfulness was observed among participants who had transgressed by cheating on a test (McMillen et al., 1974). Those participants, when compared to a control group, were much more willing to help with distributing a petition asking for support for a new Coliseum. Nevertheless, there are some studies that did not observe this positive effect of transgression on pro-sociality (e.g., Noel, 1973) or found it only under certain conditions (e.g., Freedman et al., 1967; McMillen, 1970), placing a doubt on the universality of the transgression-compliance paradigm. In the studies that found the pro-social or compliance effects of transgression, it was guilt stemming from the transgression that was often seen as a driving force of these effects (e.g., Klass, 1978; Wicker, Payne, & Morgan, 1983), even though guilt itself was not measured in these studies. Assuming that this suggestion regarding the mediating role of guilt was right, it seems possible that in the studies that did not find positive effect of moral transgression on subsequent pro-sociality, this might have been due to other emotions than guilt that were triggered. To illustrate this possibility, a study by Noel (1973) comes useful. Here, participants transgressed by reading a negative evaluation to another person and were afterwards asked for help with an environmental cause. Half of the participants were given an option to transgress or not, whereas other half had no choice. This manipulation was suggested to affect the likelihood of participants justifying their transgression, which could decrease pro-sociality. The results revealed no positive effect of transgression

on pro-sociality (i.e., the level of help was the same as in the neutral and positive evaluation conditions). Because there was not a significant difference in the level of justification between the conditions, it does not seem to provide a good explanation for the results obtained. The author himself suggested that this non-positive effect of transgression on compliance might have happened because participants felt like they themselves were hurt by the manipulation, and thus were in as much negative situation as their partners. This would suggest that there was no inequity between participants and their victims. This lack of inequity was proposed as a potential explanation of these results, as inequity was seen as another factor driving pro-sociality (Walster et al., 1970). This explanation, though, seems to bring us close to guilt and its role for pro-sociality, as guilt has been found to be triggered by charity advertisements stressing the relative inequity between, for example, life of people in Europe and third-world countries (e.g., Lwin & Phau, 2014). It appears highly possible though, that other emotions than guilt, which was suggested as a driving force of a transgression-compliance paradigm (e.g., Wicker et al., 1983) were triggered in the study of Noel (1973) and affected the results obtained. The emotion, which I will present as a potential candidate to explain the above results is anger.

Anger is an emotion that seems relevant for transgression context, especially, that it relates well to the perception of being treated unfairly (e.g., Keltner & Haidt, 1999). The fact that anger might be closer to guilt than demonstrated in the literature was well explained by Keltner and Kring (1998, p.323), who stated that: *“The experience of anger and guilt relates to perceptions of the fairness of personal relationships”*. Therefore, I would suggest that it is possible that the non-positive effects of transgression in Noel’s (1973) study might be due to anger rather than guilt being experienced by participants in that study. As mentioned, in Noel’s study (1973), participants were asked to read a derogatory evaluation to another person, which seems like a likely context to trigger anger. It probably does not require much pondering to realise that being asked to say something mean to another person might trigger anger toward the person requesting such a negative act. This would be especially true if participants would see this request as unfair or

wrong (such appraisals are linked to feelings of anger: e.g., Keltner & Haidt, 1999), which seems likely when being asked to tell someone else a negative evaluation. Therefore, assuming that participants felt angry in Noel's study (1973) and that they acted on this anger, it would be expected that they should strive to retaliate (a tendency linked to anger: Allred, 2000; Allred, Mallozzi, Matsui, & Raia, 1997). This would be visible, for example, in their decreased pro-sociality. The fact that the pro-sociality in the transgression and neutral/positive condition was the same would suggest that this is probably what happened. However, as there were no emotional measures taken in this study, all of the above explanations of the results are hypothetical. Nevertheless, this study provides a good example that in a transgression context, increased pro-sociality is not always observed. It also provides a good starting point for investigating potential mechanisms explaining this effect.

As will be explained below, people can interpret the same situation differently, and thus different than hypothesised emotions (i.e., guilt) might be triggered in a transgression situation, and subsequently affect people's behaviour. I suggest that this is what might have occurred in Noel's study (1973). Thus, in the current study, I build on these early results and examine whether the situation of transgression might indeed lead to both increased and decreased pro-sociality, and whether anger and guilt might be the mechanisms behind such effects.

There is at least, one other option that might have affected the results in the studies that did not find a pro-social effect of moral transgression, that is, an opportunity to reduce guilt in another way than by being pro-social. This claim is close to the Negative State Relief model (Cialdini et al., 1973), which suggests that people can use pro-sociality to deal with the negative affect their experience. There is some experimental evidence supporting the claim that, if there are other ways of reducing one's negative affect, than one is less likely to use a pro-social act to improve one's mood (e.g., Cialdini, Schaller, Houlihan, Arps, Fultz, & Beaman, 1987; Schaller & Cialdini, 1988; Shaffer & Graziano, 1983). However, in the study described above (Noel, 1973), such an occurrence did not seem probable as the participants were not exposed to any opportunity that could affect their emotions before being asked for help (even

the justification questions were asked after the study was over). This suggests that the proposition delineated above, based on the effects of other emotion than guilt as playing a role in Noel's (1973) findings seems highly likely. Below, I present what is the current standing of the emotions research in psychology, and explain how guilt and anger are related to each other and pro-sociality.

3.2. Role of Emotions in Human Decision-Making

Recent theories argue that emotions and emotional self-regulation have a crucial role for human decision-making and behaviour (e.g., Andrade & Ariely, 2009; Heilman, Crisan, Houser, Miclea, & Miu, 2010; Kligyte, Connelly, Thiel, & Devenport, 2013; Lerner, Li, Valdesolo, & Kassam, 2015; Pfister & Bohm, 2008; Schwartz, 2000; Van Kleef et al., 2010). Emotions have been linked to adaptive phenomena, such as pro-sociality (e.g., Lindsey, 2005), and ethical choices (e.g., Kligyte et al., 2013) but also maladaptive outcomes, such as more risk-taking (Abdu, Shinar, & Meiran, 2012), and prejudice (Parrott & Peterson, 2008). It is not emotions in general, though, that are the focus of current research in the field of affective psychology, but rather specific emotions, which are suggested to lead to specific actions (e.g., "feeling is for doing" paradigm: Zeelenberg & Pieters, 2006). To provide an example, envy has been found to lead to such anti-social behaviours as cheating (Moran & Schweitzer, 2008), and social undermining of the envied person in social contexts (Duffy, Scott, Shaw, Tepper, & Aquino, 2012), which allows for differentiating it from other negative emotions, such as, anger or sadness.

Emotions should not only be seen as predictors of varied behavioural outcomes though, but they can also be seen as the results of one's choices and behaviours. As emotions do not occur in a vacuum, they should be examined within a context, taking into account their elicitors and their subsequent effects. One type of a context that elicits emotions is a transgression, thus a situation when people do not live up to societal or their own standards. A transgression situation might leave people with an emotional baggage, such as a feeling of guilt (e.g., Baumeister et al., 1994; de Hooge, 2012) or anger (e.g.,

Iyer, Schmader, & Lickel, 2007), which subsequently, according to a social-functional perspective on emotions (e.g., Fisher & Manstead, 2008; Frijda & Mesquita, 1994; Keltner & Haidt, 1999;) should affect people's motivation and trigger specific action tendencies (Frijda et al., 1989). Recent theories claim that which emotion arises in a particular situation is dependent on one's appraisal of that situation (Siemer, Mauss, & Gross, 2007), and thus the same situation depending on one's appraisal of it, might trigger one emotion in some, but a different one in others. To illustrate that, imagine that you are late for a meeting and that once finally, you reach the room where the meeting is being held, you are welcomed with the following remark: "Nice of you to join us". It should be relatively easy to imagine that this remark might trigger amusement in the target of the remark; that is, if they appraise it as a genuine positive comment, however, it is also possible for the target to experience anger, if they appraise the comment as sarcastic. A situation of moral transgression is no different to the one above, as it can trigger varied emotions in people engaged in it, depending on how they interpret it. Even though guilt is seen as the most common emotional reaction to transgression (e.g., Wright, 1971), previous research has shown that apart from guilt, anger might also arise in a transgression context (e.g., Malti, Ongley, Dys, & Colasante, 2012; Nelissen & Zeelenberg, 2009a), suggesting that indeed a transgression situation can be appraised differently.

Even though there are punitive systems for transgressions in the modern society, people do not always behave in a moral way; they do commit many transgressions and crimes in their daily lives. They steal, lie, are violent, or in the more extreme cases commit murders. Therefore, it should not come as a surprise that anger and guilt, emotions, as suggested above, closely linked to acts of transgression (e.g., Malti et al., 2012; Nelissen & Zeelenberg, 2009), are commonly experienced (e.g., Averill, 1982; Carstensen, Pasupathi, Mayr, & Nesselroade, 2000).

Despite the fact that anger and guilt are closely related to a transgression situation not many studies tried to compare effects of guilt and anger stemming from a transgression. In the literature, guilt has been typically contrasted with shame (e.g., Dearing, Stuewig, & Tangney, 2005; de Hooij et

al., 2007; Ghorbani, Liao, Caykoylu, & Chand, 2013; Hosser et al., 2008; Kim et al., 2011; Stearns & Parrott, 2012), whereas anger with disgust (e.g., Russell & Giner-Sorolla, 2011; Salerno & Peter-Hagene, 2013), sadness (e.g., Bodenhausen, Sheppard, & Kramer, 1994; Keltner, Ellsworth, & Edwards, 1993; Rucker & Petty, 2004; Zeman & Garber, 1996) or fear (e.g., Finucane, 2011; Moons, Eisenberger, & Taylor, 2010; Nabi, 2002). This means that there is a gap in the understanding of the relative influences of guilt and anger when studied together (Roberts, Strayer, & Denham, 2014), especially when placing the focus on the context of transgression and subsequent pro-sociality. The importance of studying guilt and anger together should also be stressed due to the fact that studies have reported that guilt and anger frequently co-occur (Vansteelandt et al., 2005). Even though varied previous research studied links between transgressions and subsequent pro-sociality (sometimes also referred to as compliance), they have not deeply investigated the emotional mechanisms of these links, meriting such an investigation further.

3.2.1. Guilt vs Anger

Even though both guilt and anger in the context of transgression have been linked to similar outcomes, for example, an increased likelihood of a third-party punishment (Nelissen & Zeelenberg, 2009a), these two transgression-related emotions possess opposite characteristics and lead to strongly dissociable effects. This makes them perfect for analysing together, as their effects should be easily distinguishable.

Anger is typically seen as leading to retaliation (Allred, 2000; Allred, Mallozzi, Matsui, & Raia, 1997), with the aim of achieving psychological equity or sense of fairness (Huefner & Hunt, 2000; Phau & Baird, 2008). Guilt, on the other hand, seems bringing about reparation (Amodio et al., 2007; Baumeister et al., 1994, 1995c; Nabi, 1999) and pro-social behaviour (Caplovitz-Barrett et al., 1987; Ghorbani et al., 2013), and is aimed at restoring the relationships with wronged individuals (Baumeister et al., 1994). These two emotions not only differ in their effects but also regarding the appraisal tendency related to them. Thus, if one appraises one's causal role in a negative and harmful to someone else situation (Batson, 2006; Haidt, 2003)

they should experience guilt. However, if in the same situation one has the perception that another individual (or some circumstances) is responsible for this negative situation, it would be anger rather than guilt that is experienced. Anger has been linked to the situations of goal obstruction, or unfairness toward oneself (e.g., Lerner & Tiedens, 2006) and others (e.g., Iyer et al., 2007). It has been also found to mediate the relationship between fairness perception and retaliation (Barclay, Skarlicki, & Pugh, 2005). However, anger does not only seem to be linked to perceiving others as blameworthy, when that is the case. Anger has also been documented in transgressors who strive to excuse their actions or place blame elsewhere (Stuewig et al., 2010), hinting at a potential link between anger and coping with guilt (e.g., by reducing one's blame). The fact that guilt and anger might be more closely related than one expects has been shown in a study by Giner-Sorolla and Espinosa (2011), where it was shown that expressing anger cues guilt in participants exposed to this anger. This suggests that guilt and anger might be more intertwined than previously thought.

As guilt and anger are closely linked to the appraisals of blame and responsibility, which are also highly relevant for a transgression context, and in legal terms, they often decide about one's punishment. It needs mentioning, however, that even though guilt is linked to accepting feelings of blame and responsibility because guilt is an unpleasant emotion, people might want to reduce it, with one option for that being reducing or not accepting one's blame/responsibility. Indeed, recent research showed that people could be even more creative when dealing with their immoral behaviour, as it was found that people can project their immorality on someone else, and then by punishing this person they can obtain a decreased feeling of physical contamination (linked to immorality) via reduced guilt (Rothschild, Landau, Keefer, & Sullivan, 2015). Regulating guilt can also happen via increasing one's pro-social or moral behaviour (Estrada-Hollenbeck & Heatherton, 1998). Additionally, if a closer look is placed on the moral cleansing paradigm (e.g., Jordan, Mullen, & Murnighan, 2011), it should be even more evident that by behaving pro-socially people can reduce their guilt. According to the moral cleansing paradigm, increasing one's pro-social behaviour after a

transgression might be seen as a strategy aimed at restoring one's moral self-image. However, as committing a transgression produces guilt, it seems reasonable to expect that guilt might also be affected (i.e., reduced) by committing a pro-social act. For example, in their study, Jeong and Koo (2015) showed that reduced guilt worked as a mediator between volunteering and moral licensing (i.e., behaving badly after committing a good deed). However, not only pro-sociality can be used to alleviate guilt, as people can use other strategies, for example, physical cleansing or confession (Harris et al., 1975) to do so. Indeed, Zhong and Liljenquist (2006) showed that guilty participants who could reduce their guilt by other means than pro-sociality (i.e., washing their hands) demonstrated lowered likelihood of being pro-social afterwards, suggesting that physical cleansing reduced their guilt. These latter studies suggest then that even though guilt seems to increase one's pro-sociality if other options of reducing guilt are present, the guilt- pro-sociality link might not be evident anymore. They also suggest that people might use the first opportunity that comes to them, whether that is a pro-social option or another way of changing one's mood when feeling guilty. I will come back to this suggestion in the hypothesis section.

When it comes to anger, people cope in many ways. Older beliefs (e.g., catharsis or hydraulic theory: Breuer & Freud, 1957) suggested that venting helps to deal with anger, and reduces future aggression, which was used in many therapies of the time (e.g., Nichols, 1974). That was the case even though the experimental evidence was painting the opposite story (e.g., Bandura, 1973; Tavis, 1982). More recently ways of coping with anger have been conceptualised to involve six aspects: anger out, assertion, support seeking, diffusion, avoidance and rumination (Linden et al., 2003). Anger out – a method of alleviating anger by acting out seems still as a common occurrence, and reflects well the action tendency ascribed to anger; that is, retaliation (Frijda & Mesquita, 1994). This might stem from the fact that anger might not be an emotion that people want to regulate, especially if it can help with their goal attainment (e.g., Tamir, 2009). For example, when people think that anger might be useful, they have been found to want to increase it (Tamir & Ford, 2011). Thus, it seems that sometimes people might not be

motivated to regulate their anger, but rather to act on it. As stated above, anger might be functional, as its role is to bring back the equity and feeling of fairness (redress injustice: e.g., Keltner & Haidt, 1999), and as it signals that one was treated wrongly, it might be adaptive rather than maladaptive emotion.

3.2.2. Context-Related Factors Influencing Guilt, Anger Occurrence

Two contextual factors were examined in this study: (i) earning for oneself vs a charity, and (ii) the presence of eyes prime. They were used in order to determine whether they would influence the likelihood of transgression, and the emotional mechanisms following from it. Whether the mechanism via guilt or via anger would follow was hypothesised to depend on the charity vs yourself condition, respectively, which should function as a moderator of the mediation mechanisms described. Donation decision in yourself vs charity condition can be seen as a “give vs take” manipulation (List, 2007) used in dictator games. However, the manipulation presented in this study differed from the latter one, as participants in both conditions were exposed to a change of rules; that is, even though initially they were informed that the money they earn would be theirs (yourself condition) or charity’s (charity condition), subsequently they were told that they could give away some money (yourself condition) or keep some money for themselves (charity condition). Such a situation might represent a breach of “contract” and make participants feel like the experimenter committed a transgression – broke the rules. If that were the case, then participants could experience anger. Indeed, previous research found that *“when a negative situation is appraised as illegitimate, in the sense of being undeserved or the situation being otherwise unfair, it is typically met with anger and hostility”* (Nugier, Niedenthal, Brauer, & Chekroun, 2007, p.1702).

It is not so clear which condition, would react with stronger anger, though, as both experience a sort of transgression on the part of the experimenter. However, the prediction that anger would be more influential in the ‘yourself condition’ than ‘charity condition’ seems more convincing. The reasoning for this comes from the fact that in the charity condition the change

of rules, played in favour of the participants (i.e., they were allowed to keep some money, as this was validated by the experimenter). Whereas participants in yourself condition might have felt “cheated more” by the rule change, as they might have seen charity request as being against them; that is, taking something away from them which they lawfully earned (as they were told that they were earning money for themselves). This might lead to more anger and a tendency to “balance the scales” with the transgressor in this condition (Anderson & Bushman, 2002).

Secondly, as the presence of others is found to affect people’s behaviours (e.g., Haley & Fessler, 2005; Rigdon, Ishii, Watabe, & Kitayama, 2009; Zhong, Bohns, & Gino, 2010), I also examined whether such an effect would occur for the decision whether to transgress or not, and the subsequent emotional mechanisms. The use of eye prime was chosen as the manipulation of this effect. Such a method has been applied successfully before (e.g., Ernest-Jones, Nettle, & Bateson, 2011; Powell, Roberts, & Nettle, 2012). For example, in one study (i.e., Bateson, Nettle, & Roberts, 2006), the eyes prime triggered higher honesty box donations than a flower prime. Whether such an effect would be present in the context of moral transgression and subsequent pro-sociality is not certain though. This study has a chance of shedding some light on this issue.

3.3. Pro-Sociality

The context of this study was based on the pro-sociality domain (i.e., helping another individual). Pro-sociality is crucial for the harmonious functioning of societies and thus understanding what increases or decreases human pro-sociality is important. The emotion that has been strongly associated with pro-sociality (apart from empathy: e.g., Batson & Oleson, 1991; Davis, 1983; Eisenberg & Miller, 1987) is guilt (e.g., Lindsey, 2005; Olthof, 2012; Renner et al., 2013). As suggested above, guilt does not seem to provide the full story though, and other emotions such as anger need investigating in context of pro-sociality, especially if this pro-sociality is examined after a transgression.

The pro-social behaviours that were investigated in this study were chosen to reflect the ones related to the most common costs incurred in the everyday life – time and money (Liu & Aaker, 2008). They are also the ones widely studied in the literature (e.g., money donating: Greitemeyer, 2009; Olivola & Shafir, 2013; Pavey, Greitemeyer, & Sparks, 2011; Twenge, Baumeister, DeWall, Ciarocco, & Bartels, 2007b; time offering – for another study: Archer, Diaz-Loving, Gollwitzer, Davis, & Foushee, 1981; Coke, Batson, & McDavis, 1978; Davis, 1983; Martin, 1972; Reed, Kay, Finnel, Aquino, & Levy, 2016), and reflect the most common types of help in the real world (i.e., offering money, time: Bekkers, 2010; Duclos, 2008; Lee et al., 1999). All these behaviours can, however, be categorised as representing low-cost behaviours, and thus it has to be stated that the generalisability of the results is limited, as the cost is seen as a crucial factor in helping (Piliavin et al., 1969).

The pro-social opportunity of charity donation was chosen here as the transgression context. Donating to a charity is seen as a worthy behaviour, being a duty in some religious groups (e.g., Zakat in Islam: <https://hds.harvard.edu/news/2013/12/13/why-give-religious-roots-charity#>). Thus, people feel bad if not donating, or donating little when being asked for a donation. Charity donations are ubiquitous in today's world, therefore using it in a lab situation should provide a close resemblance to pro-social situations seen in the outside world, increasing the ecological validity of this study.

3.4. The Present Study

Based on the above, it is hypothesised that anger and guilt should be prominent emotions that occur in a transgression situation, making them perfect candidates for the study of emotional underpinnings of pro-sociality in a context of transgression. Indeed, this suggestion was recently supported, as both guilt and anger have been found to affect people's behaviour in a cooperation context (e.g., Skatova, Spence, Leygue, & Ferguson, 2017), with anger linked to destruction of cooperation, and guilt linked to sustaining it. Similar findings were obtained in the domain of unethical behaviour: Over-reporting one's performance to gain more money was affected by both guilt

and anger (e.g., Motro, Ordonez, Pittarello, & Welsh, 2016). Here, however, the emotions were triggered using autobiographical recall, which is based on recalled and not the in-situ emotions, which some researchers see as problematic (e.g., Mills & D'Mello, 2014). Building on these results, the present study has a chance of expanding these latter results by investigating the role of anger and guilt in a pro-social, rather than cooperative or unethical context, using a more in-situ method of emotion elicitation, than autobiographical recall. It is worth noting, though, that this study differs from previous studies, in using a transgression context, as participants, rather than being assigned to a transgression or no-transgression condition, decided whether to transgress or not and to what level, on their own. Only the likelihood of them performing a transgression was manipulated (see below), and this can also be seen in the real world, where situational factors often influence transgression occurrence (e.g., Greenberg, 2002; Tsang, 2002). For example, it was shown that people cheat more when the context allows for it (e.g., a small likelihood of detection: Greenberg, 2002). Thus, this study appears to be more closely reflecting real life than previous studies.

To reiterate, the main aim of this study was to investigate the emotional mechanisms between transgression and subsequent pro-social behaviours, which hopefully should provide some explanation regarding the contradictory results for the transgression-compliance paradigm found in the literature, and expand our understanding of the role of guilt and anger in pro-sociality.

3.4.1. Hypotheses

3.4.1.1. Transgression-Related

The study conditions (eyes vs no eyes, yourself vs charity) were used to manipulate the likelihood of participants transgressing and the level of transgression. Transgression here was operationalised as the level of money donated to charity (ratio of money donated, when taking into account money earned). Thus, the lower the level of donation, the worse the transgression. Based on the study conditions, it was hypothesised that participants in the eyes condition (vs no eyes) should transgress less than their counterparts. Therefore

more money should be donated for the charity in this condition. This is due to the literature suggesting that people behave worse when feeling anonymous/ in private (e.g., more selfish: Zhong et al., 2010), and vice versa when being observed (e.g., more pro-social: Haley & Fessler, 2005; Rigdon et al., 2009).

In addition, it was predicted that participants in the charity (vs yourself) condition should transgress less, and thus donate more money for a charity than those in yourself condition, as taking money away can be seen as stealing - a worse transgression than not giving or giving little. Indeed, previous research showed that people judge harmful commissions as more immoral than harmful omissions (Kordes-de Vaal, 1996; Spranca et al., 1991). Thus, it was predicted that participants would be more generous in charity condition, as in this condition taking money away should be seen as more immoral, and thus more aversive than not giving/giving little in yourself condition.

Following from these two aforementioned hypotheses, it was also predicted that there would be an interaction for eyes vs no eyes x charity vs yourself condition, with those in the eyes x charity condition donating the most money for the charity (when compared with other conditions), as in this condition the act of donating nothing/little should be seen as most morally wrong, as the participants in this condition were taking money away and were doing it in a sort of public context.

3.4.1.2. Emotional Mechanisms

Negative affect was suggested to be strongly relevant for transgression context (e.g., Haidt et al., 1993; Nichols, 2002). Following from the specificity of emotions approach in this study, I focus on two emotions: guilt and anger. As mentioned earlier, guilt is seen as the most prototypical moral emotion, but anger seems highly relevant for transgression context as well (e.g., Iyer et al., 2007). Relying on the action tendencies of these two emotions, it was predicted that the mechanism between moral transgression (i.e., the ratio of money donated) and subsequent pro-social behaviour (i.e., offering time for future study) would rely on the feelings of guilt and anger experienced due to the transgression. Specifically, it was hypothesised that guilt would serve as a

mechanism linking moral transgression with subsequent increased pro-social behaviour, and in reverse, that anger would link moral transgression with subsequent decreased pro-social behaviour. The proposed pattern of effects would stay in line with the action tendencies suggested for the emotions investigated; that is, making amendments and repair motivation for guilt (Frijda, 1986; Lewis, 1993), and seeking punishment, redressing justice, and achieving a state of psychological equity for anger (e.g., Phau & Baird, 2008; Huefner & Hunt, 2000). Anger is frequently linked with aggression and anti-social behaviour (e.g., Chen & Spector, 1992; Matthiesen & Einarsen, 2007; Novaco, 1994), however as antisocial behaviour was not available as an option after the transgression in this study, it was not possible to examine the link between anger and anti-social behaviour. Instead, it was expected that anger would be associated negatively with subsequent (decreased) pro-social behaviour, as decreasing one's pro-social behaviour might be seen as a way of punishing another person, seeking justice, establishing equity.

Lastly, a tentative model was specified, suggesting that after transgression, for some people who experience guilt, this guilt might subsequently be followed by anger, which subsequently would decrease one's pro-sociality. This anger could be seen as the effect of rationalising one's behaviour, blaming others, and thus dealing in such a way with one's guilt (e.g., Bybee & Quiles, 1998). This model is supported by previous research showing that emotions of the same valences, such as guilt and anger often co-occur (e.g., Vansteelandt et al., 2005), that guilt can be triggered by anger (Giner-Sorolla & Espinosa, 2011), and that anger might be used as a way of dealing with one's guilt (e.g., Bessarabova, Turner, Fink, & Blustein, 2015). Thus, it was tested whether for some guilt might be followed by anger, which subsequently should decrease pro-sociality. It needs mentioning, though, that because the emotion data in this study were collected at one point causality cannot be claimed by this model.

3.5. Do Emotions Affect First or Also Subsequent Pro-Social Opportunities?

Apart from investigating the emotional underpinnings of people's pro-social behavioural patterns, this study aimed to examine whether the emotions triggered in the transgression would affect only the first or also the subsequent pro-social behaviour. Therefore, more than one pro-social opportunity was presented in this study. The Negative State Relief Model (Cialdini et al., 1973) suggests that if one's behaviour in the first pro-social opportunity alleviates the negative emotions experienced in the transgression, then these effects would be non-significant for the subsequent pro-social opportunity. Schaller and Cialdini (1988) showed that when people were in a bad mood but expected a mood-enhancing event, before a chance to help another individual, they were less pro-social, than those who did not expect such an event, suggesting that their emotions were alleviated by the first event. Even though, the NSR model was suggested to work for feelings of sadness (e.g., Cialdini, Baumann, & Kenrick, 1981), here, it was proposed that same effect should be visible for both guilt and anger. This prediction paints pro-social behaviour as a more hedonistically motivated act, which agrees with Cialdini et al.'s model (1981). Therefore it was examined whether the emotions stemming from moral transgression would affect both or only the first pro-social opportunity.

3.6. Other Influences

Lastly, as gender has been shown to affect people's pro-sociality (e.g., Eagly & Crowley, 1986; Oswald, 2000; Salminen & Glad, 1992), it was predicted that gender might influence participants' pro-sociality. Indeed, previous studies found both males and females to be more pro-social in a certain context. For example, higher help in a more relational context was found for females, whereas higher help in agentic context was observed for males (Eagly, 2009). Males are also typically seen as more pro-social in resources/status-related context, where they can use their behaviour as a status signal (e.g., Van Vugt & Hardy, 2009; Van Vugt & Iredale, 2013). Due to these findings, it was predicted that in the charity dictator game (a resources-based game) males would be the more pro-social gender.

3.7. Methods

3.7.1. Participants

A sample of 122 participants was recruited among students enrolled on a variety of courses at a UK University, consisting of an equal number of both genders (51% females). The sample was relatively young ($M=22.91$, $SD=5.16$) and heterosexual (90%). The data were collected between February and November 2014. Ethical approval was granted by the Departmental Ethics Board (REF 432R).

3.7.2. Design

This study used a 2 (eyes prime vs no eyes prime) x 2 (raise money for yourself vs charity) between-subject design. Participants were randomly allocated to a public or private condition (eyes vs no eyes prime), and they performed a cognitive (earning) task in order to raise money for themselves or a charity of their choice. The public vs private condition was primed with the use of images of eyes vs no eyes printed on questionnaires and a charity donation box in the lab. All of the participants were run individually by the researcher, in order to minimise the possible influence of confounding variables (Iredale, Van Vugt, & Dunbar, 2008).

3.7.2.1. Earning Task

In this task, participants were asked to cross out as many letters “E” that appeared in a passage of text as they could; within a 3-minute period (see Appendix 3.1). This type of task has been used successfully in various studies as a measure of performance (e.g., Davids & White, 1958; Hatch, Polin, & Part, 1974). The participants were informed that each “E” that gets crossed out by them was worth one penny (1p). It was estimated that on average, participants could cross out up to 200 “E’s” in a 3-minute period. Participants were asked to check their own performance in the “crossing E’s task”. This task was used in order to avoid the “house money” effect (Thaler & Johnson, 1990); that is, the observation that people act differently with money that they were given vs money that they earned. For example, people have been found to value won money less than own money (e.g., Weatherly, Derenne, &

Terrell, 2010). As charitable donations in the real world come from people's own incomes, I tried to replicate this by having participants to work for the money they could later donate. Half of the participants were told that they were earning money for themselves, whereas the second half was told they were earning for a charity of their choice. The ratio of the money that participants decided to donate (% of their earnings) was used as an outcome measure.

3.7.2.2. Transgression Context (Earning for Yourself vs Charity)

The charity dictator game was chosen as a context of transgression. Half of the participants were told that even though they were earning money for themselves in the earning task, they could donate some to a charity. The other half of participants were told they were earning money for a charity and could take some for themselves. It was hypothesised that this change in the rules would affect participants' donations and their subsequent pro-social behaviour.

3.7.2.3. Public vs Private Condition Manipulation (Eyes Prime)

In order to create differentiated conditions of public versus private circumstances of the study, half of the participants were donating money to a box with an image of eyes on it and had the same image present when filling in all of the questionnaires (see Appendix 3.2). Participants in the no eyes prime condition were not exposed to any images. Images of eyes have frequently been used to generate a feeling of being watched (in public circumstances: e.g., Manesi, Van Lange, & Pollet, 2016; Powell et al., 2012). As stated in the hypotheses, this manipulation was used in order to manipulate the likelihood of participants transgressing.

3.7.2.4. Procedure

Once a participant was seated in a laboratory, they were presented with the consent form and informed about the study procedure. First, they were asked to complete background questionnaires, measuring the variables of interest. Afterwards, the participants were asked to perform the earning task (for a charity or themselves, depending on the self/charity condition), which

was timed by the researcher.

At the end of this task, all of the participants were told that they could: (i) give part of the money to a charity, or (ii) keep all of the money (earning for self-condition), or (iii) leave all of the money (earning for charity condition). A list of 10 different charities was given to participants to choose from. Participants were left alone to make their money-related decisions, so experimenter's presence would not influence their choice. A charity donation box was present in the room, and whether the participant decided to give some money to a charity or not, they were asked to place an envelope (empty or with a donation) in the box. The visual characteristics of the box differed across two conditions. The box for participants in the private condition had no image on it, whereas for participants in the public condition the box had an image of eyes on it. Money left for charities were transferred to those charities when the study was over. After participants decided about the money division, the experimenter came back and asked the participants to fill out a scale, measuring their emotions at that moment.

In the next step of the experiment, participants were asked whether they would be happy to help with a future online study. After this part, participants were asked whether they would mind sending a pre-paid letter for the researcher. The participants were fully debriefed after that. Debriefing took the form of the debrief form as well as of a full verbal debrief. All the participants were offered a £2 show-up fee, plus any earnings they decided to keep with them after the "crossing E's task" as an inconvenience allowance. See the Fig 3.1 for the flow chart of the study procedures.

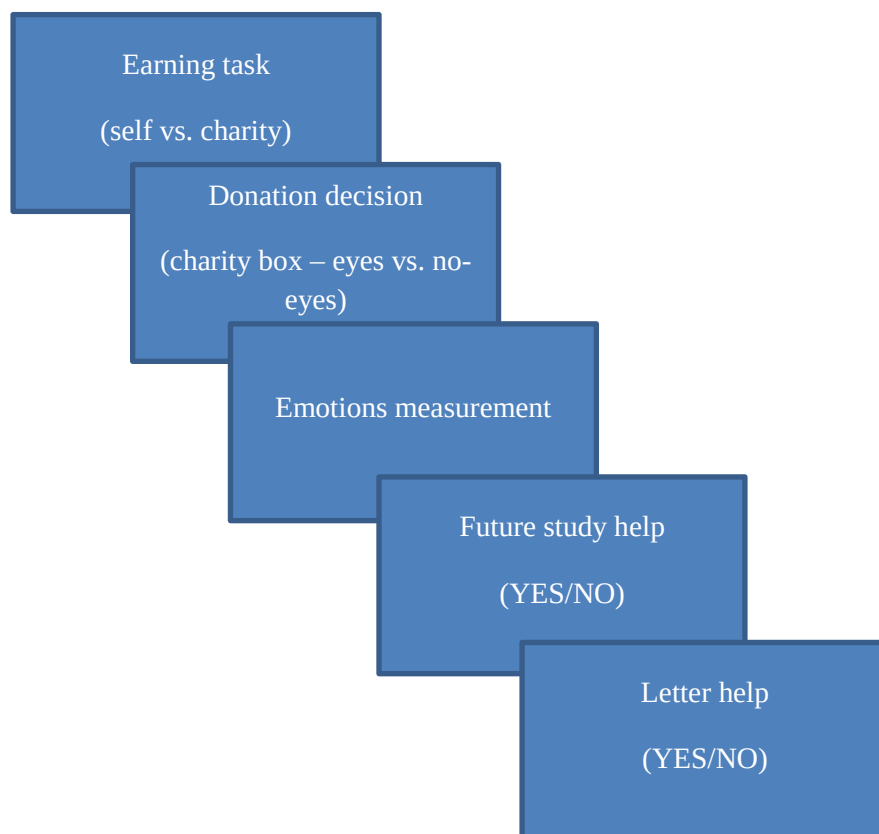


Figure 3.1 Flowchart of the study procedures.

3.7.3. Measures

The following variables were measured in this study: (a) state emotions of guilt and anger, (b) three instances of pro-sociality, and (c) demographics. The description of the measures used is provided below. Higher scores on all of the scales represent higher levels of the variable in question.

3.7.3.1. State Emotions

In order to measure participants' in situ emotions, the Positive and Negative Affect Schedule (PANAS-X: Watson & Clark, 1999) was used, which is one of the most commonly used emotions inventories. Respondents indicate on a scale from 1 (very slightly or not at all) to 5 (extremely), the intensity of different emotional states that they experience at a certain moment. I used PANAS to measure guilt (from items guilty, ashamed, blameworthy, angry at self, disgusted with self, dissatisfied with self: Cronbach's $\alpha = .89$), and anger, which is created from items: angry, hostile, irritable, scornful, disgusted, and loathing. This variable was reliable (Cronbach's $\alpha = .77$). Previous research demonstrated good reliability and

validity of PANAS scale (e.g., Austenfeld, Paolo, & Stanton, 2006; Markey & Vander Wal, 2007; Watson, Clark, & Tellegen, 1988; Watson & Clark, 1991).

3.7.3.2. Pro-Sociality Measures

3.7.3.2.1. Charity Donation

Participants were offered a chance of donating some of the money they earned in the earning task to a charity of their choice. The pro-sociality was operationalised as the ratio of the money they donated when taking into account the amount they earned, to account for individual differences in the earnings.

3.7.3.2.2. Future Study Help

Participants were offered an option of taking part in another study, this time without payment, which was supposed to be delivered online, within the next month. If they agreed on taking part in the study, they were asked to leave their email details and an estimated amount of time that they could offer for this study (between 0 and 60 min, in 5 min increments). It was stated that the online survey would take an hour, but any time that they could offer would be helpful. Participants indicated their choice on a piece of paper, by placing an X on a scale presented, which started on 0 min and finished on 60 min, with the increments of 5 min.

3.7.3.2.3. Posting a Letter

Participants were asked if they would mind helping with posting a letter (i.e., into a post-office box anytime that day) for the researcher, as the researcher has not been able to do it because they were running late having more participants that day. This request was asked politely, and no pressure was put on the participants to comply with it. The request was made in an absent-minded fashion, which was supposed to give the participants an idea that this request was not part of the study. Whether participants agreed or disagreed to send the letter was taken as the second measure of pro-social behaviour after the transgression. After participants answered this request, they were not actually asked to post the letter.

3.7.3.3. Demographics

Basic demographic information (e.g., gender, age, education, working status, social status, sexual orientation, etc.) was requested from participants.

3.8. Results

The specified hypotheses were tested with correlation analyses, ANOVAs, and mediation models. The SPSS software (IBM Corp., 2013), together with Process macro (Hayes, 2013) were used to run the analyses. First, the effects of the study conditions were analysed, followed by the examination of the emotional mechanisms delineated above. The demographic characteristic and the descriptive statistics are presented in Table 3.1.

3.8.1. Descriptive Statistics

As presented in Table 3.1, both guilt and anger showed significant correlations with the pro-social acts, and there was also some consistent pattern of correlations between varied forms of pro-sociality.

Table 3.1 Descriptive statistics of the study variables (n=122).

Variable	Mean	SD	Correlations [*]				
			1	2	3	4	5
1 Anger	1.20	.40	x	.77**	-.33**	-.25**	-.12
2 Guilt	1.25	.58	x	x	-.21*	-.07	.01
3 Ratio donated	56.09	40.71	x	x	x	.53**	.21*
4 Time offer	30.34	18.75	x	x	x	x	.25**
5 Letter help	.74	.44	x	x	x	x	x
Variable	Frequency						
	(n)	(%)					
Money donated	110 Y	90.2					
Time help	114 Y	93.4					
Letter help	89 Y	73.0					
Gender	62 F	50.8					

Note. ^{*} study conditions, and gender controlled for. Y = yes.

As depicted in Table 3.1, both guilt and anger were highly and positively correlated ($r = .77, p < .001$). Both anger and guilt decreased as the amount of money donated increased. Anger was also negatively related to time offered by participants. There were no significant correlations between the two emotions and agreeing to send a letter. Participants were in general helpful in the study, as more than 90% donated some money and offered help with future study. The majority agreed to help sending a letter as well. All the pro-social acts were positively correlated, suggesting that indeed people might demonstrate a cooperative phenotype, as suggested by Peysakovich et al. (2014; see General Introduction). This also supports the view that even though pro-sociality might come in different types (e.g., donating money, time, blood), these types seem to be strongly correlated. The correlations between anger, guilt and pro-social outcomes might also suggest that the subsequent pro-social opportunity was not affected by these emotions. Probably due to their alleviation by one's choice in the first pro-social opportunity.

3.8.2. Effect of Gender

Gender was dummy coded as 0 for male, and 1 for female. As predicted, there was a significant correlation between gender and ratio of money donated/left for a charity: $r = -.27, p = .003$, indicating that males donated more money than females. Therefore, gender was kept as a covariate in the subsequent analyses.

3.8.3. Effects of Eyes Prime (Public vs Private Condition)

When comparing participants in the eyes and no eyes conditions on their level of transgression (controlling for gender), there was no significant difference observed ($F(1,119) = 1.99, p = .16$; *Cohen's d* = .26). The mean ratio of money donated to a charity in the eyes condition was ($M = 49.54, SD = 42.00$), whereas in the no eyes condition it was equal to ($M = 59.95, SD = 39.29$). This is not as surprising though, as it is probable that the effect of eyes prime was not salient enough to affect participants' decisions, as all participants were left alone when making their donation decision. Due to this result, the effect of eyes prime was not considered further.

3.8.4. Effects of Money Target

Comparing groups of participants who were earning money for themselves and those earning for a charity revealed that there was no difference in the mean ratio of money donated (controlling for gender): $F(1,119) = .74, p = .39$; *Cohen's d* = .16. The mean ratio of money donated to a charity in yourself condition was 51.58 (SD = 40.59), whereas in the charity condition it was equal to 57.74 (SD = 41.23). However, as the effect of money target was specified in the mediation analyses, it has been tested further.

Lastly, there was also no significant interaction between eyes prime and money target: $F(1,117) = .60, p = .44$; *Cohen's d* = .14. Thus none of the hypotheses relating to the likelihood of moral transgression was supported.

3.8.5. Mediation Mechanisms

For the purposes of analysing the mechanisms of linking transgression with pro-sociality three mediation models (5000 Bootstrap samples used) were run. First, one examining the mechanisms via guilt and anger on time offer was run; second, one examining the same model but for the help with letter outcome; and third, a model examining the proposed sequential mediation via both guilt and anger on time offer. The predictor in all of the models was the ratio of money donated/left by participants for a charity. The money target (yourself vs charity) was entered as a moderator (in models in Fig. 3.2 and 3.3) or was held as a covariate (model 3.4). The outcome variable was time offered for future study by participants (in models in Fig. 3.2 and 3.4) or willingness (Yes/No) to help with sending a letter (model 3.3). The emotions of guilt and anger were entered as mediators.

3.8.5.1. Model via Emotions on Time Offer

The model via anger and guilt, on time offer, was specified in Process, and run with 5000 Bootstrap samples (Figure 3.2). The model was significant: $R^2 = .36, p < .001$. The direct link between transgression and prosociality was significant for those in the yourself condition ($c = .24, SE = .05, p < .001, 95\% CI = .14, .35$), and those in the charity condition ($c = .25, SE = .06, p < .001, 95\% CI = .14, .36$). The indirect effect of transgression (see Table 3.2)

via feelings of anger was significant for yourself condition, but not for charity condition. In reverse, the indirect effect via guilt was significant for charity condition, but not for yourself condition. Thus, the hypothesised associations were supported by this model. The indirect effects are presented in Table 3.2.

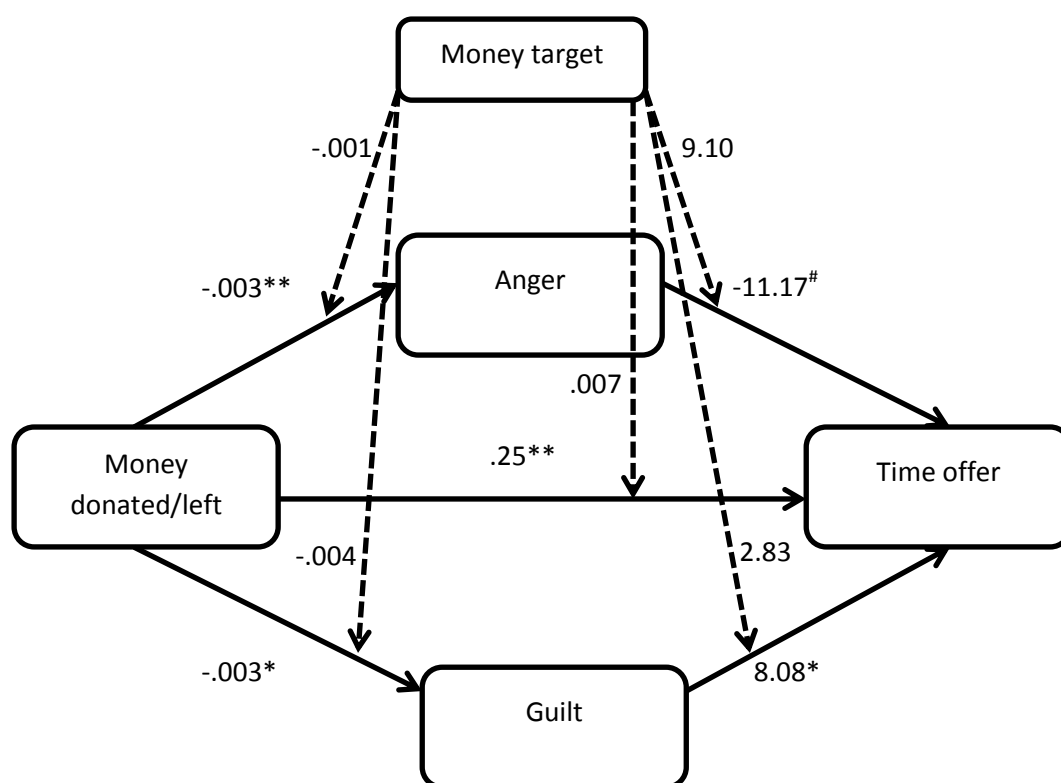


Fig 3.2 The mediation model for transgression and time offer, via anger and guilt, with moderating effect of money target (controlled for gender). N = 118.
p = .07

Table 3.2 The conditional indirect effect of transgression on time offer, via anger (top panel), and guilt (bottom panel).

Mediator	Money target	Effect	Boot SE	LLCI	ULCI
anger	yourself	.043	.030	.001	.130
anger	charity	.026	.030	-.025	.101
guilt	yourself	-.008	.020	-.092	.015
guilt	charity	-.047	.029	-.126	-.006

Note: Shaded areas represent significant effects.

3.8.5.2. Model via Emotions on Letter Help

The model via anger and guilt, on the willingness to help to send a letter (operationalised as Yes/No answer), was specified in Process and run with 5000 Bootstrap samples (Figure 3.3). The model was not significant: Nagelkarke $R^2 = .12$, $p = .23$, providing some support for the NSR model (Cialdini et al., 1973), and the claim that first pro-social opportunity possible alleviated these transgression-related emotions. See Figure 3.3 for the model coefficients.

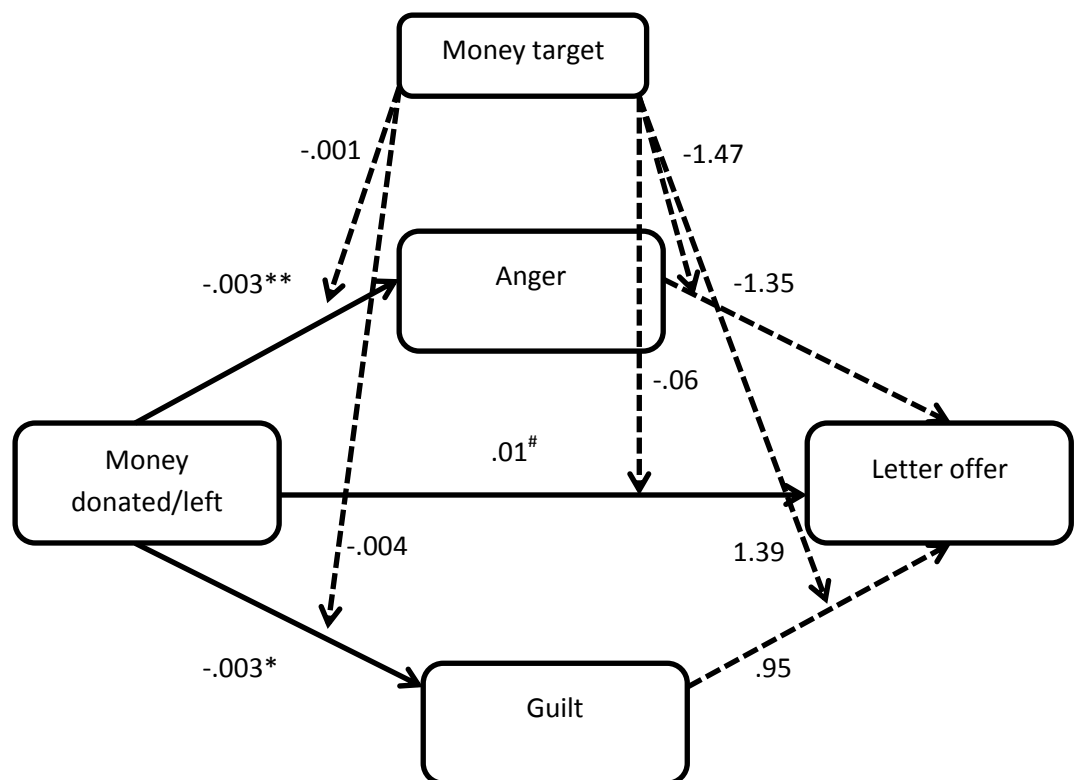


Fig 3.3 The mediation model for transgression and letter help, via anger and guilt, with moderating effect of money target (controlled for gender). N = 118. $\# p < .06$

3.8.5.3. Sequential Mediation Model

Lastly, the proposed sequential model was analysed. The model was specified in Process and run with 5000 Bootstrap samples. Both gender and money target were held as covariates, due to a small sample and the complexity of the model. It was specified that in the total sample, indirect effects via guilt, anger, and lastly guilt – anger, would be present. As

presented above, the indirect effects via anger and guilt were significant (see Figure 3.4 and Table 3.3). Thus the main interest in this analysis was to examine whether the indirect effect via both guilt and anger affect time offered by participants. The results are presented in Figure 3.4.

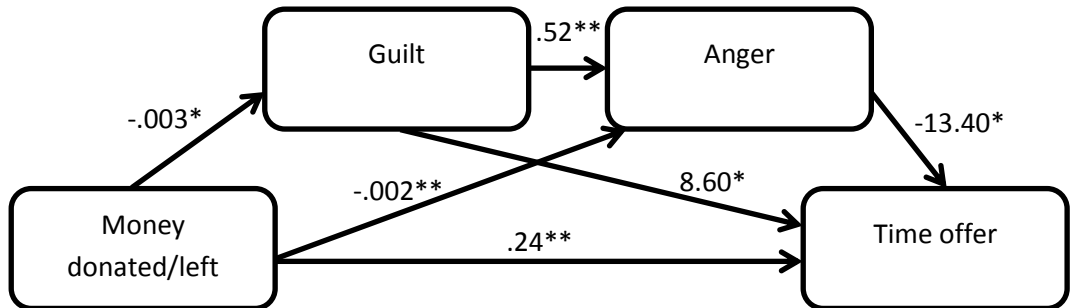


Fig. 3.4 The sequential mediation model for transgression and time offer, via guilt and anger (controlled for gender and money target). N = 118.

The total model was significant: $R^2 = .31, p < .001$. As predicted, all the indirect effects were significant, demonstrating that the effect of transgression on subsequent pro-sociality can work either via anger, guilt, or guilt followed by anger. The strength of the indirect effects is presented in Table 3.3.

Table 3.3 The conditional indirect effect of transgression on time offer, via guilt, anger, and guilt-anger.

Mediator	Effect	Boot SE	LLCI	ULCI
guilt	-.03	.02	-.08	-.002
anger	.02	.01	.006	.06
guilt - anger	.02	.02	.001	.07

Note: Shaded areas represent significant indirect effects.

As can be seen in Table 3.3, all the indirect effects were significant, with the path via guilt presenting a negative effect, whereas those via anger and guilt-anger had a positive effect on pro-sociality.

3.9. Discussion

The aim of this study was to investigate the effect of moral transgression on subsequent pro-social behaviours and examine the emotional underpinnings of this effect. This study followed from a non-replication of a transgression-compliance effect (Noel, 1973), which demonstrated that transgression does not always lead to an increased pro-sociality. It was predicted that both increased and decreased pro-sociality would occur, and that emotion of guilt and anger would be the emotional basis of these effects, respectively. It was also predicted that which path would follow from the transgression (via guilt or anger) would depend on the context of the transgression. The hypotheses were mostly supported. It was found that for those for whom the rules of the charity dictator game (CDG) changed against their interest (and thus they could perceive the situation as unfair), their transgression led to reduced pro-sociality, with this effect being mediated by anger. In reverse, those for whom the rules of the CDG changed in favour of their interest, their transgression led to increased pro-sociality, with this effect being mediated via guilt. As emotions, more often than not are directed at specific targets (e.g., Doring, 2003), following from theoretical accounts of emotions, it seems appropriate to suggest that the guilt which participants experienced was directed at their own behaviour (the money donation). This would be supported by previous research claiming that guilt is linked to a negative evaluation of one's specific behaviour (e.g., Tangney, 1991; Tangney & Dearing, 2002). Here, this would be the level of donation in the CDG. As suggested previously, donating to a charity is seen as a worthy behaviour, and thus it was demonstrated that people experience guilt if they somehow transgress in a donation situation, especially if the context signifies the act. By not donating all, participants were "stealing" from a charity, which seems particularly wrong.

3.9.1. The Role of Anger

The case of anger might seem more complicated as it appears that the anger which participants experienced was not only directed at their own actions (the money donation) but also at the context of their donation (the rule

change). This rule change could be seen as unfair by participants, and thus anger, which is seen as a response to unfair treatment (e.g., Keltner & Haidt, 1999), was evoked. It has been claimed that from emotions “*we infer (...) what we must have wanted or expected or how we must have been perceiving the world*” (Hochschild, 1983, as cited in Parrenas, 2001), which suggests that anger that participants experienced might have reflected their expectation of keeping the money they earned. It needs also highlighting that the participants in this study were students, whose motivation for participating in research is often the monetary incentive (Viens, 2001), and thus changing the rules relating to their payment might be seen as an especially unfair. Indeed, some studies have shown that offering monetary incentives increased participation rates (e.g., in mail surveys: Gates et al., 2009; Perneger, Etter, & Rougemont, 1993) and also that students perceived monetary incentives as means of coercing into study participation (Miller & Kreiner, 2008), supporting this claim. Thus, asking participants to depart with money they earned can be seen as an obstruction of their goal – obtaining payment.

The participants were not asked about the target or cause of their emotions, but it is clear that the experimental situation was to some extent responsible for their emotions – the transgression in the CDG and the conditions of the transgression. However, as there was not a difference between the mean donation between those in charity vs yourself condition, it is pretty certain that it was not just the level of donation that triggered these specific emotions. As predicted, the charity vs yourself manipulation was responsible for moderating people’s emotions and influenced the path that followed from the transgression.

3.9.2. Literature Contribution

The findings of this study contribute to the literature on pro-sociality and moral emotions, by explaining why after a moral transgression both decreased and increased pro-sociality can be observed. It also provides an explanation for the results found in the study of Noel (1973). It seems now very likely that instead of guilt, participants experienced anger, and therefore

no pro-social effect of guilt (above the neutral condition) was observed in that study.

Additionally, the specificity of emotions paradigm (e.g., DeSteno, Petty, Wegener, & Rucker, 2000; Frijda, 1987, Lazarus, 1991; Lerner & Keltner, 2000; Levine, 1995) is strengthened by the results reported here, as they showed specific and separable effects of guilt and anger on subsequent pro-sociality. Indeed, as proposed by social-functional perspective on emotion (e.g., Fisher & Manstead, 2008; Frijda & Mesquita, 1994; Keltner & Haidt, 1999; Van Kleef et al., 2010) specific emotions have specific functions, seem to activate specific goals, which can be obtained by different subsequent behaviour. Here, guilt, which should activate the aim of repayment, led to increased pro-sociality, which can be seen as an indirect repayment of one's transgression. Whereas anger, which should be aimed at decreasing unfairness and providing equity led to decreased pro-sociality, which can be claimed to suffice this goal (especially that there was not an anti-social or aggressive option available). These results support the notion that merely examining emotions in terms of their valence (i.e., positive and negative) limits predicting and understanding human behaviour. It needs mentioning that participants did not have an option of behaving in an anti-social way in the current study, but decreasing one's pro-sociality might be seen as a close equivalent. The results also appear similar to the indirect pro-social effect of guilt (i.e., behaving pro-socially toward a non-victim of one's transgression), when not having an option of direct repayment. This is an important contribution to the literature, as it shows that anger might not only lead to active anti-social behaviour but that it can also manifest in a decreased pro-social behaviour.

The results reported here also add some insight into the domain of moral cleansing by demonstrating that this phenomenon is more probable in a certain context (that is when the context of transgression is not appraised as unfair), and that guilt seems to drive this effect. Previous research focused strongly on one's moral self as a driving factor in moral cleansing (e.g., Brañas-Garza, Bucheli, Espinosa, & García-Muñoz, 2013; Jordan et al., 2011; Sachdeva, Iliev, & Medin, 2009). Here, it is shown that emotional

underpinnings of this effect rely on the feelings of guilt. Future research could expand these findings by examining the role of moderating factors such as the centrality of one's moral self on the emotional effect presented. It seems highly probable that for those who see morality as more important part of their self, the mechanism via guilt should be stronger than for those for whom moral self is not so important.

3.9.2.1. Guilt and Anger Are Strongly Related

The comparison of guilt and anger in a single study is especially important for the literature, as previous research that focused on guilt in the context of pro-sociality contrasted it typically with shame (e.g., Anolli & Pascussi, 2005; Bennett, 1998; Dearing et al., 2005; Ghorbani et al., 2013), and not anger, limiting the chance of observing the effects found here. By investigating the effects of both guilt and anger in a single study, it was possible to demonstrate that these emotions can be triggered in very similar circumstances, but that their effects are contrary. This study adds to the results which showed similar effects of guilt and anger in the domain of cooperation (Skatova et al., 2017) and unethical behaviour (Motro et al., 2016), and thus strengthens the view that guilt and anger are equally important transgression-related emotions. These findings highlight that anger should be investigated much more scrupulously in the moral domain, especially given that it has been strongly neglected in the moral literature (Haidt, 2003). An interesting prospect for future research would be to investigate whether guilt and anger also lead to contrary behavioural effects if analysed in terms of expressed, rather than experienced, emotions. Some studies have started looking into this topic and found, for example, that expressions of anger vs disappointment lead to contrary effects (van Doorn, van Kleef, & van der Pligt, 2014). It would be interesting to observe what effects on pro-sociality has expressing one's guilt vs anger.

3.9.2.2. Effects of Emotions Might Be Short-Lived

It was also shown, as predicted, that the emotional effects affected only first and not second helping opportunity. This would suggest that people's decision about offering time for future study resulted in the alleviation of the

emotions stemming from the transgression situation. This claim can be only hypothetical though, as participants emotions were not examined after their decision in the first helping opportunity, and thus there is no evidence that they actually decreased. Nevertheless, this result seems to provide further support for the Cialdini et al. 's (1973) NSR model, according to which pro-sociality might be seen as a way of reducing one's negative affect. Even though the NSR model was originally targeted at feelings of sadness, it seems that its rules also work for guilt and anger, two specific negatively-valenced emotions.

3.9.2.3. Can Anger Stem From Guilt?

Another finding, supported the tentative model presented in this study, suggesting that for some, guilt might be followed by anger. This could be a sort of coping mechanism that subsequently affects one's pro-sociality. This model gained some support, as all the indirect paths (that is; via guilt, anger, and guilt-anger) were significant. It seems that anger might follow from guilt (e.g., Rothschild & Keefer, 2017), and possibly represent a defensive mechanism against the feeling of guilt (e.g., Bessarabova et al., 2015). As the data used in this model were obtained at the same time point, these results are only correlational, and thus further research should determine whether there is a causal link between guilt and anger.

3.9.2.4. Moral Emotions as Private Phenomena

It seems interesting that there was no effect of the eyes prime in the current study. I would argue that this might stem from the fact that even though some of the participants were exposed to they eyes prime, their donation decision was done without the presence of the experimenter, which by offering a feeling of anonymity, could overrule the salience of the eyes prime. Secondly, moral emotions are private phenomena, which do not require an external audience as they represent internalised standards (e.g., Tangney et al., 2007), which supports this view. As it was found that these emotions were the driving force behind pro-sociality, it seems convincing that the effect of the eyes prime should not play a strong role in this study. Nevertheless, future studies might examine whether making a donation decision public, but using

more salient cues (e.g., the presence of the experimenter) would affect the effect reported here.

3.9.3. Practical Implications

This is also the first study to demonstrate that for some, their moral transgression does not result in moral cleansing (i.e., increased pro-sociality afterwards), but leads to reduced pro-sociality. It was also demonstrated that anger might be the mechanism behind this effect. This novel finding seems especially relevant for charity organisations that might try to use descriptions of moral transgressions present in the world in order to trigger guilt and attract charitable behaviour. As was shown here, there might be a thin line between triggering guilt and anger in people, and thus charity organisations might need to be aware of the risk of obtaining reduced levels of pro-sociality by evoking anger rather than guilt. The fact that most participants in this study behaved pro-socially (i.e., offered some time), even when feeling angry, suggests that some situational and/or normative (e.g., agreeing to help seen as a norm: Berkowitz, 1972) factors might have played a salient role for their decision. Indeed, previous research has shown that situational factors (e.g., Jones & Kavanagh, 1996; Kurtines, 1986; Zettler, Hilbig, & Heydasch, 2013) have an effect on people's decisions. The fact that participants were asked for help in person might have made declining any level of help difficult for participants. Therefore, it would be informative to examine whether when reducing the pressure to comply with a help request (e.g., by making it via a mediated source, such as a computer) would reduce the help offered by angry participants even more.

Knowing what is the mechanism behind people's decision to engage in increased or decreased pro-social behaviour after performing a transgression holds great value for psychological theory but also has important real-life applications. Understanding what sways people away from compensating their transgression might have implications for general human interactions, but also more specifically for offenders, criminal system and charity advertising.

3.10. Limitations

Application of the results from the lab studies is often criticised, especially when the methods used are not strongly related to the real world. In this study, this issue was tackled with the use of a charity donation as an opportunity for moral transgression, and asking for one's time as a proxy for pro-sociality. Therefore acts commonly seen in the outside world. Even though guilt and anger were triggered by the transgression in the CDG, due to the fact that participants made their decisions on their own rather than being assigned to the transgression vs control condition, future research should attempt replicating the results reported here with a different manipulation. For example, failing in a task has been shown to trigger both guilt and anger (e.g., de Hooge, 2012; Wingrove & Bond, 1998), and could be used for such a purpose. The use of the student sample and the amount of money available in the CDG limits the generalisability of the findings of this study as well. However, as emotions are universal phenomena (e.g., Turner, 2009), it is possible that similar results would be obtained in the general population. The fact that emotions were elicited even in the situation with a small amount of money in the CDG provides additional evidence that the emotional effects reported here should be even stronger in the real world, where people's money-related transgressions might be in size of millions (e.g., tax evasion).

3.11. Conclusions

In this study, it was found that moral transgression can lead to both increased and decreased pro-sociality and that the path that is taken depends on the emotions of guilt and anger, respectively. Further, it was found that which emotion (guilt vs anger) mediates the link between one's moral transgression and subsequent pro-sociality depends on the condition under which the moral transgression occurred (i.e., charity vs yourself), which closely reflects the appraisals of guilt (e.g., feeling responsible for one's transgression) and anger (e.g., feeling as being unfairly treated). Specifically, individuals who experienced a change of rules that was more against their interest followed the anger-based pathway. In reverse, for those, for whom the rules changed in favour of their interest, it was the guilt that mediated the

transgression - pro-sociality link. It was also shown that anger could follow guilt, and affect the subsequent behaviour. Lastly, it was shown that the emotions stemming from moral transgression affect only the first, and not the following pro-social acts. This work suggests that specific emotions play a crucial role in people's pro-social decisions, and that contextual information might affect whether these decisions will be beneficial for others or not. Future research should replicate these findings with the use of other manipulations, and emotion measures, to increase their replicability, together with examining other potential moderators of the guilt vs anger mechanisms.

Chapter 4

Can Guilt Lead to Decreased Pro-Sociality in a Personal Transgression Context? The Role of Anger and Contextual Factors

Chapter Overview

Does guilt always lead to pro-social outcomes? Even though the literature suggests that guilt is strongly related to pro-sociality and that charitable organisations often use guilt appeals to attract donations, this does not seem to be the whole story. In the previous chapter, it was demonstrated that another moral emotion, anger, is relevant for the transgression context and that it might be responsible for the occurrence of decreased pro-sociality. Does anger also mediate the effects of guilt on reduced pro-sociality? A similar claim, suggesting a role of other-blame for negative outcomes related to guilt, was presented recently in the literature (Muris & Meesters, 2014). In the current study (n=141), I examine whether guilt followed by anger might constitute the mechanism explaining decreased pro-sociality in the context of guilt. A failure in a cooperation game was used as a context of personal transgression, triggering guilt. Some contextual factors (i.e., donation target, having practice in a cooperation game) that could influence the proposed mediation mechanism were considered. It was hypothesised that the mechanism linking guilt with decreased pro-sociality via anger would be more likely under the following contextual conditions, if: (i) participants had no practice in the game that determined the payment of participants and their partners (which should be associated with less self-blame and more anger), and (ii) the target of the pro-social opportunity was charity rather than one's game partner (as this does not allow for direct repayment, and might be seen as manipulative). The results provided some evidence for the mechanism via anger, but as this evidence was not very strong, thus it requires replication. The results are discussed regarding fairness and equity theory, with possible directions for future research presented.

4.0. Introduction

Even though the psychological literature suggests that heightened moral emotions – specifically guilt - promote pro-sociality (e.g., Ilies, Peng, Savani, & Dimotakis, 2013; see also chapter 2), some recent studies (e.g., de Hooge, 2012), together with the findings from Chapter 3 suggest that guilt possesses a darker side. For example, in her study, de Hooge (2012) showed that when wrongdoers have an option of allocating some money to their victims (as a way of repaying for one's transgression), to do so, they would decrease amount of money allocated to a third party, but not the amount allocated to themselves. This result demonstrates that guilt is not always a pro-social emotion, as it can also lead to using other people in order to alleviate the wrongdoer's guilt and repair their wrongdoing. Thus, as mentioned in the General Introduction, guilt appears to possess a darker side that has not been studied yet in the pro-sociality domain (but see links with psychopathology: e.g., Ferguson & Crowley, 1997; Harder, 1995; Lewis, 1971; O'Connor et al., 1999). It is worth mentioning, however, that the fact that guilt might be both adaptive and maladaptive has started gathering some support (see review: Dost & Yagmurlu, 2008).

A perspective on guilt as not always beneficial emotion, that is, not always leading to increased pro-sociality was presented in Chapter 3, which hinted at the possibility that sometimes when people feel guilty, they behave less pro-socially if guilt is intermixed with a feeling of anger. It was also shown in that chapter that a situation of moral transgression might trigger both increased and decreased pro-sociality, depending on the emotions triggered in participants. The results of that study suggested that guilt and anger are related emotions, whose influences should be studied together. This is a novel and exciting notion, which requires more research attention. Therefore, the goal of the present study was to follow and expand on the findings from Chapter 3. The focus in the present study was to examine whether guilt triggered in a different transgression context (failing a partner in a game), would lead to decreased pro-sociality and whether anger following from guilt would be responsible for this occurrence. Additionally, the contextual conditions under which such an occurrence would be more likely were also examined. I focused

on two contextual conditions, specifically, whether one was able to repay directly to one's victim or indirectly to a charity, and whether one was given a chance to practice a game that determined monetary payoffs for them and their partner (and is used to trigger guilt), or not. Below I describe the rationale behind these conditions, but first I present more rationale for the proposed mediation mechanism, suggesting that it is anger following from guilt, that is responsible for decreased pro-sociality in a context of transgression. Subsequently, I introduce the role of self-blame and anger (a proxy of other-blame), as potential mediation mechanisms, linking guilt and pro-sociality.

4.1. When Might Guilt Lead to Decreased Pro-Sociality?

Not a lot of research has shown a negative effect of guilt or guilt-based context on pro-sociality, and thus not many theories have been proposed explaining it. Researchers that observed reduced pro-sociality in the face of guilt (e.g., guilt appeals) suggested that it might be the extreme level of guilt triggered, which was responsible for such an occurrence (e.g., Coulter & Pinto, 1995; Turner & Underhill, 2012). These latter authors suggested that too high levels of guilt might be detrimental and lead to unintended effects and that only moderate level of guilt might be beneficial. The same claim has been presented before and started when Ausubel (1955) stated that moderate, but not extreme, levels of guilt might be adaptive. This explanation does not seem very convincing though, at least considering the data in Chapter 3, as in that study the levels of guilt that participants experienced were low. This then would suggest that the cause of reduced pro-sociality might be something else than the extreme level of guilt. In Chapter 3, I demonstrated that it was anger that seemed to arise when people were faced with a guilty context that led to decreased pro-sociality. The same effect was observed in an advertisement study by Coulter and Pinto (1995). These authors showed that for mothers exposed to the guilt-inducing advertisement, hostility (which I use here as a synonym for anger) was the mediating mechanism between guilt advertisements (varied in guilt intensity) and negative advertisement attitudes. This link between guilt and anger seems to be also supported by a claim that emotions are experienced in proximity, and can lead one to another (Crozier, 2006).

Apart from the results in Chapter 3 though, there is no research, to the best of my knowledge, suggesting that guilt might lead to decreased pro-sociality via feelings of anger. These two emotions are often thought of as presenting reverse motivational and action tendencies, for example, repaying one's wrongdoing for guilt vs getting even for anger/hostility (e.g., Frijda et al., 1989). This difference in action tendencies associated with guilt and anger could be used as an argument suggesting that they should not occur closely together or be related. Nevertheless, the claim presented in this thesis, suggesting anger (or its core theme – other-blame) as the link between guilt and decreased pro-sociality, seems to be also the view of other researchers. Namely, Muris and Meesters (2014) have hypothesised that guilt can lead to both pro-social and hostile behaviour, with a potential role of self and other blame being the mediation mechanisms for these outcomes (see Fig 4.1). Their model presented in Figure 4.1 suggests that guilt can lead to both pro-social and hostile behaviours, and that blame mediates these effects, with a moderating role of context and person-related factors. I have adapted this model for the present study (see red elements in Fig 4.1), by proposing that guilt might also lead to decreased pro-sociality, with the mechanism relying on the feelings of anger at others (which can be seen as proxy or consequence of other blame). As anger at others (which from now on, I refer to as anger) is strongly linked to appraisals of other-blame (e.g., Quigley & Tedeschi, 1996; Weiner, Graham, & Chandler, 1982), it seems appropriate to state that the model presented by Muris and Meesters (2014) agrees with the suggestion above that anger (as a proxy of other-blame) might mediate the link between guilt and not only hostile behaviour, but also, decreased pro-sociality. What is also in accord with the present study in the model in Fig. 4.1, is that contextual (and personal) factors are suggested to determine which path is more likely to follow from guilt. Two such factors were explored in this study (see below). It needs noting, however, that in the current study only the context-related factors were examined. This is due to the fact that the examined mediation mechanism tested in the current study is not established yet, and therefore examining the role of other factors is not appropriate.

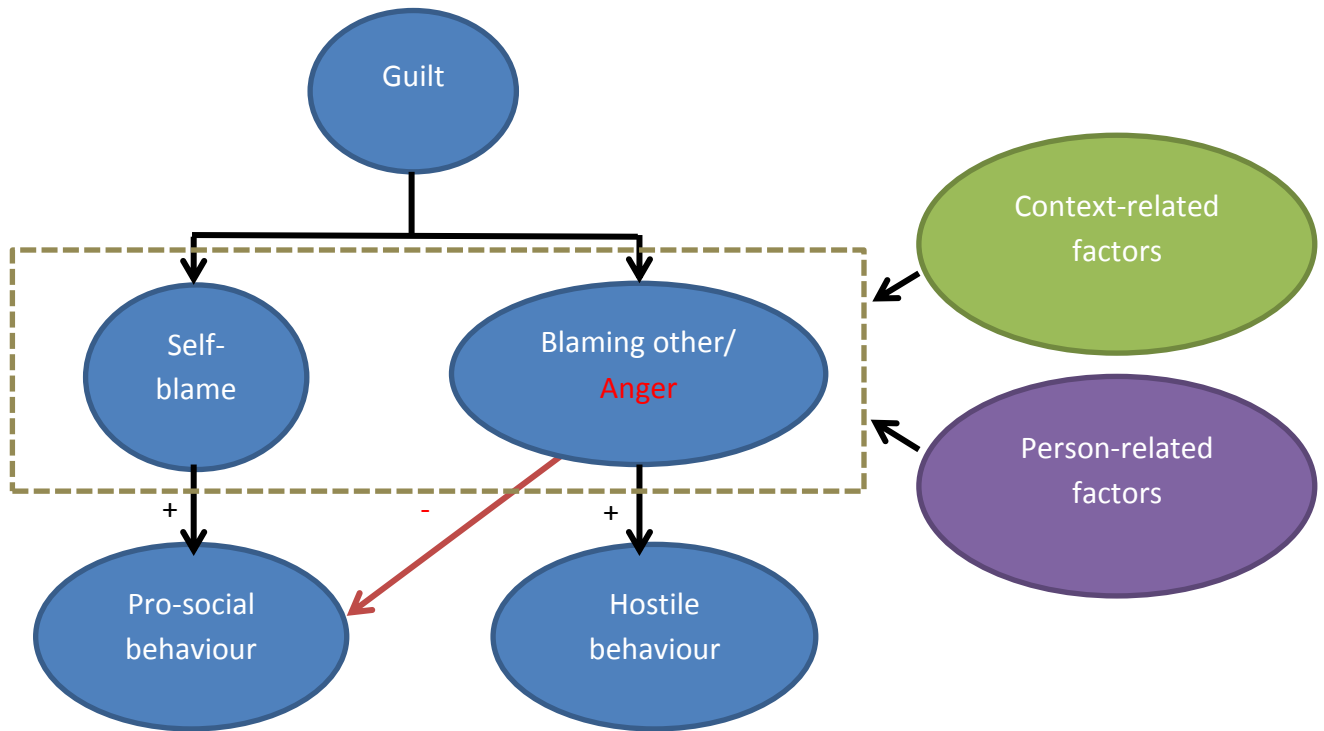


Fig 4.1 Hypothesised links between guilt and pro-social and hostile behaviours, as suggested by Muris and Meesters (2014). Note. Red arrow and +/- signs added by the thesis author. The red arrow represents that guilt via blaming other (anger) can lead to decreased pro-social behaviour.

The links presented in Figure 4.1 represent what has been discussed previously, namely, that guilt and anger might be more interrelated than previously thought. Even though, as stated above, they have been seen as relatively different, often phenomenologically opposite emotions by the researchers (e.g., Leach, Iyer, & Pedersen, 2006), their links with a situation of moral transgressions (see Chapter 3) suggest that they are related.

4.2. Guilt and Anger: More Interrelated Than Previously Thought?

As mentioned in the General Introduction, both anger and guilt are classified as moral emotions (Haidt, 2003), with guilt being a self-conscious (one's behaviour condemning), whereas anger being other-condemning emotion. They may have more in common than previously thought though. Both guilt and anger (together with other moral emotions) have been described as commitment devices (e.g., Frank, 2004), leading to benefits for society,

such as social harmony by means of repairing one's wrongdoing (guilt) or punishing the social norms' violators (anger). It should not come as a surprise then that these two emotions are closely related and often co-occur. Indeed, there are few studies, which showed that anger is often present (and positively correlated) in guilt episodes (e.g., Baumeister et al., 1995a; Etxebarria & Apodaca, 2008; Jones & Kugler, 1993). All the above then seems to support the relations presented in Figure 4.1, especially if considering other-blame as a proxy of anger.

That said, there is an abundance of studies demonstrating the negative association between trait guilt and trait anger (e.g., Lutwak, Panish, Ferrari, & Razzino, 2001; Mosher, 1979, Tangney, Wagner, Fletcher, & Gramzow, 2001). However, one needs to be aware that trait and state guilt as mentioned in the General Introduction, as well as trait and state anger are different phenomena. For example, they seem to correlate differently with various constructs, such as dissociation (Dorahy & Schumaker, 1997) or depression (Rohleder, Chen, Wolf, & Miller, 2008), and thus it should not come as a surprise that state guilt seems to relate to anger (at least in some circumstances) in an opposite manner than trait guilt. Indeed, even though a lot of evidence points toward a negative association between trait guilt and depression (e.g., Tilghman-Osborne, Cole, Felton, & Ciesla, 2008), both Tilghman-Osborne et al. (2008) and Rohleder et al. (2008) showed that depression correlates positively with guilt, when looking at state rather than trait guilt ($r = .51$; in Rohleder's study). To add more to that evidence, it has been claimed that state-like emotion measures ... *"often find a similar pattern of correlations for guilt and shame with psychopathological symptoms"* (Muris & Meesters, 2014, p.30), even though, these two emotions are often contrasted in the literature (e.g., Dearing et al., 2005). Indeed, even though a great amount of research portrayed guilt and shame as different from each other (see General Introduction), more recent studies (e.g., Rees et al., 2015) which focus on state emotions often display them as similar. Therefore, the fact that there are some studies showing a positive link between state shame, a close relative of guilt, and anger (e.g., Tangney, Stuewig, & Hafez, 2011;

Robinson, Roberts, Strayer, & Koopman, 2007), adds more credence to the notion that such a link should also be expected for state guilt.

Lastly, some support for the positive link between guilt and anger at others comes from research suggesting that one way of regulating shame would be to transform it into another emotion, usually anger (Lewis, 1971; Scheff, Retzinger, & Ryan, 1989). Therefore, the similarity of shame and guilt might suggest that this should also be possible for guilt, and thus provides another reason that seems to support the proposition that guilt, just like shame, might lead to anger. Why such an emotional transformation would occur is not certain, though. It is well established that people possess a tendency to use defensive mechanisms (e.g., rationalizing when faced with guilt: Chatzidakis, 2015), especially when an event presents a threat to their self (Miceli & Castelfranchi, 2001; Etxebarria & Apodaca, 2008), which a feeling of guilt does (e.g., Ellsworth & Smith, 1988). People indeed perform a variety of methods to alleviate (Silfver, 2007a) and avoid guilt (e.g., Iyer, Leach, & Pedersen, 2004), and it seems possible that experiencing anger after feeling guilty might be a way of dealing with one's guilt. This was already suggested by Etxebarria and Apodaca (2008). Some experimental evidence for that notion stems from a recent study that has suggested that anger might be self-serving, as it seems to follow from one's own guilt and is aimed at guilt reduction (Rothschild & Keefer, 2017).

4.3. The Role of Self and Other-Blame

The model in Figure 4.1 demonstrates the mediating role of the blame for guilt – pro-sociality link. These relationships are heavily supported by the literature, with a lot of research demonstrating guilt/guilt-proneness as positively related to feelings of self-blame (e.g., Stuewig et al., 2010). Self-blame has been indeed seen as a core appraisal associated with guilt (e.g., Smith & Lazarus, 1993). Other-blame, on the other hand, has been mostly associated with hostility and aggression in the literature (e.g., Hoffmann & Spence, 2010; Wingrove & Bond, 1998). Nevertheless, I suggested that other-blame (anger) should also be seen as a potential candidate explaining the link between guilt and decreased pro-sociality. As mentioned in Chapter 3, being

less pro-social might be seen as a way of addressing injustice, a tendency associated with anger and blaming others (e.g., Huefner & Hunt, 2000).

Other-blame and holding others as accountable has been described as a core emotional theme in anger at others, portraying it as its necessary component (Lazarus & Smith, 1988; Smith & Lazarus, 1990; Wong & Tong, 2012). Anger was suggested to be “*more than anything else (...) an attribution of blame*” (Averill, 1982, p.1150), which hints at why anger (linked to seeing others as responsible and worth punishing) often leads to aggression. Due to the focus of this thesis being on emotions, rather than cognitive elements, anger rather than other-blame was examined. However, taking into account the above strong links between anger and other-blame, one could expect them to serve a similar role for decreased pro-sociality. Nevertheless, the choice of anger rather than other-blame as a mediator stems also from the fact that it is the emotions rather than cognitive elements that are characterised as motivating and influencing people’s behaviour.

Previous research has shown that hostility (which can be seen as a proxy of other blame and anger) mediated the link between guilt (trait) and aggression (Stuewig et al., 2010) when considering trait level. More importantly, however, blaming others was also shown to mediate the link between guilt and aggression, when considered at the state level (Silfver-Kuhlampi, Figueiredo, Sortheix, & Fontaine, 2015), which more closely resembles the current study. Following the results of the latter studies, it seems reasonable to expect that guilt via anger might lead to decreased pro-sociality. Even though, as stated previously, it is self-blame that is seen mostly linked to guilt, anger seems to be related to guilt as well. This seems supported even more by the findings showing that externalizing self-blame (which might be seen as increasing other blame) leads to the experience of hostility (e.g., Ostrowsky, 2010), and can be used to reduce guilt (Rothschild, Landau, Sullivan, & Keefer, 2012).

Self-blame (or responsibility; as some authors previously, e.g., Lussier, Sabourin, & Wright, 1993; Moulton, Sweet, Temoshok, & Mandel, 1987; I refer to them interchangeably, as they are linked) has not only been linked to

guilt, it also has been suggested to mediate the guilt-pro-social behaviour link (e.g., Basil, Ridgway, & Basil 2006; Kaiser & Shimoda, 1999). For example, in a study by Basil et al. (2006) participants were exposed to charitable appeals, and asked for monetary donations. The sense of responsibility was found to mediate the link between guilt and charitable donation. However, it needs stressing that in that study the guilt appeals were contrasted with non-guilt appeals, which allowed only for the observation of increased pro-sociality. The probable decrease of pro-sociality due to guilt appeals was not examined.

Nevertheless, to understand the fuller picture of the relationship between guilt and pro-sociality, the potential detrimental effects of guilt need to be examined. Even though guilt might trigger increased pro-sociality frequently, that might not always be the case, which was already hinted at in Chapter 3 and Figure 4.1. Here, I addressed this issue by examining whether the relations between guilt and pro-sociality occur in the context of transgression. Specifically, in the present study, I tested whether it is the case that if guilt is followed by self-blame, it leads to increased pro-sociality, and whether if guilt is followed by anger (seen here as a proxy of other blame) it leads to decreased pro-sociality. Some contextual factors, potentially affecting which path would be followed (moderating factors) were also examined, and are described below.

4.4. The Role of Contextual Influences

As presented in Figure 4.1, context-related factors have been suggested to influence which path would follow from guilt, the one via self-blame, or the one via other-blame (anger). Two potential situational factors that might possess such an impact have been investigated in the present study. Specifically, the role of the target of pro-sociality (direct – one's victim vs indirect – a charity) and the role of practice in a game, which was used to trigger guilt.

4.4.1. Direct vs Indirect Target

It was proposed by Cryder et al. (2012), that guilt triggers pro-sociality only toward a person who has been transgressed against (or to a much stronger degree). Others have not agreed with this view, and have shown that spillover effects of guilt may arise, and thus guilt motivates pro-sociality toward non-injured parties as well as toward injured parties (e.g., Darlington & Macker, 1966). Here, I combine these views by suggesting that the target of pro-sociality might be important, but in a different way than postulated by Cryder et al. (2012). In this study, I use two different targets of pro-sociality, namely, one's victim and a charity, and propose that whether one has a chance of repaying directly for their wrongdoing (in the victim condition) or not (charity condition), would affect the pathway that follows from guilt. Specifically, it was hypothesised that having a chance to repay directly to one's victim would provide the context where the path leading to increased pro-sociality, via self-blame, was more likely. On the other hand, not being able to repay directly, was hypothesised to be the context where the path leading to decreased pro-sociality via anger was more likely. These hypotheses stem from the reasoning that participants who do not have a chance to repay directly might see this as an unfair situation, or even a situation where they are being manipulated to donate. By not being given a chance to repay their wrongdoing directly, participants might feel like their freedom of choice has been compromised, which is a basis of reactance theory (Brehm, 1966). Even though this was not measured in this study, I would argue that given the choice of donating to a charity or one's partner, those who feel guilty would opt for the latter option. Thus, by not giving them such an option, it can be said that their freedom was limited. On the other hand, I hypothesised that such a perception of the donation situation (as unfair or manipulative) is much less likely in the direct repayment condition, as here the chance to donate matches one's wrongdoing, and thus follows a more typical pattern of events and people's real-life expectations, where people who transgress expect to have a chance to repay their transgression directly.

4.4.2. Practice vs No Practice

Similarly, the contextual effect of practice versus no practice in a game that resulted in a monetary pay off for both the participant and their partner was examined. It was hypothesised that participants who had a chance to practice the game before playing for a monetary stake would be more likely to follow the path via self-blame and demonstrate increased pro-sociality, and the reverse for those not having practice. Previous research has shown that casual attributions (i.e., internal vs external) are the primary determinants of affective reactions to failure (e.g., McFarland & Ross, 1982), and thus it can be claimed that by varying the presence or absence of practice one can influence these attributions, and thus subsequent affective reactions. This hypothesis was based on the reasoning that giving participants a chance to practice, and providing them with a positive performance feedback, should create a context where feeling of mastery and an internal attribution would be more likely, which then if followed by a failure in the test trial should be more likely to lead to self- rather than other-blame (anger). Indeed research has shown that individuals perform better with practice in the Stroop task (e.g., Edwards, Brice, Craig, & Penri-Jones, 1996). The literature suggests that people ascribe the responsibility to themselves when being successful, but to external circumstances when failing (e.g., Gill, 1980), thus even though both groups of participants (who had versus did not have practice) were potentially more likely to blame circumstances for the failure, the fact that one group had successful practice might reduce such an attribution. Indeed, previous research has suggested that one can use self-blame or use defensive strategies, among others, when faced with failure (e.g., Mantzicopoulos, 1990). As suggested above, people often try to excuse their blame, especially if the context allows for it, and therefore I hypothesised that not having practice in the game might be such a context. Indeed, it has also been reported that success increases bias toward internal attributions (i.e., Iso-Ahola & Roberts, 1977).

4.5. Other Factors

4.5.1. Gender

Lastly, following from Chapter 3 and the literature, it was hypothesised that gender might affect pro-sociality (e.g., Eagly & Crowley, 1986; Oswald, 2000; Salminen & Glad, 1992). It was predicted that as the helping task is based on (i) monetary resources and (ii) helping a female researcher by offering time, men would be more helpful than females, as they can use such behaviours as a status signal (e.g., Jensen, 2013; Van Vugt & Iredale, 2013). Due to these previous findings, the effect of gender was examined in this study as well.

4.5.2. Type of Pro-Social Decision

Previous research has suggested that when considering the pro-social act of monetary donation, the decision whether to give and how much to give are two different pro-sociality indices, affected differently by other phenomena, such as eyes prime (Nettle et al., 2013). Following from this in this study both indices were examined separately in order to observe whether the emotional mechanisms tested in the current study would work similarly or differently, or at all, depending on the pro-sociality index under consideration.

4.6. The Present Study

Ultimately, following from the results of Chapter 3 and the model in Figure 4.1, the goal of the present study was to examine whether guilt might lead to both increased and decreased pro-sociality, with the mediation mechanism relying on self-blame and anger, respectively. Secondly, two contextual factors that have been hypothesised to possess a moderating role for the mechanisms presented above were examined (i.e., donation target and practice effect). It needs highlighting that this study demonstrates an enhanced ecological validity when compared with study in Chapter 3, as it provided participants with a dyadic (social) context for feelings of guilt, which is important for emotions research (e.g., Aldao, 2013), as emotions are social phenomena that relate to interpersonal situations and norms (e.g., Dungan, Chakroff, & Young, 2017; Keltner & Haidt, 1999). This is true especially for

guilt, which is differentiated from regret by its interpersonal nature (i.e., harming other rather than oneself: Berndsen, van der Pligt, Doosje, & Manstead, 2004).

Secondly, it was also examined, whether similar to the results in Chapter 3, there would be an effect of the emotions of guilt and anger on the second helping opportunity (i.e., helping the researcher with a short task). The NSR model (Cialdini et al., 1973) suggests that state NA affects the first pro-social opportunity unless some other pleasant event occurs beforehand. Nevertheless, as participants in the present study did not need to donate money in the first pro-social opportunity, it is possible that there might be an effect of emotional mechanisms on the subsequent helping opportunity. This was explored in this study.

4.7. Methods

4.7.1. Study Design

This study had a 2 (cooperative game round order: participant, partner vs partner, participant) x 2 (donation target: partner vs charity) x 2 (cooperative game practice vs no practice) between subjects design. There was also a control condition (no guilt manipulation), as it could allow for establishing the successfulness of the guilt manipulation. A failure in the cooperative game - Stroop task (Stroop, 1935), based on the manipulation previously used by de Hooge (2012: study 5) was used in order to trigger guilt and investigate its effects on participants' pro-social decisions. The PsychoPy software was used to create the cooperative game, and record participants' responses (Peirce, 2007). The practice and no-practice conditions, together with donation target conditions, as presented above, were the contextual factors potentially moderating the mediation mechanisms.

4.7.2. Participants

A total of 151 participants (including 29 participants in the control group, who did not experience guilt manipulation) were recruited for the study from a UK University, and run in a group setting (4 - 8 participants). This was done to provide a believable context for the game. Participants were mostly

young ($M=22.88$, $SD=4.61$), and 58% of them were female. The majority were ethnically White (56%). The data were collected between February and November 2015. Ethical approval was granted by the Departmental Ethics Board (REF 632R). Due to suspicion regarding the game used in the study, 10 participants were excluded from the data analyses. This resulted in a final sample of 29 participants in the control condition, and 112 in the experimental conditions ($n=29$ for no practice/charity, $n=27$ for no practice/partner, $n=26$ for practice/charity, and $n=30$ for practice/partner).

4.7.3. Guilt Manipulation

Once seated in a laboratory room, participants were informed that the computer would randomly match them with someone else in the room and that they would play two rounds of a game (i.e., Stroop task: Stroop, 1935) together. The feedback in the game was predetermined and indicated a failure in the round that counted towards monetary pay off of the participant's partner (for experimental conditions). The order of the round when a failure occurred was counterbalanced. In the Stroop task, participants had to use arrows (associated with three different colours) to determine the correct colour of the words presented, one by one, on a computer screen. Because the words were names of colours themselves, sometimes there was an inconsistency between the meaning of the word and its colour (see Appendix 4.1 for a detailed description of the game). Participants were asked to be as quick and accurate as possible. The performance in one of the rounds supposedly counted towards bonus money for the participant, whereas in the other round toward the bonus money of their partner. Both the participant and their partner had to do well enough (i.e., meet a specified time and accuracy threshold) in each round for both of them to get the bonus money (£2 each). If one of them did not do well enough in a round, the bonus money would not be awarded to the person that the respective round counted for (even if the other person met the performance criteria). In reality, participants were playing by themselves twice, and their performance level was predetermined. All the participants randomly assigned to the guilt condition were informed that they did (did not) perform well enough in the round that counted toward their (their partner's) bonus, and subsequently they would receive bonus money, but their partners would not.

Such a situation was designed to trigger guilt in participants, as they should feel like they failed the person that had helped them to receive their bonus and did well enough to receive their own bonus. A similar procedure was applied successfully in a previous study (de Hooze, 2012: study 5). In the control condition, participants were informed that their partner and they met the required criteria in both rounds, and thus both of them would get the bonus money. In this condition, there should be no feelings of guilt present.

4.7.4. Procedure

In the lab, once seated, participants were presented with an information sheet and informed consent was obtained. After that, all participants went through a neutral mood induction (a video clip from: “Alaska’s Wild Denali” – available on YouTube), in order to ensure that they all initiated the experiment with a similar mood. Video clips are a commonly used method to induce different emotions (Platte, Herbert, Pauli, & Breslin, 2013; Rottenberg, Ray, & Gross, 2007), and previous research indicated that the clip above has been successful in inducing neutral mood (Rottenberg et al., 2007). Subsequently, participants were asked to rank the movie on some dimensions and to rate how they felt. This was to ensure that participants started off with a similar mood and that they were not suspicious regarding the reasons behind watching the movie. Next, half of the participants had a practice session where they could practice the cognitive task (Stroop task: Stroop, 1935) that would count towards their and their partners’ bonus money. All of the participants were asked to complete two rounds of Stroop task, where they had to quickly and accurately respond (by pressing predefined keyboard keys) to a colour of the words appearing on the screen. During one of the rounds the guilt manipulation was applied (for the experimental condition only).

Participants’ emotions were assessed after each round with on-screen questionnaires. Similarly, after finishing the game participants’ attribution regarding their failure (self-blame) in the Stroop task was assessed. After that, the emotions were assessed once more, in order to observe whether anger would follow from guilt experienced in the game. Afterwards, participants were given a choice of donating some of the bonus money they earned in the

task (i.e., £2) to a charity (condition A) or their game partner (condition B). All the money donated (also the ones from condition B) was passed to that charity at the end of the study. Participants in the control group had only the option to donate to charity.

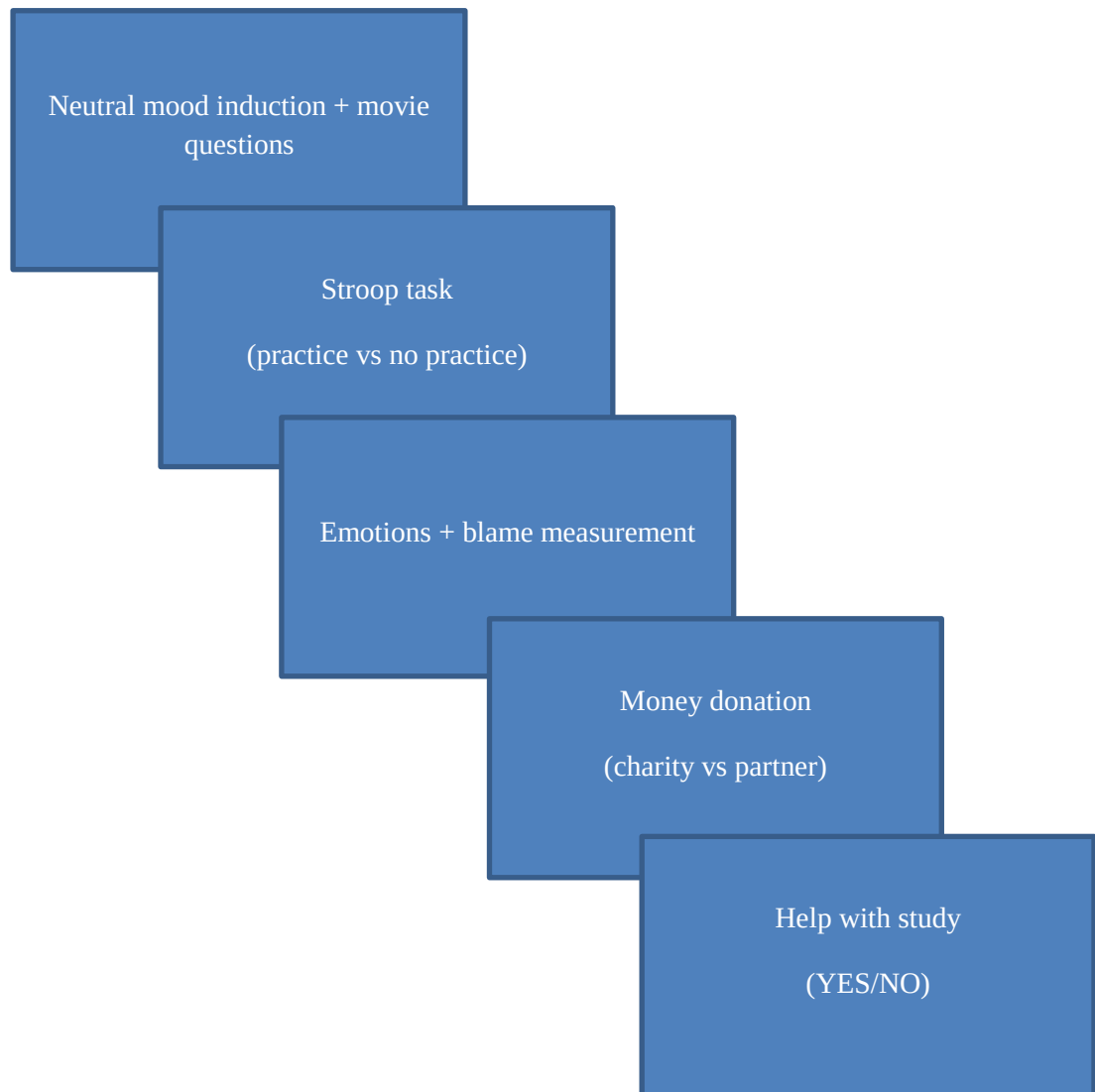


Fig 4.2 Flowchart of the study procedures.

Finally, participants were asked whether they would be happy to help the experimenter with a short task. If they had agreed, they were presented with a task (it was supposed to take around 10 min), where they had to assess few helping behaviours on several dimensions (e.g., cost, risk). This second opportunity to be helpful was offered to participants in order to examine whether the effect of guilt triggered in the Stroop task expands over the first helping opportunity, similarly to the method used in Chapter 3. Lastly,

participants were debriefed, paid and offered a mood-enhancing leaflet to tackle any remaining negative affect (see Figure 4.2 for the procedure).

4.7.5. Measures

The following variables were measured in this study: (i) movie ratings and initial mood, (ii) participants' emotions, (iii) self-blame appraisal, (iv) pro-social behaviours, and (v) demographics.

4.7.5.1. Movie Rating and Initial Mood

Participants were asked how enjoyable and interesting was the movie, and whether they would recommend it to their friends. These questions were included to provide participants with a task after watching the movie (and to trigger no suspicion in regard to the movie goal). Participants were also asked how they felt after watching the movie (e.g., good – bad, guilty-not guilty: adapted from Alter & Forgas, 2007). A 7-point Likert scale was used. The scales were collapsed to create singular scores for both movie (interesting and enjoyable: Cronbach's $\alpha = .79$) and mood rating (Cronbach's $\alpha = .73$). These scores were used as a simple check to ascertain that there were no baseline mood differences between the participants assigned to different study conditions.

4.7.5.2. Emotions

State shame and guilt scale (SSGS: 15-items, Marschall, Sanftner, & Tangney, 1994), a positive emotions subscale from PANAS (10-items, Watson & Clark, 1999), and a scale (feeling mean subscale, containing 14-items, such as angry, outraged, offended: Anderson, Deuser, & DeNeve, 1995) measuring anger and irritation at others, were used to measure participants' emotions. This last subscale was used as it closely captures the feeling of anger/hostility, and was reported to be responsive to experimental manipulations (Anderson & Carnagey, 2009). Positive emotions were measured in order to balance the tone of the emotional questions and not to bias participants' responses toward negative affect. Respondents were asked to indicate how they felt using a scale ranging from 1 (not at all) to 5 (very strongly). Guilt subscale of the SSGS (including items: remorse, tension,

apologising, bad, cannot stop thinking) was reliable (Cronbach's $\alpha = .88$, the average of two measurements). The same was true for anger (Cronbach's $\alpha = .93$, the average of two measurements). Positive affect was also reliably measured (Cronbach's $\alpha = .89$, the average of two measurements), but is not the focus of this study. All these scales have shown good psychometric properties previously (e.g., SGGS: Fedewa, Burns, & Gomez, 2005; Tangney & Dearing, 2002; PANAS: Crawford & Henry, 2004; Hostility scale: Anderson & Carnagey, 2009).

4.7.5.3. Self-Blame Scale

This is a 4-item scale (from Cognitive Emotion Regulation Questionnaire CERQ; adapted; Garnefski & Kraaij, 2006) measuring perception of blame, which I adapted to be relevant for the feelings of blame for the failure in the Stroop task (for example "I feel that I am the one to blame for it" – "it" referring to the failure in the game). Participants used a 5-point Likert scale, from "strongly disagree" (1) to "strongly agree" (5) to indicate whether they blamed themselves for the failure in the game. The reliability of this scale was good (Cronbach's $\alpha = .86$). This scale has been successfully used in previous studies (e.g., Jermann, Van der Linden, d'Acremont, & Zermatten, 2006), demonstrating good psychometric characteristics.

4.7.5.4. Pro-Social Behaviours

Few indices of pro-social inclination were included in this study, namely: (i) decision whether to donate money, (ii) amount of money donated and (iii) completion of an additional task for the researcher. Offering money and time are commonly used pro-sociality indices (e.g., Jackson, Bachmeier, Wood, & Craft, 1995).

4.7.6. Demographics

Standard demographic information was requested from participants (i.e., age, gender, working status, cultural background, and the highest education level).

4.8. Results

The specified hypotheses were tested with correlation analyses, independent and paired t-tests, Chi-square tests, Mann-Whitney U test, and mediation models. The SPSS software (IBM Corp., 2013), together with Process macro (Hayes, 2013) were used to run the analyses. The results focus on the manipulation checks and initial mood of participants, followed by the descriptive statistics, and examination of the study hypotheses.

4.8.1. Gender Effects

Gender was dummy coded as 0 for male, and 1 for female. Even though gender has been seen to affect pro-sociality in the literature, there was no significant correlations (study conditions kept constant) between gender and the decision whether to donate ($r = -.01, p = .88$), and donation category ($r = .05, p = .56$). There was small effect for help with the additional task for the researcher ($r = .17, p = .047$), indicating that in this task females were more pro-social than males. However, as the two indices of pro-sociality that were the main focus of this study did not show gender effects, gender was not kept as a covariate in the relevant analyses.

4.8.2. Initial Mood and Movie Ratings

Initial mood and movie ratings were compared between participants who were randomly assigned to the transgression (undergoing guilt manipulation) and control conditions with the use of independent t-tests. There were no significant differences in movie ratings between the two groups ($t(26.89) = -.70, p = .49$; *Cohen's d* = .23). Similarly, there were no significant differences in the initial mood between control and experimental condition ($t(124) = .26, p = .80$; *Cohen's d* = .08). The same results were obtained when comparing four conditions that underwent the guilt manipulation. Practice and order factors were entered into one-way ANOVA with mood ratings, which showed no significant effects of any of the factors, neither an interaction (all $F_s < 2.63, p_s > .10$; *Cohen's d*s < .31). These results ascertain that the effects observed in the study were not due to potential differences between the groups at the start of the study.

4.8.3. Order Effects

In the next step, the order effects were examined. Participants experienced more guilt and anger (Table 4.1) in the round that counted toward their partner's bonus ($ts < 5.80$, $ps < .001$; *Cohen's ds* < 1.12), than toward their own bonus. This demonstrated that participants reacted emotionally stronger in the round that included transgression (as expected), and thus their feelings (e.g., guilt) were transgression related. Due to the fact that for some participants these emotions appeared in the first, and for some in the second round, for the subsequent analyses I used the average guilt score from both rounds as the independent variable. This was done to assure that the most recent emotional experience, before the donation task, was accounted for. The issue with using guilt rating only from the round with the failure is that it would not allow for accounting for the most recent guilt rating in half of the participants. Please refer to Table 4.1 for the descriptive statistics of the emotions experienced after each round.

Table 4.1 Emotions reported after each round of the Stroop task.

Emotion	Rounds order			
	Partner/Participant (n=52)		Participant/Partner (n=59)	
	M	SD	M	SD
Guilt T1	2.50	1.04	1.47	.79
Guilt T2	1.77	.92	2.33	1.12
Anger T1	2.05	.75	1.36	.54
Anger T2	1.44	.65	2.12	.97

Note. T1 = after round 1, T2 = after round 2

4.8.4. Manipulation Check

Both, emotions of participants and their pro-social behaviour was analysed to examine whether the transgression condition showed more guilt, anger, self-blame and more pro-sociality than the control condition.

4.8.4.1. Emotion Induction by the Failure in the Cooperative Game

As expected, participants in the transgression conditions ($n=110$) experienced more guilt ($M=2.01$, $SD=.85$; $t(56.27) = -4.71$, $p < .001$; *Cohen's d* = .81), anger ($M=1.66$, $SD=.81$; $t(64.17) = -3.27$, $p = .002$; *Cohen's d* = .53) and self-blame ($M=3.22$, $SD=1.20$; $t(60.51) = -6.37$, $p < .001$; *Cohen's d* = 1.06) than participants in the control ($n=27$) condition ($M_{\text{guilt}}=1.36$, $SD=.59$; $M_{\text{anger}}=1.26$, $SD=.50$; $M_{\text{self-blame}}=2.02$, $SD=.77$). When comparing emotions within participants in the transgression conditions only, they reported more guilt than anger (paired t-test: $t(110) = 4.62$, $p < .001$; *Cohen's d* = .34).

4.8.4.2. Pro-Social Behaviours

4.8.4.2.1. Frequency of Donations

When comparing participants who were exposed to the guilt manipulation ($n=112$) with those in control condition ($n=28$), a significant difference in the frequency of donating some money to the partner or the charity: $X^2 = 4.68$, $p = .031$; *Cohen's d* = .37 was observed. Specifically, overall, higher percentage donated money in the transgression condition (65%), than in the control group (43% donated).

4.8.4.2.2. Donation Amount

The mean amount of money donated (range 0 – 200 pennies) among participants who underwent guilt manipulation (and could donate to partner or charity depending on condition) was 71.63 pennies ($SD= 67.29$), whereas in control group (who could donate only to charity) it was 45.39 ($SD =62.42$). Due to non-normally distributed data, non-parametric tests were undertaken in order to examine the significance of the difference in donation amount between the groups. The independent groups Mann-Whitney U test determined that the distribution of the money donated showed a trend ($U = 1215.50$, $p = .052$; *Cohen's d* = .31), where guilt group (Mean rank = 73.65) donated slightly more than the control group (Mean rank = 57.91).

4.8.2.2.3. Helping the Experimenter

To compare the frequency of participants who agreed to help the experimenter with an extra task at the end of the study (a 10-min survey) a chi-square test was run. There was no significant difference in the frequency of help offered between transgression (80% helped) and control condition (82% helped): $X^2 = .046$, $p = .83$; *Cohen's d* = .04. The same was true when comparing frequencies of help between the four transgression conditions solely (task practice/no practice x donation target): $X^2 = 2.40$, $p = .49$; *Cohen's d* = .30.

The above results suggest that participants in the transgression condition felt more guilt, anger and self-blame, and were more pro-social (apart from the second helping opportunity). This demonstrated that the manipulation was therefore effective.

4.9. Practice vs No Practice and Emotions

It was hypothesised that participants in no practice condition would experience less self-blame and more anger after the game, than those with practice. Independent t-tests revealed no such effect, as there was no difference in the level of self-blame and anger between these two groups (Self-blame: $M_{\text{practice}} = 3.04$, $SD = 1.18$, $M_{\text{nopractice}} = 3.40$, $SD = 1.20$; $t(107.67) = 1.62$, $p = .11$; *Cohen's d* = .31; Anger: $M_{\text{practice}} = 1.63$, $SD = .85$, $M_{\text{nopractice}} = 1.69$, $SD = .85$; $t(108) = .44$, $p = .66$; *Cohen's d* = .05).

4.10. Descriptive Statistics

Similarly to the results in Chapter 3, the level of emotions that were triggered was relatively low (see Table 4.2); that is, below the mid-point of the response scale. This, once again, suggests that the claim that extreme levels of guilt are responsible for negative effects might not be a valid explanation for reduced pro-sociality if this was to be found here. Guilt and anger were correlated positively with each other and with self-blame, suggesting that when considered as state variables, they change in a similar rather than opposite fashion. In the current study majority of participants behaved pro-socially, by both donating some money that they earned in the game, and

helping with the study. As stated in the Introduction, in this study a positive, strong correlation was found between anger and guilt, suggesting that they are interrelated (see Table 4.2).

Table 4.2 Descriptive statistics of the study variables, with correlation coefficients (n=112).

Variable	Mean	SD	Partial Correlations*					
			1	2	3	4	5	6
1 Anger	1.65	.80	x	.61**	.20*	-.13	-.11	-.12
2 Guilt	2.00	.85	x	x	.45**	.14	.06	.12
3 Self-blame	3.20	1.20	x	x	x	.41**	.29**	.08
4 Money (Y/N)	.65	.48	x	x	x	x	.86**	.20*
5 Donation	1.31	1.08	x	x	x	x	x	.13
6 Study help (Y/N)	.80	.40	x	x	x	x	x	x
Variable	Frequency							
	(n)	(%)						
Money donated	73 Y	65.2						
Study help	90 Y	80.4						
Gender	67 F	59.8						

Note. * study conditions, and gender controlled for. Control condition not included in these analyses. Y = yes, N = No. ** $p < .001$, * $p < .05$

When looking at the pro-social behaviours solely, it appeared that the decision whether to donate money was strongly correlated with the level donated, and helping with the study. However, there was no association between the donation level and study help (see Table 4.2). This suggests that even though indices of pro-sociality might be strongly related, that is not always the case.

4.11. Mechanisms of Pro-Sociality

In the next step, the proposed mechanisms linking guilt with pro-sociality were examined. Only participants who were assigned to transgression condition were used in these analyses. Following the hypotheses, I run two mediation models, with the donation decision (Yes vs No), and second study help as the outcome variables. The data were analysed in the Process software (Hayes, 2002), with 5000 Bootstrap samples. The models examined whether there was a direct link between guilt and pro-social act, and the indirect effects mediating this link. Two such effects were specified: (i) via self-blame, which was supposed to lead to increased pro-sociality, and (ii) via anger (a proxy of other-blame), which was supposed to lead to decreased pro-sociality. The moderating effects of the context-related factors, namely, whether participants had practice or not, and whether they could donate to their partner in the game vs a charity were examined as well.

Additionally, it was examined whether there was any relationship between the study variables and the donation amount. Due to the nature of this variable, multinomial logistic regression models were run, to establish whether the mediation mechanisms might be plausible. These are reported below.

4.11.1. Links Between Guilt and Donation Decision

First, the model with the binary donation decision was tested (see Fig. 4.3). As presented below, the direct link between guilt experienced was not directly linked with the decision to donate ($c = .46, p = .27$).

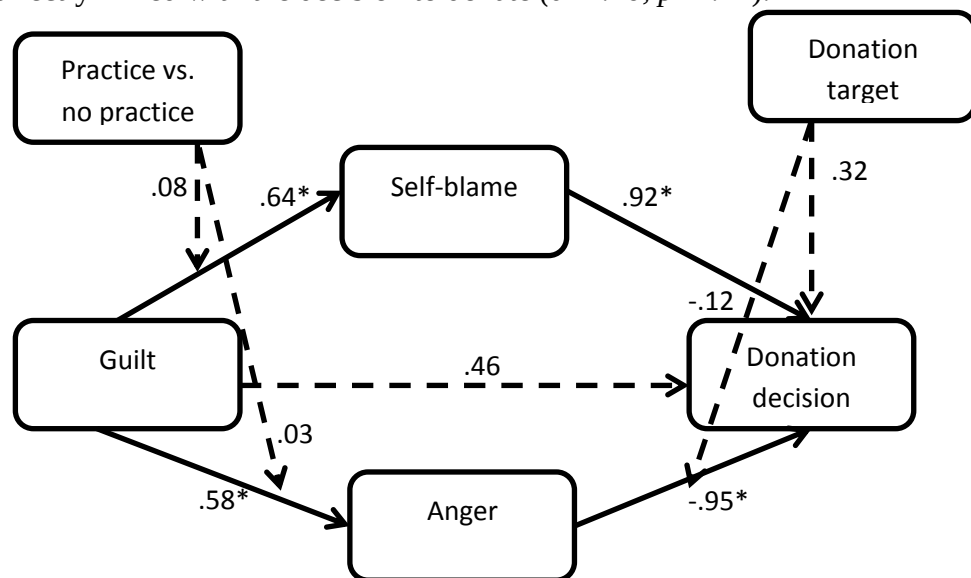


Fig. 4.3 Model predicting donation decision (Yes/No, n=108; control condition not included). Note: Nagelkerke $R^2 = .32$, $p < .001$; direct effect = .46, $p = .27$.

When considering the indirect effect in Fig. 4.3, it was observed that effects, via self-blame and anger, were significant. There was no moderating effects present though (see Table 4.3), as neither the donation target nor the practice seemed to moderate the proposed mediation mechanisms.

Table 4.3 The conditional indirect effect of guilt on donation (Yes/No) via self-blame (top panel), and anger (bottom panel).

Mediator	Practice	Donation target	Effect	Boot SE	LLCI	ULCI
Self-blame	no	charity	.461	.248	.089	1.045
Self-blame	no	partner	.657	.339	.222	1.453
Self-blame	yes	charity	.521	.276	.097	1.165
Self-blame	yes	partner	.742	.416	.207	1.706
Mediator	Practice	Donation target	Effect	Boot SE	LLCI	ULCI
Anger	no	charity	-.500	.324	-1.230	-.006
Anger	no	partner	-.568	.389	-1.388	-.009
Anger	yes	charity	-.523	.318	-1.255	-.015
Anger	yes	partner	-.595	.376	-1.402	-.022

Note: SE= standard error, LLCI=lower limit confidence interval, ULCI=upper limit confidence interval.

The moderating effects of donation target and self-blame, and anger, on donation decision, are presented in Fig. 4.4 and 4.5.

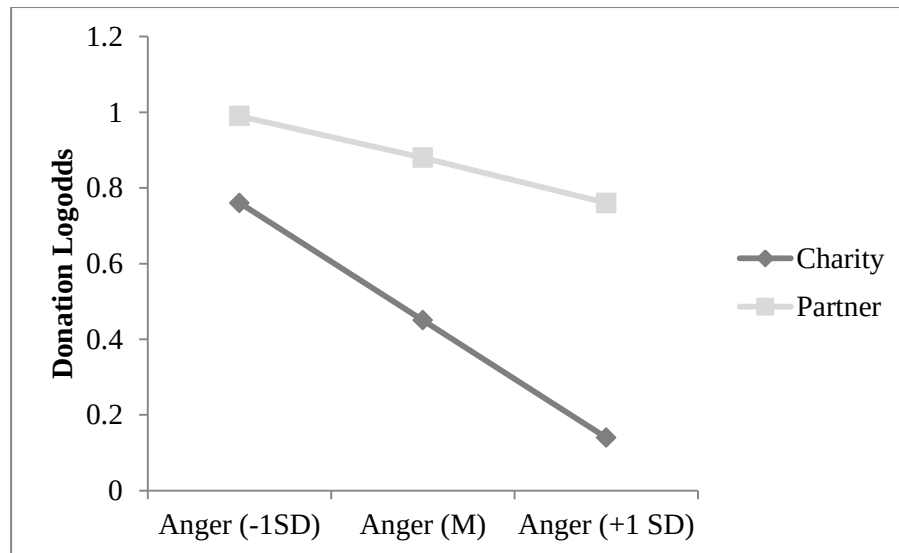


Fig 4.4 Interaction between anger and donation target, on donation decision.

Even though the graph in Figure 4.4 shows that there might be some relationship between anger and donation decision, when running this part of the model separately to investigate the moderation effect of donation target, there was no significant effect of anger (*coeff.* = $-.26$, $p = .29$) or donation target (*coeff.* = $.43$, $p = .30$), or an interaction between the two (*coeff.* = $.24$, $p = .63$) on donation decision. This suggests that the mediating effect of anger for guilt and the pro-sociality link might not be very strong, or appear only under specific conditions. The results in Table 4.3 support this, as the 95% confidence intervals of the indirect effect found there were very close to zero.

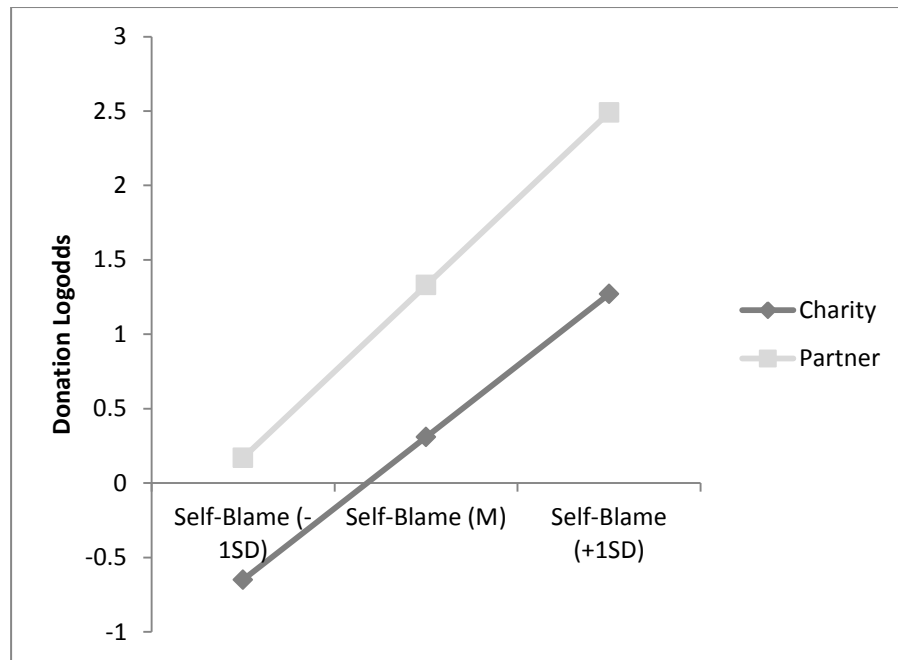


Fig 4.5 Interaction between self-blame and donation target, on donation decision.

As can be seen in Figure 4.5, the more self-blame participants experienced, the higher was the likelihood of them donating money ($coeff. = .88, p < .001$). Once again, there was also a significant effect of donation target, where the likelihood of donating money to one's game partner was higher than the likelihood of donating to a charity ($coeff. = 1.02, p = .04$). But there was no interaction between the donation target and self-blame ($coeff. = .17, p = .70$), suggesting that there was no moderating effect of donation target, which agrees with the results presented in Table 4.3.

4.11.2. Links Between Guilt and Donation Amount (Category)

In the next step, a multinomial regression model was run, with the donation amount (category) as the pro-sociality measure. As mentioned above these two pro-sociality indices (whether to donate versus how much to donate) are considered as separate, and thus they might be affected by the proposed mechanisms differently. As the amount of money that people donated was non-normally distributed and showed a clear categorisation, three categories were used (a – donated less than half ($n=13$), b – donated exactly half ($n=44$), c – donated more than half ($n=16$)) as the outcome variable. To start with,

each predictor was entered separately in the multinomial model, in order to examine whether they predict the donation category. Unfortunately, none of the predictor variables, apart from donation target significantly predicted the donation category (see Table 4.4).

When examining the effect of donation target on the donation category, it was observed that this effect was only significant ($B = -1.58$, $Exp(B) = .21$, $p = .019$) when comparing group who donated less than half and the one that donated exactly half, with the difference being that donating exactly half was more likely if being able to donate to one's partner, rather than a charity.

Additionally, I run another multinomial model with all the predictor variables entered together, to confirm the results obtained with initial tests. Here, the results demonstrated that the specified model was not better at predicting the classification category than the intercept-only model (Likelihood ratio test: *Chi-square* = 13.30, $p = .21$). Another model fit statistics (*Pearson's Chi-square* = 157.17, $p = .08$), being close to 0.5 was also indicating not a good model fit. Therefore no other analyses were performed, and it could be concluded that the donation category was not predicted by the examined variables, apart from donation target.

Table 4.4 The statistics for the models predicting donation category, for each predictor variable.

Predictor	Statistics (<i>Chi-square</i> , p)
Guilt	1.98, .37
Anger	1.27, .53
Self-blame	3.66, .16
Donation target	6.32, .04
Practice	.42, .81

Note. The shaded area represents a significant predictor.

4.11.3. Links Between Guilt and Second Study Help

Lastly, a model of guilt-based pro-sociality, but with gender hold as a covariate, due to its significant effect of help with the study, was examined,

for the second pro-social opportunity (i.e., helping with the study) that was given to participants (see Fig. 4.6).

This model was examining whether the effects of initial guilt would expand beyond the first helping opportunity. Once again, it was specified that guilt would be directly linked with study help and that the indirect effects would rely on the feeling of self-blame and anger, leading to increased and decreased help, respectively (see Fig 4.6)

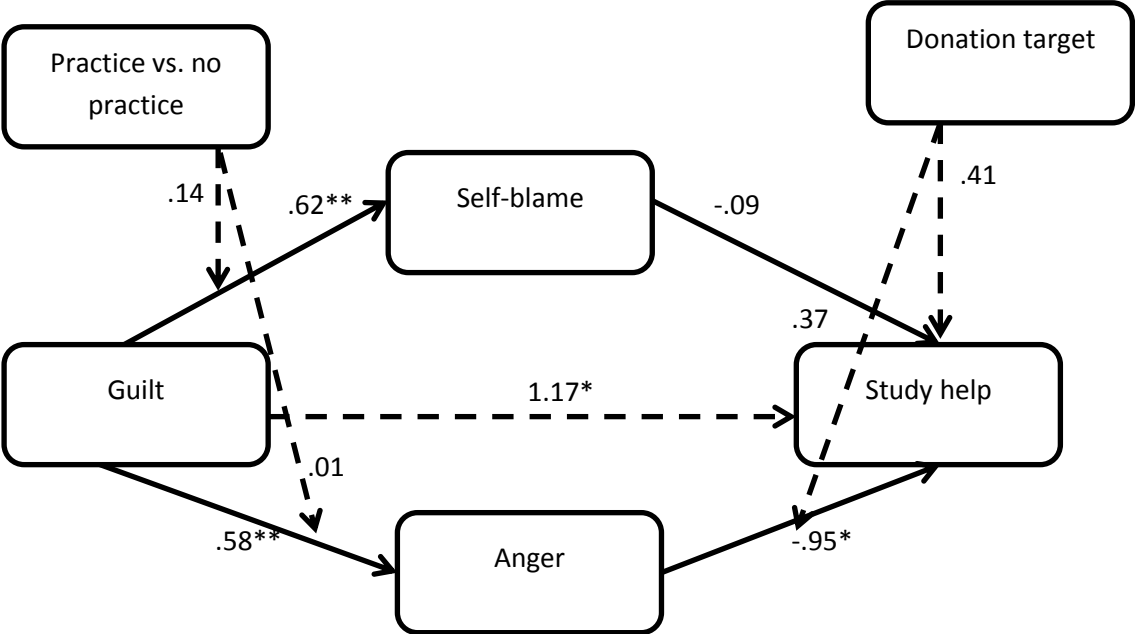


Fig. 4.6 Model predicting decision whether to help with the study (n=108; control condition not included; gender hold as a covariate as it was correlated with study help). Note: $R^2 = .15$, $p = .16$; direct effect = 1.17, $p = .02$

This time, it was observed that the total model of guilt affecting help with the second study was non-significant, however, the direct link between guilt, and the indirect link via anger showed significant patterns. This seems to hint at the possibility of some spillover effects of emotions beyond the first helping opportunity. However, like in Chapter 3, the results revealed that guilt indeed is most likely to affect first and not the subsequent helping opportunity. This would suggest that behaving in a pro-social fashion reduces guilt and thus its effects are unlikely to expand to next helping opportunity. Whether that is the case is examined in Chapter 5.

4.12. Discussion

Following from the results presented in Chapter 3 this study aimed at investigating the mechanisms concerning the association of guilt and pro-sociality, especially the emotional path leading to decreased pro-sociality. This is an intriguing pathway to take, as the majority of the literature presents guilt as an emotion leading to increased pro-sociality. The role of anger, vs self-blame, as a potential mediator of the link between guilt and decreased vs increased pro-sociality was examined, and a special focus was placed on the potential contextual factors moderating the mediation mechanisms proposed. Specifically, the potential role of pro-sociality target, an opportunity to practice a task used to trigger guilt, and the type of pro-sociality was considered. The results supported some of the hypotheses presented.

4.12.1. Guilt Leads to Increased Pro-Sociality

The results revealed the long-established positive effect of guilt on pro-sociality. This effect was mediated by a feeling of self-blame that participants ascribed to themselves after failing their partner in a game, irrespective of the contextual circumstances (i.e., donation target, practice, and pro-sociality type). Previous research suggested that feelings of responsibility mediate the effect of guilt on pro-sociality (Basil, Ridgway, & Basil, 2006). This study has demonstrated that both self-blame and responsibility seem to play a similar role in the context of transgression, namely, mediate the pro-social effects of guilt. This finding might be suggesting that these two cognitions are closely related and that their unique features might be more important in another context than pro-sociality or transgression, for example, pathology. Indeed, self-blame was linked with increased avoidant coping, whereas responsibility with decreased avoidant coping among people with inflammatory bowel disease (Voth & Sirois, 2009), hinting at such a possibility.

It is noteworthy that self-blame appears to be crucial for the pro-social effect of guilt to appear, as when self-blame was entered in the model, the direct link between guilt and pro-sociality was not significant. This might suggest that the cognitive rather than emotional aspect of guilt might be a more important determinant of subsequent behaviour. However, it is more

likely that both elements are necessary, and it would be difficult to imagine a scenario when one would blame oneself, without feeling guilty. Nevertheless, future studies might shed some insight onto that by considering whether cognitive factors related to the cause of harm, are sufficient to affect pro-social behaviour, or whether it is the emotional element that is necessary.

4.12.2. Guilt Leads to Decreased Pro-Sociality

The story underlying the mechanism behind decreased pro-sociality in the face of guilt was more complex, though. As suggested, anger at others was the emotional mechanism linking guilt with decreased pro-sociality, however this result was not very strong. This highlights the need to examine this mechanism further, with the aim of replicating it. Also, the contextual factors did not seem to have an effect on the mechanism via anger. However, it was observed that the type of donation measure used might be important when considering emotional mechanisms, as none of the emotional effects was significantly predicting donation amount (category). The reverse was true for the decision whether to donate or not. Here both emotional mechanisms were significantly linked to the likelihood of donation. This finding seems to support the notion that the decision whether to donate and how much to donate are separate, as suggested by Nettle et al. (2013), and seem to be affected by different factors. This result supports also the importance of considering different types of pro-social behaviour when analysing human pro-sociality in order to gain a fuller picture. It is likely that generalisation based on one index of pro-sociality might be biased.

The finding that guilt might result in decreased pro-sociality is an intriguing result. As suggested above it stands in opposition to the current view of guilt as a prototypical moral emotion. It seems though to be in accord with the perspective that emotions are not adaptive or maladaptive per se, but that this depends on other factors, for example, context-related ones. This finding has special importance for charitable organisations, who often rely on guilt appeals to attract funding, as it suggests that such a method might backfire, and result in decreased pro-sociality.

4.12.3. Context Does Not Moderate the Emotional Mechanisms

The novel and exciting findings of this study suggest that guilt is not a purely moral emotion linked with increased pro-social behaviour, as it might also result in decreased pro-sociality. Both these mechanisms did not seem affected by the contextual factors examined, however, this does not mean that other factors might not provide a crucial moderating context. This finding requires careful and cautious consideration, though, as the results supporting the mechanism via anger were weak, and did not replicate in a separate moderation analysis. Therefore, more research needs to be conducted before it can be treated as an established effect.

Even though the contextual factors did not seem to moderate the emotional mechanisms leading to increased and decreased pro-sociality, donation target showed a significant effect on the donation category, suggesting that if one has a chance to repay one's wrongdoing directly, rather than indirectly (e.g., by donating to a charity), there is a higher likelihood of repaying exactly half of earnings rather than less than half. The question arises why that might be the case? I would suggest that this result provides some support for the notion that consideration of fairness might be more salient when considering direct rather than indirect repayment. Specifically, if one has an amount of money, whereas their partner has none, (and this is somewhat due to the failure of the person with the money) it might seem more fair to split the money in half, as then each party has an equal amount, rather than to offer less than half. Such reasoning seems to apply less to the situation when the donation target is a charity, as it was not negatively affected by one's failure, and therefore any amount might seem as fair or justified. In short, donating little might be seen as more inappropriate and unjust in the partner than the charity condition. A recent study has shown that justice seems to legitimise property rights in the dictator game (Schurter & Wilson, 2009) and that people are strongly motivated by the desire for fairness and reciprocity (e.g., Fehr & Schmidt, 2001), which seems strongly applicable to the current study. Especially, that in the current study participants knew that, if not because of them, their partners would have earned their money. Therefore, it seems likely that justice motive might have been important in the condition

where participants could repay their wrongdoing directly, and not so much in the one with a charity as donation target. Indeed, research has shown that people have strong opinions of what constitutes fairness, especially if they have been benefitted by someone (e.g., Rabin, 1993).

Secondly, a finding that individuals donate exactly half rather than less than half when donating to partner rather than a charity, might be supported by research showing that people strive to equalize their earnings in economic games (e.g., Loewenstein, Thompson, & Bazerman, 1989), and that fairness considerations play an important role in one's money allocation decisions (e.g., Kagel & Willey Wolfe, 2001). Following from this, it seems more likely that participants who were donating to their partner would try more to make their relative earning equivalent, which would mean donating exactly half of one's earnings from the game. This would be not relevant for the charity condition though, as here participants could not really create equal earnings (e.g., they did not know how much money was already left or would be left for the charity). Indeed, twice the amount of participants in the partner condition (when compared to the charity condition) donated exactly half of their earnings, strengthening the view, that such an amount was possibly seen as the fairest. It is possible that some personal tendencies could have influenced one's perspective on the equity of earnings (e.g., social value orientation = SVO); however, without measuring this, it is difficult to say whether that was the case. Nevertheless, SVO seems mostly relevant for conditions of competition, which was not the case here (i.e., it was stressed that participants need to work well together in order to gain the money), and therefore it is highly probable that all participants had a similar perception of what constituted a fair repayment. Some research effort has been put to understand what makes an allocation fair in economic games (e.g., Andreoni, Brown, & Vesterlund, 2002); however, as stated above, this seems to be much more salient in the context when one has a chance to repay to one's victim, rather than to a charity, which seems to agree with what was observed in the current study.

4.12.4. The Null Effect of Practice in the Game

The fact that practice in the game had no significant effect on the mediation mechanisms might stem from the fact that it was too short to give participants a feeling of being proficient at the game, which was hypothesised to lead to higher probability of the occurrence of the mechanism via self-blame. Similarly, not having practice was potentially not salient enough to give participants an increased chance of blaming other factors than themselves and feeling angry at the outcome of the game. The results seem to support this, as there was no difference found for self-blame and anger between the two conditions. Therefore, future research might reconsider what other manipulations might be sufficient to affect the likelihood of the mechanism via self-blame versus anger. It would be interesting to examine whether a different manipulation that affects the possibility of self and other-blame/anger would moderate the results accordingly with the hypotheses presented here. One such manipulation could rely on informing participants that sometimes computer that is used to run the game malfunctions, and therefore there is a chance of the results not being 100% correct. It seems plausible that such manipulation would affect participants' emotions, and potentially be the context where reduced pro-sociality due to anger would be more likely. It would be in great interest, not only to the literature but also charitable or health organisations, to understand when the negative effect of guilt (e.g., reduced pro-sociality or compliance) is more likely. Therefore future studies should investigate this topic further, and investigate other contextual factors that might affect the mechanisms demonstrated here.

4.12.5. Do the Pro-Social Effects of Guilt Last?

Lastly, the fact that there was no effect of guilt on the second helping opportunity suggests that pro-social effects of guilt do not expand beyond the first helping opportunity. This is probably due to the alleviation of guilt due to helping in the first instance, which seems in accordance with the Negative State Relief model (Cialdini & Kenrick, 1976). This finding was obtained for the second time in this thesis, as it replicated a similar result reported in Chapter 3. However, even though the model was non-significant, some of the

associations showed significant patterns. Therefore, future research should examine this effect further, by potentially measuring emotions after first helping opportunity and see whether this updated emotional state would affect the subsequent helping opportunity.

4.12.6. Limitations

Finally, a few limitations need highlighting. First, the sample used in this study was student-based, limiting the generalisation of the results. However, due to the use of a dyadic context simulating an everyday life experience, this limitation should have had a small effect.

Second, it needs acknowledging that the choice of the non-direct target of the pro-social act (the charity) might have biased the results, as donating to a charity is seen as a desirable act, and thus not donating might be an additional source of anticipatory guilt, additionally affecting the results. Therefore future studies should consider whether a choice of a less desirable target of the pro-social act might produce different results for those feeling guilty and deciding whether to help.

4.12.7. Summary

In sum, this study adds to the emerging literature suggesting that guilt possesses two sides, which was previously suggested by de Hooge et al. (2011): the pro-social and the darker side. I corroborate the view that even though the majority of studies demonstrated the moral character of guilt, its darker side should not be neglected in future research, especially that it seems to affect pro-sociality of individuals who transgressed. Indeed, Dost and Yagmurlu (2008) called for context-sensitive studies of guilt (and shame), as they are needed to disentangle the adaptive/maladaptive controversy that surrounds guilt. This study answered this call and hopefully will open a pathway of research examining this topic more.

4.13. Conclusions

Guilt is not a purely pro-social emotion, as previously thought. I demonstrated that like other emotions (e.g., anger), guilt could be both constructive and destructive, as it can both promote and hinder pro-sociality. The pathway that follows guilt might lead via self-blame or anger. Guilt via self-blame seems to lead to increased pro-sociality, whereas via anger to decreased pro-sociality. But this latter mechanism requires more research.

Chapter 5

The Side Effects of Guilt-Tripping: Manipulative Intent as Determinant of Guilt-Based Pro-Sociality

Chapter Overview

The view that guilt is adaptive and beneficial for the functioning of society is widely acknowledged. Some researchers have demonstrated, however, that guilt possesses a darker side that occurs, for example, when one compensates their victim using others' rather than one's own resources. Similarly, in Chapter 4 the data hinted that sometimes guilt could lead to decreased rather than increased pro-sociality. Till now, the literature has suggested that the intensity of guilt is responsible for the two sides of guilt, with high levels leading to negative outcomes. Not a lot of evidence has supported this claim, though. Following from the previous chapter, in the present study I tested the model of guilt-based pro-sociality with the focus on the emotional mechanisms underlying it and manipulative intent (MI) as a context-related factor possibly moderating these. It was hypothesised that the mechanism of guilt via anger leading to decreased pro-sociality would be more likely for the context of high MI. Similarly, the mechanism leading to increased pro-sociality was expected to be more likely in the low MI condition. The results showed that guilt led to increased pro-sociality (via responsibility) when the MI was both low and high. Surprisingly, the mechanism via anger was significant only for those in the low MI condition. The possible explanation for this effect is presented in the discussion. Finally, it was shown, for the first time in the literature, that acting pro-socially possesses a guilt-alleviating and pride-triggering quality.

5.0. Introduction

Even though guilt is seen as one of the most prototypical moral emotions (Haidt, 2003), the previous chapter demonstrated that guilt does not always lead to increased pro-sociality and that decreased pro-sociality might occur as well. One aspect that has been highlighted in chapter 3 is that the perception of unfairness might be strongly relevant for whether the positive (i.e., increased pro-sociality) or negative (i.e., decreased pro-sociality) effect of guilt appears. In chapter 3 it was suggested that participants might have felt unfairly treated when their earnings ownership was changed by the experimenter, which triggered anger, and led to decreased pro-sociality. If this is the case, that the perception of being treated unfairly, or manipulated leads to decreased pro-sociality via anger in the face of guilt, showing such an effect directly, would bring great value to the literature on guilt and pro-sociality. A demonstration of such an effect would not only support the claims made in the previous chapters but also allow for a better understanding of the relationship between guilt and pro-sociality in more general terms, which this study is hoping to do, by examining the role of manipulative intent. The focus was placed on the manipulative intent (present in a guilt context), as it is likely that this factor underlies the effects of guilt in a guilt-based situation. This might be especially true for guilt-based persuasive communications, which are used to trigger compliance with the message by inducing guilt. An example of such a message was used in the present study as guilt triggering stimuli. A drawback of such a method, however, is a possibility of reactance (e.g., Bessabarova Turner, & Fink, & Blustein, 2015), due to feelings of restricted freedom, or more generally being manipulated. Therefore, it is highly likely that perceiving a manipulative intent in the guilt-based context might be a crucial factor in determining the relationship between guilt and pro-sociality and the mechanisms underlying this relationship.

Lastly, to determine whether self-blame (which was examined in Chapter 4) and responsibility can play a similar mediating role, responsibility rather than self-blame was tested as a mediating mechanism between guilt and increased pro-sociality. The rationale behind the choice of the MI as a moderating factor is presented below, but first I briefly present few studies

that show guilt as indeed associated with negative outcomes, and then introduce the model that was tested in the present study.

5.1. Does Guilt Always Lead to Positive Outcomes?

The majority of research supports the view that guilt promotes pro-sociality (e.g., Chapter 2) and is thus beneficial for society (e.g., Myrick, 2015). The meta-analysis presented in Chapter 2 demonstrated that the link between guilt and pro-sociality is significant and of moderate strength, even when publication bias is accounted for. This summary finding stresses that guilt indeed reliably leads to pro-sociality. However, some studies included in that meta-analysis did not find a positive link between guilt and pro-sociality (e.g., Dembroski & Pennebaker, 1972), or even showed a negative association (e.g., Silverman, Rivera, & Tedeschi, 1979). Similarly some recent findings suggest that guilt sometimes has negative outcomes, such as hurting a third party (de Hooge et al., 2011), or triggering reactance to health (e.g., Wolburg, 2006) or other persuasive messages (e.g., Bessarabova et al., 2015; Mistry & Latimer-Cheung, 2014). To give an example, Bessarabova et al. (2015) found that pupils exposed to guilt-inducing messages aimed at increasing taking school seriously reacted with a negative, rather than a positive, attitude toward school, providing an example of reactance-like response (Brehm, 1966). Nevertheless, there are studies that demonstrated a positive effect of guilt-based appeals. For example, Becheuer and Valette-Florence (2014) observed a positive effect of the guilt-inducing message on the alcohol abuse attitude. This highlights that there is a discrepancy in the effects of guilt found in the literature and that some moderating factors possibly determine whether guilt leads to positive or negative outcomes. Exploring what can determine whether the effects of guilt-based context are positive or negative holds great value, as many public campaigns use guilt to induce positive behaviour change (e.g., anti-smoking PSAs: Wong, Harrison, & Harvell, 2015). If they result in a negative change, this presents a problem for the use of guilt-based appeals or guilt-induction techniques. This also stresses the importance of better understanding when guilt-based context might backfire. Some evidence for moderators being important in determining the effects of guilt induction comes from a recent study that examined its use within romantic relationships

and found that attachment style of the target of the guilt induction determined its effect (Jayamaha, Antonellis, & Overall, 2016). This result supports the need for investigating the moderators of the relationship between guilt and phenomena it can affect, especially, pro-sociality. Following from this, manipulative intent, which appears relevant for guilt-based context, was investigated in this study.

5.2. What Might Explain the Negative Effect of Guilt?

Some authors, as presented in Chapter 4, suggested that guilt intensity underlies this discrepancy of the effects of guilt (Coulter & Pinto, 1995; Jimenez & Yang, 2008; Pinto & Priest, 1991). Specifically, they claimed that it is high or extreme levels (in absolute terms) of guilt triggered (but not low or moderate ones) that lead to negative outcomes, such as reactance. Even though the intensity claims, suggesting that effects of negative emotions follow an inverted-U function, have been present in the literature for some time (e.g., for guilt: Coulter & Pinto, 1995; and for fear: Bennett, 1996; Witte & Allen, 2000), "... the support for the (intensity) hypothesis is patchy" (Hibbert et al., 2007, p.726), and thus, it is probable that intensity of guilt per se, is not as crucial as previously thought. This hypothesis is also not well suited for explaining the effects examined in the laboratories, where triggered guilt is at low or medium levels, often due to ethical considerations and methods used.

Following from the results of chapter 4, I suggest that the negative outcomes related to guilt are mediated by anger, but that this mechanism is more likely under specific circumstances. This hypothesis has its core in the approach presented by Berkowitz (1990), who claims that all aversive events, therefore including those with experience of guilt, cause some feelings of anger. According to his cognitive-neoassociationistic model: *"(...) there is an associative connection between negative affect and anger-related feelings, ideas, and memories, and also with aggressive inclinations. It is because of these associations that persons who feel bad for one reason or another (...) are likely to be angry, have hostile ideas and memories, and to be aggressively disposed"* (Barkowitz, 1990; p.496). This model then supports the

relationships tested in this study, particularly, the link between guilt – anger- and reduced pro-sociality. The reduction in pro-sociality is not directly an act of aggression, but it can be seen as an anger-related reaction, due to its “balancing the scales” motive (Anderson & Bushman, 2002). As in the model presented in Fig. 5.1, Berkowitz (1990) also claimed that a variety of factors could determine the strength of the responses related to anger, experienced due to a negative situation. In the previous chapter, two conditions that could have moderating role for the model presented (the role of donation target and practice in a game) were examined, but they did not show a significant impact. Nevertheless, they were very specific, and thus examination of a more general contextual factor might demonstrate different results. As suggested in the model in Fig 4.1 in Chapter 4 and its authors (Muris & Meesters, 2014, p.34): “*Various person- or environment-related variables may influence the secondary appraisal processes*”. A factor that appears highly relevant, especially in the light of the recent literature, is manipulative intent, which was examined in the present study. The value in examining this context-related factor stems from the fact that it can be applied to multiple situations, which was not the case for the factors examined in Chapter 4. If this is the case that MI has a crucial role for the effect of guilt on pro-sociality, then this would enable making inferences about the potential effects of any manipulation or factor that can be defined as manipulative in a guilt context.

5.3. Manipulative Intent

The role of manipulative intent is well-established in consumer and health psychology. Defined as “*inferences that the advertiser (persuasion agent)² is attempting to persuade by inappropriate, unfair, or manipulative means*” (Campbell, 1995, p. 228) it has demonstrated mostly detrimental effects on compliance with, and attitude towards a message (e.g., Reinhart et al., 2007; Wentzel, Tomczak, & Herrmann, 2010), and emotional reactions experienced (e.g., annoyance: Coulter, Cotte, & Moore, 1999; anger: Boudewyns, Turner, & Paquin, 2013; Cotte et al., 2005). MI seems to be highly relevant for situations that involve guilt induction, as they often rely on

² Added by the author.

manipulating participants to trigger guilt in them. A good illustration of that was the manipulation in Chapter 4, where participants were manipulated to think that they caused a failure in the game, and then once again, when their donation target was predetermined. Such procedures might have caused participants to feel tricked or manipulated to react in certain ways. Previous research has demonstrated that when consumers infer manipulative intent in advertising, they develop a negative attitude towards the advertising brand, the advert, and it also negatively impacts their purchase likelihood (Campbell, 1995). However, the role of MI might be especially crucial for guilt-based messages, which are most commonly used by charitable (Huhmann & Brotherton, 1997) and sometimes health organisations. Indeed, people find such messages as manipulative and often oppose their use (Hudson, 2013). A recent study supports this view, by suggesting that feelings of being manipulated are responsible for decreased pro-sociality (at least in men: van Rijn, Barham, & Sundaram-Stukel, 2017). Similarly, Graton et al. (2016) demonstrated that guilt could have negative effects on repayment behaviour if the persuasive message was too blatant. This suggests again that MI might play core role for determining the pro-social effects linked to guilt. As MI has been also linked with negative advert attitude (e.g., Wentzel et al., 2010), such a construct was also measured in the current study, as replicating the negative association between MI and advert attitude might provide additional support that MI manipulation used within this study worked successfully.

In the context of charity appeals inferring MI might be especially likely and problematic, as rather than promoting feelings of self-blame or responsibility, which are suggested to mediate the effects of guilt, it might trigger anger in the target of the message, and result in reduced pro-sociality. Such effects are especially likely nowadays, as people get to understand tactics used by charities, and develop “immunity” against them (e.g., Dalton, Madden, Chamberlain, Carr, & Lyons, 2008). As guilt-based appeals are common nowadays, an example of one was chosen as guilt induction technique in the present study. This should provide a real-life like stimuli to observe reactions to it. As presented in Chapter 4, feelings of self-blame mediated the pro-social effect of guilt, whereas anger mediated the effect of

reduced pro-sociality in a laboratory context. Would these effects be visible in a context of charitable appeal? It is highly likely that they would be even stronger, due to people's exposure to such appeals in everyday life. Finally, would responsibility play the same mediating role as self-blame? These questions were considered in this study.

5.4. The Proposed Model

As already described in Chapter 4, the link between guilt and reduced pro-sociality was hypothesised to be mediated by the feelings of anger, whereas with increased pro-sociality via self-blame (here, responsibility). These mechanisms were tested once again in the present study, with the moderating role of MI (see Fig. 5.1). It was expected that high MI would provide situational context for the occurrence of the path via anger, whereas low MI would be the context where path via responsibility occurs.

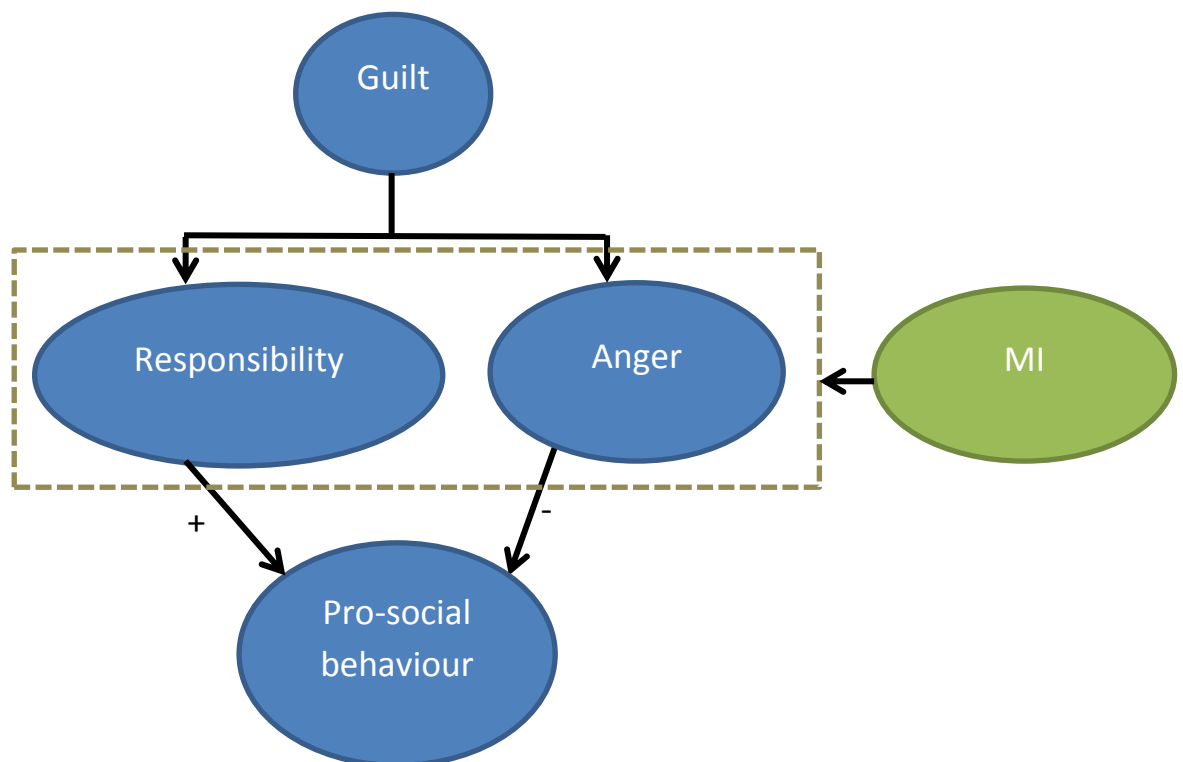


Fig. 5.1 The moderated mediation model tested in this study.

5.4.1. Responsibility vs Self-Blame

As suggested in chapter 4, self-blame and responsibility are similar but not the same constructs. For this study, however, it was hypothesised that they would play a similar role; specifically, mediating the link between guilt and increased pro-sociality. Knowing that self-blame significantly mediated this link in the previous study (chapter 4), here, responsibility was predicted to demonstrate the same effect.

5.5. Gender

Following from Chapter 3, 4 and published literature, it was hypothesised that gender might affect pro-sociality (e.g., Eagly & Crowley, 1986; Oswald, 2000; Salminen & Glad, 1992), and thus this was examined as well. It was predicted that males would be more pro-social than females when considering willingness to donate blood, as giving blood is seen as costly (e.g., Lyle, Smith, & Sullivan, 2009), and costs of helping have been found to be more impactful for pro-social decisions made by females (e.g., Cox & Deck, 2006). It was also expected that males would donate more money in the CDG, as they have been found to be more pro-social when there are monetary resources involved, which can signal one's status (e.g., Van Vugt & Iredale, 2013).

5.6. Does Acting Pro-Socially Reduce Guilt?

The secondary aim of this study was to examine whether, as suggested in previous chapters (3 and 4), guilt decreases after performing a pro-social act. Expanding from the Negative State Relief Model (Cialdini et al., 1973), such a decrease was expected in this study, as according to Cialdini's theory (ibidem), people can use pro-social acts to alleviate their negative mood. Many studies, as presented in the General Introduction found that when people were in a negative mood, they subsequently were more likely to engage in a pro-social, or otherwise mood-enhancing activity. This behavioural evidence was used to support the notion that performing a pro-social act has mood alleviating quality. However, as far as I am aware, there is no direct evidence showing that negative emotions, especially guilt, decrease after performing a

pro-social act. If performing a pro-social act reduces feelings of guilt, then this would provide some explanation for previous findings showing no effect of guilt on secondary helping behaviours (presented in Chapters 3 and 4). Therefore, it was hypothesised that guilt would decrease in those who behaved in a pro-social way (i.e., donated in the charity dictator game), but not in their counterparts. To test this hypothesis in the second part of the study, participants played a charity dictator game, and afterwards, their emotions were measured. The pro-social act that participants could engage in was not related to the source of the initial guilt as this allows for testing the proposed effect with less suspicion in participants.

5.7. Methods

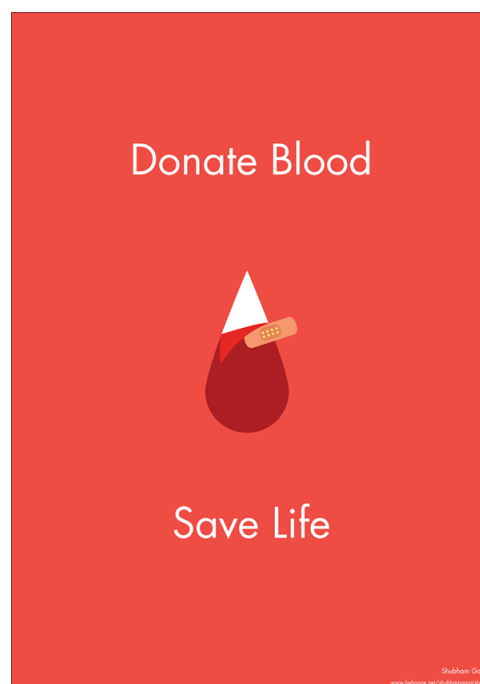
5.7.1. Participants

A sample of 121 student participants (56% female; $M_{age}=22.73$, $SD=4.17$) was recruited for this study, from a UK University, and run in groups of two to four. This was done to provide a feeling of anonymity. A sample of 61 participants was randomly assigned to the low MI condition, whereas 60 to the high MI condition. Ethical approval was granted by the Departmental Ethics Board (REF 736). Participants who could not donate blood due to medical, religious, or other reasons were not included in the analyses regarding willingness to donate blood.

5.7.2. Guilt and Manipulative Intent Manipulation

In this study, an emotional appeal differing in manipulative intent level (low MI vs high MI) was used to trigger emotional reactions in participants, following a between-subjects design. The appeal focused on recruiting blood donors based on Renner et al. (2013). The appeal described the difficult situation of blood supplies in hospitals and the fact that because fewer people are donating blood, this situation might take catastrophic size. The blood appeal was translated into English (originally German). This appeal was chosen as it successfully triggered guilt in a previous study (Renner et al., 2013), and was perceived as moderately manipulative. A picture was added to the text of the appeal (to make it look more like a real-life poster), and to

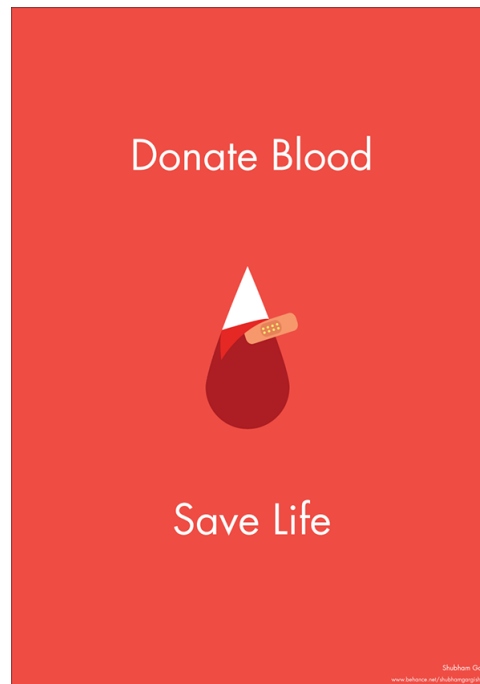
manipulate the level of MI two versions were created (see Fig 5.2 and 5.3). The two versions of the appeal differed in the instructions given (i.e., high MI appeal contained information about manipulative strategies used by some organisations in order to manipulate audience), and additionally the high MI appeal contained a sentence: “A good person would not think twice whether to donate blood or not, would they?” which was based on previous findings showing that using rhetorical questions affects one’s MI perception (e.g., Wentzel et al., 2010). Finally, I also decided to link the appeal with a behavioural request, as this might be an important factor for the MI manipulation to work. This is why, after reading the appeal, but before answering questions regarding it, participants from both groups were asked whether they would like to obtain an information pack, by email, that would inform them about the process of becoming a blood donor.



If people like you do not donate blood, there will be shortages again in the future.

Prof. Dr Ed Snyder calls on all young people to donate blood: *"Blood donation is important so that we can provide for the patients in hospitals. If people like you do not donate blood, there will be continuing shortages in the future"*. Prof. Snyder argues that especially for young people blood donation is a way of actively doing something to prevent future bottlenecks in the supply of blood preservations.

Fig. 5.2 Low MI blood donation appeal presented to participants.



If people like you do not donate blood, there will be shortages again in the future.

Prof. Dr Ed Snyder calls on all young people to donate blood: *"Blood donation is important so that we can provide for the patients in hospitals. If people like you do not donate blood, there will be continuing shortages in the future"*.

Prof. Snyder argues that especially for young people blood donation is a way of actively doing something to prevent future bottlenecks in the supply of blood preservations. "A good person would not think twice whether to donate blood on not, would they?" he adds.

Fig. 5.3 High MI blood donation appeal presented to participants.

The two blood appeals were piloted with a group of 30 students, to determine the emotional reactions and the differential level of MI they would trigger. The mean level of MI for low ($M=2.74$, $SD=1.43$), and high MI ($M=4.33$, $SD=1.02$) group differed significantly ($t(28) = 3.51$; $p = .002$; *Cohen's d* = 1.28), and thus the MI manipulation was deemed successful. Secondly, guilt ($M=2.29$, $SD=.75$ for low MI; and $M=2.29$, $SD=1.01$ for high MI), and anger ($M=1.27$, $SD=.53$ for low MI; and $M=1.73$, $SD=.86$ for high MI) were successfully triggered by both adverts, with guilt ($t(28) < .001$; $p = .99$; *Cohen's d* < .0004) and anger ($t(28) = -1.78$; $p = .085$; *Cohen's d* = .64) demonstrating the same level for both groups. This was important, as it allows

rule out the possible confounding effects of guilt intensity on the subsequent pro-sociality.

5.7.3. Procedure

Participants were informed that they were taking part in a two-part study examining: (i) perception of advertisements, and (ii) resources allocation. It was stressed that these two parts were not related, which should counteract participants' trying to behave accordingly with some intuition regarding the study hypothesis. In the first part (see Fig. 5.4), participants were presented with a blood donation appeal and asked questions about the advert (perceived MI), their emotional reactions to it (guilt and anger), the feeling of responsibility for donating blood, and their inclination to donate blood. As presented above, one group was presented with a high MI advert, whereas the other group with the advert with low MI. Subsequently, in the resources allocation study, participants played a charity dictator game (CDG), where they had to decide on money allocation between themselves and a chosen charity (£3). Anonymous conditions were provided during the donation decision. Afterwards, participants filled in the emotions questionnaire once again. Finally, they were debriefed, paid (£1 show-up fee + money kept in the CDG), and thanked. All the money donated to a charity was passed to the respective charity.

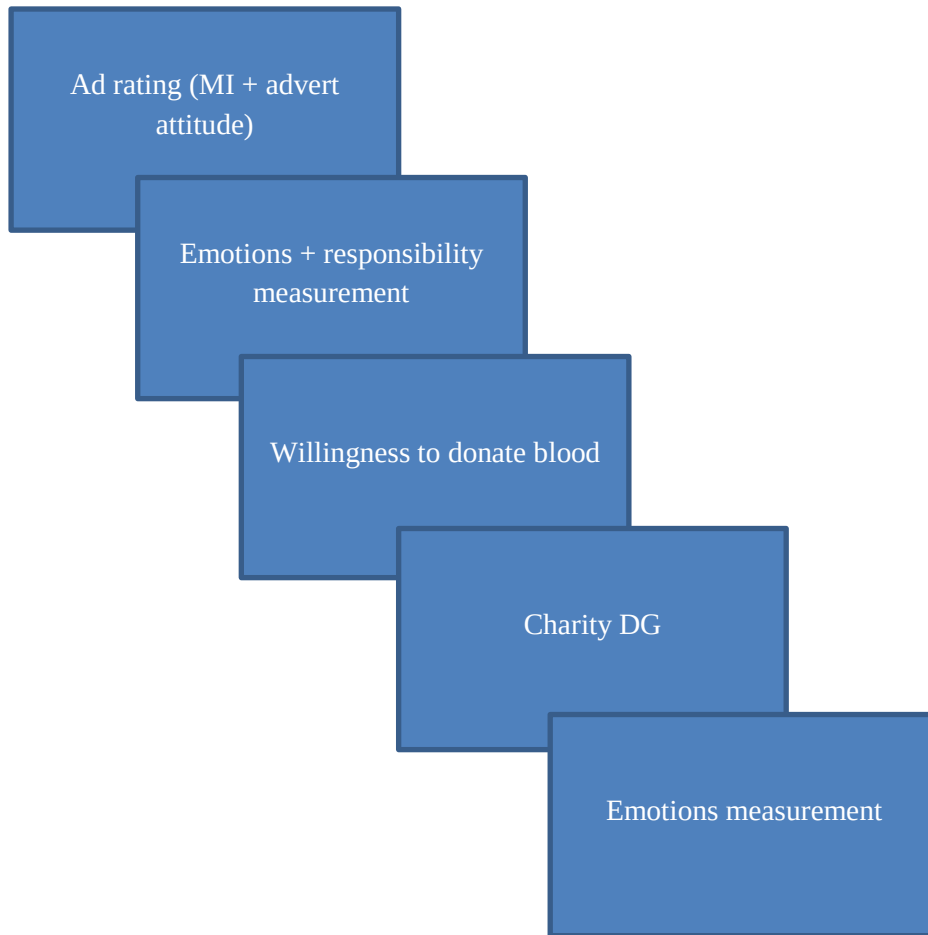


Figure 5.4 Flowchart of the study procedures.

5.7.4. Measures

The following variables were measured in this study: (i) perception of MI in the advert, (ii) advert attitude, (iii) experienced emotions, (iv) feeling of social responsibility, (v) pro-social intentions and behaviour, and (vi) demographics.

5.7.4.1. Perception of Manipulative Intent (MI)

Six items were used to measure manipulative intent of the blood donation appeal (Campbell, 1995). For example, “This advert tried to make me feel guilty”. Participants used a 7-point Likert scale to indicate their responses, ranging from “not at all” (1) to “very much” (7). The scale was reliable: Cronbach’s $\alpha = .85$.

5.7.4.2. Advert Attitude

A 3-item scale (MacKenzie & Lutz, 1989), measuring how good, favourable, and positive was participants' attitude toward the appeal was used. Participants responded with a Likert scale, ranging from "strongly disagree" (1) to "strongly agree" (7). Scale's reliability was very good: Cronbach's $\alpha = .93$.

5.7.4.3. Emotions

The emotions that participants experienced following the appeal were taken from the PANAS (Watson & Clark, 1994), and previous research (e.g., Basil et al., 2008). Guilt was operationalised as guilty, sorry, and regretful ($\alpha = .69$ at time 1; $\alpha = .83$ at time 2; see Basil et al., 2008), whereas anger as angry at others, hostile, and irritable ($\alpha = .75$ at time 1, $\alpha = .65$ at time 2). Participants indicated how strongly they felt each emotion, using a 5-point Likert scale, from "not at all" (1) to "a lot" (5).

5.7.4.4. Responsibility

It was measured whether participants perceived donating blood as a socially responsible act. Three items were used, "I feel like it is my duty to help solving the blood shortage situation", "This appeal made me feel accountable for the blood shortage situation", and "This appeal made me feel somewhat responsible for the blood shortage situation" ($\alpha = .81$). The same Likert scale as above (1-5) was used to obtain participants' responses.

5.7.4.5. Pro-Sociality

A 2-item measure of people's willingness to donate blood was used: "This appeal made me less/more likely to consider donating blood in the future". The negatively worded item was reverse-coded. The items were correlated significantly ($r = .28, p < .01$). Secondly, CDG was used as a measure of pro-social behaviour, and an occasion to perform a pro-social act. The decision whether an individual donated or not and the amount of money donated were used as a proxy for pro-sociality, and a potential cause of the decrease in guilt.

5.8. Results

The specified hypotheses were tested with correlation analyses, independent and paired t-tests, Chi-square tests, Mann-Whitney U test, and mediation models. The SPSS software (IBM Corp., 2013), together with Process macro (Hayes, 2013) were used to run the analyses. The results focus on the manipulation check, the emotions of participants, and examination of the study hypotheses (tests of the proposed model).

5.8.1. Descriptive Statistics

The partial correlations between study variables are presented in Table 5.1. The MI condition was controlled for these analyses.

As presented in Table 5.1, guilt and anger after being presented with the blood appeal were related positively ($r = .20, p < .05$). Guilt ($r = .43, p < .001$), but not anger ($r = .02, p = .82$), was also related positively to responsibility, whereas anger ($r = .61, p < .001$), but not guilt ($r = .12, p = .20$) showed positive link with the perception of manipulative intent. Finally, willingness to donate blood was significantly associated with all: guilt, anger, responsibility and MI, in the hypothesised directions (see Table 5.1). Donating money in the CDG did not show any significant correlations, suggesting that participants indeed saw the two part of the study as separate. However, the level of guilt and anger measured after donation decision were negatively related to amount donated, suggesting that performing a pro-social act, might indeed, possesses guilt alleviating quality.

It should be highlighted that the level of guilt triggered in this study was moderate ($M=2.24, SD=.94$; on a 5-point scale), and thus if such a level of guilt still leads to decreased pro-sociality, this might suggest that indeed the “intensity hypothesis” does not predict pro-sociality stemming from guilt well.

Table 5.1 Descriptive statistics of the study variables, with correlation coefficients (n=110).

Variable	Mean	SD	Partial Correlations [*]								
			1	2	3	4	5	6	7	8	9
1 Anger (T1)	1.84	.94	x	.20*	.02	.61**	-.61**	-.43**	.06	.28**	.14
2 Guilt (T1)	2.24	.96	x	x	.43**	.11	.22*	.25**	-.03	.18 [#]	.32**
3 Responsibility	2.54	1.07	x	x	x	-.17	.34**	.34**	.13	.13	.35**
4 MI	3.81	1.44	x	x	x	x	-.68**	-.51**	.01	.13	-.02
5 Advert attitude	4.36	1.64	x	x	x	x	x	.61**	.11	-.08	.13
6 Blood don. willingness	3.58	.89	x	x	x	x	x	x	-.02	-.10	.11
7 Money donation	107.54	101.91	x	x	x	x	x	x	x	-.21*	-.34**
8 Anger (T2)	1.17	.41	x	x	x	x	x	x	x	x	.48**
9 Guilt (T2)	1.72	.88	x	x	x	x	x	x	x	x	x
Variable	Frequency										
	(n)	(%)									
Money donated	88 Y	72.7									
Gender	68 F	56.2									

Note. ^{*} study conditions controlled for. Y = yes, F = female, don. = donation. ** p < .001, * p < .05, [#] p < .065.

5.8.2. Gender Effects

Gender was dummy coded as 0 for male, and 1 for female. Even though gender has been seen to affect pro-sociality and emotions in the literature, there were no significant correlations (MI condition kept constant) between gender and the decision whether to donate ($r = -.10, p = .32$), donation amount ($r = -.18, p = .06$) and blood donation willingness ($r = .12, p = .18$). Therefore, gender was not kept as a covariate in the subsequent analyses.

5.8.3. Emotion Induction

To examine whether MI manipulation affected participants emotions, independent t-tests were run. Both groups of participants (low vs high MI) did not differ in the level of guilt ($M_{\text{lowMI}} = 2.23, SD = .87; M_{\text{highMI}} = 2.20, SD = 1.03, t(118) = .16, p = .87; \text{Cohen's } d = .03$), and responsibility ($M_{\text{lowMI}} = 2.56, SD = 1.04; M_{\text{highMI}} = 2.54, SD = 1.10, t(119) = .10, p = .92; \text{Cohen's } d = .02$) they experienced after being exposed to the blood appeal, but they differed in the level of anger ($M_{\text{lowMI}} = 1.59, SD = .71; M_{\text{highMI}} = 2.07, SD = 1.05, t(101.71) = -2.90, p = .005; \text{Cohen's } d = .54$). When comparing emotions within-subjects (due to blood appeal), participants reported more guilt ($t(118) = 3.56, p = .001; \text{Cohen's } d = .32$), and responsibility ($t(118) = 5.66, p \leq .001; \text{Cohen's } d = .49$) than anger as their reaction to the blood appeal, as determined by paired t-tests. This suggests that anger was not the strongest emotion triggered by the blood appeal, and thus considering only the effect of anger would be inappropriate.

5.8.4. Manipulative Intent Manipulation and Advert Attitude

Participants in the low MI group reported lower MI perception ($M = 3.34, SD = 1.33$) than participants in the high MI group ($M = 4.25, SD = 1.37$); $t(117) = -3.66, p < .001; \text{Cohen's } d = .67$; confirming the successful MI manipulation. Participants in the low vs high MI groups also perceived the adverts differently, with those from low MI group ($M = 4.67, SD = 1.51$) when compared with high MI group ($M = 4.05, SD = 1.70$) reporting more positive

advert attitude ($t(117) = 2.09, p = .039$; *Cohen's d* = .39), which replicates findings of other studies (e.g., Campbell, 1995; Cotte et al., 2005).

5.8.5. MI and Pro-Sociality

The participants from low ($M=3.80, SD=.79$) vs high ($M=3.38, SD=.97$) MI group differed in their willingness to donate blood in the future ($t(119) = 2.67, p = .009$; *Cohen's d* = .48), with those in low MI group indicating significantly higher willingness to donate blood. There was no difference, in the frequency of monetary donations in the charity DG ($\chi^2 = .07, p = .80$; *Cohen's d* = .05) though, or the distribution of amount donated (Mann-Whitney $U = 1783.50; p = .81$; *Cohen's d* = .04) between the groups. There were also no significant correlations (MI condition controlled for) between one's willingness to donate blood, and the decision whether to donate money in CDG ($r = -.01, p = .95$) or the amount donated ($r = -.04, p = .66$).

5.8.6. Mediation Analysis

In the next step, the proposed mechanisms linking guilt with pro-sociality were examined. Following the hypotheses, a mediation model was specified to explain study's blood donation willingness (see Figure 5.3). The MI was introduced as moderator in the model, as hypothesised. The Process software (Hayes, 2002), with 5000 Bootstrap samples, was used for these analyses. As suggested previously, two paths were specified: (i) via responsibility (a proxy of self-blame), which was supposed to lead to increased pro-sociality, and (ii) via anger (a proxy of other-blame), which was supposed to lead to decreased pro-sociality. It was expected that MI would have an impact on the feelings of anger and responsibility, which subsequently would impact on the donation intention.

The results of this mediational analysis are presented in Table 5.2 (indirect effects) and Figure 5.5. As depicted below, the results showed that guilt both directly and indirectly affected willingness to donate blood. The mechanism via responsibility was significant for those who were exposed to both low and high MI appeal. It appeared that under all circumstances the

more guilty participants felt, the more responsibility they ascribed to themselves, which consequently led to increased willingness to donate blood.

Regarding the mechanism via anger, the results did not support the predictions, as this mechanism was not significant for those exposed to the highly manipulative blood appeal. Interestingly, the mechanism via anger was significant and showed a negative influence on willingness to donate blood, for those exposed to blood appeal with low MI. Why that might be the case, is considered in the discussion.

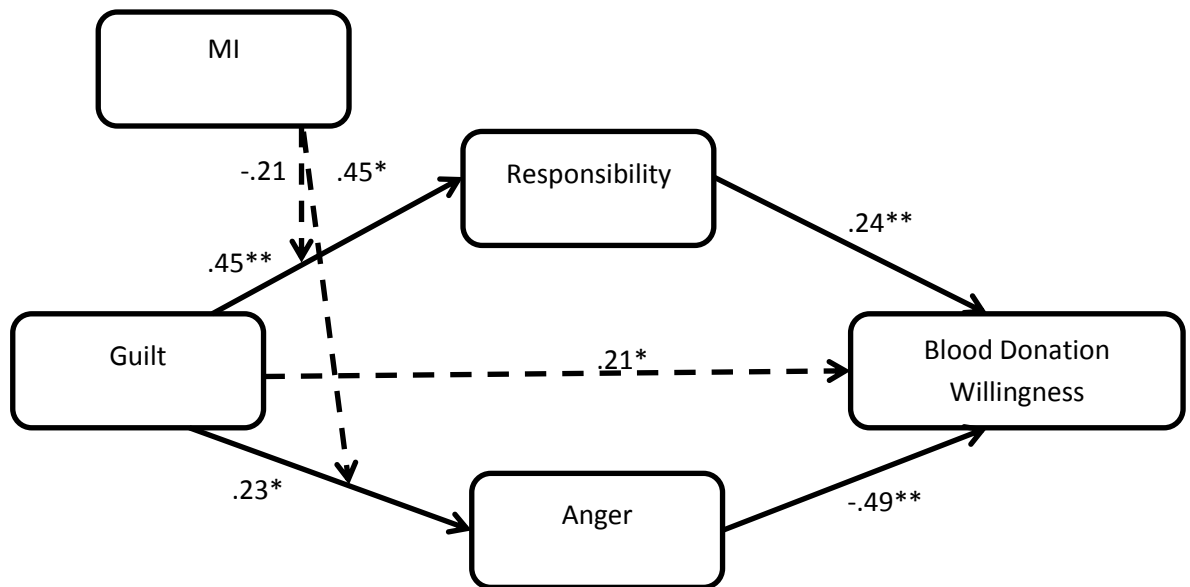


Fig. 5.5 Model predicting willingness to donate blood (n=93; participants who could donate blood not included). Note: $R^2 = .40$, $p < .001$; direct effect = .21 [95% CI = .031; .380], $p = .02$.

Table 5.2 The conditional indirect effect of guilt on the willingness to donate blood via anger (top panel), and responsibility (bottom panel).

Mediator	MI	Effect	Boot SE	LLCI	ULCI
Anger	Low	-.116	.056	-.258	-.029
Anger	High	-.115	.094	-.354	.026
Mediator	MI	Effect	Boot SE	LLCI	ULCI
Responsibility	Low	.114	.057	.029	.250
Responsibility	High	.104	.055	.020	.230

Note: SE= standard error, LLCI=lower limit confidence interval, ULCI=upper limit confidence interval. Shaded areas represent significant effects.

5.8.7. Mitigating Effect of a Pro-Social Act on Feelings of Guilt But Not Anger

To test the hypothesis that a pro-social act would reduce levels of guilt experienced, a repeated measures ANOVA was performed. Only 33 (27.73%) participants did not donate any money to a charity in the CDG. A three-way ANOVA conducted on levels of guilt, with a within-subjects factor of time (T1 & T2), and between-subject factors of donation (YES vs NO) and MI condition (low vs high), revealed no main effect of MI condition ($F(1, 115) = .003, MSE = .003, p = .96, \text{Cohen's } d < .006$), or donation decision ($F(1, 115) = 2.74, MSE = 3.00, p = .10, \text{Cohen's } d = .31$). There was, however, a significant main effect of time ($F(1, 115) = 12.04, MSE = 6.51, p = .001, \text{Cohen's } d = .67$), and a significant interaction between donation decision and time ($F(1, 115) = 8.18, MSE = 4.43, p = .005, \text{Cohen's } d = .55$). Comparing within groups of those who donated and those who did not, simple main effects analysis showed that there was a significant decrease in guilt between T1 and T2 for those who donated ($F(1, 115) = 36.14, p < .001, \text{Cohen's } d = 1.12$), but not those who did not donate ($F(1, 115) = .13, p = .72, \text{Cohen's } d = .06$) – see Fig 5.6. Comparing between donation decisions revealed that the guilt levels reported at T2 were significantly lower in those that donated compared to those that did not ($F(1, 115) = 10.49, MSE = 7.36, p = .002, \text{Cohen's } d = .59$), but there was no such difference at T1 ($F(1, 115) = .07, MSE = .07, p = .79, \text{Cohen's } d = .06$). Returning to the results of the ANOVA, there were no significant interactions between MI condition and donation decision ($F(1, 115) = .76, MSE = .83, p = .39, \text{Cohen's } d = .20$), between time and MI condition ($F(1, 115) = .008, MSE = .004, p = .93, \text{Cohen's } d < .06$), and the three-way interaction was also not significant ($F(1, 115) = 2.86, MSE = 1.55, p = .09, \text{Cohen's } d = .29$).

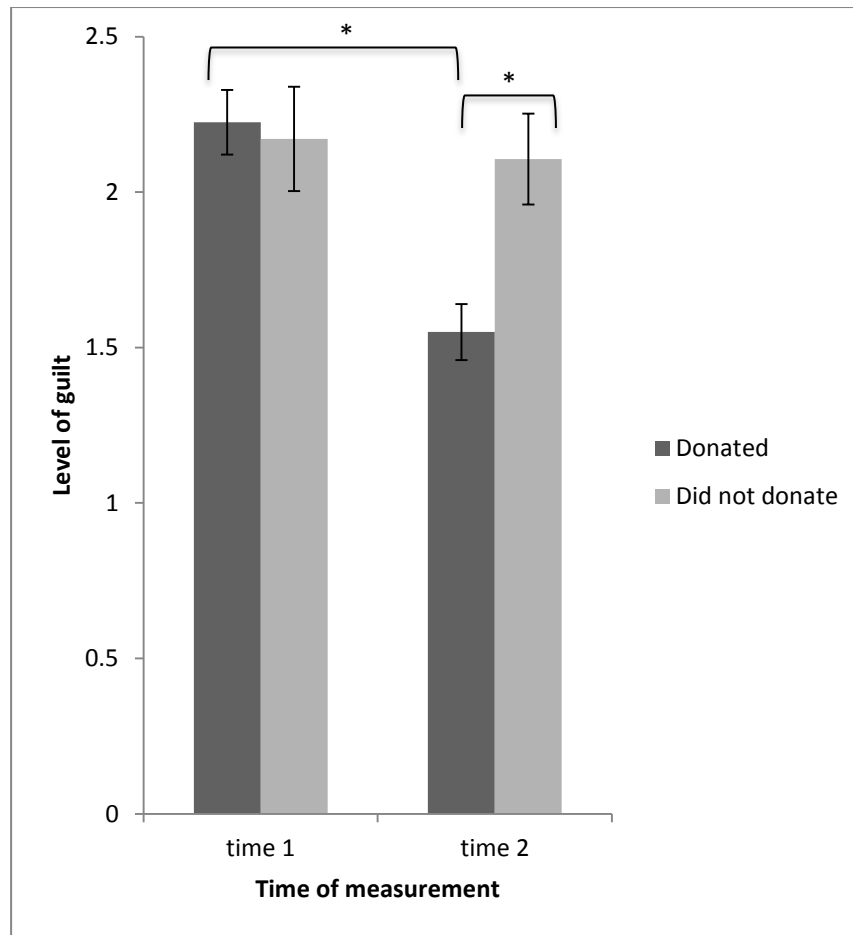


Fig. 5.6 The level of guilt before (T1) and after (T2) a donation opportunity, for participants who did not (lighter bars) and did donate (darker bars) some money to a charity. Note: SEs used as error bars.

The same analysis of guilt, but when additionally controlling for the effects of anger and responsibility, revealed that the interaction between time and donation decision remained significant ($F(1,110) = 4.03$, $MSE = 2.09$, $p = .048$, *Cohen's d* = .38), suggesting that the alleviating effect of a pro-social act is unique to guilt, rather than any negative emotion. To add more support to this view, I also tested whether the feeling of anger that participants experienced varies after performing a pro-social act. If it is the case that anger decreases after donating, it might be that any negative emotion decreases after a pro-social act, rather than specifically guilt. The same repeated measures analysis (see above) was performed with anger as the dependent variable. The results showed a significant main effect of MI condition ($F(1, 114) = 5.18$, $p < .03$, *Cohen's d* = .41), where those in the high MI condition ($M = 1.67$, $SE = .08$) experienced higher level of anger than those in the low MI ($M = 1.42$, SE

= .08). There was also a significant main effect of time ($F(1, 114) = 49.67, p < .001, \text{Cohen's } d = 1.31$), indicating that anger decreased between T1 and T2 regardless of whether participants donated or not. The main effect of donation decision was not significant ($F(1, 114) = 2.56, p = .11, \text{Cohen's } d = .29$), all interaction terms were also not significant ($F_s < .42, p_s > .52; \text{Cohen's } d_s < .13$). In summary, the analyses presented above suggest that the alleviating effect of performing a pro-social act is unique to guilt, rather than any negative emotion.

5.8.8. Is Pride Affected by Performing a Pro-Social Act as Well?

Lastly, I examined whether another emotion closely linked to pro-sociality, that is pride, changed due to the charitable donation. The same repeated measures analysis (see above) was performed with pride as the dependent variable. The results showed a trend towards a main effect for time ($F(1, 114) = 3.24, p < .08, \text{Cohen's } d = .35$), a trend towards a main effect of donation decision ($F(1, 114) = 3.75, p < .06, \text{Cohen's } d = .35$), and a significant interaction between time and donation decision ($F(1, 114) = 4.48, p < .04, \text{Cohen's } d = .41$). Comparing within groups of those who donated and those who did not, simple main effects analysis revealed a significant increase in levels of pride between T1 and T2 for those who donated ($F(1, 114) = 13.72, p < .001, \text{Cohen's } d = .70$), but not for those who did not donate ($F(1, 114) = .04, p = .85, \text{Cohen's } d < .06$). Comparing between donation decisions, the level of pride reported by participants who donated was significantly higher than those who did not donate at T2 ($F(1, 114) = 7.19, \text{MSE} = 8.37, p = .008, \text{Cohen's } d = .51$), but there was no such difference at T1 ($F(1, 114) = .15, \text{MSE} = .15, p = .70, \text{Cohen's } d = .06$). Returning to the results of the ANOVA, there was no main effect of MI condition ($F(1, 114) = .074, p = .79, \text{Cohen's } d = .06$), and all remaining interaction terms were not significant ($F_s < 1.38, p_s > .24; \text{Cohen's } d_s < .22$).

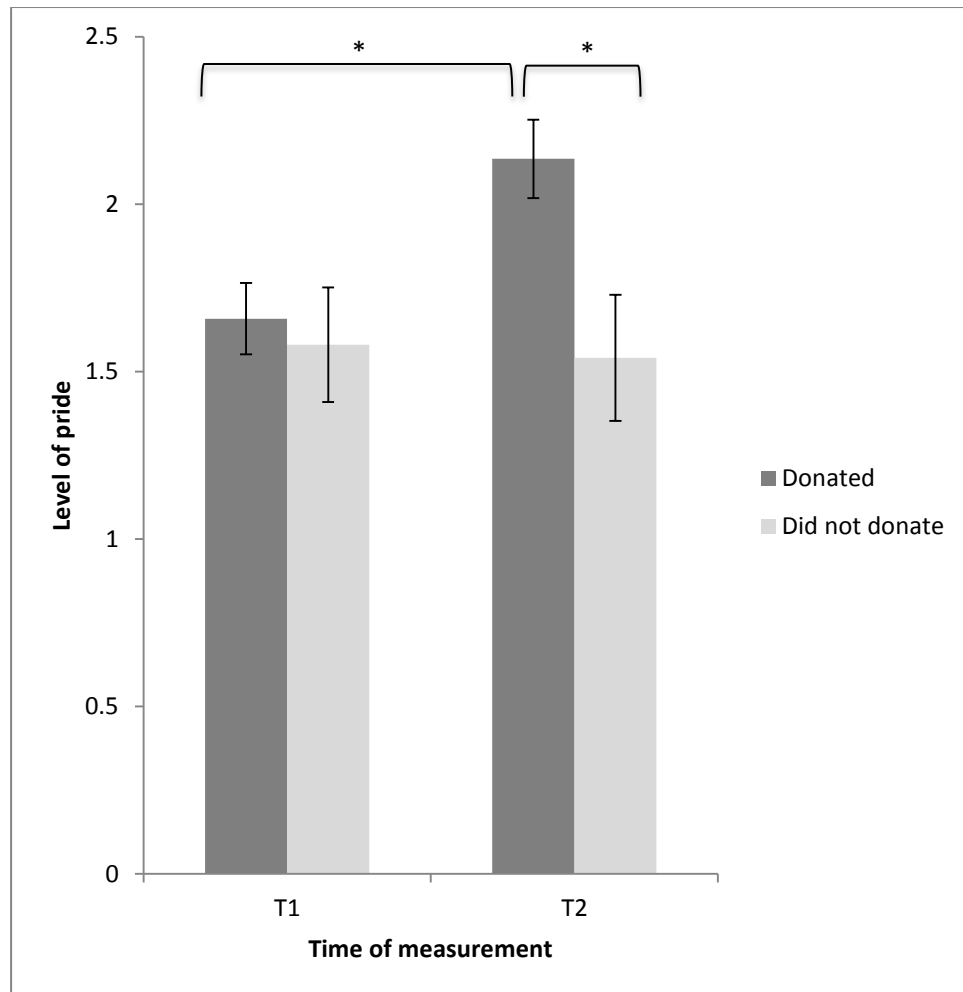


Fig. 5.7 Level of pride before (T1) and after (T2) a donation opportunity, for participants who did not (lighter bars) and did donate (darker bars) some money to a charity. Note: SEs used as error bars.

This analysis suggests that performing a pro-social act not only alleviates guilt but also increases feelings of pride. Thus, the effects of performing a pro-social act seem beneficial in at least two ways: alleviating guilt, and increasing pride.

5.9. Discussion

Following from the results presented in Chapter 4, this study was aimed at investigating the mechanisms standing behind the association of guilt and pro-sociality, especially the emotional path leading to decreased pro-sociality. This link has not been studied deeply yet, as the big part of the literature presents guilt as an emotion leading to increased pro-sociality.

However, following from results demonstrated in Chapter 4, and taking into account studies that did not find positive association between guilt and pro-sociality (e.g., Silverman et al., 1979; Nelissen & Zeelenberg, 2009: study 2), it is undeniable that such an effect occurs, and thus should not be neglected in the literature.

The role of anger (responsibility) as potential mediator of the link between guilt and decreased (increased) pro-sociality was examined, and a special focus was placed on the potential moderating factor; namely, the manipulative intent present in a guilt inducing context. This moderator was chosen as its crucial role for reactions toward persuasive communications was shown before, especially in the marketing literature (e.g., Cotte et al., 2005; Wentzel et al., 2010). The results partially supported the hypotheses presented. It was observed that guilt led to increased pro-sociality via responsibility, for those exposed to both low MI and high MI blood appeal. It was also observed that guilt led to decreased pro-sociality via anger, but only in one condition; specifically, this mechanism was true for participants exposed to low MI appeal, but not those exposed to high MI. This was against the predictions. Lastly, the guilt-alleviating and pride-triggering qualities of performing a pro-social act (i.e., donating money in a CDG) were examined, showing that indeed guilt decreased, whereas pride increased among those who donated some money, when compared to their counterparts. Some potential explanations and applications for these results are offered below.

5.9.1. Guilt Leads to Increased Pro-Sociality

As expected, guilt showed a positive association with pro-sociality, with mediating mechanism relying on feelings of responsibility, which was true under all of the contextual conditions. Just like in Chapter 4, this result suggests that the link between guilt and increased pro-sociality is strong. This hints at the possibility of evolutionary roots of guilt-based pro-sociality, as if the relationship between guilt and pro-sociality is not easily malleable, this would suggest that this relationship was strengthened via evolution, as guilt-based pro-sociality would be beneficial for survival of individuals (e.g., via

reputation management: see Fehr, 2004) and groups (e.g., via cooperation and repairment of broken ties: see Vaish, 2017).

5.9.2. Guilt Leads to Decreased Pro-Sociality

In keeping with Chapter 4, the results here suggest that guilt might lead to decreased pro-sociality, with its mechanism relying on feelings of anger. Nevertheless, contrary to the expectations, the negative association of guilt with pro-sociality via anger was true in low, rather than high MI condition. This surprising finding requires some explanation. Firstly, it appears possible that the level of MI in the low MI condition was relatively high, and therefore the result that occurred was a response toward a moderately high level of MI. Indeed, when comparing the level of MI that participants perceived in these two conditions, it can be said that they both were close to the middle of the scale ($M=3.34$ for low MI, versus $M=4.25$ for high MI, on a 1-7 Likert scale), rather than to its lower or higher end. But, if this is the case, why was there no same effect for high MI? One possibility is that, as described before, the appeal in the high MI condition informed participants that charitable organisations often use manipulative techniques to attract funding (which was not the case for the low MI appeal), which could affect participants reactions. As described above, to counteract the reactance-like response of the recipients of a persuasive communication, some inoculation techniques are applied, one of them, being information given in regard to the use of MI (e.g., Richards & Banas, 2015). Therefore, it is likely, that even though, participants in the high MI condition, perceived higher MI than their counterparts, they did not act on this perception, as they were inoculated against this. If that was the case then it would be expected that those in high MI condition would not show reduced pro-sociality, which seems to agree with the results observed. However, it is worth highlighting that even inoculation techniques can be more or less effective, or even enhance the reactance (e.g., Richards, Banas, & Magid, 2017).

In accordance with reactance theory (Brehm, 1966; Brehm & Brehm, 1981), these results demonstrate that people who feel like their freedom of choice has been unfairly compromised (e.g., by the blood donation appeal)

react with an unintended emotion – anger, which affects pro-sociality negatively. As such, guilt appeal does not seem to differ from other types of persuasive communications, such as fear appeals, which were found to lead to both compliance and reactance (Witte & Allen, 2000).

A similar idea of the role of the correct source of emotion on pro-sociality has been suggested in a study investigating link between gratitude and pro-sociality (Bartlett & DeSteno, 2006). These authors have shown that the pro-social effect of gratitude towards a stranger is removed when one realises why/thanks to whom do they experience this emotion. Based on the above, I suggest that similar phenomenon might remove the pro-social effect of guilt; that is, if people realise that the guilt that they experience has been manipulated onto them, rather than with self-blame or responsibility, they will react with anger.

These findings seem also to offer an explanation for a study that did not succeed in demonstrating the pro-social function of guilt (i.e., Nelissen & Zeelenberg, 2009b: study 2). The latter authors found no evidence for guilt leading to pro-social behaviour, viz. compensating victim of one's poor game performance that had a negative impact on victim's bonus (even though studies using similar procedures clearly showed the pro-social effect of guilt: e.g., deHooze, 2012, study 5). According with findings of this study, I propose that the predetermined game feedback that was used in the Nelissen and Zeelenberg (2009a) study, where participants (in the guilt condition) were informed about reacting correctly to 7 out of 10 trials in the first round, but only to 2 out of 10 trials, in the second round, triggered not only guilt but also anger among participants. It is not difficult to imagine how participants presented with such a feedback have felt (i.e., manipulated), and why they reacted the way they did. I propose that the emotional reaction stemming from feeling manipulated would explain why there was no evidence of pro-social function of guilt in their study. However, as the authors did not measure feelings of anger or being manipulated, future studies are needed to demonstrate whether these claims are correct.

5.9.3. Pro-Social Acts Possess Guilt-Alleviating and Pride Triggering Quality

This study demonstrated that behaving in a pro-social way reduces guilt (even when controlling for other negative emotions) and also increases pride. This beneficial effect of performing a pro-social act on guilt was suggested previously (e.g., Estrada-Hollenbeck & Heatherton, 1998), but no research, to the best of my knowledge, has provided an evidence for it. This finding is even more interesting taking into account that guilt was alleviated by an act that did not correspond to the source of guilt (i.e., blood appeal). Here, participants had decreased guilt level after donating to a charity, even though their guilt was triggered by a blood donation appeal. This finding is especially important in the light of the findings in Chapters 3 and 4, which showed that the effects of guilt did not expand beyond first helping opportunity, as it suggest that the reason for that could be the reduction of guilt after performing the first pro-social act. One could argue that not all participants performed the first pro-social act, and therefore some effect of guilt on subsequent pro-social opportunity might have been expected; however, it needs highlighting that a great majority of participants responded pro-socially to the first pro-social opportunity in the previous studies (in Chapter 3 –90.2%, whereas in Chapter 4 – 65.2% helped with the first instance), minimising the strength of this claim. This finding also suggests that the guilt-alleviating quality of pro-social act might be the base of cause-related marketing, where luxury brands offer possibilities to donate money for charities together with the luxury purchase, potentially triggering guilt (e.g., Chang, 2011).

In terms of pride, previous research showed that pride increases pro-social behaviour (e.g., Bissing-Olson, Fielding, & Iyer, 2016), but once again, to the best of my knowledge, there is no research showing that performing a pro-social act increases pride. Therefore, this study provides first evidence of pride increasing effect of pro-social behaviour. In the light of the above, it seems possible that both guilt and pride function in a cyclic fashion; that is, lead to pro-sociality, but are also affected by this pro-sociality. The difference is that guilt is alleviated by pro-social acts, whereas pride increases. Thus, it is

possible that pride might be a better emotion than guilt to refer to when trying to increase pro-sociality in a long term.

5.9.4. Future Studies

More research is needed that would replicate the findings presented in this study but in different context – for example interpersonal communication rather than written appeal, and importantly with behavioural rather than intentional measure. Also, extending this research into personal context, similarly to the study by Jayamaha et al. (2016) would offer more insight into intricacies of the effects of guilt induction, both beneficial and detrimental.

5.9.5. Limitations

As already hinted above, there were some limitations affecting the present study. First, because over 20 participants could not donate blood, the sample size was jeopardised, which could have potentially underpowered the model. Second, the anger was measured in general terms, and thus it cannot be certain whether anger that participants experienced, was indeed stemming from guilt, or whether it was a by-product of the appeal.

5.10. Conclusions

Even though guilt appears to be a source of great power when used appropriately – as it triggers compliance and intended reactions in the respective audience, used wrongfully might bring exactly the opposite, mostly by triggering anger. Nevertheless, doing a pro-social act seems to alleviate feelings of guilt, which might be what charitable organisations count on, and thus present their appeals when individuals already feel guilty, for example, after purchasing some luxury goods, which has been known as cause-related marketing (e.g., Boenigk & Schuchardt, 2013). Nevertheless, referring to pride in charitable appeals might be another option, as it rises after committing a pro-social act, and seems to be linked to pro-sociality as well.

Chapter 6

The Correspondence of Pro-Sociality Inside and Outside the Lab: Does Trait Guilt Relate to Cost-Risk Appraisal of Pro-Social Behaviours?

Chapter Overview

Interest regarding the level of correspondence between results about pro-social behaviour obtained in experimental settings, and those found in the real world, has increased. While this issue has been examined primarily regarding predictive validity, here I explore the construct validity between the lab and real-world pro-sociality tasks concerning appraisals of cost/risk as well as their association with personality. Lab indices of pro-social behaviours were perceived as less costly/risky than real-world indices. Trait guilt did not show any significant relationship with the cost-risk appraisal, which suggests that a different mechanism might underlie the link between guilt-proneness and increased pro-sociality. However, it was observed that trait agreeableness was associated with perceiving both lab and real-world pro-social behaviours as less costly/risky. Lab pro-sociality appears to index low-cost pro-sociality, and this limits the generalisation to predict high-cost real-world pro-sociality. People high in agreeableness appraise pro-social tasks generally as less costly, and this offers a new explanation why those high in agreeableness are more likely to perform pro-social acts.

6.0. Introduction

Human behaviour in the lab is very often used as a proxy of real-world phenomena (e.g., Falk & Heckman, 2009), which raises questions of the continuity between the lab and real-world results (Aronson, Wilson, & Brewer, 1998; Ostrom, 2006). A particular focus of this debate has concentrated on human pro-sociality (Green & Schneider, 1974). However, using lab indices of pro-sociality to describe real-world pro-sociality, in general, might be problematic. For example, the majority of real-world pro-social acts occur between family members and friends, while helping strangers, which accounts for 10% of real-world pro-sociality, is most frequently studied in the lab (Amato, 1990).

The main approach to explore the link between the lab and real-world pro-sociality has been an examination of the predictive validity of lab-based assessments. This research has demonstrated varying level of support from strong (e.g., Fehr & Leibbrandt, 2011; Franzen & Pointner, 2013; Stoop, 2014), to weak (e.g., Galizzi & Navarro-Martinez, 2015), to no (e.g., Voors, Turley, Kontoleon, Bulte, & List, 2012; Gurven & Winking, 2008) association between the lab and real-world pro-sociality. One reason for this variability might lie in the construct validity of the lab analogues of pro-sociality (Galizzi & Navarro-Martinez, 2015). They may not be assessing, to the same extent, key dimensions of pro-sociality such as costliness. Thus, drawing on the psychometric tradition to risk perception (Slovic, 1987) I explored the construct validity of both lab-based (economic games, and social psychological indices like picking up pencils) and real-world (e.g., donating blood, posting a letter) indices of pro-sociality with respect to appraisals of cost/risk. This is the first study, to the best of my knowledge, which has tackled the lab-real world correspondence using such an approach.

6.1. Appraisals of Cost/Risk

Perceived cost and risk influences pro-sociality in both lab and the real-world, with high cost/risk linked to reduced pro-sociality (e.g., Bode, Miller, O’Gorman, & Codling, 2015; Piliavin et al., 1981). However, as levels of pro-sociality found in the lab are often higher than those in real-world, I

suggest that real-world behaviours are likely appraised as more costly/risky (e.g., Benz & Meier, 2008; Engel, 2011). Different appraisals of costs/risk associated with lab and real-world pro-sociality might, in part, explain why the correspondence between the two is not always good.

6.2. The Role of Traits

Personality traits, in particular trait guilt (Agnihorti, Krush, & Singh, 2012; Carlo, McGinley, Davis, & Streit, 2012; Kagel & McGee, 2014; Quiles & Bybee, 1997) and agreeableness (e.g., Caprara, Alessandri, & Eisenberg, 2012), are consistently identified as predictors of both lab and real-world pro-sociality. This predictive power may reflect how the trait influences the appraisal process associated with pro-social behaviours. Indeed, the influence of traits on appraisal process is well documented in the stress literature (Ferguson, 2013). If appraisals of lab and real-world pro-social behaviours are influenced by traits like guilt and agreeableness, then scores on these traits may be one factor that strengthens links between the lab and real-world pro-sociality. Thus, I examined the role of the Five Factor Model (FFM) and trait guilt with respect to appraisals of the lab and real-world pro-sociality.

I explore if these trait constructs are differentially related to perceptions of lab and field-based pro-sociality. If they are, it may also be another reason why the lab-field correspondence is sometimes low. For example, it is established that agreeableness is linked to lab-based economic games (Ben-Ner, Kong, & Putterman, 2004; Ben-Ner, Kramer, & Levy, 2008; Kagel & McGee, 2014; Koole, Jager, van den Berg, Vlek, & Hofstee, 2001; Pothos, Perry, Corr, Matthew, & Busemeyer, 2011; Volk, Thöni, & Ruigrok, 2011), but conscientiousness to donating blood (Ferguson, 2004; Ferguson & Lawrence, 2016). Thus, traits may differentially influence real and lab-based pro-sociality.

6.3. Cultural Norms

Cultural norms are known to affect pro-social behaviour (Gächter & Schulz, 2016; Henrich et al., 2010; Herrmann, Thöni, & Gächter, 2008). Collectivism is of particular relevance with also increased pro-sociality

associated with greater collectivistic norms (e.g., Lampridis & Papastyllanou, 2014). Thus, two cultures that should differ concerning collectivism are explored (Poland and UK; Hofstede, 2001) along with individual differences in collectivism.

6.4. Methods

6.4.1. Sampling

A convenience sample of 314 participants from the UK and 112 from Poland (Mean age = 29.80; SD = 12.11; 71% female) was recruited. The responses were collected between November 2014 and November 2015 in the UK and Poland. Ethical approval was granted by the Departmental Ethics Board (REF 486).

Participation in the study was voluntary, and participants were not compensated. They had, however, a chance of entering a prize draw of 20 gift vouchers of £10 (12€, \$13) for a commercial website. Many studies of pro-sociality use either online surveys (e.g., Einolf, 2008) or lab-based questionnaires (e.g., Piff, Kraus, Hayden Cheng, & Keltner, 2010). In order to determine whether there is any difference between lab-based and online appraisals, a twofold data collection procedure was used; with some participants taking part in an online version (187 from the UK and 112 from Poland), and some (N = 127) participants from the UK sample completing a paper version, which consisted of 84% of all participants that took part in an unrelated experimental study. The completion of this survey occurred at the end of the unrelated study, and was optional. In comparison, 60% of participants who initiated the online survey completed it.

Due to an administrative error, a personality measure was not included in the paper and pencil version of the study and thus analyses using personality variables are based on the participants who completed the online version (n=299). In order to maximise the sample size though, when it was feasible (i.e., exploratory factor analysis), all the participants' data were included. However, to check that the inclusion of the paper and pencil version did not affect the main results reported in the paper I re-ran the analyses on the

online sample only (excluding paper version subsample). The same results to those reported in the main paper were observed (see Appendix 6.2).

6.4.2. Measures

While part of a larger study measuring emotions, demographics and other traits these analyses focus on the Five Factor Model, guilt proneness, collectivism, and appraisals of cost/risk of pro-social acts.

6.4.2.1. Five Factor Model (FFM)

The Ten Item Personality Inventory (TIPI; Gosling, Rentfrow, & Swann, 2003) was used to assess neuroticism, openness to experiences, conscientiousness, extraversion, and agreeableness. Responses are made with the use of 7-point Likert scale, from disagree strongly (1) to agree strongly (7). TIPI constructs are based on only 2 items. All 5 TIPI domains were reliable (Extraversion $r = .59$; Agreeableness $r = .31$; Conscientiousness $r = .36$; Neuroticism $r = .27$; Openness $r = .34$; all $ps < .001$).

6.4.2.2. Guilt Proneness

This was assessed with a 5-item measure of guilt proneness (GP-5; Cohen, Kim, & Panter, 2014; Cronbach $\alpha = .80$) using a 7-point Likert scale, ranging from very unlikely (1) to very likely (7).

6.4.2.3. Collectivism

This was measured with the Cultural Orientation Scale (COS; Triandis & Gelfand, 1998) using a 9-point scale, ranging from never (1) to always (9). Scores on this measure reflect how a person sees themselves in terms of interdependencies/independencies, and collective (e.g., group norms adherence) values. I averaged the horizontal and vertical collectivism subscales to produce a single measure of collectivism. The reliability for this combined construct was satisfactory: Cronbach $\alpha = .84$.

6.4.2.4. Pro-Social Behaviours: Lab-Based and Real World Pro-Social Behaviours

To identify a representative sub-set of all lab and real world pro-social acts from the literature the following strategy was adopted. First, a list of 250 pro-social behaviours was derived from a comprehensive pool of behaviours, obtained from existing measures and studies examining pro-social behaviours (e.g., Holland, Silva, & Mace, 2012; Johnson, Yoo, Kim, & Lennon, 2008; Pearce, & Amato, 1980; Piff et al., 2010; Rushton, Chrisjohn, & Fekken, 1981). Second, 5 postgraduate psychology students (PhD) were instructed to create different categories for these behaviours, and to choose the most prototypical behaviours for each of these categories. The choice of these categories was at the discretion of each judge. The judges (PhD) created 11 categories in total that the pro-social behaviours could be divided into (see Table 6.1). These categories were based mostly on what was the resource offered, namely: time, money, information (e.g., telling the directions), human tissues (e.g., blood), strength (e.g., carrying someone's belongings) and other resources (e.g., mobile phone). Some of the judges also differentiated more specific categories such as: helping in an emergency situation (e.g., helping an unconscious person), helping in a situation that is potentially highly risky (e.g., breaking up a fight), or helping a charity. Finally, job-related helping (e.g., "stretching the truth" for a work-mate) and polite helping (e.g., helping someone picked up things they dropped) were differentiated by some judges. Most judges mentioned categories based on helping by offering money, time, tissue and other resources, while other categories were mentioned less frequently.

Table 6.1 List of categories that pro-social behaviours were divided into by the judges (PhD students).

Pro-social categories
Offering time
Offering money
Help requiring physical strength
Helping a charity organisation
Offering information
Offering other resources (other than money or time, e.g., a mobile phone)
Emergency helping
Tissue/organ donating
Highly risky helping
Polite helping
Job-related helping

Note: Some categories were created by all of the judges (e.g., offering money), whereas others were mentioned less frequently.

Having chosen the most prototypical behaviours, we were left with 64 (see Appendix 6.1). These 64 behaviours were refined to 23, by eliminating behaviours that were similar to each other, for example sharing money in DG and lending money in an experiment. This procedure was performed by the author. The behaviours that were included in the study are displayed in Table 6.2. Subsequently, I asked 10 other judges (postgraduate psychology students: 50% female), using a discrete choice task, to indicate whether each behaviour was low, medium or high in cost (see Table 6.2). Judges were not provided with a reference category, and used their personal opinions and experiences to determine the cost of each behaviour. The behaviours were grouped into low-

to-medium cost, or high cost, for those used in the lab or from the real world, based on the judges' ratings.

I categorised pro-social behaviours into low-to-medium cost lab behaviours, low-to-medium cost real world behaviours, and high cost real world behaviours. None of the lab behaviours were classified as high cost (see Table 6.2).

Table 6.2 List of pro-social behaviours used, divided into lab and real world-based ones, with codes indicating their cost ratings (low=LC, medium=MC, and high=HC), as indicated by competitive judges.

Behaviour	Lab vs real world	Cost			Category behaviour was classified to
		Low	Medium	High	
		Number of judges choosing each category			
1. Participating in a research study (e.g., psychological, medical).	L	2	8	0	LM
2. While taking part in an experiment helping an experimenter to pick up pencils s/he has dropped.	L	10	0	0	LM
3. After completing an experiment, agreeing to do additional/unpaid online task for the experimenter.	L	4	6	0	LM
4. After completing an experiment agreeing to distribute some leaflets for the experimenter to recruit more subjects.	L	3	6	1	LM
5. If given a choice in an experiment to either allocating another person to try either M&Ms or Chilli sauce, choosing M&Ms for them.	L	7	3	0	LM
6. While filling out a questionnaire for a market research organisation, you hear the investigator falling off a chair in the next room, you rush in to help.	L	5	3	2	LM

Table 1 Cont'd	L	3	5	2	LM
7. Helping with addressing letters for a researcher, after taking part in his/her study.					
8. Sharing a small amount of money you have been given in an experiment with a second person, who you do not know and will never meet, that has no money in the experiment. (dictator game)	L	4	4	2	LM
9. Allowing someone to go ahead of you in a queue (e.g., in the supermarket, etc.).	RW	8	2	0	LM
10. Mailing a lost letter that you have found on the street.	RW	9	1	0	LM
11. 'Stretching the truth' to help someone out of an embarrassing situation	RW	3	6	1	LM
12. Helping carry a stranger's belongings (books, parcels, shopping, etc.).	RW	8	1	1	LM
13. Donating goods or clothes or money to a charity (more than once).	RW	5	4	1	LM
14. Doing volunteer work for a charity (on more than one occasion).	RW	1	7	2	LM
15. Giving directions to a stranger.	RW	10	0	0	LM
16. Giving £2 to a stranger, who approaches you on the street, claiming to need the money for a bus fare.	RW	2	7	1	LM
17. Breaking up a fight between two university students.	RW	1	2	7	H
18. Stopping to pick up a hitchhiker standing along the side of the road.	RW	1	3	6	H
19. Offering your seat on a bus or in a public place to a stranger who is standing.	RW	8	2	0	LM
20. Rushing in to save someone's life (e.g., from drowning, a fire, etc.).	RW	0	2	8	H
21. Providing direct assistance (e.g., chest	RW	1	6	3	LM

compressions) to help an unconscious person.

22. Donating blood (more than once).	RW	1	4	5	H
23. Donating an organ to your relative/acquaintance (i.e., kidney or part of your liver).	RW	0	1	9	H

Note. L = lab, RW = real world, LM = low-to-medium cost, H = high cost.

Low and medium cost behaviours were grouped together as this provided most consistent classification, especially because some behaviours were seen as low, or medium cost by similar amount of the judges (e.g., items 8, 13). Moreover, low and medium cost behaviours represent behaviours seen both in the lab and in the real world, which is not the case for the separate category of high cost behaviours.

6.4.3. Appraisals of Pro-Social Behaviours

Participants assessed the cost/risk of pro-social behaviours presented in Table 6.2. The cost was defined as “any financial, psychological or time-related cost one can think of” and was responded using a scale from costless (1) to very high cost (5). Participants also indicated how risky they appraised each pro-social behaviour to be: “What would be the level of risk involved in performing such behaviour?” (1 = no risk, to 4 = high risk). These two measures were collapsed together, as they were highly correlated (for mean cost and risk of all behaviours: $r = .62, p < .001$, controlling for the country).

6.5. Results

This section presents the comparison of risk/cost appraisals between various variables, such as gender, country of the sample, and study settings, together with associations between risk/cost appraisals and personality traits.

6.5.1. Country of the Sample

The Polish and British samples were compared on psychological variables, with gender, age and education level hold as covariates, as the participants from these countries differed on these demographics. The gender was used as covariate due to a higher proportion of females in the Polish

sample ($\chi^2 = 10.29, p = .006$; *Cohen's d* = .31). The Polish sample (N = 112) was significantly older ($M_{Poland}=37.20, SD=12.71$; $M_{UK}=27.16, SD=10.74$; $t(170.76) = 7.46, p < .001$; *Cohen's d* = 1.14), and had a higher level of education ($Mode_{Poland}=Masters$; $Mode_{UK}=A$ levels) than the UK (N = 314) sample [$X^2(8) = 33.56, p < .001$; *Cohen's d* = .58]. The samples did not differ in terms of collectivism ($F(1, 286) = .39, p = .53$; *Cohen's d* = .07). The participants from both countries differed in openness [$F(1, 283) = 4.53, p = .034$; *Cohen's d* = .24], extraversion [$F(1, 284) = 11.79, p = .001$; *Cohen's d* = .38], and agreeableness [$F(1, 285) = 11.72, p = .001$; *Cohen's d* = .38], but not neuroticism [$F(1, 283) = .17, p = .68$; *Cohen's d* = .05] or conscientiousness [$F(1, 283) = .88, p = .35$; *Cohen's d* = .10], with Polish sample expressing higher levels on all the traits with a significant difference.

6.5.2. Dimensions of Helping

An exploratory factor analysis (EFA) was conducted, using principal axis factoring with Varimax rotation on the appraisals of the sum of cost and risk of all the 23 behaviours. The sum of the cost and risk appraisals was used. The Kaiser-Meyer-Olkin (KMO) measure demonstrated that the sampling was adequate, KMO = .94. Both, Eigenvalues greater than 1, and the scree-plot indicated 4-factor solution explaining 53.05% of the variance. The 4-factor solution is shown in Table 6.3.

Table 6.3 Factorial structure of the 23 helping behaviours (N=405) based on Varimax rotation (Oblimin rotation with delta = -.03 produces same factors).

	Rotated Factor Loadings (Varimax)				
Item	Factor	Factor	Factor	Factor	h^2
	1	2	3	4	
F1 - Low cost/risk, casual help					
Offering a bus seat (F)	.668				.54
Giving directions (F)	.662				.50
Carrying belongings (F)	.623	.348			.59
Picking up pencils (L)	.561		.325		.48

Letting in a queue (F)	.502			.36
Helping a R that fell off a chair (L)	.460	.335		.38
Donating goods/money (F)	.449			.29
Giving £2 to a stranger (F)	.448		.382	.44
Mailing a lost letter (F)	.396			.26

F2 - High cost/risk, emergency help

Saving someone's life (F)	.686			.53
Donating an organ (F)	.656			.44
Providing direct assistance (F)	.623			.48
Picking up a hitchhiker (F)	.594		.360	.50
Breaking up a fight (F)	.572		.335	.51
Donating blood (F)	.342	.515		.43
Psychological or medical research participation (L)	.361			.29

F3 – Providing additional help

Addressing letters for a R after completing a previous study (L)	.367		.525	.51
Volunteering work, on many occasions (F)	.409	.312	.509	.55
Doing online task for a R after completing a previous study (L)	.351		.493	.342 .53
Distributing leaflets for a R after completing a previous study (L)		.368	.456	.47

F4 - Generosity of spirit

Dictator Game (L)			.453	.34
Offering M&M's (L)			.445	.31

Stretching the truth (F)				.333	.26
Eigenvalues	8.14	1.95	1.07	1.04	
Variance explained (%)	35.38	8.49	4.67	4.51	
Reliability (α)	.84	.82	.80	.52	
Mean inter-item correlation	.37	.40	.51	.27	

Note: L=Lab based behaviour; F=Field based behaviour; h^2 – communalities.

Loadings in bold font represent the factors. Eigenvalue of 5th factor was equal to .94. Loadings below .30 are not shown.

As can be observed in Table 6.3, the items that loaded into the first factor were a mixture of everyday and lab-based helping reflecting “spontaneous, casual and low-cost helping”. The second factor represented “high-cost, emergency helping” which is primarily field-based. The third factor represented behaviours that are heavily based on “providing additional help”, such as agreeing to do an additional task for a researcher after finishing their study. Finally the fourth factor represented behaviours that are based on “good manners” and politeness (Zhao, Ferguson, & Smillie, 2017a, Zhao, Ferguson, & Smillie, 2017b). For example, participants faced with DG do not have to share any money; and likewise for participants deciding on giving M&Ms instead of chilli sauce (Lieberman, Solomon, Greenberg, & McGregor, 1999; Yoon & Vargas, 2014). Similarly, a person asked by their co-worker to “stretch the truth” for them does not have to do it, but might decide to help due to the spirit of generosity or feelings of camaraderie. The pro-social behaviours in the first category might seem similar to these behaviours, but behaviours such as picking up pencils that someone dropped do not involve an exchange of goods/money. Finally, these latter behaviours always present two possible options (i.e., one can help or not help), whereas the behaviours in the casual help category are often more spontaneous behaviours such as when deciding to give up a bus seat for someone.

6.5.3. Effects of Sex Differences on Pro-Social Appraisals

When comparing pro-social appraisals for the four pro-social factors between males and females (controlling for country), it was found that there

was no difference for low cost helping ($F(1, 405) = 1.34, p = .25$; *Cohen's d* = .12), additional help ($F(1, 407) = .79, p = .37$; *Cohen's d* = .09) or politeness ($F(1, 407) = 1.93, p = .17$; *Cohen's d* = .14), but there was a significant difference for high cost pro-sociality ($F(1, 405) = 17.11, p < .001$; *Cohen's d* = .41), with females perceiving higher cost/risk for this type of pro-sociality ($M_f = 2.99, SE = .03, 95\% CI = 2.92; 3.05, M_m = 2.73, SE = .05, 95\% CI = 2.63; 2.83$).

6.5.4. Effects of Country on Pro-Social Appraisals

It was also examined whether country of the sample had an effect on the cost/risk appraisals of the pro-social factors. There was a significant difference between the countries (when controlling for gender, age and education level) for low cost helping ($F(1, 399) = 6.69, p = .01$; *Cohen's d* = .26), with Polish people perceiving lower cost/risk for this type of pro-sociality ($M_{Pol} = 1.48, SE = .04, 95\% CI = 1.40; 1.56, M_{UK} = 1.60, SE = .02, 95\% CI = 1.56; 1.64$). The same was true for high cost pro-sociality ($F(1, 399) = 9.64, p = .002$; *Cohen's d* = .31), again, with Polish people perceiving lower cost/risk for this type of pro-sociality ($M_{Pol} = 2.76, SE = .06, 95\% CI = 2.65; 2.87, M_{UK} = 2.97, SE = .03, 95\% CI = 2.90; 3.03$). The first effect loses significance when additionally controlling for the personality traits that were significantly different between the two countries (i.e., openness, agreeableness and extraversion): $F(1, 270) = 1.10, p = .30$; *Cohen's d* = .13. However, the difference remains significant for the high cost helping factor: $F(1, 272) = 6.99, p = .009$; *Cohen's d* = .32. There was no significant difference between the two countries for cost/risk appraisals of additional help ($F(1, 401) = .55, p = .46$; *Cohen's d* = .07) or generosity of spirit ($F(1, 401) = .90, p = .35$; *Cohen's d* = .09).

6.5.5. Effects of Personality and Demographics on Pro-Social Appraisals

Subsequently, I run partial correlation analysis (controlling for country, gender, age and education level) to compare the strength of the associations between pro-social appraisals of four pro-sociality factors and psychological variables. The correlation coefficients can be seen in Table 6.4. The appraisals of cost/risk of the four factors of pro-social behaviour were related significantly and in a consistent way with agreeableness (negatively),

neuroticism (positively) and collectivism (negatively) only. I observed few unique associations as well, for example, males and older people perceived less cost/risk, but only for high cost pro-sociality. Interestingly, however, there was no significant relationship between cost/risk appraisals of any of the factors and guilt-proneness.

Table 6.4 Partial correlations (country, age, sex and education level controlled for***) between the cost/risk appraisals and personality and socio-demographic variables.

	Cost/Risk (N=269)									
	Mean (SD)	N	E	A	O	C	Coll	GP	Age	Sex
Low cost help	1.55 (.39)	.11 [#]	-.09	-.11 [#]	-.01	.05	-.18**	-.05	-.10	-.04
High cost help	2.90 (.58)	.14*	-.11	-.13*	-.07	.07	-.19**	-.02	-.17**	-.22**
Additional help	1.91 (.50)	.14*	-.11 [#]	-.11 [#]	-.01	.04	-.17**	.08	-.06	.01
Generosity of spirit	1.87 (.50)	.13*	-.06	-.15*	.03	-.01	-.17**	.06	.01	-.11 [#]

Note. N = neuroticism, E = extraversion, A = agreeableness, O = openness to experiences, C = conscientiousness, Coll = collectivism, GP = guilt proneness. Gender dummy coded as 1 = male, 0 = female, * $p < .05$, ** $p < .01$, [#] $p \leq .081$; *** not for age and gender

6.5.6. Effect of Study Settings

Finally, I compared whether the setting of the study (in the lab versus online) affected the appraisals of the four helping factors. The country was controlled for again. There was no significant differences for appraisals of cost/risk between the study settings, for low cost ($F(1, 407) = .0002$, $p = .99$; *Cohen's d* = .002) or high cost helping ($F(1, 407) = 1.37$, $p = .24$; *Cohen's d* = .12). There was a significant difference however for the additional help ($F(1, 409) = 9.16$, $p = .003$; *Cohen's d* = .30), with participants completing the

study in the lab ($M = 1.73$, $SE = .05$, 95% CI = 1.64; 1.83) appraising cost/risk as lower than those completing it online ($M = 1.91$, $SE = .03$, 95% CI = 1.85; 1.97). The same was the case for generosity of spirit factor ($F(1, 409) = 3.93$, $p = .048$; *Cohen's d* = .20), with participants completing the study in the lab ($M = 1.75$, $SE = .05$, 95% CI = 1.66; 1.85) appraising cost/risk of this factor as lower than those completing it online ($M = 1.87$, $SE = .03$, 95% CI = 1.81; 1.93). These results suggest that pro-social appraisals are not affected by where/how the opinions of participants in regard to pro-sociality were gathered, apart from when the pro-sociality is measured in situations where participants were asked for additional help and/or to share some money in a DG, and afterwards are asked about the perception of such acts. The lab sample used in this study before completing the appraisal questionnaire, engaged in a DG task, and secondly completing the appraisal questionnaire is a form of an additional task done for the researcher. In such a case, participants perceived providing additional help and generosity of spirit factors as lower in cost/risk. This is possibly due to the fact that these participants already engaged in these types of pro-sociality. It is worth noting that 16% of participants in the lab did not complete the appraisal task, possibly seeing such behaviour as more costly/risky. Therefore these results should be taken with caution, as possibly by including answers of such participants I would observe no differences between online and lab participants regarding their cost/risk appraisals of pro-sociality.³

³ I ran the analyses for additional help and generosity of spirit factors once again, this time excluding two items that might have been appraised differently by participants in the lab, as they performed them as a part of the study (i.e., DG and doing an online task for a researcher). The difference in cost/risk appraisals of „providing additional help” factor was upheld as significant, but with strongly decreased p value ($F(1, 411) = 3.92$, $p = .048$; *Cohen's d* = .19); with participants completing the study in the lab ($M = 1.82$, $SE = .05$, 95% CI = 1.72; 1.92) appraising cost/risk of providing additional help as slightly lower than those completing it online ($M = 1.95$, $SE = .03$, 95% CI = 1.88; 2.01). However that was not the case for the „generosity of spirit” factor ($F(1, 410) = .86$, $p = .36$; *Cohen's d* = .09). This suggests that the cost/risk appraisals of behaviours measuring “providing additional help” might be affected by the study setting, that is, by running it online or in the lab. It would be interesting to examine whether participants completing a study online and being asked to do an additional task online would show

6.6. Discussion

The generalisability of knowledge based on experimental results to the real-world is crucial for the success of any science. Here, I shed some light on this issue by exploring how lab-based and real-world pro-sociality correspond with respect to appraisals of cost/risk. I showed that there is some correspondence between low-to-medium cost/risk lab and real-world pro-sociality. This seems to suggest that predictive validity of the lab-based assessment is low when the cost/risk correspondence is not matched. Indeed, this is the case in the studies that showed poor (e.g., Galizzi & Navarro-Martinez, 2015) and no lab-real world correspondence (e.g., Voors et al., 2012; Gurven & Vinking, 2008). All these studies compared economic games (low cost) with more costly/risky behaviours, such as food sharing or lending a mobile. However, studies that used behaviours with a high degree of correspondence, such as making decisions about common pool resources in the lab and the real-world (e.g., Fehr & Leibbrandt, 2011), demonstrated good lab – real-world correspondence.

6.6.1. The Discrepancy Between Lab and Field Pro-Sociality

The levels of pro-sociality found in the lab are often higher than those in the real-world for similar tasks (e.g., Benz & Meier, 2008; Engel, 2011). Here I show that when appraisals are considered, the low-cost lab and field studies correspond, but high-cost pro-sociality is only really observed in the field. This indicates that researchers might need to consider whether the measures of pro-sociality that they use in the lab are equivalent to those found in the real-world as if not, this might bias the findings and limit their generalisability.

The result showing that real-world pro-social behaviours are appraised similarly, independent from the study settings, indicates that such behaviours should be applied in the labs more. Future research should be cautious if assessing people's cost/risk appraisals based on acts that they were engaged in

similar level of cost/risk appraisals for this factor, as to those who fill the study in the lab and are asked for additional help in person.

close to the time of assessment as being involved in a pro-social act seems to affect its cost/risk appraisal level.

The results presented in this chapter also highlight a limitation of the pro-social acts used within this thesis; specifically, it needs to be acknowledged that all of them can be classified as low and medium (e.g., CDG, help with a study, sending a letter), but not high cost. This limits the potential generalisability of the findings presented in this thesis, and therefore they should only be applied to pro-social acts with low-to-medium cost. Whether the results in regard to guilt and its links with pro-sociality presented in this thesis would also apply to high-cost pro-social acts awaits an answer.

6.6.2. Trait Guilt

Interestingly, it was observed that there was no relationship between trait guilt and appraisals of cost/risk of the four factors of pro-sociality. This suggests that perception of cost/risk is not related to guilt-proneness, and thus potentially different mechanisms underlie its link with heightened pro-sociality. When considering the fact that trait guilt seems to be more emotional-focused than cognition-focused factor (such as agreeableness), the result presented in this study seems to match such a conceptualisation. Following from that, it is highly possible that more emotional mechanism might be the one linking trait guilt and pro-sociality, such as consideration of the level of guilt experienced if not helping. It seems highly likely that those who are highly guilt-prone might be more biased toward considering the emotional cost of not helping, which then leads them to offer help. Whether this is the case, need to be determined in future.

6.6.3. Trait Agreeableness

Lastly, I highlight for the first time the potential mechanism linking agreeableness and pro-sociality (Caprara et al., 2012). The results suggest that people high in agreeableness are motivated to perform pro-social acts by two linked routes: (1) they perceive pro-social behaviours as less costly/risky, and thus are more likely to enact these behaviours as low-cost pro-sociality is more likely to be enacted (e.g., Piliavin et al., 1981), and (2) they see pro-sociality

as more normative, and again people are more likely to enact behaviours that are seen as the norm (e.g., Kraft-Todd, Yoeli, Bhanot, & Rand 2015). The converse is the case for neuroticism for cost/risk appraisals.

6.7. Conclusions

To conclude, poor lab-real world correspondence sometimes found for pro-sociality might stem from comparing behaviours differing on constructs important for pro-sociality (e.g., cost). Personality mechanisms of pro-sociality via cost-risk appraisal were demonstrated for the first time in the literature. Guilt-proneness did not relate to the perception of cost/risk of pro-social behaviours, but trait agreeableness did. Like other researchers (e.g., Eisenberg & Spinrad, 2014, p.17), I encourage future studies to concentrate on domain-specific rather than general pro-sociality. More research also needs to develop ethically justifiable indices of high-cost lab-based helping. These may include variants of the cold-pressor task or simulated contexts.

Chapter 7

7.0. General Discussion

The work presented in this thesis explored what people do when they feel guilty (or find themselves transgressing), and whether the actions taken by them are always beneficial for others. The view of guilt as the “good” (e.g., Tangney, 1991), moral and pro-social emotion is the one that clearly emerges from the literature. Is this the full picture though? Do people always help, repay their wrongdoing, and seek opportunities to right the wrong when feeling guilty? Is this why charity organisations often use appeals based on guilt to attract funding? Or is the truth more in line with the view of guilt as one of the emotions, those: *“dynamic, relational processes that coordinate the actions of individuals in ways that guide their interactions toward more preferred conditions”* (Keltner & Kring, 1998, p.322), irrespectively whether these conditions are beneficial for others or not? The picture stemming from this thesis suggests that the above beneficial tendencies are not always the outcome of guilt (even though this relationship is not easily malleable), and that guilt can also lead to decreased helping, under circumstances of MI (and no inoculation against it). The results here also suggest that an important role should be assigned to anger when considering outcomes in a guilt-inducing situation, as it is strongly linked to unfairness and the manipulative context, which is clearly present in guilt-based situations.

7.1. Summary of Findings

All the studies presented in this thesis were aimed at increasing the understanding of human pro-sociality (with a special focus on most common pro-social acts: offering money, time, and willingness to offer blood) and guilt as its emotional underpinning. Special emphasis was placed on the emotion of guilt, as it has been presented in the literature as the prototypical moral emotion that motivates repayment of transgressions and deters from unethical actions (e.g., Cohen et al., 2012; Haidt, 2003). Still more research is needed to investigating its nuances, as studies have started demonstrating that guilt

possesses a darker side (e.g., de Hooge, 2011), and that it does not always lead to pro-sociality (e.g., Nelissen & Zeelenberg, 2009: study 2).

7.1.1. Reliability of the Guilt – Pro-Sociality Link

The role of guilt for pro-sociality in the context of transgression seems evident, and was supported in Chapter 2 in which I presented a meta-analysis on the literature, which indicated clear positive link between guilt and pro-sociality (with a moderate effect size, and with only few moderating factors affecting it, such as religiosity, and direct vs indirect pro-sociality). This does not seem to be the whole story though. The studies included in the meta-analysis presented in Chapter 2 varied from ones that observed negative relationship between guilt and pro-sociality (i.e., Silverman et al., 1979), via some with no relationship (e.g., Chang, 2014; Ilies et al., 2013), to those with strong and positive link (e.g., Elgaaied, 2012; Yu et al., 2014). This suggests that the pro-social effect of guilt is varied, and thus it might be affected by moderating factors, which should be identified. Some potential moderating factors have been examined in this thesis, and the ones that showed a significant effect are presented in Figure 7.1 (dashed lines).

The fact that guilt does not always lead to increased pro-sociality, also suggests that the mechanisms underlying effects of guilt, especially the one responsible for its negative effect, are not well understood. Following from this, I considered potential mechanisms of guilt-based pro-sociality (especially the one potentially explaining decreased pro-sociality) in three chapters (3, 4, and 5), together with some contextual factors that might affect these mechanisms (e.g., MI, type of pro-sociality). This investigation provided some evidence for the complex relationships underlying the link between guilt and pro-sociality. These, and other major findings stemming from this thesis are summarised in the model presented below (Fig 7.1) and discussed in the subsequent paragraphs.

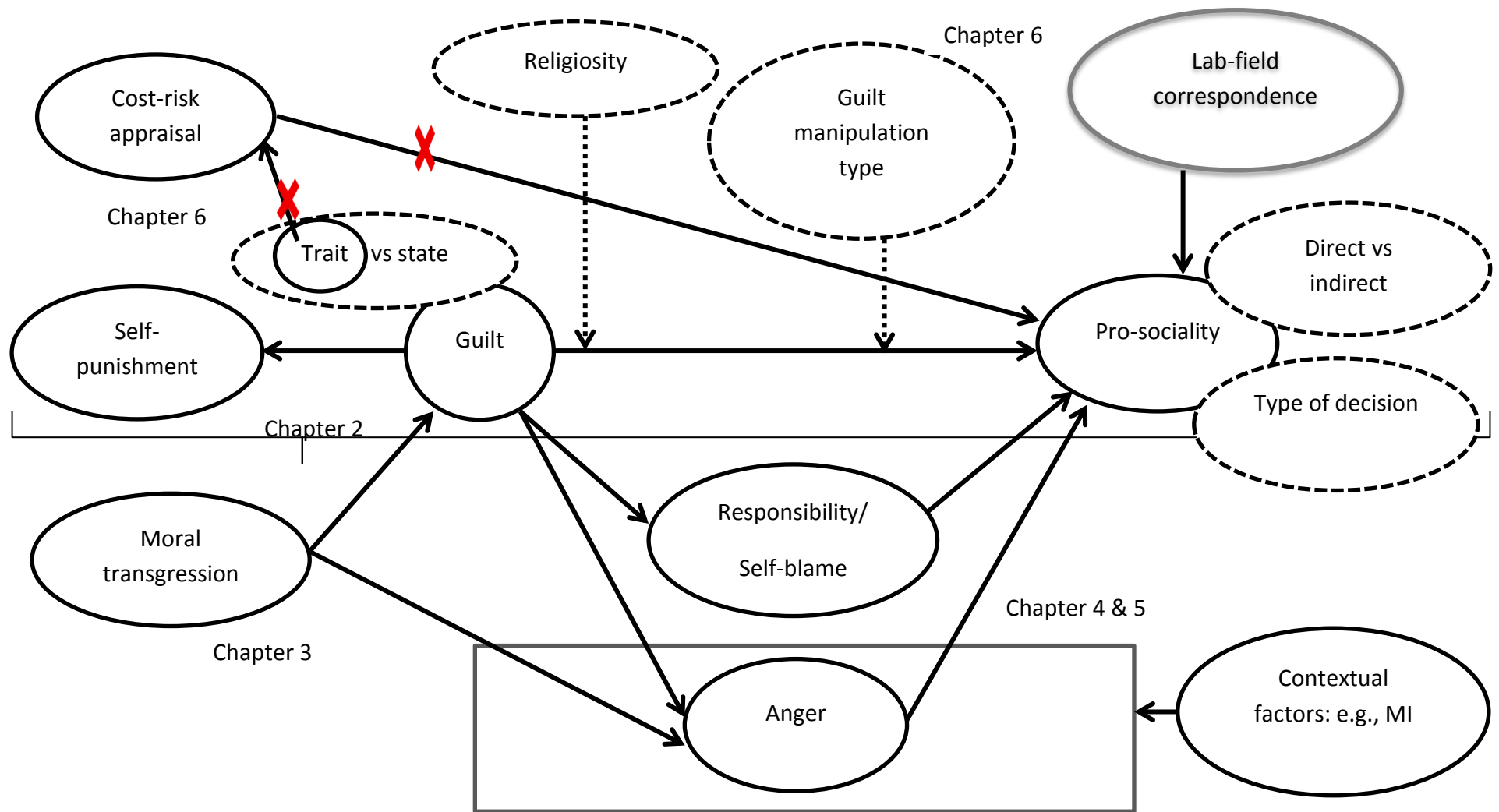


Fig. 7.1 Overall model of the relationship between guilt and related phenomena, with a special focus on pro-sociality, stemming from the results of this thesis. Dashed lines represent moderator effects.

7.1.2. The Model of Guilt-Based Pro-Sociality

The model presented in Figure 7.1 summarises well the picture of guilt stemming from this thesis. It demonstrates, in line with Chapter 2, that the relationship between guilt and pro-sociality is affected by moderating factors such as: (i) religiosity, (ii) guilt manipulation type, (iii) whether guilt was considered on a trait or a state level, and (iv) whether the pro-social act was directed at the victim or not (direct vs indirect pro-sociality). The pathways from moral transgression to pro-sociality in Fig. 7.1 demonstrate, in line with Chapter 3, that both guilt and anger are transgression-related emotions, and thus they might be more interrelated than previously thought. The result showing the high relevance of both guilt and anger for a situation of transgression has provided a basis for investigating another pathway; specifically, the one demonstrating that guilt can be followed by anger and subsequently negatively affect pro-sociality (see Fig 7.1). This was investigated in Chapters 4 to 5 and mirrors closely a similar negative effect that has been observed in the literature previously. For example, consider people's reactions to persuasive messages (e.g., Dillard & Shen, 2005) that are sometimes based on installing guilt in their audience, but result in reactance rather than compliance with the message. These effects mimic decreased pro-sociality observed in response to guilt in this thesis. Below I describe the elements of the model in Figure 7.1 with more details.

7.1.3. The Role of Anger and Contextual Effects

The result demonstrating what an important role anger can play in a transgression (guilt-based) situation not only provided an explanation as to why transgression might not always lead to increased pro-sociality (see also Noel, 1973), but also highlighted the positive association between guilt and anger, and their joint relevance for a situation of transgression. In Chapters 4 and 5, however, it has been shown that guilt can lead to decreased pro-sociality, but only under certain conditions (e.g., depending on manipulative intent).

This thesis also provided more evidence that the positive effect of guilt on pro-sociality is mediated by feelings of self-blame and responsibility (e.g.,

Basil et al., 2006). Here, the evidence suggests that the relationship between guilt and responsibility (self-blame) is strong and not easily malleable, as the contextual factors investigated in this thesis (e.g., MI) did not affect the pathway between guilt and pro-sociality via these constructs. Such results might hint that the links aforementioned are evolutionarily rooted in the experience of guilt.

7.1.4. Manipulative Intent as Context for Decreased Pro-Sociality

Coming back to Chapter 5, the study presented here aimed to find more supporting evidence for the relationship between guilt, anger, and decreased pro-sociality, and examine more directly the role of unfairness (perception of manipulative intent). Manipulative intent (a context-related moderating factor) was manipulated within the blood donation appeals, and it was examined whether it would moderate the emotional mechanisms linking guilt with pro-sociality (via anger and responsibility). Donation appeals were chosen as a context in this chapter, as they can be seen as representing the world outside the laboratory walls better than dyadic computer interactions (such were used in Chapter 4), and due to the fact that, as suggested above, charitable appeals can be easily seen as manipulative. This time, it was the responsibility (rather than self-blame, as in Chapter 4), whose mediating role was examined. Previous research has suggested such a mechanism (e.g., Basil et al., 2006), but has not considered the moderating role of manipulative intent experimentally. In this study, it was hypothesised that high manipulative intent present in the appeal would provide a context, where guilt would lead to decreased rather than increased pro-sociality, as the emotional mediating mechanism (anger and responsibility) would be affected. The results revealed that guilt led to increased pro-sociality with the mechanism relying on responsibility, for all MI conditions, suggesting that the link between guilt and responsibility is a strong one, not easily modifiable by contextual cues. However, it is also possible that the nature of the MI manipulation did not allow for the occurrence of the moderating effect. This stems from the fact that its moderating role for the pathway via anger was not clear.

The story for the mechanism leading to decreased pro-sociality via anger (see Figure 7.1) was not so simple, as it appeared significant only in the condition where participants were exposed to the appeal with low MI. This finding was against the prediction presented in this chapter, as low rather than high MI provided context for the occurrence of the mechanism via anger. It is possible, however, that certain limitations affected this result (e.g., see chapter 5). Nevertheless, it seems reasonable to say that the mechanism via anger takes place (as presented in Chapters 4 and 5), but the conditions of its occurrence need further investigation.

Manipulative intent seems to affect the occurrence of the mechanism via anger, however, it is possible that the perception of MI might not have worked in the way predicted in Chapter 5 (i.e., participants perceived higher level of MI, but were inoculated against its effects), or that MI perception might have been affected itself, for example, by person-related factors such as involvement in the cause. Such a surprising finding was reported in the literature previously though, as Hibbert et al. (2007) found a negative association between guilt and MI, but a positive one between MI and donation intention. Clearly, further research is required into the role of MI for guilt and pro-sociality.

Coming back to cause involvement, some more support for its role stems from the self-perception theory (Bem, 1965, 1967), which stresses that one's own behaviour (e.g., donating blood) might affect one's judgments, attitudes and beliefs in a way consistent with this behaviour. Thus, if someone donates blood, they might see this as a more important cause than someone who does not donate. Indeed, the importance of values and beliefs to explain the discrepancy in the effects of guilt has been highlighted in the literature previously (e.g., Kraus, 1995; Vaske & Donnelly, 1999; Verplanken & Holland, 2002). For example, one previous study has shown that there was a difference in the reactions of donors (involved in cause) and non-donors to an audio-visual public service announcement (LaVail, Anker, Reinhart, & Feeley, 2010), suggesting that cause involvement might indeed be an effective moderator of people's reactions to guilt-related context. It seems likely that people who are involved in the cause, and therefore regard it as important,

might react with less unintended reactions to a guilt-triggering situation than those who are not involved in the cause. Indeed, it was observed that for people with high concern (they might be considered as involved in the cause) guilt led to positive effects, but for those with low concern, it led to unintended effects (Wonneberger, 2017). Finally, involvement was deemed an important moderator of unintended reactions (such as reactance) in a recently published boomerang model, in the context of attitudes to low-carbon technologies (de Vries, 2017). All of the above suggests that the moderating role of the MI on the relationship between guilt and pro-sociality needs investigating further, particularly with the focus on some person-related factors that can affect one's MI perception, such as cause involvement.

7.1.5. Do Results on Pro-Sociality From the Lab Generalize to the Field?

Finally, the last part of the model presented in Figure 7.1, was investigated in Chapter 6, where a study aiming at investigation of the lab - field correspondence and the issue of generalisation in the pro-sociality domain was investigated, together with the role of cost/risk appraisal for pro-sociality and its probable links with trait guilt. It was demonstrated that pro-sociality does not create a single factor solution, and thus researchers should be more careful when generalising their results between lab and field.

Moreover, it became clear that pro-social behaviours studied in the labs might be considered less costly and risky by participants, suggesting that transposing the lab results to the behaviours seen in the real world might not be fully justifiable. What is studied in the labs are behaviours that do not cover the high cost/risk pro-social acts, such as saving someone's life, and thus the literature on pro-sociality is limited in this respect. The pro-social behaviours used in the studies presented in this thesis were also tapping into low and medium (e.g., DG, helping with a short study, sending a letter), rather than high-cost pro-social behaviours (e.g., donating an organ). Due to that, the generalisability of the findings presented in this thesis should not be expanded to high-cost pro-social acts. This limitation, however, opens the avenue for future investigations, which should examine whether the model of guilt-based pro-sociality presented in this thesis (see Fig. 7.1) applies to high-cost pro-

social acts as well. I presume that due to the high-cost of some pro-social acts, their links with guilt might not be operating in a similar mode as for those with lower cost, especially given that individuals can reach for other options of dealing with their guilt (e.g., self-punishment, alcohol use), which might be less costly when compared with a high-cost pro-social act. However, it might also be the case that, if no other option of dealing with one's guilt is available, even when the pro-social act is costly, there would be a higher likelihood of enacting such an act among those feeling guilty than those in the neutral state. Whether that is the case, need to be determined by future research.

Even though few studies included in the meta-analysis in Chapter 2 used pro-social acts that can be classified as high cost (e.g., donating blood: Darlington & Macker, 1966; donating bone marrow: Lindsey, 2005), these studies were based on the inclination to help rather than actual help. Therefore, one might question whether the same results would occur if the behavioural rather than attitudinal measures of pro-sociality were applied. I would claim that attitudinal measures in themselves involve less cost than measures of actual behaviours (i.e., it is easier to say that one would do something than actually doing it), which additionally stresses the importance of examining links between guilt and high-cost pro-social behaviour (not the intention) in future research.

One way to tackle this issue would be to create tasks that might seem closer in their cost/risk to the ones present in the real world. For example, by asking participants to exchange a painful experience, such as the ice cold pressor task with their partner. Exploring the usefulness of field studies might become another path to tackle this issue (e.g., by examining individuals who helped victims of mass tragedies, etc.). All in all, there is a clear need to study more costly pro-social behaviours in psychology than what has been done in the literature till now, as only this can open the avenue for understanding also the more costly forms of human pro-sociality. It is promising to say, though, that studies that try to use costly behaviours (and not relying on hypothetical scenarios, which is problematic: Vlaev, 2012) have started appearing in the literature (e.g., Lin, Tong, Lee, Low, & Gomes, 2016).

Second, this study also looked at the guilt-proneness and its effects on people's perception of cost and risk of helping behaviours, as it was hypothesised that such appraisals might underlie the link between trait guilt and pro-sociality. However, no relationship was found there. This suggests that perception of cost and risk, which are established factors that affect the likelihood of help (e.g., cost-benefit model: Piliavin et al., 1969), is not the mechanism linking trait guilt with increased pro-sociality. This study demonstrated, though, that such a mechanism might be at work for the link between agreeableness and pro-sociality. Nevertheless, future studies should investigate further what makes guilt-prone people more pro-social. Its effect on cost-risk appraisals can be ruled out (as demonstrated in Figure 7.1), but whether more emotional processes such as considering the level of guilt if not helping be more fruitful, awaits an answer. Future research will hopefully shed more light on this issue.

7.1.6. Literature Contributions

Taking the results of the studies presented in this thesis, it seems appropriate to say that guilt should not only be considered as an adaptive and beneficial emotion leading to increased pro-sociality, as it was evident that it possesses a darker side; specifically, the side leading to decreased pro-sociality. This finding shows that guilt, like other emotions, might lead to both adaptive and maladaptive (or less beneficial) outcomes depending on situational context. Such an understanding of guilt provides a fuller picture and does not neglect highly relevant links between guilt and anger in a situation of transgression. It also brings it closer to the understanding of other emotions, such as shame and pride, which have been shown to possess adaptive and maladaptive facets (e.g., authentic and hubristic pride: Tracy & Robins, 2007; endogenous versus exogenous shame: de Hooge et al., 2008).

The results presented in this thesis contribute mostly to the affective and pro-sociality areas of psychology, with additional insight for the methodological perspective. To reiterate, some of these contributions include a demonstration that guilt and anger are more interrelated than previously thought (see Figure 7.1), and thus consideration of their relative influences

should be taken into account in research. Additionally, the results presented in this thesis support the paradigm of emotions –specificity (e.g., Lindebaum & Jordan, 2012; Zeelenberg et al., 2008), demonstrating that only by going beyond the notion of general affect, can the study of emotions move forward and provide more nuanced understanding of emotional links to behaviour. Even though negative emotions might be strongly related to each other, and co-occur just like guilt and anger in the studies presented here, their influences are very different, and therefore by averaging them, the picture obtained would be rather blurry.

7.1.6.1. Dark Side of Guilt

By showing that guilt does not only lead to increased pro-sociality, this thesis provides additional support for the new and emerging view of guilt as not completely “good emotion” (Tangney, 1991). Just like pride, which has been shown to have adaptive (i.e., authentic pride) and maladaptive (i.e., hubristic pride) aspects (e.g., Carver, Sinclair, & Johnson, 2010; Tracy & Robins, 2014), or emotion regulation (e.g., Troy, Shallcross, & Mauss, 2013) where adaptiveness is context dependent, guilt also appears to have a good and a “darker” side. Previous research has started demonstrating this darker side, for example, by showing that guilt can lead to disadvantaging a third party in order to be pro-social towards one’s victim (de Hooze, 2012). The results of the studies (chapter 4 and 5) in this thesis add to this view, by showing that guilt (via anger) can lead to decreased pro-sociality, and thus question the purely pro-social role of guilt.

In doing so, these results shed more light on the fact that state and trait guilt are different phenomena, with the latter one being presented as clearly pro-social, ethical, and adaptive (e.g., Cohen et al., 2012; Tangney, Youman, & Stuewig, 2009), linked with values benefitting society like benevolence and universalism (Silfver, Helkama, Lonnqvist, & Verkasalo, 2008). The effects of state guilt seem to be more variable than trait guilt, likely leading to increased or decreased pro-sociality, depending on other contextual factors (Muris & Meesters, 2014). It is worth noting, however, that one of the most commonly used measures of trait guilt (i.e., TOSCA: Tangney et al., 1989) has been

criticised as being biased toward its adaptive nature and action (e.g., Giner-Sorolla et al., 2011; Luyten et al., 2002), and positively correlated with desirability bias (e.g., Abe, 2004; Tangney et al., 1996b). Thus, there might be a side of trait guilt that has not been discovered yet. Such a side might present more negative outcomes, for example, for one's behaviours or well-being. Some evidence for this can be taken from a recent study that showed that alcohol-dependent individuals are more prone to guilt (but not shame) than their counterparts (e.g., Grynberg, de Timary, Van Heuverswijn, & Maurage, 2017), suggesting that trait guilt might have a darker side as well. In the study above this darker side of trait guilt relied on being a risk factor for developing an addiction. Nevertheless, because it is not clear what is the mechanism of trait guilt link with pro-sociality, it is also difficult to predict how trait guilt can lead to negative outcomes. This reiterates the need for more studies (an effort in response to that was presented in Chapter 6) that look into this further (see also Graton & Ric, 2017). One thing that is clear is that appraisals of cost-risk do not mediate effects of trait guilt on pro-sociality. What is? That is a question for further inquiry.

7.1.6.2. The Relationship Between Guilt and Pro-Sociality Is Not Strongly Malleable

Additionally, this thesis contributes greatly to the literature by combining the evidence to date on the association between guilt and pro-sociality (Chapter 2) and examining potential moderators of this relationship. As demonstrated in Chapter 2, the guilt –pro-sociality link appeared to be relatively strong, and not subject to many moderating effects. This result seems to support the view of guilt as evolutionary adaptive emotion (e.g., Nesse & Ellsworth, 2009), with strong links with reconciliatory behaviours that can be used to repair and maintain relationships with others (e.g., Baumeister et al., 1994). However, the fact that this relationship was stronger for direct rather than indirect pro-sociality (chapter 2) suggests that guilt might be more relationship-focused (i.e., focused on repairing the relationship with the wronged person) when one has a chance to repay their wrongdoing. If that is not the case, then it is probable that other ways of dealing with guilt, such as looking for penance in church or self-punishment, might be more likely.

Indeed, the studies that were analysed in Chapter 2 showed that there is a positive and moderately strong link between guilt and self-punishment (especially if the direct repayment was not possible), supporting this claim.

The finding that the link between guilt and pro-sociality was weaker for samples from more religious countries needs replicating, as religiosity was estimated rather than measured. Nevertheless, this result seems to suggest that different behaviours other than pro-sociality might be used among more religious people to deal with one's guilt (e.g., praying, or attending mass) which would explain this moderating effect. Indeed, a recent study found that people induced to feel guilty expressed higher willingness to pray than those in the neutral mood (Hermann, Simpson, Lehtman, & Fuller, 2015). This finding also adds more support for the view that religious people are more helpful people is not that simple, and that sometimes, the opposite effect might appear. This would suggest that religiosity might be a more complex construct, just like guilt, and this should be taken into account in research. Nevertheless, following from this complex view of religiosity, it would not be as surprising to see that the link between guilt and pro-sociality might be varied when taking religiousness into the equation, for example, depending on the type of religiosity examined. This is supported by some previous studies, which have found different effects for religiosity and pro-sociality depending on context and type of religiosity (e.g., Preston, Ritter, & Ivan Hernandez, 2010). Similarly, some support for the moderating role of religiosity comes from a recent study showing that children from religious households were less pro-social than their counterparts (Decety et al., 2015). Religiosity then could be another moderating factor for the link between guilt and pro-sociality and requires further research attention.

7.1.6.3. Specific Emotions and Their Influences

This thesis highlighted the importance of investigating specific emotions rather than general affect, demonstrating the view that emotions of the same valence might affect human behaviour in varied ways (Chapter 3). Here, I showed that guilt and anger might arise in the similar context of transgression, but still influence the subsequent pro-social behaviour

oppositely. This demonstrates how important it is to examine specific emotions, and how valuable such an approach is.

There is a possibility that anger and responsibility (self-blame) could present similar effects for pro-sociality, without guilt being considered in the equation. However, this alternative hypothesis does not agree with the fact that in Chapter 4, effects of guilt at time 1 were measured before anger at time 2, suggesting a causal relationship between them. Similarly, in Chapter 5, guilt was manipulated with the blood appeal, and later on, its effects on one's responsibility were measured. Therefore, I would argue that the mediating links between guilt and both anger, and responsibility are supported by the data well.

It is crucial that future research keeps examining specific behavioural effects of specific emotions, but also that they embark on examining their relative influences, and other aspects related to them such as cognition. Indeed, very little is known about the effect of specific emotions, especially guilt, on other phenomena such as attention, which might be an important determinant of one's behaviour, such as pro-sociality (e.g., Gibbons & Wicklund, 1982; Rosenhan et al., 1981). For example, is it that the attention of guilty individuals is directed more on the opportunities of reparation, victim's wellbeing or one's own blame? Understanding how guilt affects other aspects of human existence might also shed more light into how different or similar specific moral emotions are but also help with more nuanced conceptualisations of specific emotions. As stated in the General Introduction, guilt and shame have often been contrasted against each other with the use of different theoretical approaches (e.g., private versus private emotion: Ausubel, 1955; Izard, 1977; Tangney et al., 2007), some of which did not find support in research (e.g., Tangney et al., 1994; 1996a). Examining such aspects as attention, beyond the behavioural aspects, might be a different approach to understanding what makes specific emotions unique, and what makes them similar.

7.1.6.4. Guilt and Shame: Similarities

Even though, as stated in the General Introduction, guilt and shame are seen as separate entities that lead to varied outcomes (e.g., Dearing et al., 2005), the results of this thesis suggest that they might be closer than previously thought. This similarity appears to stem from the fact that both guilt and shame seem to possess links with anger. Even though shame has been suggested as the one leading to anger (e.g., Tangney et al., 1992), this thesis has shown that under specific circumstances this association is also true for guilt. It needs highlighting, though, that this finding is relevant for the state rather than trait guilt, as previous research has consistently demonstrated that on trait level guilt is negatively linked to anger (e.g., Tangney et al., 1996b). The above claim fits well with other recent findings showing that shame, under certain circumstances (e.g., when the harm is more reparable), just like guilt, leads to pro-social and beneficial outcomes (e.g., de Hooge, Breugelmans, & Zeelenberg, 2008; de Hooge, 2014; Gausel et al., 2016; Leach & Cidam, 2015; Panagopoulos, 2010), adding more support to the notion of the similarity between guilt and shame when focusing on behavioural outcomes.

7.1.6.5. Guilt Appeals in Advertising

The key practical contribution of this thesis concerns organisations that use guilt-based appeals. The results suggest they need to consider whether guilt-based appeals trigger increased pro-sociality or whether they might result in anger and decreased pro-sociality. Therefore, even though as stated at the beginning of this chapter, guilt-based appeals might seem intuitively beneficial and valuable for organisations interested in influencing people's pro-sociality, they might be a mixed blessing. Even though previous research suggested that its extreme levels of guilt that lead to such negative effects (e.g., Coulter & Pinto, 1995; Jimenez & Yang, 2008; Pinto & Priest, 1991), here, it was shown that even moderate guilt might lead to decreased pro-sociality. Therefore, guilt-based appeals should be used with caution, or after introducing some strategies that might protect from unintended effects of decreased pro-sociality. The strategies of inoculation against MI, have been

investigated in the literature (e.g., Richards & Banas, 2015); maybe then, similar strategies could work for guilt-based techniques, such as charity appeals.

7.2. Avenues for Future Research

Even though this thesis provided findings that answered many questions present in the pro-sociality and affective literature, probably even more have been raised. This new questions require further investigation, which hopefully will be undertaken by researchers intrigued by the emotional underpinnings of pro-sociality, and the pro-sociality construct itself. Below, I present some topics that are clearly relevant to the results of this thesis, and could offer additional insight into the pro-social literature.

7.2.1. Mechanisms of Guilt-Based Pro-Sociality

This thesis offered new insight into the emotional underpinnings of human pro-sociality, by demonstrating that self-blame (and responsibility) seem to mediate the effects of guilt on increased pro-sociality, and that anger seems to mediate the effects of guilt on decreased pro-sociality. A few moderators of these relationships were examined (e.g., MI), but many have not been tackled, even though their role might be highly relevant. It was already mentioned that cause involvement might be a factor moderating the effects of guilt on pro-sociality, and even affect the perception of MI. There are some other person-related moderators, which also require further investigation. The potential role of person-related factors is supported by Muris and Meesters (2014), and some of those are presented below.

7.2.1.1. Gender Influences

Gender showed a non-consistent pattern of results in this thesis; that is, in some studies (Chapter 3) it was significantly related to pro-sociality, whereas in others (Chapter 4) it had no impact on pro-sociality. Also, the results of the meta-analysis (Chapter 2) seemed to add more support to the notion that when it comes to guilt and pro-sociality, gender does not play an important role. However, as there seems to appear situations where gender might have some influence, future research might consider what is specific

about situations that might trigger differences between males and females and their pro-social responses to guilt. One suggestion from this thesis is that in situations where help is solicited by a female such a difference might be found, especially if that help is based on monetary resources, which can be seen as a sign of status (e.g., Iredale & Van Vugt, 2012). However, a finding contrary to the one above was presented recently (van Rijn et al., 2017), showing that females donated significantly more money when exposed to guilt appeal, whereas males significantly less. The proposed explanation presented in the study by van Rijn et al. (2017) regarded males as being more prone to negative reactions when feeling manipulated, or females neglecting this feeling due to higher empathic concern. This claim seems closely related to the idea in this chapter, that cause involvement might protect against the effect of MI. Therefore examining whether trait empathy could be another moderator of the links between guilt and reduced pro-sociality (and linked to gender), with an attenuating effect, could provide additional insight for the relationships between guilt and pro-sociality. If indeed that is the case, then, inducing empathy before presenting guilt-based messages could be a way to increase pro-sociality (or at least in females), without the risk of reduced pro-sociality due to anger and feelings of being manipulated. Whether such manipulation would work for both males and females opens another line of inquiry.

7.2.1.2. Person-Related Influences

Future research might be interested in expanding the model presented in Figure 7.1, by examining the potential influences of person-related factors that might be relevant for determining the paths following from guilt to pro-sociality. In this thesis mostly context-related factors have been investigated. Therefore there is a gap in understanding the impact of person-related factors. The importance of such factors, for the mechanism of guilt, has been stipulated by Muris and Meesters (2014). Following from this, such person-related factors as anger-proneness, and guilt-proneness might be of special interest, as they should be linked to the likelihood of someone reacting with state emotions of guilt and anger (e.g., Rosenberg, 1998). Previous research has shown that anger-prone individuals are more likely to react in hostile and

aggressive ways (e.g., Deffenbacher, Deffenbacher, Lynch, & Richards, 2003; Ramirez, Fujihara, & van Goozen, 2001, Tafrate, Kassino, & Dundin, 2002) and to present more negative appraisal biases (e.g., other-blaming: Hazebroek, Howells, & Day, 2001), suggesting that for them, the pathway via anger to decreased pro-sociality might be more likely. Anger-proneness could also explain why males have been found to react more negatively to guilt induction (i.e., van Rijn et al., 2017), as generally, they are more anger-prone than females (e.g., Kucharska-Newton, Williams, Chang, Stearns, Sueta, Blecker, & Mosley, 2014). Similarly, women have been found to use wider strategies to cope with anger, and seem more likely to use anger diffusion strategies (such as talking to a third party rather than retaliate) than males (e.g., Campbell & Muncer, 2008; Linden et al., 2003), potentially implicating why females (or people with low anger-proneness, or adaptive anger coping) might react more positively (i.e., with increased pro-sociality or compliance) to guilt induction.

Additionally, a similar construct, to anger-proneness, specifically revenge motivation, might also prove explanatory for the different reactions to guilt induction. Indeed, a recent study has shown that proneness to revenge rather than anger-proneness, explained differences in aggression between males and females (i.e., Wilkowski, Hartung, Crowe, & Chai, 2012). Whether this construct proves useful as a moderator of the model presented in this thesis (Chapter 4, 5) waits for an answer.

In reverse, it is highly likely that guilt-proneness might offer a protective role against the reduced pro-sociality due to anger. Guilt-proneness might also offer an explanation as to why in the study by van Rijn et al. (2017), females were more pro-social when exposed to guilt induction compared to men. This might be because females are found to be more guilt-prone than men (e.g., Cohen, Wolf, Panter, & Insko, 2011; Lutwak & Ferrari, 1996), with guilt –proneness reflecting a motivation for repayment (e.g., Cohen et al., 2012), and offering a potential protection from anger – reduced pro-sociality link. Indeed, a recent study has shown that high guilt proneness protects against anger-aggression link to occur among children (i.e., Colasante, Zuffiano, & Malti, 2015). Therefore, there is already some evidence suggesting that guilt-proneness might protect against reduced pro-

sociality in the face of anger, stemming from guilt induction. Nevertheless, as far as I am aware, there are no studies that would have undertaken a research path looking into the effect of trait guilt onto state guilt and pro-sociality. This reiterates the need for examining the interaction of the effects of trait and state guilt as, in such a way, the understanding of guilt might be enhanced.

7.3. Potential Model Expansion: Health Promotion and Personal Relationships

Even though pro-sociality was the focus of this thesis, and it was used as the outcome variable, as presented in Figure 7.1, it seems highly likely that the same emotional mechanisms (via anger, and self-blame/responsibility) might apply to other contexts, for example, health advertising or interpersonal relationships. A recent study has already demonstrated that effects of guilt induction on a romantic partner depend on the attachment style of its target (i.e., Jayamaha et al., 2016). This finding provides, in a way, some support for the crucial role of considering moderators when studying the effects of guilt. Similarly, previous research has suggested that guilt-based communications sometimes (but not always: e.g., Xu & Guo, 2017) backfire, and result in reactance from the audience rather than compliance (e.g., Bessarabova et al., 2015), which seems to mimic the results presented in this thesis. Therefore, it would be of great importance to examine whether the model presented in this thesis (Chapter 5) also expands to the health field. Specifically, whether guilt-based health communications lead to both increased and decreased compliance with the message, depending on the person-related and contextual circumstances. If that is the case, future research could strive to design adverts that take into account cause involvement of its audience, and potentially obtain increased rather than decreased compliance with a guilt-based health message. Studying the effects of guilt-based health communication appears especially crucial in the relatively new discipline of health promotion (Kreps, 2015), as its effects should be understood well, before being used on a wide scale. The cost of causing a reaction opposite to the intended one bears too high of a cost in the health context, and thus, requires further research.

7.4. Individual Versus Collective Moral Emotions

There is also scope for inquiry regarding the mechanisms presented in this thesis, but with regard to the collective (i.e., group-based) rather than individual emotions. As collective guilt reflects an emotion stemming from a collective fault, it is possible that the mechanisms presented for individual guilt might also be true for collective guilt, but possibly with a different strength. It would be therefore interesting to examine whether in the context of collective guilt, decreased rather than increased pro-sociality might occur, and what conditions (e.g., high manipulative intent) would determine such an occurrence. The possibility of different mechanisms underlying effects of collective guilt is also likely, and it might stem from the fact that, in contrary to the differential effects of individual guilt and shame, the collective version of shame and in-group anger, but not guilt has been found to lead to reparation (e.g., Allpress, Barlow, Brown, & Louis, 2010). This suggests that the relationships between collective emotions might not be equivalent to those among individual state emotions. There are, however, studies that demonstrated that both collective guilt and shame could lead to reparation, but via different mechanisms (e.g., Brown & Cehajic, 2008). This suggests that effects of collective guilt are not well understood yet, opening the possibility of further investigations.

7.5. Emotions in Social Context

In 2010 a plea for including social interactions in emotion research was published (Fischer & van Kleef, 2010). Where it was possible, this plea was followed in the current thesis (e.g., in Chapter 4, participants believed they were playing with a partner; in Chapter 3, the experimenter could be seen as providing social context). This plea seemed to follow from the social-functional approach to emotions (e.g., Keltner & Haidt, 1997; Keltner & Kring, 1998) emphasising interpersonal characteristics and importance of emotions, and presenting them as: “*multichannel responses that enable the individual to respond adaptively to social problems*” (ibidem, p.321). However, some studies, still do not provide the social context for their investigations, which needs addressing. As suggested by Baumeister et al.

(1994) guilt functions to protect social relationships, and therefore, when studying effects of interpersonal guilt, providing such a context seems crucial. There is of course scope for investigations directed at guilt and its indirect effects, especially as those are of interest to charity organisations. But as suggested above, interpersonal guilt requires social context, especially that as shown in this thesis its effects, seem context-dependent (at least for decreased pro-sociality).

7.6. Concept of Pro-Sociality

The results of this thesis demonstrated that pro-sociality construct is more complex than what literature suggests, and how it is used in various studies. Therefore, future research needs to focus on understanding human pro-sociality in a more detailed and specific way. Due to the fact that behaviours used in the labs do not tap into all of the forms of pro-sociality (especially the high-cost ones), more efforts should be exerted into designing methods that would, within ethical guidelines, provide contexts that would mimic such behaviours.

Secondly, the data in this thesis suggested that pro-social behaviours might be affected differently by emotional mechanisms depending on their type, highlighting the need to investigate the unique forms of human pro-sociality more. Why the decision to give to a charity and how much to give are differently predicted by emotions and other factors is an intriguing question, providing the answer to which might help with understanding pro-social behaviours more. This finding seems particularly interesting, as a similar result has been shown before (i.e., Nettle et al., 2013), in a way, strengthening its value. One question, however, remains: What determines which form of pro-sociality will be affected by guilt, and which might be affected by other factors? Such factors might include the salience of social and moral norms, overriding the effects of guilt. Indeed, previous studies have shown that norms affect one's pro-sociality (e.g., Goldstein, Cialdini, & Griskevicius, 2008). Hopefully, future research will provide answers to the question above.

Lastly, research has started to appreciate that pro-social behaviour comes in distinct forms (e.g., Bockler, Tusche, & Singer, 2016; Dunfield et

al., 2011; cf. Wilhelm et al., 2017). Based on the above, it seems that there is a need for further research into what makes these forms distinct and what is meaning of that differentiation for the pro-sociality field: Should we go beyond the concept of general pro-sociality, just like the affective field has? Previous research has shown that people might be more willing to help if asked for time rather than money (e.g., Liu & Aaker, 2008), suggesting that indeed, understanding different types of pro-sociality might be beneficial, as it could provide greater insight into what factors affect each type of pro-sociality the most. It is highly possible that certain types of people would be more likely to behave in certain pro-social ways, but not all of them. Future research should address this.

7.7. Taking State Emotions Outside the Laboratory

The area of research that has been neglected by the emotions literature seems to be the study of naturally occurring emotional states. The reason for this might be as simple as the fact that it is rather difficult to observe naturally occurring emotions (especially guilt that does not possess a specific facial expression linked to it: Izard, 1991) and their effects on one's behaviours. However, the value of experimental research lies in being generalisable to the outside world and its phenomena, which was stressed in Chapter 6. Therefore, there is a clear need for such field research in the affective literature, which seems to be also the case for other disciplines, as other fields have started encouraging the use of field research (e.g., List & Price, 2016). The lab-field gap in the literature is especially important for the studies presented in this thesis (Chapters 3-5) as all of them used manipulations that might not necessarily be equivalent to situations present in real life. However, as noted before, there are some recent studies that show that more real-life guilt manipulations, for example, in a romantic relationship, might also bring negative outcomes (Overall et al., 2016). This suggests that the effects found in this thesis are likely to apply to situations outside of the lab. In this thesis, the study presented in Chapter 5 was mimicking real-life the most, as a guilt-inducing stimulus was an appeal which can be seen as commonplace in daily

life, but still, there is a need for more research, with focus on naturally occurring emotions and their effects.

7.8. Conclusions

The emotion of guilt has been seen as one that is crucial for driving human pro-social acts. Nevertheless, this thesis has shown that the true story is more complex than that. Even though Tangney et al. (1992, p. 674) have suggested that *“an individual in the midst of the guilt experience may be more likely to view this affective response as justified and thus own the negative consequences”*, as the experience of guilt should be *“... less likely to invoke defensive manoeuvres akin to externalisation of blame and other-directed anger”*. It seems that under certain circumstances, for example, when guilt is seen as unjustified or being the effect of manipulation, it can lead to negative rather than positive outcomes, because of anger. Therefore, it seems that, as with other emotions, guilt possesses two sides, one linked with increased, and one linked with decreased pro-sociality. Self-blame and responsibility seem to underlie the positive effect of guilt, whereas anger underlies the negative effect. The occurrence of reduced pro-sociality in the face of guilt is dictated by context-related factors, such as the level of manipulative intent present in the context. All of this suggests that the use of guilt as a manipulation technique, for example, to attract funds by a charity, might be a risky approach. However, the risk of producing the negative effect of guilt in pro-social context might be decreased by the informed choice of the level of MI present in a guilt-based context (or use of inoculation strategies). More research is required into this novel approach to studying pro-social effects of guilt, especially ones that can help disentangle the conditions that might favour increased rather than decreased pro-sociality in the face of guilt, and expand them to more intimate relationships, such as friendship or family, and health domain. More attention also needs to be directed at higher cost pro-social acts, as only then our understanding of pro-sociality and its links with guilt will be more intricate. Hopefully, future research will enhance the understanding of the complex ties between guilt and pro-sociality that has emerged in this thesis.

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Appendices

Appendix 1.1 Coding of the moderators for the studies included in the meta-analysis.

Study	Sex ^a	Objective- ness ^b	Pro-sociality type ^c	Guilt type ^d	Guilt manipulation type ^e	Guilt measure ^f	Manipulation Check ^g	Study population ^h	Pro-sociality target ⁱ	Known vs. unknown individual ^j	Direction of pro-sociality ^k
Agnihotri, Krush, Singh (2012)	x	0	3	2	x	4	0	1	1	1	2
Ahn, Kim, Aggarwal (2014) study 2	0	0	3	1	x	1	0	0	2	x	0
Amodio, Devine, Harmon-Jones (2007)	f	1	3	0	6	0	1	0	1	0	1
Bamberg, Hunecke, Blobaum (2007)a	n	0	3	1	x	0	0	1	2	x	0

Bamberg, Hunecke, Blobaum (2007)b	0	0	3	1	x	0	0	1	2	x	0
Basil, Ridgway, Basil (2006) s1	x	0	0	0	2	2	1	0	0	x	0
Basil, Ridgway, Basil (2006) s2	n	1	0	0	2	2	1	0	0	x	0
Basil, Ridgway, Basil (2008)	0	0	0	0	2	2	1	1	0	x	0
Boster, Mitchell, Lapinski et al. (1999) Carlo,	n	0	1	0	3	0	1	0	1	1	1
McGinley, Davis et al. (2012)	0	0	3	2	x	4	0	0	x	x	2
Carlsmith, Gross (1969) s1	m	0	1	0	6	x	2	0	1	1	0
Carlsmith, Gross (1969) s2	m	0	1	0	6	x	2	0	1	1	1
Chang (2010)	0	0	3	1	x	0	0	1	2	x	0

Chang (2014)a s1	0	0	0	0	2	1	1	0	0	x	0
Chang (2014)a s2	0	0	0	1	0	1	1	0	0	x	0
Chang (2014)a s3	0	1	0	1	0	1	1	0	0	x	0
Cialdini, Darby, Vincent (1973)	x	0	1	0	5	x	2	0	1	1	1
Cristofari, Guitton (2014)	n	0	3	0	x	1	0	2	1	0	0
Cryder, Springer, Morewedge (2012) s1	n	0	0	1	0	0	1	1	2	x	0
Cryder, Springer, Morewedge (2012) s2	n	0	0	0	6	2	1	1	2	x	0

Cryder, Springer, Morewedge (2012) s3	0	0	0	1	0	0	1	0	2	x	0
Cryder, Springer, Morewedge (2012) s4	n	0	0	1	0	0	1	1	2	x	0
Cryder, Springer, Morewedge (2012) s5	n	0	0	1	0	0	1	1	2	x	0
Culiberg (2014)	0	0	3	1	x	0	0	1	2	x	0
Cunningham, Steinberg, Grev (1980) s1	n	1	1	0	5	x	2	1	1	0	1
Cunningham, Steinberg, Grev (1980) s2	n	1	0	0	5	x	2	1	0	x	2

Dahl, Honea, Manchanda (2005)	n	0	3	1	0	0	1	0	1	0	0
Darlington, Macker (1966)	f	0	2	0	4	x	2	0	2	x	1
De Hooge (2012) s1	x	0	0	1	0	0	1	1	1	1	0
De Hooge (2012) s2	n	0	0	1	0	0	1	0	1	1	0
De Hooge (2012) s3	0	0	0	1	0	0	1	0	1	1	0
De Hooge (2012) s4	0	0	0	1	0	0	1	0	1	1	0
De Hooge (2012) s5	n	0	1	0	4	0	1	0	1	1	0
De Hooge, Nelissen, Breugelmans et al. (2011) pilot1	x	1	0	1	1	0	1	1	1	0	0

De Hooge, Nelissen, Breugelmans et al. (2011) pilot2	x	1	0	1	0	0	1	0	1	0	0
De Hooge, Nelissen, Breugelmans et al. (2011) pre- pilot	x	1	0	1	0	0	1	2	1	0	0
De Hooge, Nelissen, Breugelmans et al. (2011) s1	n	1	0	1	0	0	1	0	1	0	0
De Hooge, Nelissen, Breugelmans et al. (2011) s2	n	1	0	0	4	0	1	0	1	0	0
De Hooge, Nelissen, Breugelmans et al. (2011) s3	n	1	0	0	4	0	1	0	1	0	0

De Hooge, Nelissen, Breugelmans et al. (2011) s4	n	0	1	1	1	0	1	0	1	0	0
De Hooge, Zeelenberg, Breugelmans (2007) s1a	0	1	0	1	1	0	1	0	1	0	1
De Hooge, Zeelenberg, Breugelmans (2007) s1b	0	1	0	1	1	0	1	0	1	0	1
De Hooge, Zeelenberg, Breugelmans (2007) s2a	0	0	3	1	1	0	1	0	x	x	2
De Hooge, Zeelenberg, Breugelmans (2007) s2b	0	0	3	1	1	0	1	0	x	x	2

Dembroski, Pennebaker (1972) s1	f	1	0	0	2	x	2	1	0	x	0
Dembroski, Pennebaker (1972) s2	x	0	3	0	2	x	2	1	0	x	0
Dunlop, Lee, Ashton, Butcher, Dykstra (2015)	x	0	3	2	x	4	0	0	x	x	1
Elgaaied (2012)	n	0	1	1	x	0	0	1	2	x	0
Freedman, Wallington, Bless (1967) s1	m	0	1	0	3	x	2	0	1	1	1
Freedman, Wallington, Bless (1967) s2	f	0	1	0	5	x	2	0	1	1	2
Freedman, Wallington, Bless (1967) s3a	f	0	1	0	5	x	2	0	1	1	0

Freedman, Wallington, Bless (1967) s3b	f	0	1	0	5	x	2	0	1	1	0
Ghorbani, Liao, Caykoylu et al. (2013)	n	0	0	1	0	2	1	0	1	0	0
Gino, Pierce (2009) s1	0	1	3	0	6	x	0	0	1	0	1
Gino, Pierce (2009) s2	n	1	3	0	6	x	0	0	1	0	1
Gneezy, Imas, Madarasz (2014)s1a	x	1	0	0	6	x	2	0	0	x	1
Gneezy, Imas, Madarasz (2014)s1b	x	1	0	0	6	x	2	0	0	x	1
Gneezy, Imas, Madarasz (2014)s2	x	1	0	0	6	x	2	0	0	x	1
Graton, Ric, Gonzalez (2016)	n	0	3	1	1	0	1	0	2	x	2

Harris, Benson, Hall (1975)	n	1	0	x	x	x	0	1	0	x	1
Hibbert, Smith, Davies et al. (2007)	0	0	0	0	2	1	2	1	0	x	0
Ilies, Peng, Savani et al. (2013)a	n	0	3	0	6	1	1	1	2	x	0
Ilies, Peng, Savani et al. (2013)b	n	0	3	0	6	1	1	1	2	x	0
Johnson, Danko, Darvill et al. (1989)a	n	0	3	2	x	4	0	1	x	x	2
Johnson, Danko, Darvill et al. (1989)b	n	0	3	2	x	4	0	1	x	x	2
Katz, Glass, Lucido et al. (1979) s1	m	0	1	0	6	0	1	0	1	1	0

Katz, Glass, Lucido et al. (1979) s2a	f	0	1	0	6	0	1	1	1	1	0
Katz, Glass, Lucido et al. (1979) s2b	f	0	1	0	4	0	1	1	1	1	0
Katz, Glass, Lucido et al. (1979) s3	0	0	1	0	4	x	2	1	1	1	0
Ketelaar, Au (2003) s2	n	1	0	0	x	x	0	0	1	0	0
Konecni (1972)	m	1	1	0	x	x	0	1	1	0	1
Konoske, Staple, & Graf (1979)	n	0	1	0	5	x	2	0	1	1	2
Lelieveld, Van Dijk, Van Beest et al. (2012) s1	n	1	0	1	x	0	0	0	1	0	0
Lelieveld, Van Dijk, Van Beest et al. (2012) s2	n	1	0	1	x	x	0	0	1	0	0
Lindsey (2005)	n	0	2	0	2	2	1	0	0	x	0

Lu, Schuldt (2015)	0	0	3	1	1	2	1	1	2	x	1
Lwin, Phau (2011)	n	1	0	0	2	x	2	0	0	x	0
McKay, Herold, Whitehouse (2013)	n	1	0	1	1	x	2	0	0	x	1
McMillen (1971)	m	0	1	0	3	x	2	0	1	1	0
McMillen, Austin (1971)	m	0	1	0	3	x	2	0	1	1	0
Millar (2002)	n	1	1	0	6	2	1	2	1	1	0
Morgan, King (2012)	n	0	3	2	x	0	0	1	2	x	0
Nelissen, Leliveld, van Dijk et al. (2011)	n	1	0	1	1	0	1	0	1	0	1
s2 Noel (1973)	f	0	1	0	6	x	2	0	1	1	1
O'Malley, Andrews (1983)	x	0	2	1	1	1	1	0	0	x	1

Onwezen, Antonides, Bartels (2013)	0	0	3	1	x	1	0	1	2	x	0
Onwezen, Bartels, Antonides (2014)a	0	0	3	1	x	2	0	1	2	x	0
Onwezen, Bartels, Antonides (2014)b	0	0	3	1	x	2	0	1	2	x	0
Park, Meyvis (2012) s1a	x	0	0	1	0	0	1	2	0	x	1
Park, Meyvis (2012) s1b	x	1	0	1	0	0	1	2	0	x	1
Park, Meyvis (2012) s2	x	0	0	1	0	0	1	0	0	x	1
Park, Meyvis (2012) s3	x	0	0	0	6	0	1	0	0	x	1
Park, Meyvis (2012) s4	x	0	0	1	0	0	1	0	0	x	1

Park, Meyvis (2012) s5	x	0	0	1	0	0	1	0	0	x	1
Park, Meyvis (2012) s9	x	0	0	1	0	0	1	0	0	x	1
Polman, Ruttan (2012)	x	1	0	1	1	2	1	0	0	x	1
Rawlings (1968)	f	1	3	0	4	x	2	0	1	0	1
Regan (1971)	n	1	0	0	4	x	2	0	0	x	1
Regan, Williams, Sparling (1972)	f	1	1	0	5	x	2	1	1	0	1
Rees, Klug, Bamberg (2015)	x	0	3	1	0	1	1	0	2	x	0
Riek (2010)	n	0	3	1	1	0	1	0	1	1	0
Riek, Luna, Schnabelrauch (2014)	n	0	3	1	1	0	1	0	1	1	0
Riordan, Dunaway, Haa, James, Kruge (1984)	x	0	1	0	3	x	2	0	1	1	1

Rotella,												
Richeson (2013)	n	0	3	0	6	0	1	0	1	0	2	
s1												
Schwartz (1970)	n	0	2	0	6	x	2	1	0	x	0	
Schwartz, David												
(1976)	m	1	3	0	4	x	2	0	1	1	0	
Silverman,												
Rivera, Tedeschi	f	1	1	0	3	x	2	0	1	1	0	
(1979) s1												
Silverman,												
Rivera, Tedeschi	f	0	1	0	3	x	1	0	1	1	1	
(1979) s2												
Smith,												
Haugtvedt, Petty	x	0	1	1	x	x	0	0	2	x	0	
(1994)												
Steenhaut, van												
Keenhove	n	0	0	1	x	x	0	0	1	0	0	
(2005) s2												
Steenhaut, van												
Keenhove	n	0	3	1	0	2	2	1	0	x	0	
(2006) s1												

Steenhaut, van												
Keenhove	x	0	3	1	0	2	1	0	0	x	0	
(2006) s2												
Torstveit,												
Sütterlin, Lugo	n	0	3	2	x	4	0	2	x	x	2	
(2016)												
Wang (2011)	n	0	2	1	x	0	0	0	0	x	0	
Xu, Begue,												
Bushman (2012)	0	1	0	0	4	0	1	1	0	x	1	
Xu, Begue,												
Bushman (2014)	0	1	1	1	1	0	1	1	1	1	1	
Xu, Begue,												
Sauve, Bushman	n	1	0	0	4	0	1	0	1	0	1	
(2014)												
Yu, Hu, Hu,												
Zhou (2014)	0	1	3	0	4	0	1	0	0	x	0	
Zemack-Rugar,												
Bettman,												
Fitzsimons	x	0	1	0	6	0	2	0	1	1	1	
(2007) s2a												

Zemack-Rugar,												
Bettman,	x	0	1	0	6	0	2	0	1	1	1	
Fitzsimons												
(2007) s2b												

Note. Letters a, b near the study names indicate use of different samples.

Code interpretation: a: 0 = balanced; f = 100% female; m = 100% male; n = other; x – no data; b: 0 = subjective; 1 = objective; c: 0 = money, 1 = time, 2 = human tissue, 3 = other; d: 0 = concurrent, 1 = non-in-situ, 2 = trait; x = no data; e: 0 = scenario, 1 = autobiographical recall, 2 = charity appeal, 3 = withholding information from researcher, 4 = failing other person, 5 = disrupting something (i.e., camera, index cards, experiment), 6 = other; f: 0 = pure guilt, 1 = guilt + shame, 2 = guilt +remorse +regret, 4 = guilt-proneness; g: 0 = not needed, 1 = present, 2 = absent/unsuccessful; h: 0 = students, 1 = non-students, 2 = other; i: 0 = organization, 1 = individual, 2 = humankind/nature; j: 0 = unknown, 1 = known; k: 0 = direct, 1 = non-direct, 2 = other.

Appendix 3.1 The earning task used in study in chapter 3, and the donation decision form.

The money earning task (Crossing E's) used in Chapter 3 (an exemplar) for the groups earning money for themselves (Part 1A, 1B) and those earning for others (Part 2A, 2B), and the selection of charities presented to participants to choose from.

Part 1A. Earn Some Money for Yourself

This section of this study is a simple task. Your job is to cross out as many letter 'E's as possible in the attached article, 'Carpet'. For each 'E' you cross out you will earn 1p. However, if you cross out any other letters 1p will be deducted. You will have 3 minutes to cross as many out as you can.

At the end of the task you will add up the total number of 'E's you have crossed out and the number of non-Es crossed out. Please write these numbers in the box titled 'Final Score' on the front page of the text.

Please do not begin until instructed to do so. Good luck!

Carpet

A carpet is a [textile floor covering](#) consisting of an upper layer of "pile" attached to a backing. The pile is generally either made from wool or a manmade fibre such as [polypropylene](#), [nylon](#) or [polyester](#) and usually consists of twisted tufts which are often heat-treated to maintain their structure.

The widespread popularity of carpets has inspired stories of the [Magic carpet](#), a legendary carpet that can be used to transport persons who are on it instantaneously or quickly to their destination.

The term "carpet" comes from Old Italian *carpita*, "carpire" meaning *to pluck*. The term "carpet" is often used interchangeably with the term "rug". Some define a carpet as stretching from wall to wall. Another definition treats rugs as of lower quality or of smaller size, with carpets quite often having finished ends.

Historically the word was also used for table and wall coverings, as carpets were not commonly used on the floor in European interiors until the 18th century, with the opening of trade routes between Persia and Western Europe.

Woven

The carpet is produced on a [loom](#) quite similar to [woven fabric](#). The [pile](#) can be [plush](#) or [berber](#). Plush carpet is a cut pile and [Berber carpet](#) is a loop pile. There are new styles of carpet combining the two styles called cut and loop

carpeting. Normally many coloured yarns are used and this process is capable of producing intricate patterns from pre-determined designs (although some limitations apply to certain weaving methods with regard to accuracy of pattern within the carpet). These carpets are usually the most expensive due to the relatively slow speed of the manufacturing process. These are very famous in India, Pakistan and Arabia

Needlefelt

These carpets are more technologically advanced. Needle [felts](#) are produced by intermingling and felting individual [synthetic fibers](#) using barbed and forked needles forming an extremely durable carpet. These carpets are normally found in the contract market such as hotels etc. where there is a lot of traffic and are extensively found in Istanbul and other Islamiyah countries

Knotted. On a knotted pile carpet (formally, a supplementary weft cut-loop pile carpet), the structural [weft](#) threads alternate with a supplementary weft that rises at right angles to the surface of the [weave](#). This supplementary [weft](#) is attached to the warp by one of three knot types (see below), such as [shag carpet](#) which was popular in the 1970s, to form the [pile](#) or [nap](#) of the carpet. Knotting by hand is most prevalent in [oriental rugs](#) and carpets. Kashmir carpets are also hand-knotted.

Part 1B.

You now can decide if you want to donate some, none or all of this money to a charity

If you decide to donate some, none or all of this money you will first be required to choose from the list of charities, the one which one you feel you would be most willing to donate money too. Please tick the appropriate box next to the charity.

Here is a list of 10 charities you will get the option to donate some, none or all of the earned money you earn to your chosen charity. Please circle the one you would choose to contribute too.

Please choose the charity that you want to receive your donation. Pick one of the following charities:

- Amnesty International
- UNICEF
- British Heart Foundation
- Help the aged
- Cancer Research UK
- Oxfam
- Asthma UK
- Barnardos
- Green Peace
- RSPCA

Part 2A.

In the first section of this task you will be required to choose from the list of charities attached which one you feel you would be most willing to donate money too. Please tick the appropriate box next to the charity. In the next part of the study you'll do a task where you can earn some money that you'll be able to donate to a chosen charity.

Here is a list of 10 charities you will get the option to donate some, none or all of the earned money you earn to your chosen charity. Please circle the one you would choose to contribute too.

Please choose the charity that you want to receive your donation. Pick one of the following charities:

- Amnesty International
- UNICEF
- British Heart Foundation
- Help the aged
- Cancer Research UK
- Oxfam
- Asthma UK
- Barnardos
- Green Peace
- RSPCA

Part 2B. Raise Money for Your Charity

The second section of this study is a simple task. Your job is to cross out as many letter 'E's as possible in the attached article, 'Carpet'. For each 'E' you cross out you will earn 1p for your chosen charity. However, if you cross out any other letters 1p will be deducted. You will have 3 minutes to cross as many out as you can.

At the end of the task you will add up the total number of 'E's you have crossed out and the number of non-Es crossed out. Please write these numbers in the box titled 'Final Score' on the front page of the text.

Please do not begin until instructed to do so. Good luck!

Carpet.

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Historically the word was also used for table and wall coverings, as carpets were not commonly used on the floor in European interiors until the 18th century, with the opening of trade routes between Persia and Western Europe.

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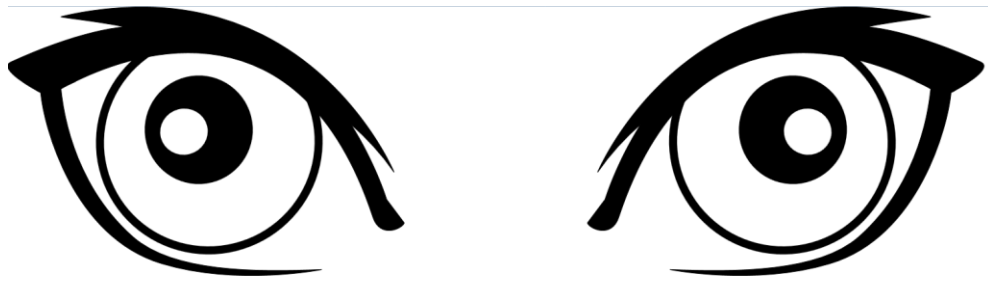
carpeting. Normally many coloured yarns are used and this process is capable of producing intricate patterns from pre-determined designs (although some limitations apply to certain weaving methods with regard to accuracy of pattern within the carpet). These carpets are usually the most expensive due to the relatively slow speed of the manufacturing process. These are very famous in India, Pakistan and Arabia

Needlefelt

These carpets are more technologically advanced. Needle [felts](#) are produced by intermingling and felting individual [synthetic fibers](#) using barbed and forked needles forming an extremely durable carpet. These carpets are normally found in the contract market such as hotels etc. where there is a lot of traffic and are extensively found in Istanbul and other Islamiyah countries

Knotted. On a knotted pile carpet (formally, a supplementary weft cut-loop pile carpet), the structural [weft](#) threads alternate with a supplementary weft that rises at right angles to the surface of the [weave](#). This supplementary [weft](#) is attached to the warp by one of three knot types (see below), such as [shag carpet](#) which was popular in the 1970s, to form the [pile](#) or [nap](#) of the carpet. Knotting by hand is most prevalent in [oriental rugs](#) and carpets. Kashmir carpets are also hand-knotted.

Appendix 3.2 The image of eyes that was presented to participants on the printed questionnaires and the charity box, in the study, in chapter 3.



Appendix 4.1 Description of the cooperation game (Stroop task) used in Chapter 4, with screenshot examples.

Participants perform a cognitive task twice; their performance counts toward their own and the other player additional earning. Participants are informed about the task, and it is explained, that they both need to meet a required threshold in order to gain the additional bonus (less than 600ms reaction time on average and at least 85% accuracy). The goal of “doing the best as one can” is stressed, as it was shown that goals influence the intensity of emotions felt when succeeding or failing to attain a goal (Rebar & Conroy, 2013). Half of the participants are offered a practice trial before doing the bonus sessions, whereas the other half is not. This training/no training manipulation should help obtain varying levels of emotions of guilt/anger that participants should feel after the game. If one of the subjects does poorly, then depending on the round, one of them does not receive the bonus money (i.e., £2). Participants are not informed, however that theirs and the second subject’s performance levels are predetermined (and that there is no second player). After one of the rounds, participants (apart from controls) are informed that they did not do well enough themselves, causing their partner to lose the bonus money, which should trigger guilt. At the end of the study participants are informed about the nature of this manipulation and the reason for it, which should neutralise any negative effects it can have.

It needs to be mentioned that the bogus feedback manipulation in a success/failure paradigm used in this study was applied before in various studies (e.g., de Hooge, 2012; Joosten, van Dijke, van Hiel, & De Cremer, 2014; Stroeber, Kempe, & Keogh, 2008). However, as the task used in the study of de Hooge (2012) was criticised as being too simple (Rebega, Apostol, Benga, & Miclea, 2012), suggesting that the bogus feedback was not strongly believable, this study uses a more difficult task, which should produce more valid results. The task itself cannot be too complex though, as failing in an easy task was the one to show the appearing of shame (e.g., in kids: Lewis, Alessandri, & Sullivan, 1992; in college students: Conroy, Willow, & Metzler, 2002). On the other hand, participants need to feel that they have control over

the task result, as feeling guilty requires a feeling of responsibility to be present (Furukawa, Tangney, & Higashibara, 2012). This is why, Stroop task (Stroop, 1935) was used, which is a measure of attention, which participants should feel like they possess control over, but because of its nature (i.e., conflicting stimuli), it is relatively easy not to do well on this task. In this task, participants are responding to a colour of the word that appears on the screen (e.g., red, green, blue) by pressing an appropriate button on the keyboard. Their reaction time is measured and accuracy. It is easy to make mistakes on some of the trials as they present incongruent stimuli (i.e., word “red” printed in green colour). The average reaction time and accuracy are measured. The scores required in this study are based on the results provided by two previous studies; one with adolescents (Hui Khng & Lee, 2014), which used Stroop task, and provided the information on average performance in this task (i.e., $RT_{congruent}=598ms$; $RT_{incongruent}=665ms$; $Accuracy_{congruent}=95\%$; $Accuracy_{incongruent}=82\%$). The second one (Davidson, Zacks, & Williams, 2003) was conducted with young people ($Mage=20.6$), which showed that on average the RT for both conditions was 587ms for congruent trial and 700ms for incongruent one, giving total average RT of 643.5ms. Below are the screenshots of instructions that participants see during the Stroop task, if in Practice condition. No practice condition looks the same apart from not having a practice session.

This is a game where you play with one other person.

- * There will be 2 rounds in this game and a practice session.

- * Your task is to respond to the colour of the ink in which a word is written and not the word itself. Words in three different colours will be displayed on the screen one after one.

- * We will measure your speed and % of correct responses

- * You and the other player can each earn £2 in one of the bonus rounds, but only if both of you perform well enough (i.e. both, if you are quicker than 600ms on average and correct at least 85% of the time).

If only one of you meets these requirements, no one gets the bonus in such a round.

In the pilot study we measured that 90% of people managed to do that. The outcome of this task was found to depend mostly on the amount of effort one puts in.

Press space to go to next screen.

Fig 4.1.1. Game instructions.

Before you start we want you to have a go at the game and practice a bit. This way you will be able to check your abilities on this task.

There will be 3 practice rounds of 20 words each and you will get feedback after each.

Then you will start the real game.

Press space to go to the next screen

Fig 4.1.2. Follow-up instructions for participants in the practice group.

Remember, your task is to respond to a colour of the ink a word was printed in.

Ignore the meaning of the word itself.

If the colour of the ink is:

blue - press "left" cursor key

red - press "right" cursor key

yellow - press "up" cursor key

Try to respond quickly and correctly.

Click space to start, if you are ready

Fig 4.1.3. Reminder of the responses required.



Fig 4.1.4. An example of a stimulus participants respond to.

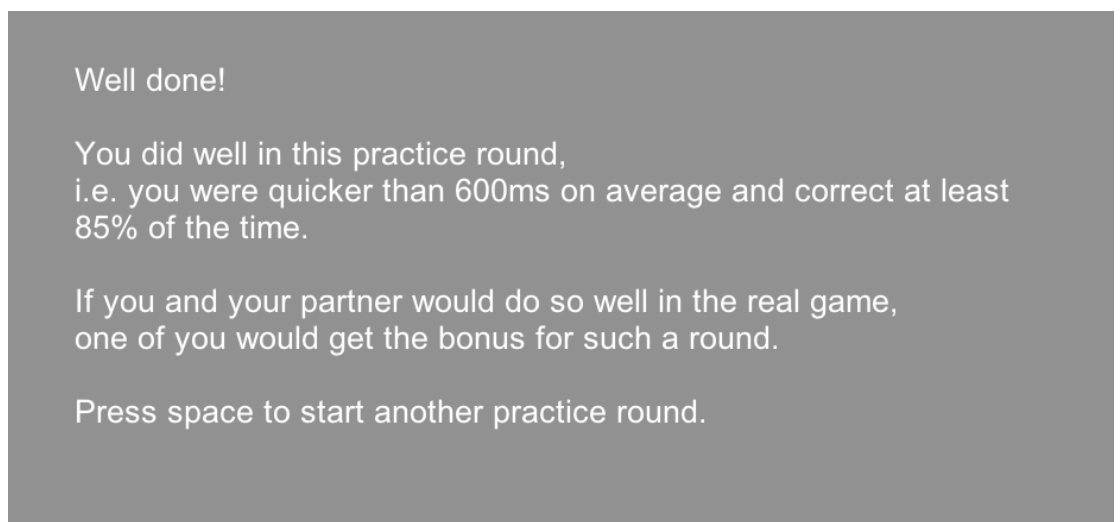


Fig 4.1.5. Feedback in the practice session.

Now you will start first round.

You and the player B will be
working toward YOUR BONUS in this round.

Remember that both you and the player B have to do well enough
FOR YOU to get the bonus in this round,
i.e. to be quicker than 600ms on average and at least 85% correct.

Respond with the following keys:
red colour of the ink - "right" cursor key
blue - "left" cursor key
yellow - "up" cursor key

This round counts toward YOUR bonus.

Now press space to start first round!
The game will start immediately,
so you better place your fingers on the arrows.

Fig 4.1.6. Instructions for the round where the performance counts toward participant's own bonus.

Well done!

Both you and the player B did well enough in this round-
you were both quicker than 600ms on average and at least 85% correct.

Because you both did well enough, and this round counted toward your bonus,
YOU are getting the bonus for this round which is £2.

Press space to go to next screen.

Fig 4.1.7. Positive feedback after a round.

Now you will start second round.
You and the player B will be
working toward HIS/HER BONUS.

Remember that both you and the player B have to do well enough
FOR HIM/HER to get the bonus in this round,
i.e. to be quicker than 600ms on average and at least 85% correct.

Respond with the following keys:
red colour of the ink - "right" cursor key
blue - "left" cursor key
yellow - "up" cursor key

This round counts toward THE PLAYER B's bonus.

Now press space to start second round!
The game will start immediately,
so you better place your fingers on the arrows.

Fig 4.1.8. Instructions for the round where the performance counts toward the partner of the participant.

Ooopppss..

It seems that you did not do well enough this time,
i.e. your speed or your accuracy were not good enough.

The player B did well enough in this round,
he/she was quicker than 600ms on average and at least 85% correct.

However, even though that the player B did well enough,
he/she will not receive the bonus for this round,
as you did not do well enough.

Click space to go to the next screen

Fig 4.1.9. Negative feedback after a round.

This is the end of the game.

In this game after the joint performance of you and the player B,
you earned bonus, i.e. £2

The player B did not get the bonus,
as your speed or correctness was not good enough in the round
that counted toward player B's bonus.

You will get your bonus at the end of the study, together with the
inconvenience allowance.

The player B will get the inconvenience allowance and no bonus.

Press space to finish this part
and raise your hand to indicate that to the experimenter.

Fig 4.1.10. Final screen, reminding what was the outcome in the game.

Appendix 6.1 The list of 64 initial helping behaviours (not full description).

Behaviours	
From the real world	From the lab
Letting in a queue	Helping a researcher who fell from a chair
Taking care of pets/plants	Addressing letters for researcher
Shopping for friend	Doing a 30-min survey
Agreeing to be interviewed	Sharing money in DG
Mailing a lost letter	Lending money in an experiment
Holding an elevator doors for someone	Helping a researcher with another study
Giving £2 to a stranger	Doing an online task for a researcher
Buying a coffee for someone	Distributing some leaflets for a researcher
Giving change to someone who asked	Choosing M&M's instead of chilli sauce for second participant
Pushing a car that has problems starting	Doing a cold pressor task for a charity
Carrying some parcels for someone	Helping researcher who fell from a ladder
Helping someone with a flat tire	Being study participant
Putting someone's luggage on a shelf	Picking up pencils
Opening doors for someone	
Charity donation	
Donating clothes/goods	
Volunteering for a charity	
Buying charity cards	
Charity box donation	
Charity shopping	
Giving directions	
Helping someone at work	
Telling the time	
Lending something to a neighbour	

Offering seat in a bus
Lending a mobile phone
Making a call for a deaf person
Donating food
Helping lost kid in a store
Saving someone's life
Helping an unconscious person
Helping someone who fell down
Clutching someone's chest
Donating blood
Donating organ
Registering as bone marrow donor
Keeping an eye on someone's
belongings
Working past your shift to help
someone
Covering for a workmate
Stretching the truth for someone
Pointing out cashier's error
Mailing back wallet that you found
Alerting someone that they dropped
something
Walking someone through a
dangerous area
Breaking up a fight
Picking up a hitchhiker
Mailing a letter for someone
Returning a wallet/documents
Helping someone to cross the street
Helping a kid with a task (e.g.,
homework)

Effects of Sex Differences on Pro-social Appraisals. When comparing pro-social appraisals for the four pro-social factors between males and females (controlling for country), it was found that there was no difference for low cost helping ($F(1, 289) = .34, p = .56$; *Cohen's d* = .07; additional help ($F(1, 292) = .02, p = .90$; *Cohen's d* = .02) or generosity of spirit ($F(1, 291) = 2.28, p = .13$; *Cohen's d* = .18), but there was a significant difference for high cost pro-sociality ($F(1, 289) = 14.95, p < .001$; *Cohen's d* = .46), with females perceiving higher cost/risk for this type of pro-sociality ($M_f = 2.98, SE = .04, 95\% CI = 2.91; 3.06, M_m = 2.69, SE = .07, 95\% CI = 2.56; 2.82$).

Effects of Country on Pro-social Appraisals. It was also examined whether country of the sample (controlling for age, gender and education level) had an effect on the cost/risk appraisals of the pro-social factors. There was a significant difference between the countries for low cost helping ($F(1, 283) = 6.06, p = .01$; *Cohen's d* = .29), with Polish people perceiving lower cost/risk for this type of pro-sociality ($M_{Pol} = 1.48, SE = .04, 95\% CI = 1.41; 1.55, M_{UK} = 1.60, SE = .03, 95\% CI = 1.54; 1.65$). This effect did not hold when additionally controlling for the personality traits that were significantly different between the two countries (i.e., openness, agreeableness and extraversion): $F(1, 272) = 3.24, p = .073$; *Cohen's d* = .22. Similarly, there was a significant difference for high cost pro-sociality ($F(1, 283) = 11.29, p = .001$; *Cohen's d* = .40), with Polish people perceiving lower cost/risk for this type of pro-sociality ($M_{Pol} = 2.76, SE = .06, 95\% CI = 2.65; 2.87, M_{UK} = 3.00, SE = .04, 95\% CI = 2.91; 3.08$). This effect holds even when additionally controlling for the personality traits that were significantly different between the two countries (i.e., openness, agreeableness and extraversion): $F(1, 272) = 6.99, p = .009$; *Cohen's d* = .32. There was not a difference for additional help ($F(1, 286) = 1.87, p = .17$; *Cohen's d* = .16) or generosity of spirit ($F(1, 285) = .14, p = .71$; *Cohen's d* = .04) though.