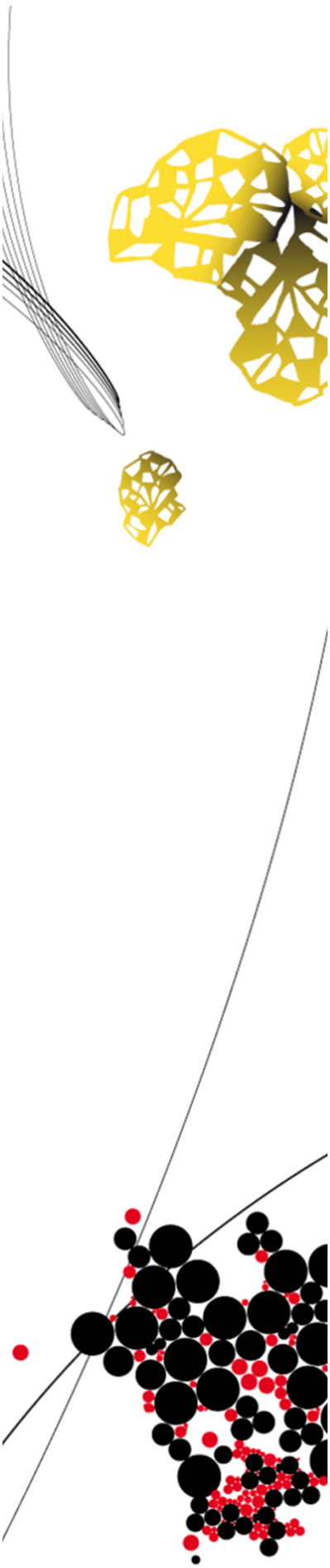

UNIVERSITY OF TWENTE.

Communication Science

I know you're watching me!

A study into the effects of being aware of a watching eyes priming stimulus on altruistic behaviour.

Jip Lukkien
S1851748

Supervisor:
Dr. Joris van Hoof

Hand in Date:
28/06/2019

Abstract

Aim — The watching eyes effect is a priming technique used to influence a subject's behaviour. By unconsciously suggesting a subject is being watched, the subject changes their behaviour in a prosocial way. It is unclear whether the subject's awareness of the influence of this subtle cue affects its success in promoting prosocial behavioural changes. This study aims to find out whether the watching eyes priming effect is as effective if a subject is aware of the prime and its influence.

Method — This experimental research adopted a two by two design to examine the effects of knowledge of the watching eyes influence, on the altruistic behaviour in a dictator game. A survey was conducted containing an economic dictator game, to evaluate the degree to which the watching eyes effect can influence prosocial division of money between two participants, and whether knowledge of the effect decreases its prosocial influence. The dictator game allowed participants to divide money between themselves and another unknown, anonymous participant. Four conditions were created to fulfil the two by two design. The four conditions consisted of a control group; a group with only the watching eyes effect present; a group with the watching eyes present, and an explanation of its influence and a group; with no watching eyes present, but still an explanation of the effect present. The results were analysed with ANOVA analyses, taking into account moderation variables such as income and gender. The survey also included a scaled measure of the participant's self-perception of social responsibility.

Results — The study yielded no significant effects of the watching eyes effect on the prosocial division of money, and no significant effect of an explanation of the watching eyes phenomenon. There was a marginally significant effect of the explanation of the watching eyes effect, as those with an explanation behaved less prosocially in the dictator game than those without an explanation. This finding was however, not significant enough to draw valid conclusions from. Further research is advised in this area to further elaborate on these marginally significant effects. The study did however find a significant impact of the watching eyes effect on the self-perceived image of social responsibility. Participants exposed to the watching eyes, viewed themselves as significantly more socially responsible after the dictator game. Similarly, those that perceived themselves as more social responsible, tended to act in a more prosocial way during the dictator game.

Discussion — This suggests that while the watching eyes effect does have a significant effect on self-perception in terms of social responsibility, the watching eyes effect may be exaggerated in previous studies regarding behavioural changes. Further research is advised in this field to develop a stronger understanding of the phenomenon.

Table of Contents

1. Introduction

Priming and behavioural psychology techniques are everywhere. From stop signs that count down to ensure citizens in a city wait for the green light, to lines on the road to ensure drivers know the layout of the road. Behavioural psychology and priming are tools used by many businesses, cities and marketers to promote an, often positive, behavioural change. This study will look deeper into the effects of priming, and the behavioural psychology behind why it works.

This study focuses specifically on the watching eyes effect. This effect relates to the aim of changing human behaviour through the presence of depicted eyes or a fake camera, to give the impression that a subject is being watched. This, in turn, stimulates a behavioural change from the subject. Many studies have tested this effect with varying degrees of success. As with most priming interventions, the underlying assumption is that the behaviour change is caused by an unconscious influence from the priming technique. Many studies have been conducted around the watching eyes effect (e.g. Haley & Fessler, 2005), though each have assumed that the participant is unaware of this effect.

Many studies have found that by placing an image of eyes within sight of a subject, the subject displays an observatory response (Jones, Nettle & Bateson, 2011). Subjects unconsciously feel as though they are being watched, and as such, adjust their behaviour to appear more prosocial. This effect has also been successfully tested with vague depictions, loosely resembling eyes (Haley & Fessler, 2005). These studies have found staggeringly positive results from the suggestion that watching eyes may be present. These effects closely resemble similar effects achieved by the social presence theory, in which the presence of another, changes human behaviour. Studies disagree on whether the presence of another only produces prosocial results, or whether in certain contextual areas, a subject may even perform worse on certain tasks, based on the fact that another person is watching them (Baumeister & Steinhilber, 1984). Research has shown however, that the presence of another may temporarily influence the self-perception and self-image one has of oneself (Bereczkei, Birkas & Kerekes 2010).

The watching eyes effect has been examined in several contexts, from stimulating honest giving in an honesty box, increasing charitable donations, reducing littering in areas prone to littering and in several altruistic games. Many studies have found a positive influence from creating a subconscious feeling of being watched, or the presence of another person (Bateson, Nettle & Roberts, 2006). These effects are often tested in an experimental type setting however, in which it is difficult to rule out the observatory effect of the researchers themselves.

The watching eyes effect has already been applied in many areas. A local police department in New York city used the technique in high-crime areas, and found that theft and vandalism dropped substantially. An image of a policeman was placed on the wall in areas especially susceptible to crime. This substantially reduced the amount of criminal activity in those areas, by around 60%. Similarly, many shopping centres and public transport services make use of the theory, by installing fake security cameras. These cameras are often simply the shell of a security camera, without the inner workings. These methods produce similar results to the watching eyes effect, by creating an observatory feeling. These cameras have been found to not only reduce costs of installing working camera units, but also decrease crime and antisocial behaviour significantly. Subjects assume the cameras are working, and therefore behave as though they are being watched, when the reality is of the contrary (Lasky, Fisher, & Jacques, 2017).

Having said this, in recent years, an increasing number of studies, have failed to replicate the results of earlier watching eyes effect studies (Matsugasaki, Tsukamoto &

Ohtsubo, 2015). These scholars are now debating whether its effect has been exaggerated, or whether its success in early studies was due to other contextual factors. The focus in recent years has been to develop an understanding of the factors, that may play a role in creating a positive effect from the watching eyes stimulus. There is still much debate about the underlying theories that cause the effect to work successfully, and what motivates people to change their behaviour. Some scholars argue that the behavioural change comes from an attempt to improve one's social reputation (Panchanathan & Boyd, 2003). On the other hand, other scholars argue that the effect comes from a willingness to avoid potential punishment from being observed, thereby promoting prosocial behaviour (Fehr & Gachter, 2002).

A growing popularity amongst young people around the idea of influence and social change, ensures an increasing number of people are becoming aware of the priming techniques used around the developed world. A recent episode of the UK hit show 'QI', aired a segment on the watching eyes effect, and its use in cities to reduce crime rates. Many scholars argue that the effect of such unconscious priming stimuli, only work if the subject is unaware of its effect (Bargh, 1992). This begs the question then, whether the increasing awareness of such techniques, and specifically the watching eyes effect, reduces, or even reverses the effect it can have on stimulating positive behaviour. There is currently little research in this field, and especially with a specific focus on the watching eyes effect.

The objective of this research then, is to examine the success of the watching eyes effect in the area of prosocial behaviour, and whether being aware of its effect, influences its success rate, in promoting positive behavioural changes. Whilst many studies have shown the effect can indeed promote prosocial behaviour, such as increased charitable donation or more altruistic decision made in dictator games, these studies seem to assume the participants' ignorance to the stimulus being tested. As such, this study focusses strongly on replicating other studies, that have shown a strong positive effect of the watching eyes phenomenon. However, it will also test whether the effect can also be replicated if the participant is aware of the stimulus and its goal.

By using a dictator game, often used to test altruistic behaviours, this experiment will provide some participants with information on the watching eyes phenomenon, whilst others are naïve to the stimulus. The altruistic behaviours of these groups will be compared, to examine the degree to which the watching eyes phenomenon is still successful in promoting the altruistic behaviours in a dictator game, as found by Haley and Fessler (2005), if the participant is aware of the intervention and its influence.

This study poses the following main research question based on the contextual understanding of the watching eyes effect. 'Can the watching eyes effect increase prosocial behaviour in a dictator game, and to what extent is this effect affected by awareness of the influence of the watching eye stimulus?'. Contextual factors will also be taken to account, such as 'Do gender or income have an effect on the strength of the effect caused by the watching eyes effect?'. Finally, the perception subjects have of their own social responsibility nature, will also be taken to account. This leads to the final sub-question of 'to what extent can the watching eyes effect influence the perception one has of one's own social responsibility?'.

Whether it be to increase charitable giving, stop smoking, or decrease crime, a thorough understanding of this phenomenon can help shed some light on how to best tackle social issues and promote positive behaviours from the general public.

2. Theoretical framework

In order to fully understand the topics that are to be measured in this study, it is first important to gain a general overview of the knowledge currently already in circulation in this field. Broadly speaking, this framework will discuss four of the main components of this research in depth, to remove any ambiguity on which the research is based, and create a better understanding of the concepts and factors at play. As such, this framework will start by looking at charitable giving as a prosocial behaviour and what stimulates and increases these behaviours. Next, social presence theory will be evaluated in terms of previous research and existing knowledge on the phenomenon, to create an understanding of how the presence of another can influence actions. The next part of this section will look into the watching eyes phenomenon, and the previous studies in this field. Finally, the degree to which priming stimuli are successful if participants are aware of their influence, will be examined. This is to gain knowledge on whether priming stimuli, such as the watching eyes effect, is as strong if subjects are aware of their intent. Before conducting any research, it is important to understand existing knowledge on the areas covered within the research, in order to fully understand the effects present and how to interpret them.

2.1 Charitable giving

The first important concept to define and elaborate on, is that of charitable giving. While in this study, the giving is not necessarily charitable, it helps to develop an understanding of what motivates monetary, prosocial behaviour. In other words, this section aims to explore the underlying reasons why an individual may choose to keep a sum of money for themselves or instead, donate it to another. This section will therefore look at the mechanisms involved in driving charitable giving.

There is much debate amongst scholars as to what drives philanthropy. Bekkers and Wiepking (2010), argue that based on their literature review, there are 8 fundamental mechanisms for giving. These are an awareness of need, solicity, cost and benefit, altruism, reputation, psychological benefits, values and efficacy. That being said, within the scope of this study, certain concepts are not relevant as there is no named charitable organization present. Therefore, for the scope of this research, the focus will be on altruism, reputation, psychological benefits, and values.

The first, and perhaps most salient motive is that of altruism. Altruism relates to the moral concern of others' wellbeing. There is much discussion as to whether true altruism can exist, or whether altruistic actions undertaken are actually motivated by a secondary search for a 'warm glow'. Andreoni (1990) discusses this in detail, saying that altruistic motives are difficult to predict, as there is always the possibility of the underlying motive of being seen, feeling good about oneself, and improving one's reputation. Khalil (2004), argues however that such a 'warm glow' effect is merely a 'by-product' and not the underlying motive for charitable giving. He states "if one insists that ''warm glow'' is a primary motivator, it means that the agent acts from some inner motives that are oblivious to consequences" (Khalil, 2004). Scholars continue to disagree on this concept, and therefore often refer to altruistic motives as 'impure altruism'. In other words, altruism is a factor that can motivate charitable giving, however, it must be acknowledged that such altruistic actions, do result in ulterior feelings for the giver, which could also be a secondary underlying motive.

Reputation hereby refers to the social consequences of donations for the donor (Bekkers & Wiepking, 2011). Horne (2003) states that giving is usually interpreted as a positive and admirable thing to do, especially when giving reduces inequality. Therefore, is stands to reason that those who give, are held in high regard by their peers (Wiepking, 2008).

On the other hand, when donations are publically observable, the act of not giving, can damage reputation (Barclay, 2004). As such, when donations are observable, the choice to give may be simply a reputational one, to increase one's own public image. By making a potential donor aware of the observational nature of the act of donation, many studies have found an increase in donations (Bull & Gibson-Robison, 1981; Hayler & Fessler, 2005).

Psychological benefits hereby refer to the aforementioned 'warm glow' affect. Studies have shown the psychological rewards gained from giving money to charities (Bateson & Shaw, 1991). These range from an improved self-image (Schwartz, 1970); a feeling of joy from giving (Andreoni, 1989) and good moods (Cunningham et al., 1980). These motivational factors of direct psychological rewards, can often be used to promote charitable giving. Basil, Ridgway and Basil (2006), found for example, that feelings of guilt in a potential donor can promote donations, in an attempt to alleviate this feeling of guilt. The study showed that the feeling of guilt was indeed decreased after a prosocial act, such as giving to charity or attending a church service (Harris, Benson & Hall, 1975).

Values, whilst very much linked to altruism and reputation differ in that they are "very difficult if not impossible to manipulate" (Bekker & Wiepking, 2010). Fong (2007) links values of humanitarianism and egalitarianism to charitable donations. Prosocial values such as altruism, post-materialism, left-wing politics, moral principle of care, devotion, spirituality, and those who care about social justice, order and consensus, have been found to directly increase charitable donations (Todd & Lawson, 1999; Bekker & Wieking, 2006; Bekker & Schuyt, 2008; Amato, 1985). As stated before, these values are difficult to manipulate as they are derived from a core sense of being and morale. The ethics and virtues upon which these values are based, are often linked to certain environmental factors, such as religion and upbringing, which are difficult to change.

These motivational factors have the potential to influence donations and prosocial acts such as giving. Whilst they are not all factors one can manipulate, they do provide a framework to understanding the choice people make in terms of altruistic prosocial behaviour. By taking these factors into consideration, it is possible to find drivers for promoting more prosocial behaviour and promoting equality.

2.2 Social Presence Theory

Many scholars believe that the watching eyes effect, comes from a feeling of being watched, and as such, is greatly linked to social presence theory (Roberts, 1998). Therefore, to fully understand the watching eyes effect, it is important to first understand the psychological mechanisms underlying this phenomenon. There is a great deal of discussion as to whether the effect is caused through a motivation to preserve one's social reputation, or to avoid sanctions when not conforming to a certain set of expected social behaviours (Bateson, et al. 2013). Many, if not all, scholars do however, agree on the fact that the effect is greatly influenced by social norms and pressures people feel in order to feel part of a social group. Regardless of the motivation behind the behaviours shown as a result of the presence of 'watching eyes', the phenomenon is based on the principle that the subject is under the impression they are being watched, and as such, must conform to the socially accepted behaviours of the social group. This then, ties greatly to social presence theory in which it is assumed that people change their behaviour, or perform tasks differently, based on whether another person is present when the behaviour is being carried out. This next section will look deeper into social presence theory and the effect it can have on an individual's behaviour and performance.

To begin, it is important to understand what is meant by social presence and how to define it. Lowenthal (2010) define "social presence as the degree of salience between two

communicators using a medium". He goes on to add, that social presence is an attribute of communication that can determine the way people interact and communicate. In contrast Biocca, Harms and Burgoon (2003), succinctly define social presence theory as "the sense of being with another". While this is the underlying essence of why social presence theory appears be important, it does not entail the effect of said sense of being with another. Therefore, this paper will adopt the following definition for social presence theory: "The sense of being with another, which has the ability to affect the interaction and communication of an individual."

Now that social presence theory has been defined, the effects and implications of the theory must be explored. It is important to first understand why the theory works and how it can be applied. Many studies have looked at social presence theory within the context of learning. Here, mixed results have been shown, though the important underlying factor that scholars agree on, is that the presence of others has the ability to change behaviour and interaction. Kushnir (1986) found that the presence of others in a hospital learning environment, increases the sense of anxiety and fear of failure. In this instance, it appeared to lead to a greater number of errors made during the learning trajectory. In contrast however, Garramone, Harris and Anderson (1986) found that social presence enhances interaction in a traditional classroom setting. That is to say, when social presence is low, so is interaction. This shows two very contrasting outcomes of social presence theory, however in both studies, the presence of others had a direct effect on the performance and behaviours of the participants present.

To further develop an understanding of social presence theory the underlying theories behind the effect must be explored. Shin, Lee and Kim (2015) point out that people are not only influenced by individual level factors, but also social factors. Dewey (2005), found that it is the interaction between environmental and individual factors, that constitutes the perceived experience of a human being. As such, it seems people are motivated to behave differently, through the social pressure created by the presence of others. Bereczkei, Birkas and Kerekes (2010), found for example, that the presence of others had a direct impact on the Machiavellianism scale. That is to say, those with a high Mech score, disguised their sense of egotism and individualism in the presence of others, to show more altruistic and prosocial traits. It appears then, that the presence of others can influence one to behave in a way that they believe is expected, or is the social norm. This yields the following hypothesis for this current study: *'the presence of eyes will significantly increase the self-perception of social responsibility participants have'*.

On the other hand, however, many studies have also found the contrary. Chekroun and Brauer (2002), found for example, that the presence of others increased the bystander effect. In other words, the presence of others decreased the probability of an individual reporting, or stopping small anti-social acts in public. This shows then, that the presence of others does not necessarily positively affect the way in which a person responds to a stimulus caused by another, but does have the potential to positively impact the way in which a person behaves themselves. It is this phenomenon, which many scholars believe is the underlying antecedent for the success of the watching eyes effect. The next section will look at the watching eyes in more depth, to broaden the understanding of the phenomenon.

2.3 Watching eyes effect

It is widely accepted that humans thrive on social interaction. As primarily social creatures, humans often define themselves in terms of how others view them and their actions. Research has shown that many humans use social interaction as a means to justify decisions made (Nowak & Sigmund, 2005). This is often in terms of relative reputation or punishment outcomes to the decision. Reputation determines to a certain extent, choices made due to the

reputational outcomes of the decision. Choosing to undertake a certain action, may create a greater chance of being accepted by others, as part of an intergroup relationship (Nowak & Sigmund, 2005). In this model, actions are governed by a need to present oneself to a group in a positive way, in order to be well-liked or feel a part of the given group (Panchanathan & Boyd, 2003). On the other hand, a punishment model refers to the opposite phenomenon. In this model, failing to comply in a certain accepted way, creates costs for those in the group (Boyd, Gintis & Bowles, 2010). This pressure to comply stimulates certain behaviour, in order to avoid punishments, set by the group when not compliant, such as, being removed from the group and becoming an outcast. This need for interaction is the basis on which the watching eyes effect is formed. In general, groups punish people who do not comply with a set of expected behaviors (Fehr & Gachter, 2002), and reward those who do, with a stronger reputation within the group (Sylwester & Roberts, 2010).

These two models have an underlying assumption however, that behaviours one presents, are observed by others either in, or outside the desired social group, and as such, are only relevant when a subject is highly aware they are being watched (Jones, Nettle & Bateson, 2011). Furthermore, Soetevent (2005) found that people take observers into account, when there is an expectation of future interaction. Boyd, Gintis, Bowles and Richerson (2003), argue that this phenomenon has developed over time into a group selection process, governed by the actions one takes, to show solidarity with the given group. It stands to reason then, to suggest that giving one cues that they are being observed, may spark a socially based decision process, in which choices are governed by the need to be selected by a given group. One such cue is the watching eyes effect, in which a simple picture of a pair of human eyes, or a depiction of a face, sparks an unconscious cue of observation, thus leading to a social influence on decisions made.

These observational cues have been tested by scholars in a wide variety of settings. The most common research involves a dictator game in which these observational cues, or eyes, are present to influence the choices made during the game. Hayley and Fessler (2005), found that exposing a subject to a photo of human eyes, promoted more pro-social behaviour from the subject in a dictator game setting. Whilst this was a laboratory experiment with many drawbacks, the phenomenon was tested in a variety of ways by other scientists who came to the same conclusion. Even subtle cues such as three dots arranged to loosely resemble a face had the same pro-social effect on the participants (Rigdon, Ishii, Watabe & Kitayama, 2009). The results of these studies are often disputed however, as many scholars consider the prosocial effects to also be heavily influenced by uncontrolled subconscious observation cues, such as the researcher in a laboratory setting (Bateson, Nettle & Roberts, 2006). The observer bias created in a laboratory setting, may have an overarching observation cue effect, thus rendering the addition of the eyes or face relatively obsolete.

Outside of a laboratory setting however, many researchers have also found notable effects based on the presence of eyes. Earnest-Jones, Nettle and Bateson (2011), used the eyes in a cafeteria to test the effects of the eyes on littering. They found a notable reduction of litter left behind on days where the eyes were present, suggesting the cue did indeed increase prosocial behaviour. Ekström (2011) suggests this study suffers from a bias based on the social multiplier effect. He states: “if some fraction does respond to the eyes other subjects will notice this and respond to the shift in real behaviour by peers not because of the picture of eyes.”. It is difficult to determine then, whether each individual who responds in a prosocial way does so because of the eyes or due to the social pressure of seeing others around them behave in this way. The same principle was applied to an honesty box in an office kitchen. Again, the presence of eyes, showed a dramatic increase in honest donations for the use of kitchen items. Again, it is unclear whether this effect is due to the presence of eyes; due to the social pressure created by seeing others pay for their items; or due to seeing

more money in the honesty box creating more social pressure to give honestly (Bateson et al., 2006).

Many scholars have also claimed that the watching eyes effect is often a victim of publication bias (Matsugasaki, Tsukamoto & Ohtsubo, 2015). Many of the articles on this topic show strong, positive results based on the effect. Whilst the limitations of the various studies are duly noted, it is inherently difficult to find articles that provide evidence that the watching eyes, have no effect at all. This bias is important to take into account when looking to further the research in this field, as failing to report negative findings, can put a biased spin on the phenomenon, leading to an overestimation of its effects.

In summary, this phenomenon has been at the core of many studies with varying degrees of success. There are many factors that can influence the outcome of the results and a lack of reported negative results suggests some publication bias on the topic. As it is very difficult to determine which unconscious factors can influence the success of the watching eyes effect, studies should do their best to control all factors that could potentially aid prosocial behaviour during the study. These previous studies, though varied, lead to the following hypothesis: *'the presence of eyes will significantly increase the prosocial division of money in an economic dictator game'*.

2.4 Awareness of priming

The watching eyes effect falls under a branch of social psychology known as priming. Priming has been defined by Iyengar & Kinder (1987) as ''changes in the standards that people use to make evaluations''. Priming mechanisms are often related to framing theory or word association. In many studies, priming has been used to subconsciously change a person's behaviour through subtle cues of specific words, phrases or ways of viewing things. Scheufele states that priming works "by increasing the salience of issues and thus the ease with which they can be retrieved from memory" (2000). These priming interventions are often unconscious however, and only appear to work when the person being influenced is not aware of the prime. There is much debate about whether this is truly the case. This final section will look into whether an awareness of a priming intervention can hinder its effect.

Many debates amongst scholars arise from the argument, that a person being aware of a priming stimulus will ensure the priming effect no longer occurs. Loftus and Klinger (1992) argue that priming is an unconscious influence, and therefore can only work if the presentation of the stimulus is subliminal, and not known to the receiver. In other words, if the someone is aware the prime is happening, it will no longer work. Bargh (1992), on the other hand found that it is not the awareness of a prime that reduces its affect, but instead the awareness of the effect of the prime that has an influence on its effectiveness. He states "it makes no qualitative difference for social psychological phenomena whether the subject is aware of the stimulus event or not. What does matter, is whether or not the individual is aware of the ways in which the stimulus is interpreted, and the influence of this processing of stimulus presentation" (Bargh, 1992).

Bargh (2016) later revisits this notion by stating that the same outcomes are obtained from both subliminal and supraliminal primes. His study showed that primes that were not subliminal or unconscious, still yielded the same change in behaviour, showing that awareness of the prime itself does not matter, but instead it is the awareness of the effect or goal of the prime, that affects its influence. Studies have even found that an awareness of the influence of the prime, can produce an opposite effect to which the prime was intended. Herr, Sherman and Fazio (1986) conducted a study using Hitler as a prime, to test its influence on social judgement tasks. Participants who were aware of the intention of the prime, in fact produced contrastingly stronger prosocial judgement calls, to counteract the influence of the prime.

Finally, Bargh also argues that motivation is an important factor to consider with priming. He argues that a person's importance to certain goals also affects the effectiveness of primes. Custer and Aarts (2010) found for example, that people with a salience for reward as a goal, were easier influenced by unconscious primes of reward. Studies have also found the contrary however, in which important personal goals outweigh the effect of a prime, thus causing the opposite effect to the effect the prime was trying to create (Sherman et al., 2003).

To conclude, when a prime is relevant to a person's own motivation and goals, the effect of a prime can be much stronger. Studies have even shown that people are more likely to unconsciously seek out primes that relate to their own motivational goals (Ferguson & Bargh, 2004). That being said, it is also important to note that a person's awareness of the influence of a prime, also has an effect on their behaviour, and can even promote the opposite behaviour, of the behaviour the prime is trying to promote. It is generally accepted then, that the awareness of the prime itself is not particularly relevant, but it is instead the awareness of its effect that matters. This analysis of the current understanding of the effect of being aware of the influence of a priming cue, yields the following hypothesis in relation to this study: *'The awareness of the influence of the watching eyes effect will significantly decrease the effect eyes have on the prosocial division of money during an economic dictator game'.*

2.5 Research Model

In order to gain a clear understanding of possible variables and their effects, based on knowledge from previous studies, a model has been developed in order to examine each variable and its influence on prosocial behaviour. Figure 2.1 shows the relationships between the variables and how they will be examined as a whole. The model outlines the four main hypotheses this study aimed to find. These hypotheses are:

H_1 'The presence of eyes will significantly increase the prosocial division of money in an economic dictator game'.

H_2 'The awareness of the influence of the watching eyes effect will significantly decrease the effect eyes have on the prosocial division of money during an economic dictator game'.

H_3 'There will be significant differences in prosocial behaviours in an economic dictator game between each of the four conditions'.

H_4 'The presence of eyes will significantly increase the self-perception of social responsibility participants have'.

M_1, M_2, and M_3, outline the moderator variables that will be taken into account during the analyses.

Figure 2.1

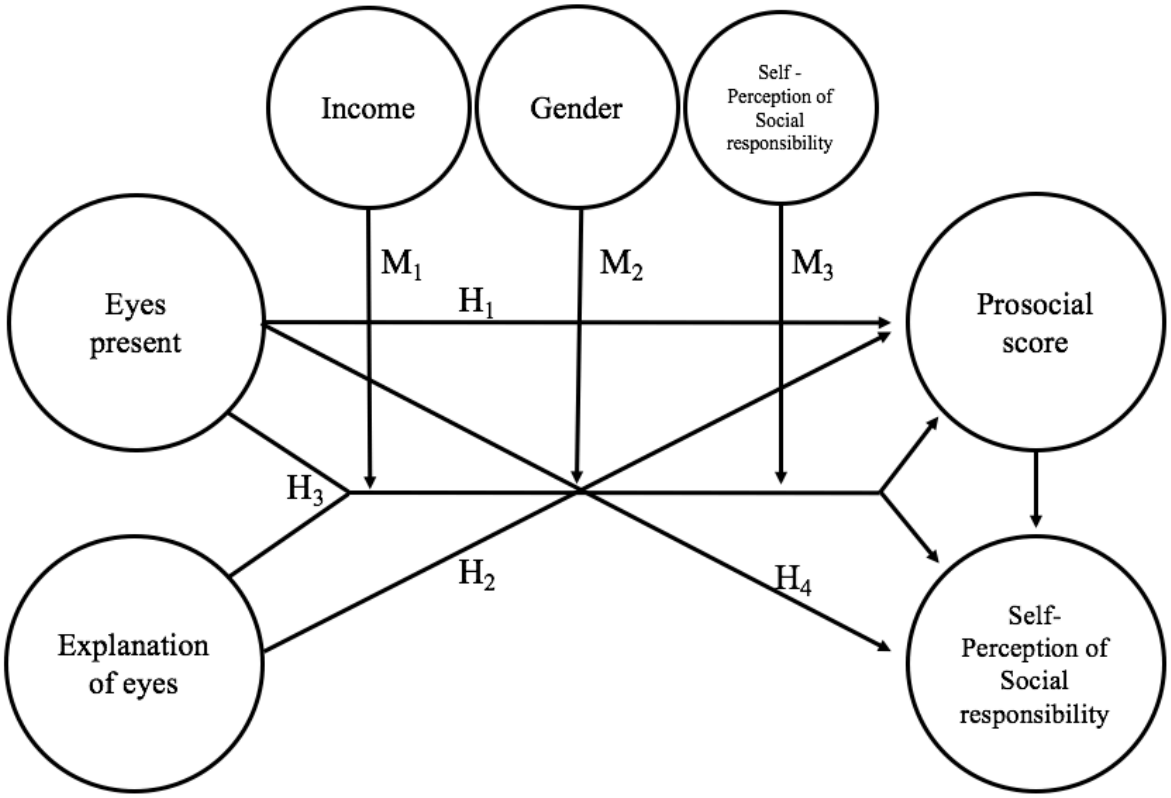

Figure 2.1. A model of the research design including all the relevant variables and hypotheses incorporated into the research design.

3. Methodology

This study adopted a two by two quantitative approach, in order to test the effect of the watching eyes effect, by the effect of participant's awareness of the influence of the effect. The two by two approach was chosen to ensure each possible scenario was tested, to find the degree to which each variable had an effect on the outcome. Once the data was obtained, a quantitative analysis was carried out to determine the degree to which the different scenarios caused a higher output, in terms of prosocial behaviour. The study took the form of an economic decision game, presented in an online survey. The research design in outlined in figure 3.1.

Figure 3.1

		Eyes Present	
		Yes	No
Explanation Present	Yes	4	3
	No	2	1

Figure 3.1. A summary of the research design, showing each of the four conditions.

3.1 Participants

126 participants were randomly selected to take part in the study. Participants were approached in a local city centre or university campus, and asked to fill in a short survey on an iPad. Anonymous URL links were also distributed via social media inviting participants to take part. Participants were chosen at random and there were deliberately no criteria to fulfil, in order to take part, to improve the validity of the study. This was done to achieve an accurate representation of the population across all ages, incomes and genders. Four separate surveys were created for each of the conditions, and each participant was randomly assigned one of the four surveys until the quota of 30 participants per condition was fulfilled. As the study had an experimental research design, a between-subjects approach was adopted. Each participant took part in only one of the four conditions, and was unaware of the other three conditions during the research.

3.2 Procedure

Four conditions were created to test each of the conditions in the survey. The questions for each condition remained exactly the same, to improve reliability. The questions were based on an economic decision game from Haley and Fessler's (2005) study on the watching eyes effect. The game, often referred to as a dictator game, involved assigning the participant ten euros and allowing the participant to divide this sum between themselves and an anonymous other, who had no control over the division of the money. The participant was awarded three separate transactions of ten euros to divide, in order to accumulate money during the game. Each transaction of ten euros, had predetermined divisions from which they could choose. The first transaction of ten euros allowed the participant to choose to keep all of the money, or to divide the money 50/50 with the anonymous participant. The next transaction of ten euros was a closer division of either seven euros or six euros to themselves, leaving the other participant with either three or four euros. This was done to examine whether participants would be inclined to make the same decision as before, if the division of the ten euros was less dramatically split. Finally, the last scenario involved the anonymous other supposedly giving up their entire ten-euro participation bonus to the participant, who was then able to choose to keep this entire sum, or whether to split it 50/50. This was chosen to examine

whether participants were less inclined to take an entire sum of money, generously given to them by the other, anonymous participant.

Several demographic questions were also developed as control and mediator variables. Whilst the economic game was hypothetical, a monetary prize draw was offered to provide an incentive for participants to fill out the survey as honestly as possible. Rewarding a participant with the chance to win the money they assign themselves during the game, was done to reduce a possible Hawthorne effect, and ensure participants filled out the survey in a realistic manor.

The four conditions kept the same format and the same questions, to improve reliability. Each of the four conditions had slight alterations made, however. The first condition was the control group, which consisted of only the game and demographic questions (Appendix B). The second condition showed the same information, except during the economic game, a picture of eyes was placed above the text (Appendix C). The picture chosen was the same image used by Haley and Fessler (2005) in their study of the watching eyes effect with the same economic game, for increased validity (figure 3.2). The next condition consisted of an explanation of the watching eyes effect and its influence on decision, as well as the image of the eyes during the economic game (Appendix D). The final condition involved the explanation of the watching eyes effect, without the presence of the eye image, thus completing the two by two experiment.

Whilst the surveys were being filled in, the researcher left the area, to ensure no social presence or Hawthorne effect would affect the answer given during the game. The participants were also asked whether they felt like they were being watched during the study. This was partly to confirm the potential effect of the image of eyes, but also used as a control to ensure the presence of the researcher did not provoke a change in behaviour from the participant.

Figure 3.2

Figure 3.2. The depiction of eyes used in the survey, adopted from Haley & Fessler's (2005) study.

3.3 Measures

To ensure any effects found were not from other outside factors, a control variable was used, to account for any data collection errors. This was done to improve the validity of the research. Each participant was asked whether they saw a picture of eyes during the survey. Of the 126 participants, 6 had wrongly assumed eyes were present, or had not seen the eyes during the study, when eyes were present. To account for these errors, these 6 participants were removed from population sample, to ensure any effects found were due to the presence or absence of the eyes. Table 1 shows the division of participants between the four conditions.

Table 1

Division of participants between conditions

	Noticed eye presence	Yes	No	Total
Condition	1	0	30	30
	2	30	0	30
	3	0	30	30
	4	30	0	30
Total		60	60	120

3.4 Further Measures

In order to account for differences in the population, the survey included several demographic questions, that may have affected the outcome of the study. Participants were asked their gender, in order to control for differences in prosocial norms between genders, and to improve the validity of the outcomes of the study. Participants were also asked about their income, to account for fluctuations in results due to a larger need for money, because of personal financial situations. Finally, four, five-point Likert scale questions were asked, to develop a construct of social responsibility. These questions related to whether a person donated money to charity, whether they consider themselves socially responsible, to what degree they live for their own personal satisfaction, and to what degree they help others. These four questions were combined to form a construct of feeling socially responsible. A Cronbach's Alpha test was carried out to determine the reliability of the scale items as a construct as whole. Table 2 shows the division of gender and income between each condition. As the data collection was random, the participants are not equally distributed across each condition in terms of gender and income. As such, these effects were taken into account as moderation variables during the data analysis, to account for differences between gender or income on prosocial behaviour. For both income and gender items on the study instrument, participants were also offered the opportunity to answer with 'prefer not to say'. This explains the irregularity in the total participant scores.

Table 2

Gender and Income of participants between conditions

Condition		1	2	3	4	Total
Gender	Male	23	14	18	13	68
	Female	6	15	11	16	48
Income	0k-20k	20	16	20	24	80
	20k-40k	8	2	7	5	22
	40k-60k	2	2	0	0	4
	>60k	0	6	0	0	6

3.5 Analyses

To analyse the results, ANOVA tests were carried out to determine the significant relationships between each variable and hypotheses outlined in figure 2.1. Moderation analyses were carried out for the moderation variables of gender, income and self-perceived social responsibility. Bonferroni post hoc tests were carried out for any significant findings to determine the specific significant results between each condition.

4. Results

Several statistical analyses were carried out according to the model outlined figure 2.1. For each of the analyses significance was tested based on the p <.05 level. In order to analyse the results, each decision of the economic game was given a dummy code. The prosocial choice was assigned a one, and the egotistic choice was assigned a two. The three decision moments in the game were added, and dummy coded to produce a scale from one, being the most prosocial in every decision, to four, being the most egotistical in all the decisions. This allowed for a clear analysis of the results in terms of prosocial division of money in the economic game. Each Likert scale item answered after the game by the participants measuring social responsibility, was also coded ranging from one through to five. One meaning a very strong sense of social responsibility and five representing no feeling of social responsibility from the participant. This was done to ensure easy links between the various variables could be made. The next section reports the findings from this study.

Table 3
Two-way ANOVA analysing differences between eyes present and explanation present on prosocial game behaviour

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	5.83	3	1.94	1.89	.14
Intercept	1062.08	1	1062.08	1034.43	0
Eyespresent	2.41	1	2.41	2.35	.13
explanation	.41	1	.41	.40	.53
Eyespresent * explanation	3	1	3.01	2.93	.09
Error	119.1	116	1.03		
Total	1187	120			
Corrected Total	124.93	119			

Note. R Squared = .047 (Adjusted R Squared = .022)

A two-way between subjects ANOVA was conducted, to test differences between the presence of eyes, and the explanation of the priming motives of the eyes on the prosocial behaviour exhibited in the economic game. There was no significant effect of eye presence on prosocial behaviour at the $p < .05$ level [$F(1, 120) = 2.35$, $p = .13$]. There was also no significant effect of explanation presence on prosocial behaviour at the $p < .05$ level [$F(1, 120) = .40$, $p = .53$]. Finally, there was also no significant effect of eye presence and explanation presence on prosocial behaviour at the $p < .05$ [$F(1, 120) = 2.93$, $p = .09$]. This data suggests that neither eye presence nor the presence of an explanation of the eye effect, either separately or when combined, have a significant effect on the prosocial behaviour shown in an economic dictator game. The combined effect of eyes present and explanation present, though not significant, was marginally significant at the $p < 0.1$ level. Figure 4.1 shows this effect. While this effect is not significant at the $p < .05$ level, it does show initial findings that confirm the first hypothesis outlined in this study.

Figure 4.1

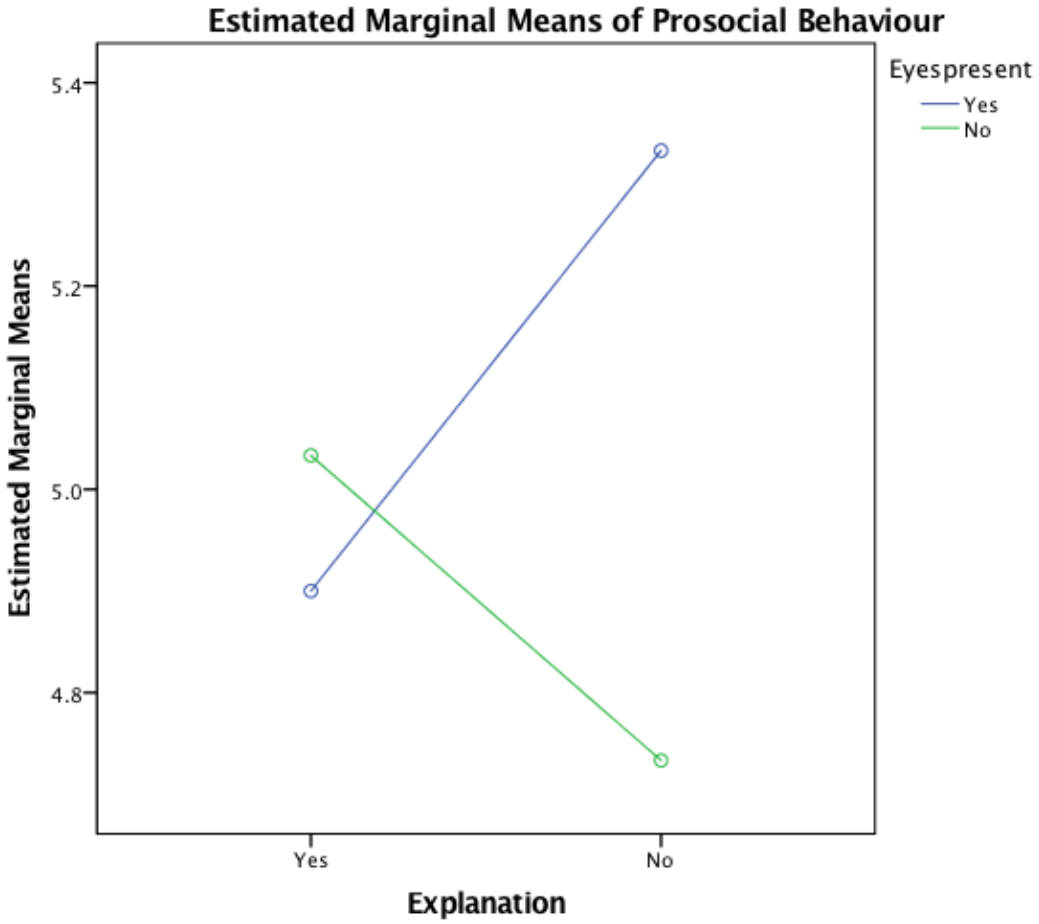

Figure 4.1. Graph showing the estimated marginal means of the effect of explanation and eyes present on prosocial behaviour in the economic dictator game.

Table 4
ANOVA analysis of eye and explanation presence on prosocial division of money

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.83	3	1.95	1.89	.14
Within Groups	119.1	116	1.03		
Total	124.93	119			

A one-way between subjects ANOVA was conducted to compare the effect of eyes present and explanation of eyes on prosocial division of money in the economic dictator game. There was no significant effect of eyes or explanation of eyes on the prosocial division of money at the $p<.05$ level for the four conditions [$F(3, 116) = 1.89$, $p = .14$]. These results suggest that the presence of a picture of eyes, or an explanation of the effect of the eyes have no significant effect on the way a participant chooses to divide money between themselves and another participant.

Table 5

ANOVA analysis of eye and explanation presence on social responsibility

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.03	3	1.01	2.69	.05
Within Groups	43.86	116	.38		
Total	46.89	119			

A one-way between subjects ANOVA was conducted to compare the effect of eyes present and explanation of eyes on how socially responsible participants felt based on four five-point Likert scale questions. There was a significant effect of eyes or explanation of eyes on the feeling of social responsibility at the $p<.05$ level for the three conditions [$F(3, 116) = 2.69$, $p = .05$].

Table 6

Mean social responsibility value per condition

Condition	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval		Min	Max
					Lower Bound	Upper Bound		
1	30	2.76	.68	.12	2.5	3.01	1.75	4.75
2	30	2.33	.52	.09	2.14	2.53	1.25	3.5
3	30	2.47	.66	.12	2.22	2.71	1.25	4
4	30	2.58	.51	.09	2.38	2.77	1.5	3.5
Total	120	2.53	.61	.06	2.42	2.64	1.25	4.75

Table 7

Bonferroni Post Hoc comparison of Conditions and Social Responsibility

Condition	Condition	Mean Difference	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Control	Eyes present	.43	.15	.04	.01	.84
	Control + Explanation	.29	.15	.37	-.12	.71
	Eyes + Explanation	.18	.15	1	-.23	.59
Eyes present	Control	-.43	.15	.04	-.84	-.01
	Control + Explanation	-.13	.15	1	-.55	.28
	Eyes + Explanation	-.24	.15	.73	-.66	.17
Control + Explanation	Control	-.29	.15	.37	-.71	.12
	Eyes present	.13	.15	1	-.28	.55
	Eyes + Explanation	-.11	.15	1	-.52	.31
Eyes + Explanation	Control	-.18	.15	1	-.59	.23
	Eyes present	.24	.15	.73	-.17	.66
	Control + Explanation	.11	.15	1	-.31	.52

Post hoc comparisons using the Bonferroni test indicated that the mean social responsibility score of the control group ($M = 2.76$, $SD = .68$) was significantly different to the eyes present condition ($M = 2.33$, $SD = .52$) at the $p<.05$ level. The means for the other groups did not show any significant differences. These results show that there is a significant positive effect of the presence of eyes as opposed to no eyes present in creating a feeling of social responsibility amongst participants. The effect of explaining the watching eye effect appears to have no significant effect on the feeling of social responsibility.

Table 8

ANOVA analysis of prosocial division of money on social responsibility

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6.85	3	2.28	7.01	0
Within Groups	37.77	116	.33		
Total	44.62	119			

A one-way between subjects ANOVA was conducted to compare the effect prosocial decisions made in the dictator game and how socially responsible participants felt based on four, five-point Likert scale questions. There was a significant effect of prosocial money division on the feeling of social responsibility at the $p<.05$ level for the four conditions [$F(3, 116) = 7.01$, $p = 0$]. Post hoc comparisons using the Bonferroni test indicated that the mean social responsibility score of the most prosocial group ($M = 2.28$, $SD = .61$) was significantly different to the least prosocial group ($M = 2.89$, $SD = .79$) [$p = 0$]. The mean social

responsibility score of the most prosocial group ($M = 2.28$, $SD = .61$) was also significantly different to the second least prosocial group ($M = 2.88$, $SD = .61$) [$p = 0$]. There were no significant effects from the interactions of the other groups.

These results indicate that playing the economic game in a prosocial manner, has a significant effect on the feeling of social responsibility once the game has been completed.

Table 9
ANOVA of regression moderation analysis of conditions and gender on prosocial division of money

	Sum of Squares	df	Mean Square	F	Sig.
Regression	5.24	3	1.75	1.66	.18
Residual	117.75	112	1.05		
Total	122.99	115			

A moderation analysis was conducted to compare the effect the eyes and explanation conditions and gender had on prosocial decisions made in the dictator game. There was no significant effect of the game conditions and gender on the prosocial division of money at the $p<.05$ level [$F(3, 112) = 1.66$, $p = .18$]. These results imply that gender had no impact when combined with the four conditions of the game in affecting the prosocial decision made in the game.

Table 10
ANOVA of regression moderation analysis of conditions and income on prosocial division of money

	Sum of Squares	df	Mean Square	F	Sig.
Regression	2.82	3	.94	.88	.45
Residual	115.03	108	1.07		
Total	117.86	111			

A moderation analysis was conducted to compare the effect the eyes and explanation conditions and income had on prosocial decisions made in the dictator game. There was no significant effect of the game conditions and income on the prosocial division of money at the $p<.05$ level [$F(3, 108) = .88$, $p = .45$]. These results imply that income had no impact when combined with the four conditions of the game in affecting the prosocial decision made in the game.

Table 11
ANOVA of regression moderation analysis of conditions and social responsibility on prosocial division of money

	Sum of Squares	df	Mean Square	F	Sig.
Regression	18.12	2	9.06	9.92	0
Residual	106.81	117	.91		
Total	124.93	119			
Regression	18.13	3	6.04	6.56	0
Residual	106.8	116	.92		
Total	124.93	119			

Table 12
Summary of moderation model

R	R Square	Adjusted R Square	Std. Error of the Estimate
.38	.15	.13	.96
.38	.15	.12	.96

A regression with prosocial division of money in the dictator as the dependent variable, and game condition and social responsibility as independent variables was run. This model was significant to the $p < .05$ level, [$F(3, 116) = 6.56$, $p = 0$], and explained 38% of variance on prosocial decision making. However, the model without the moderation interaction showed the same of variance (R=.38), thus showing that the interaction had no effect on the variance. This suggests the moderation effect of social responsibility and the game conditions had no effect on the prosocial division of money during the game.

Figure 4.2 highlights the significant results in the developed model. It can be concluded that hypotheses one through to three in the model can be rejected. Hypothesis four, however, was proven with a significant degree of confidence. Hypothesis three did however, show marginally significant results, though not significant at the p<.05 level.

Figure 4.2

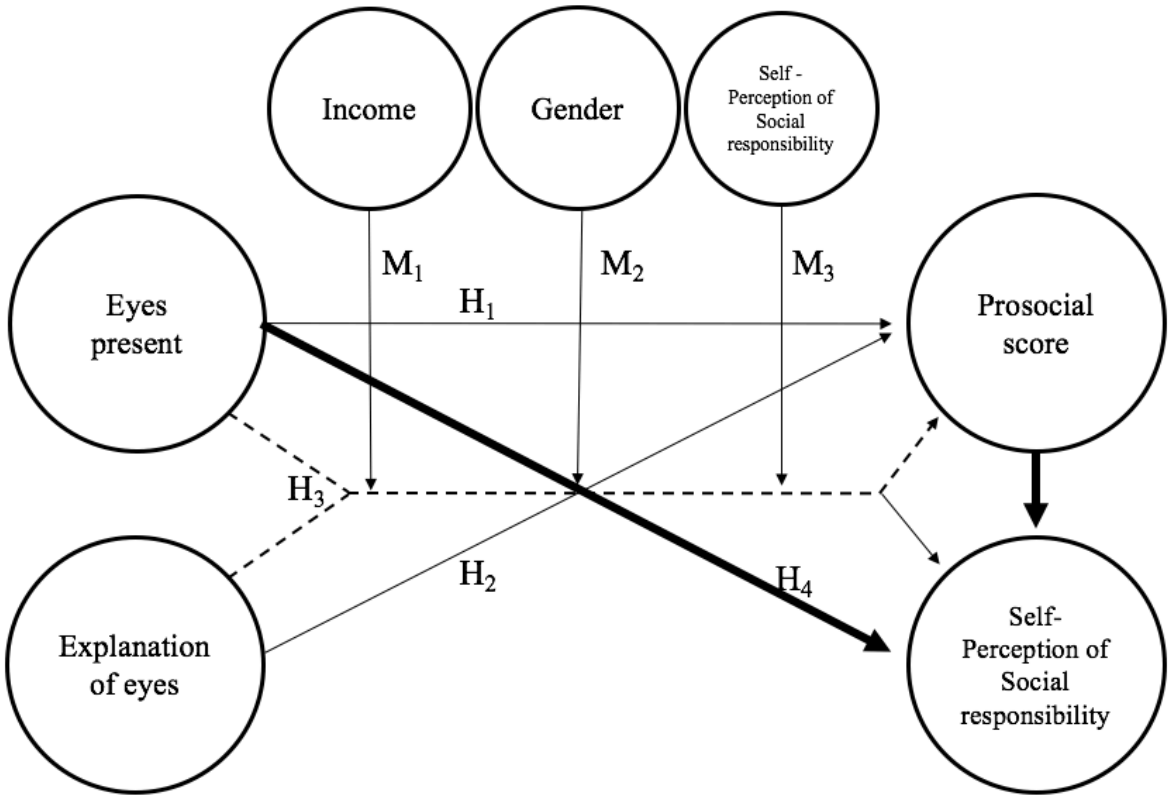

Figure 4.2. Research design model indicating significant findings in bold arrows, and insignificant findings in light arrows. Marginally significant results are highlighted by a dotted line.

5. Discussion

Whilst many scholars have shown the strong effect of the watching eye phenomenon, there have been several studies showing this phenomenon is not always successful. Most notably Matsugasaki, Tsukamoto and Ohtsubo (2015), produced a study with a similar experiment consisting of a dictator game. In both conditions, one increasing the saliency of the watching eye effect over the other, there were no notable differences in the way money was divided between the participant and their opponent when compared to the control group. Similarly, this study found no significant effect of the watching eyes phenomenon. It also found no significant effect of whether or not the participant was aware of the priming motive behind the watching eyes effect.

There were also no notable differences between participants responses with regards to gender or income of the participants in this study. These differences between participants also had no direct effect on the way in which money was divided in the game, regardless of the condition they were randomly assigned to. Finally, this study also found no significant influence on the results, based on how socially responsible the participants evaluated themselves, based on follow-up Likert scale items after completing the game. This suggests that neither gender, income nor a feeling of social responsibility has an impact on how effective the watching eyes effect is, or how effective the phenomenon is after a participant has been made aware of its purpose.

The results of this study did find a marginally significant interaction effect between the presence of eyes, and the explanation of the eyes on prosocial behaviour in the dictator game. This interaction effect is depicted in figure 4.1. Whilst these findings were only marginally significant, these results do provide interesting and promising results regarding the influence of the watching eyes effect, and the awareness of its effect on prosocial behaviour in a dictator game. As such, these results provide a strong recommendation for further research. Replication of this study with a higher sample size is advised, to further examine this interaction effect and its influence on prosocial behaviour. The effect was present, though only marginally significant, suggesting that knowledge on the influence of the watching eyes effect prime, does indeed decrease its effectiveness. Further research is required however, to confirm these results to a more significant degree of confidence.

In contrast however, this study did find some notable significant outcomes that may further explain the results obtained. Firstly, there was a significant impact of the condition the participants were given on the social responsibility score the participants gave themselves. This effect was only significant for the control group and the group with only eyes. The results showed that the control group scored themselves as significantly less socially responsible, than the group that was shown an image of eyes during the game. There were no significant differences between the two groups that received an explanation of the watching eyes phenomenon, and the other conditions. This data suggests that there is no significant effect of explaining the priming phenomenon. While the presence of eyes had no real effect on the prosocial behaviour during the game, the eyes did have a significant impact in how prosocial the participants viewed themselves. This finding is also in line with Bereczkei, Birkas and Kerekes' (2010) work, where they noted that that the presence of another, led more egotistical people to appear and view themselves as more social and altruistic. It appears then, that the presence of an image of an eye may reveal the same cognitive reaction as social presence theory, in allowing people to present themselves as more altruistic and prosocial.

The other notable significant result came from the effect of making prosocial decisions in the dictator game, and the social responsibility score the participants rewarded themselves. The results showed a significant difference between the participants who played the game in the most prosocial manner – by dividing each sum of money as equally as

possible – and the participants who played the game the least prosaically – that is, they awarded themselves the maximum amount of money during the game. The same significant effect was also present between the most prosocial group and the second least prosocial group – this group awarded themselves most, but not all of the money available. This data suggests that the choices the participants made directly affected their perception of how socially responsible they view themselves. The more money the participant shared, in general, the more socially responsible they viewed themselves. This is also in line with previous studies on altruism and prosocial behaviour. Schwartz (1970), found that charitable giving for example, directly improved self-image. This study supports these claims as acting pro-socially seemed directly to improve self-image from a social responsibility point of view.

These results were only present between the extremes however. That is to say, there were no significant differences between the third most prosocial group and the other groups. This suggests that this effect of self-image improvement, is only present when individuals have clearly chosen to behave in a palpable prosocial manner, when compared to individuals who make choices for their own benefit. Another possible explanation for these findings is related to the so called 'warm glow' effect as described by Andreoni (1990). This effect relates to the positive feeling associated with altruistic behaviour. The act of behaving in a prosocial manor during the dictator game may have sparked a warm glow effect response in the participants. In other words, participants who divided the money as equally as possible between themselves and the anonymous other, may have felt good about themselves and did so to improve their own social reputation (Andreoni, 1990). This positive feeling from behaving altruistically may have been reflected in the social responsibility score the participants gave themselves. The feeling of 'doing good' from their altruistic choices, may have caused participants to view themselves in a more positive light in terms of their social responsibility.

Whilst many studies have reported a strong correlation between the watching eyes effect and prosocial behaviour, this study found no such effect. This then begs the question whether the watching eye effect is as prominent as is currently believed. While many scholars agree that the effect is pronounced, others have also found replicating the results challenging. Bereczkei, Birkas and Kerekes state "The altruism-promoting effect of disembodied watching eyes may be weaker than usually believed" (2010), after their replication of the study by Haley and Fessler (2005) also failed to show any significant results. Similarly, Tane & Takezawa (2011) failed to find an observer effect in a dictator game played in darkness with a face stimulus. They too, call for further research in this field to find contextual factors, that may otherwise be responsible for causing the effect. This also begs the question whether the watching eyes effect has indeed suffered from publication bias. Research on this topic has shown a far greater number of strong positive results, as opposed to studies that fail to show any effect at all. Yet an increasing number of studies, are finding it difficult to replicate the results found in initial published studies on the watching eyes effect.

Although this study found no real effect based on whether the participant was informed about the priming motive of the watching eyes effect, this topic has gained increased media exposure over the years amongst young people. Sparks and Barclay (2013) state that the watching eyes effect works at an unconscious level. They found that less obvious cues of the watching eyes effect yields a greater observer effect and a greater prosocial outcome. It stands to reason that with the increasing knowledge on this topic, the unconscious cues of the watching eyes effect are become more apparent, thereby reducing its effect. Further research in this field is needed to fully understand the extent to which the watching eyes cues must remain at an unconscious level.

5.2 Limitations

Several improvements could be made to the study, however. From a methodological point of view, the failure to replicate the previous dictator game studies in this field may be due to virtual nature of the game. Previous studies have used lab experiments, in which participants exchange real sums of money, with a real hidden participant. Whilst the laboratory setting may be a cause to the observer effect often found in these studies, it may be the virtual nature of this study, that yielded inconsistent results. Participants were asked to play a game with a virtual participant, with virtual sums of money, with only a potential to win the money they award themselves. By having a more realistic setting with direct monetary rewards as a result of the in-game decisions, participants may be inclined to react less altruistically in situations where the watching eyes effect is not present.

Another limitation of the study was the random sample selection. Studies have shown that certain demographics, just as religious, or high-income individuals, are more likely to behave in an altruistic manner when dealing with financial decisions. A random selection does not account for these demographic variables which may cause discrepancies in the expected results. To improve this, it is suggested that participants be selected based on equal demographic criteria related to the expected altruistic behaviour. In other words, a repetition of the entire experiment with only low income, non-religious participants may yield other interesting results.

One final methodological limitation of the research lies in the data collection methods. With a survey format, it becomes difficult to control how carefully and seriously participants take part in the research. Outside of a laboratory setting, participants have the freedom rush through surveys, thus rendering important information obsolete. The explanation of the watching eyes phenomenon for example, was a fundamental part of this study. In the form of a piece of text during a survey however, its emphasis may not have been as great as in a laboratory setting, in which the researcher has control over explaining the phenomenon fully. This limitation may have been responsible for a lack of effect found with regards to the explanation of the phenomenon factor at the core of this study. This is however, an area that could be interesting for future research. To improve this, the suggestion is to repeat the study in a comfortable setting, where participants physically compete in a realistic dictator game with another anonymous participant. To remove the laboratory style setting, it is advised that the research is not present during the game, to decrease the impact of the researcher's presence.

Finally, this study also had a conceptual limitation. The watching eyes effect is based mainly on the idea that a subject is being watched, thus causing a behavioural change. Conceptually this effect is hard to measure however, as the very act of observing the behavioural change may spark a similar behavioural response from a participant. By using a dictator game in a research setting, a participant is always aware that their choices are recorded to fulfil a certain research goal. This is the case even if the participant is unaware of the specific research goals. As such, future research should focus on ways in which the watching eyes effect can be measured, without participants being aware of the presence of a researcher or data collection tool. An example would be to measure the effect of the watching eyes phenomenon, on littering in public places. Whilst this does raise ethical issues, this would ensure a participant is not aware of the presence of a researcher. This, in turn, may provoke a more realistic response from the participant based solely on the watching eyes effect and not the presence, or awareness of a researcher.

5.3 Practical Implications

In terms of practical implications, this research shows no direct issues or benefits with making participants aware of the motive behind the watching eyes priming effect. It also does not suggest that using the watching eyes effect can significantly improve prosocial behaving in a monetary or altruistic context. On the contrary, it does build on, and support existing theory that altruistic behaviour improves self-awareness and that the watching eyes effect also acts as an observer, or social presence effect in causing individuals to present themselves as more altruistic than they really are. Practically, this suggests the watching eyes effect does have a priming influence, and as such can be used to temporarily change the perceptions one has of oneself. It also promotes the positive aspects of altruistic behaviour, which directly results in a more socially responsible self-image.

An example of how this study can be applied in a practical sense is within charitable giving. The watching eyes effect appears to have a significant effect on one's self-perception in terms of social responsibility. The data also showed that those with a more socially responsible perception of themselves, tended to behave more altruistically during the dictator game. Charities can use this to their advantage when campaigning or fundraising. By using the watching eyes priming technique to allow the public to feel more socially responsible, the altruistic behaviour of the public is increased, thus potentially resulting in a higher yield of donations.

To conclude, whilst there were several limiting factors to this research and its methodology, it is evident that the watching eyes effect may not be as strong as previously thought. The failure to replicate result previously obtained from the watching eyes effect in a dictator game, suggest further research is needed into the contextual and situational factors that may be responsible for causing such strong results previously.

5.4 Implications for Future Research

This study has several implications for future research to further the understanding in this field. The first suggestion is repeating the current study in a laboratory setting. This allows for greater control and more realistic dictator game results where direct monetary rewards may affect the altruistic behaviour of some participants. It would be interesting to see whether the altruistic effect found by other studies of the watching eyes effect in a laboratory setting can be repeated if the participant is made aware of the priming motives behind the watching eye stimulus. As this study only found marginally significant results on this front, a replication of the study may provide further explanation as to why these results were only marginally, and not fully significant.

Secondly, further research is needed into the contextual and situational factors that allow for the success of the watching eyes phenomenon. An increasing amount of studies are finding differing results to the original watching eyes studies currently available. Situational factors such as demographic data of the participants, the watching eye stimulus used, the sums of monetary reward used in the dictator game, the subtlety of the watching eye cues and presence of other observational factors such as the researcher or other people in the vicinity may play a role in the success of the watching eyes effect. As such, further research should focus on the conditions in which the watching eyes phenomenon has the greatest impact to rule out other contextual factors, that may cause more altruistic responses from participants.

Next, this study found a strong link between the watching eyes effect and the social presence theories surrounded by how individuals temporarily present themselves in more favourable, altruistic manners. As such, this opens up opportunities for further research in this area to further develop the degree to which the watching eyes phenomenon has the

capacity to produce cognitive behavioural changes, in the way individuals present themselves to others. This is an area where currently very little literature is available, and it would be interesting to see the ways in which the watching eyes can not only affect human behaviour and decisions, but also temporarily the way in which humans perceive themselves in terms of social responsibility and altruism.

Finally, there should be a strong focus on replicating successful experiments. Scholars have long agreed on the strong altruistic effect of the watching eyes phenomenon, but only recently have studies begun to emerge that fail to replicate the previously undisputed results. Rigorous testing and confirmation of existing studies is necessary, to reduce any possible publication biases or unrealistic claims on the strength of the effect. The watching eyes effect may be less effective than previously thought, and there should be room for discussion as to whether or not the strength of this affect has changed as interest in the topic grows, or whether other contextual factors are responsible for producing the previously undisputed results.

5.5 Conclusion

To conclude, this research found no significant evidence that the watching eye effect had an influence on the prosocial behaviour exhibited in an economic decision game. Neither did it find any significant evidence that explaining the effect of the watching eyes priming goals, had any influence on its priming success. This study also found no significant moderation effects based on gender, income or self-perceived social responsibility. That is to say that income, gender and self-perceived social responsibility have no effect on the success of the watching eyes effect and the awareness of the watching eyes effect have on prosocial behaviour in a dictator game. This research did however find significant effects the watching eyes effect can have on perceived social responsibility. The watching eyes effect appeared to significantly increase the self-perception of being socially responsibility. Additionally, it found a significant positive influence of prosocial behaviour on self-image, that is, playing a dictator game in an altruistic manner, positively influences how socially responsible one views oneself.

This study highlights four hypotheses that it expected to find. The first hypothesis was ‘the presence of eyes will significantly increase the prosocial division of money in an economic dictator game’. This hypothesis was found to be insignificant and has therefore been rejected. The second hypothesis of ‘The awareness of the influence of the watching eyes effect will significantly decrease the effect eyes have on the prosocial division of money during an economic dictator game’, was also found to be insignificant, and has therefore been rejected by this study. The third hypothesis tested for was ‘there will be significant differences in prosocial behaviours in an economic dictator game between each of the four conditions’. This hypothesis was also found to be only marginally significant and has therefore also been rejected. Finally, the third hypothesis of this study that was tested for was: ‘the presence of eyes will significantly increase the self-perception of social responsibility participants have’. This hypothesis can be accepted with a high degree of confidence, as this study found significant evidence for this claim.

Finally, this study highlighted several sub questions and a main research question. Based on the significant findings of this study, these questions can be answered with a high degree of confidence. This study found that gender and income have no significant effect on the strength of the watching eyes effect. Secondly, the watching eyes effect does have a significant positive influence on one’s perception of one’s own social responsibility. And finally, the main research question proposed by this study was ‘Can the watching eyes effect increase prosocial behaviour in a dictator game, and to what extent is this effect affected by awareness of the effect of the watching eye stimulus?’. Based on the findings of this study, it

is concluded that the watching eyes effect does not increase prosocial behaviour in a dictator game, and there is no significant effect on the watching eyes effect's success based on whether or not the participant is aware of the effect of the watching eye stimulus.

6. References

Amato, P. R. (1985). An investigation of planned helping behaviour. *Journal of Research in Personality,19*(2), 232-252. doi:10.1016/0092-6566(85)90031-5

Andreoni, J. (1989). Giving with Impure Altruism: Applications to Charity and Ricardian Equivalence. *Journal of Political Economy,97*(6), 1447-1458. doi:10.1086/261662

Andreoni, J. (1990). Impure altruism and donations to public goods: A theory of warm-glow giving. *The economic journal*, *100*(401), 464-477.

Barclay, P. (2004). Trustworthiness and competitive altruism can also solve the "tragedy of the commons". *Evolution and Human Behavior,25*(4), 209-220. doi:10.1016/j.evolhumbehav.2004.04.002

Bargh, J. A. (2016). Awareness of the prime versus awareness of its influence: Implications for the real-world scope of unconscious higher mental processes. *Current Opinion in Psychology,12*, 49-52. doi:10.1016/j.copsyc.2016.05.006

Bargh, J. A. (1992). Does subliminality matter to social psychology? Awareness of the stimulus versus awareness of its influence.

Basil, D. Z., Ridgway, N. M., & Basil, M. D. (2006). Guilt appeals: The mediating effect of responsibility. *Psychology and Marketing,23*(12), 1035-1054. doi:10.1002/mar.20145

Batson, C. D., & Shaw, L. L. (1991). Evidence for Altruism: Toward a Pluralism of Prosocial Motives. *Psychological Inquiry,2*(2), 107-122. doi:10.1207/s15327965pli0202_1

Bateson, M., Nettle, D., & Roberts, G. (2006). Cues of being watched enhance cooperation in a real-world setting. *Biology letters*, *2*(3), 412-414.

Baumeister, R. F., & Steinhilber, A. (1984). Paradoxical effects of supportive audiences on performance under pressure: The home field disadvantage in sports championships. *Journal of personality and social psychology*, *47*(1), 85.

Bekkers, R., & Schuyt, T. (2008). And who is your neighbor? Explaining denominational differences in charitable giving and volunteering in the Netherlands. Review Of Religious Research, 50(1), 74-96.

Bekkers, R., & Wiepking, P. (2006). To Give or Not to Give, That Is the Question: How Methodology Is Destiny in Dutch Giving Data. *Nonprofit and Voluntary Sector Quarterly,35*(3), 533-540. doi:10.1177/0899764006288286

Bekkers, R., & Wiepking, P. (2011). A literature review of empirical studies of philanthropy: Eight mechanisms that drive charitable giving. *Nonprofit and voluntary sector quarterly*, *40*(5), 924-973.

Bereczkei, T., Birkas, B., & Kerekes, Z. (2010). The presence of others, prosocial traits, machiavellianism. *Social Psychology*.

Biocca, F., Harms, C., & Burgoon, J. K. (2003). Toward a More Robust Theory and Measure of Social Presence: Review and Suggested Criteria. *Presence: Teleoperators and Virtual Environments,12*(5), 456-480. doi:10.1162/105474603322761270

Boyd, R., Gintis, H., & Bowles, S. (2010). Coordinated Punishment of Defectors Sustains Cooperation and Can Proliferate When Rare. *Science,328*(5978), 617-620. doi:10.1126/science.1183665

Boyd, R., Gintis, H., Bowles, S., & Richerson, P. J. (2003). The evolution of altruistic punishment. *Proceedings of the National Academy of Sciences*, *100*(6), 3531-3535.

Bull, R., & Gibson-Robinson, E. (1981). The Influences of Eye-Gaze, Style of Dress, and Locality on the Amounts of Money Donated to a Charity. *Human Relations,34*(10), 895-905. doi:10.1177/001872678103401005

Chekroun, P., & Brauer, M. (2002). The bystander effect and social control behaviour: The effect of the presence of others on peoples reactions to norm violations. *European Journal of Social Psychology,32*(6), 853-867. doi:10.1002/ejsp.126
Cunningham, M. R., Steinberg, J., & Grev, R. (1980). Wanting to and having to help: Separate motivations for positive mood and guilt-induced helping. *Journal of Personality and Social Psychology,38*(2), 181-192. doi:10.1037//0022-3514.38.2.181
Custers, R., & Aarts, H. (2010). The Unconscious Will: How the Pursuit of Goals Operates Outside of Conscious Awareness. *Science,329*(5987), 47-50. doi:10.1126/science.1188595
Dewey, J. (2005). *Art as experience*. New York: Perigee Book.
Ekström, M. (2011). Do watching eyes affect charitable giving? Evidence from a field experiment. *Experimental Economics,15*(3), 530-546. doi:10.1007/s10683-011-9312-6
Ernest-Jones, M., Nettle, D., & Bateson, M. (2011). Effects of eye images on everyday cooperative behaviour: A field experiment. *Evolution and Human Behavior,32*(3), 172-178. doi:10.1016/j.evolhumbehav.2010.10.006
Ernest-Jones, M., Nettle, D., & Bateson, M. (2011). Effects of eye images on everyday cooperative behaviour: A field experiment. *Evolution and Human Behavior,32*(3), 172-178. doi:10.1016/j.evolhumbehav.2010.10.006
Fehr, E., & Gächter, S. (2002). Altruistic punishment in humans. *Nature,415*(6868), 137-140. doi:10.1038/415137a
Ferguson, M. J., & Bargh, J. A. (2004). Liking Is for Doing: The Effects of Goal Pursuit on Automatic Evaluation. *Journal of Personality and Social Psychology,87*(5), 557-572. doi:10.1037/0022-3514.87.5.557
Fong, C. M. (2007). Evidence from an Experiment on Charity to Welfare Recipients: Reciprocity, Altruism and the Empathic Responsiveness Hypothesis. *The Economic Journal,117*(522), 1008-1024. doi:10.1111/j.1468-0297.2007.02076.x
Garramone, G. M., Harris, A. C., & Anderson, R. (1986). Uses of political computer bulletin boards. *Journal of Broadcasting & Electronic Media,30*(3), 325-339. doi:10.1080/08838158609386627
Haley, K. J., & Fessler, D. M. (2005). Nobodys watching? *Evolution and Human Behavior,26*(3), 245-256. doi:10.1016/j.evolhumbehav.2005.01.002
Harris, M. B., Benson, S. M., & Hall, C. L. (1975). The Effects of Confession on Altruism. *The Journal of Social Psychology,96*(2), 187-192. doi:10.1080/00224545.1975.9923284
Herr, P. M., Sherman, S. J., & Fazio, R. H. (1986). On the consequences of priming: Assimilation and contrast effects. *Journal of Experimental Social Psychology,19*(4), 323-340. doi:10.1016/0022-1031(83)90026-4
Horne, C. (2003). The Internal Enforcement of Norms. European Sociological Review, 19(4), 335-343.
Iyengar, S., & Kinder, D. R. (1987). News that matters: Agenda-setting and priming in a television age. *News that Matters: Agenda-Setting and Priming in a Television Age*.
Khalil, E. L. (2004). What is altruism? A reply to critics. *Journal of Economic Psychology*, *25*(1), 141-143.
Kushnir, T. (1986). Stress and social facilitation: The effects of the presence of an instructor on student nurses behaviour. *Journal of Advanced Nursing,11*(1), 13-19. doi:10.1111/j.1365-2648.1986.tb01215
Lasky, N. V., Fisher, B. S., & Jacques, S. (2017). 'Thinking thief'in the crime prevention arms race: Lessons learned from shoplifters. *Security Journal*, *30*(3), 772-792.
Loftus, E. F., & Klinger, M. R. (1992). Is the unconscious smart or dumb? *American Psychologist,47*(6), 761-765. doi:10.1037//0003-066x.47.6.761
Lowenthal, P. R. (2010). Social Presence. *Social Computing,*129-136. doi:10.4018/978-1-60566-984-7.ch011

Matsugasaki, K., Tsukamoto, W., & Ohtsubo, Y. (2015). Two Failed Replications of the Watching Eyes Effect. *Letters on Evolutionary Behavioral Science,6*(2), 17-20. doi:10.5178/lebs.2015.36

Nettle, D., Harper, Z., Kidson, A., Stone, R., Penton-Voak, I. S., & Bateson, M. (2013). The watching eyes effect in the Dictator Game: Its not how much you give, its being seen to give something. *Evolution and Human Behavior,34*(1), 35-40. doi:10.1016/j.evolhumbehav.2012.08.004

Nowak, M. A., & Sigmund, K. (2005). Evolution of indirect reciprocity. *Nature*, *437*(7063), 1291.

Panchanathan, K., & Boyd, R. (2003). A tale of two defectors: The importance of standing for evolution of indirect reciprocity. *Journal of Theoretical Biology,224*(1), 115-126. doi:10.1016/s0022-5193(03)00154-1

Rigdon, M., Ishii, K., Watabe, M., & Kitayama, S. (2009). Minimal social cues in the dictator game. *Journal of Economic Psychology,30*(3), 358-367. doi:10.1016/j.joep.2009.02.002

Roberts, G. (1998). Competitive altruism: From reciprocity to the handicap principle. *Proceedings of the Royal Society of London. Series B: Biological Sciences,265*(1394), 427-431. doi:10.1098/rspb.1998.0312

Scheufele, D. A. (2000). Agenda-Setting, Priming, and Framing Revisited: Another Look at Cognitive Effects of Political Communication. *Mass Communication and Society,3*(2-3), 297-316. doi:10.1207/s15327825mcs0323_07

Schwartz, R. A. (1970). Personal Philanthropic Contributions. *Journal of Political Economy,78*(6), 1264-1291. doi:10.1086/259708

Sherman, S. J., Rose, J. S., Koch, K., Presson, C. C., & Chassin, L. (2003). Implicit and explicit attitudes toward cigarette smoking: The effects of context and motivation. *Journal of Social and Clinical Psychology*, *22*(1), 13-39.

Shin, Y., Lee, B., & Kim, J. (2015). Prosocial Activists in SNS: The Impact of Isomorphism and Social Presence on Prosocial Behaviors. *International Journal of Human-Computer Interaction,31*(12), 939-958. doi:10.1080/10447318.2015.1085699

Soetevent, A. R. (2005). Anonymity in giving in a natural context—a field experiment in 30 churches. *Journal of Public Economics,89*(11-12), 2301-2323. doi:10.1016/j.jpubeco.2004.11.002

Sparks, A., & Barclay, P. (2013). Eye images increase generosity, but not for long: The limited effect of a false cue. *Evolution and Human Behavior,34*(5), 317-322. doi:10.1016/j.evolhumbehav.2013.05.001

Sylwester, K., & Roberts, G. (2010). Cooperators benefit through reputation-based partner choice in economic games. *Biology Letters,6*(5), 659-662. doi:10.1098/rsbl.2010.0209

Tane, K., & Takezawa, M. (2011). Perception of human face does not induce cooperation in darkness. *Letters on Evolutionary Behavioral Science,2*(2). doi:10.5178/ebs.2011.15

Todd, S. J., & Lawson, R. W. (1999). Towards a better understanding of the financial donor: An examination of donor behaviour in terms of value structure and demographics. *International Journal of Nonprofit and Voluntary Sector Marketing,4*(3), 235-244. doi:10.1002/nvsm.76

Wiepking, P. (2008). For the love of mankind: A sociological study on charitable giving.

Wiepking, P., & Bekkers, R. (n.d.). Giving in the Netherlands. *The Palgrave Handbook of Global Philanthropy*. doi:10.1057/9781137341532.0019

Wiepking, P., & Bekkers, R. (2010). Does who decides really matter? Causes and consequences of personal financial management in the case of larger and structural charitable donations. *Voluntas: International Journal of Voluntary and Nonprofit Organizations*, *21*(2), 240-263.

Appendix A
Literature Logbook

Research Questions
The following research questions were developed for the literature study:
- Which factors motivate charitable giving?
    - o Which factors motivate altruistic behaviours?
- To what extent can social presence theory be used to motivate prosocial behaviour?
- Can the watching eyes effect promote prosocial behaviour?
    - o How does the watching eyes effect influence people?
- Is a priming stimulus still effective if a subject is aware of the prime and its influence?

Criteria preferred materials
The main sources for materials to be used during the literature study were scientific articles. They were mainly English, though some Dutch articles were considered too. In general, the focus was on recently published articles, unless concepts are discussed that have been developed some time ago such as social presence theory or altruism. Articles selected were from reputable sources, and must be peer reviewed. Claims in articles were also validated by checking relevant sources or repetitions of experiments to find similar results. This was done to ensure claims are valid and repeatable.

Selected databases
The main databases used were google scholar, Scopus and science direct. Research gate was also considered in some cases, though not all these articles were accessible. Research gate was however a valuable source to find relevant authors on articles, such as Bargh's work on awareness of priming stimulus. In general, google Scopus provided too many results, and as such was mainly used to get an idea of strong search terms and relevant authors. This helped for example to pin point Bateson's work on the watching eyes theory which was then further explored in less broad databases such as Scopus or science direct. In general, Scopus and science direct showed fewer results and as such made finding relevant articles easier. Many search terms were entered into multiple databases however to ensure no relevant articles were missed and to compare the results between databases for reliability of the sources used.

Relevant Terms

Concept	Related Terms	Smaller Terms	Broader Terms
Charitable giving	Charities, altruistic behaviour	Donations	Altruism
Social presence theory	Presence of others, Bystander	Bystander, pressure	Social Presence
Watching Eyes Effect	Priming, social Psychology	Fake camera, Watching eyes	Watching eyes effect
Awareness of prime	Influence of priming, knowledge of prime, Priming success	Priming awareness	Priming, influence, behavioural changes
Social Reputation	Reputation management, social groups, in-groups, out-groups	Social group reputation	Social pressure, social norms, belonging to social group

Social Punishment	Reputation management, Conforming to social norms, In-group, Out-group	Social group punishment	Punishment pressure, Belonging to social group, social norms

Search Actions

Number	Date	Database/Set number	Search action + search technique	Total hits
1	15/05/19	Google Scholar	Social Presence Theory	4.5m
2	15/05/19	Google Scholar	Social Presence Behaviour	3.5M
3	15/05/19	Google Scholar	Charitable Giving Altruism	63,200
4	17/05/19	Scopus	Watching Eyes Effect	254
5	17/05/19	Scopus	(Watching AND Eyes) AND (Priming)	31
6	18/05/19	Google Scholar	Watching Eyes Phenomenon	364,000
7	23/05/19	Scopus	Awareness Prime Influence	165
8	24/05/19	Scopus	Bargh (Author)	285
9	25/05/19	Science Direct	Self Perception Altruism	6,422
10	25/05/19	Google Scholar	Prosocial Behaviour Priming	23,100
11	25/05/19	Scopus	Prosocial Priming	111
12	04/06/19	Science Direct	Dictator Game	3,109
13	04/06/19	Scopus	Altruism Self Image	84
14	04/06/19	Scopus	Social Presence Watching Eyes	24
15	05/06/19	Scopus	Self Image Priming	130
16	07/06/19	Google Scholar	Crime Watching Eyes	221,000

Found references

Below are a few examples of relevant articles retrieved from the search terms above:

Andreoni, J. (1989). Giving with Impure Altruism: Applications to Charity and Ricardian Equivalence. *Journal of Political Economy,97*(6), 1447-1458. doi:10.1086/261662

Barclay, P. (2004). Trustworthiness and competitive altruism can also solve the "tragedy of the commons". *Evolution and Human Behavior,25*(4), 209-220. doi:10.1016/j.evolhumbehav.2004.04.002

Bargh, J. A. (2016). Awareness of the prime versus awareness of its influence: Implications for the real-world scope of unconscious higher mental processes. *Current Opinion in Psychology,12*, 49-52. doi:10.1016/j.copsyc.2016.05.006

Batson, C. D., & Shaw, L. L. (1991). Evidence for Altruism: Toward a Pluralism of Prosocial Motives. *Psychological Inquiry,2*(2), 107-122. doi:10.1207/s15327965pli0202_1

Bateson, M., Nettle, D., & Roberts, G. (2006). Cues of being watched enhance cooperation in a real-world setting. *Biology letters*, *2*(3), 412-414.

Bekkers, R., & Wiepking, P. (2006). To Give or Not to Give, That Is the Question: How Methodology Is Destiny in Dutch Giving Data. *Nonprofit and Voluntary Sector Quarterly,35*(3), 533-540. doi:10.1177/0899764006288286
Boyd, R., Gintis, H., Bowles, S., & Richerson, P. J. (2003). The evolution of altruistic punishment. *Proceedings of the National Academy of Sciences*, *100*(6), 3531-3535.
Custers, R., & Aarts, H. (2010). The Unconscious Will: How the Pursuit of Goals Operates Outside of Conscious Awareness. *Science,329*(5987), 47-50. doi:10.1126/science.1188595
Ernest-Jones, M., Nettle, D., & Bateson, M. (2011). Effects of eye images on everyday cooperative behaviour: A field experiment. *Evolution and Human Behavior,32*(3), 172-178. doi:10.1016/j.evolhumbehav.2010.10.006
Ferguson, M. J., & Bargh, J. A. (2004). Liking Is for Doing: The Effects of Goal Pursuit on Automatic Evaluation. *Journal of Personality and Social Psychology,87*(5), 557-572. doi:10.1037/0022-3514.87.5.557
Haley, K. J., & Fessler, D. M. (2005). Nobodys watching? *Evolution and Human Behavior,26*(3), 245-256. doi:10.1016/j.evolhumbehav.2005.01.002
Khalil, E. L. (2004). What is altruism? A reply to critics. *Journal of Economic Psychology*, *25*(1), 141-143.
Lowenthal, P. R. (2010). Social Presence. *Social Computing,*129-136. doi:10.4018/978-1-60566-984-7.ch011
Matsugasaki, K., Tsukamoto, W., & Ohtsubo, Y. (2015). Two Failed Replications of the Watching Eyes Effect. *Letters on Evolutionary Behavioral Science,6*(2), 17-20. doi:10.5178/lebs.2015.36
Rigdon, M., Ishii, K., Watabe, M., & Kitayama, S. (2009). Minimal social cues in the dictator game. *Journal of Economic Psychology,30*(3), 358-367. doi:10.1016/j.joep.2009.02.002
Soetevent, A. R. (2005). Anonymity in giving in a natural context—a field experiment in 30 churches. *Journal of Public Economics,89*(11-12), 2301-2323. doi:10.1016/j.jpubeco.2004.11.002
Sparks, A., & Barclay, P. (2013). Eye images increase generosity, but not for long: The limited effect of a false cue. *Evolution and Human Behavior,34*(5), 317-322. doi:10.1016/j.evolhumbehav.2013.05.001
Todd, S. J., & Lawson, R. W. (1999). Towards a better understanding of the financial donor: An examination of donor behaviour in terms of value structure and demographics. *International Journal of Nonprofit and Voluntary Sector Marketing,4*(3), 235-244. doi:10.1002/nvsm.76

Reflection

Several choices were made to ensure the information found was reliable and qualitatively sound. First, several databases were examined for the same search terms. This was to check whether the same sources appeared in multiple databases. If so, the sources seemed more reliable. The number of citations and publishing journal were also taken into account. The higher the number of citation, the more reliable. Similarly, the reputation of the journal was also taken into account, to ensure it only posted relevant scientific and peer reviewed articles. Finally, the date was taken into account. Several older articles were used to explain older concepts, however, when any research data was discussed, only relatively recent work was considered to ensure newer research did not find alternative results. The results were also compared with other research in the field to see if similar results were obtained from similar research studies.

To gain more knowledge on the subject initially, first, large databases were used such as google scholar. This provided a basis on which to focus on for further knowledge accumulation. Google searches were also used, but only claims that came from peer reviewed

scientific articles were ultimately cited and used in the text. The google searches were useful in gaining basic background knowledge however, and helping to find relevant search terms to use. For example, a google search revealed a study with the watching eyes effect on crime in a blog post. This was then checked in a scientific database, and this research provided insights to many other similar studies. While no information from the google searches was used to make any claims in the text, it did allow for easier searching of scientific articles as relevant concepts and search terms came up on many webpages.

To find relevant terms, the searches made went from broad to specific. For social presence theory, for example the search started out with simple 'social AND presence AND theory'. Once general definitions were found, more specific searches including prosocial behaviour, priming and behavioural changes were added. This same procedure was used for each of the search terms. Each term started with a broad search for definitions, which were then elaborated for searches within specific context. Prosocial behaviour and behavioural changes were two terms which yielded a lot of relevant articles in the appropriate field of research for this study. In some cases, some deviations were made from the initial search terms as information was needed on specific contextual areas. The watching eyes effect was for example explored within the field of crime and antisocial behaviour. Whilst the study focussed on prosocial behaviour, it was relevant to also find how the effect could be applied in preventing crime, not just promoting prosocial behaviour in general.

The relevance of articles and sources found was determined by several factors. First the number of citations was considered. A highly cited source, implied its relevance and reliability within the chosen field. Next, the publisher was considered, to ensure the article was published in a scientific, peer reviewed journal, with an editorial board that carefully choses its papers to publish. The reputation of the journal was also considered to ensure it had a large enough audience. Next, the publishing date was considered. In general, more recent published articles were considered more, than older, dated articles. Finally, the author was explored to see whether the work published fitted within the authors line of work and expertise.

To make the process easier next time, the search would not just include a search for random articles, but perhaps start with a search for relevant journals. This would yield a journal that was relevant to the topic of interest, thus producing an entire journal of possible relevant articles, that have all been peer reviewed and chosen by an editorial board. This would also ensure the sources are both recent and reliable. In addition, the next search operation, would include a search matrix to help keep track of relevant articles, authors and journals to ensure easier citations and searching within a specific scope. This would provide a basis from which to generate more specific search terms if necessary and evaluate ineffective search terms to avoid.

Overall, the process of finding literature, while lengthy, was done with care to ensure any claims made in the study were backed up with sufficient credibility. Without the checks for reliability and relevance, claims made in the study could not be made with confidence, thus lowering the credibility of the research as a whole.

Appendix B

Control Group Survey

Please read the following text carefully.

You are about to play a game in which you decide how much money you make.

In the game you are playing with another participant of this research project who has been randomly assigned to you. You have been assigned the role of the dictator. You will be given two instalments of 10 euros. Simply choose how you wish to divide this money between you and the other participant. How you do this is entirely your own choice.

At the end of the survey you have the chance to enter a prize draw in which you and your opponent can win the money you have decided to allocate yourself during the game in cash.

Good luck!

Please only continue once you have read the text fully.

You have been given your first 10 euros. Choose what you wish to do with this amount.

- ○ Keep all of the 10 euros, give nothing to the other participant.
- ○ Split the 10 euros 50/50, giving each of you 5 euros.

You now have 10 euros in the bank. You have been given another 10 euros. Decide what you wish to do with this money.

- ○ Keep 7 euros, gviving the other participant 3 euros.
- ○ Keep 6 euros, giving the other participant 4 euros.

The other participant has been given a 10 euros participation bonus, for having no say in the amount of money they receive. They have decided to give you all of this money. You now have an extra 10 euros. Decide what you wish to do with it.

- ○ Keep all of the 10 euros, give them nothing.
- ○ Split the 10 euros 50/50, giving you both 5.

What is your gender?

- ○ Male
- ○ Female
- ● Prefer not to say

What is roughly your yearly income?

- ○ 0-20K a year
- ○ 20k-40k a year
- ○ 40k-60k a year
- ○ More than 60K a year
- ● Prefer not to say

Had you heard of the watching eyes phenomenon before this study?

- ○ Yes
- ○ No

Please select the degree to which you agree to these statements.

	Strongly Disgree	Disagree	Neutral	Agree	Strongly Agree
I often give money to charity	○	○	○	○	○
I consider myself socially responsible	○	○	○	○	○
I mainly live for my own personal satisfaction	○	○	○	○	○
I often try to help others	○	○	○	○	○
I felt like I was being watched during this study	○	○	○	○	○

Did you notice a picture of eyes whilst filling out this survey?

- ○ Yes
- ○ No

Appendix C

Watching Eyes Present Condition

UNIVERSITY OF TWENTE.

You have been given your first 10 euros. Choose what you wish to do with this amount.

- ○ Keep all of the 10 euros, give nothing to the other participant.
- ○ Split the 10 euros 50/50, giving each of you 5 euros.

Appendix D

Explanation Present Condition

Please read the following text carefully. Only proceed once you have read and understood the text.

In social psychology, there is a theory that one can stimulate pro-social behaviour through the use of pictures of eyes. The theory is that the presence of eyes gives one the impression that one is being watched. This leads people to behave in a more pro-social way.

For example, this theory has been used to improve charitable donations; putting the right amount of money in an honesty box; and lowering the amount of littering in given areas. In each of these examples, pictures of eyes were put up in an area, which drastically improved the conditions being tested. That is to say, the eyes were responsible for increasing charitable donations, paying the correct amount in an honesty box and reducing littering.

The theory works on the same premise as putting up fake security cameras. The eyes, much like the empty casing of a security camera, can cause people to behave as if someone were watching them.

Please continue.