In the presence of god : does acceptance by god increase prosocial behavior?

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**NANYANG
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IN THE PRESENCE OF GOD:

DOES ACCEPTANCE BY GOD INCREASE PROSOCIAL BEHAVIOR?

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SCHOOL OF SOCIAL SCIENCES

2019

**IN THE PRESENCE OF GOD:
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School of Social Sciences

A thesis submitted to the Nanyang Technological University in partial fulfilment of the
requirement for the degree of Master of Arts

2019

Statement of Originality

I certify that all work submitted for this thesis is my original work. I declare that no other person's work has been used without due acknowledgement. Except where it is clearly stated that I have used some of this material elsewhere, this work has not been presented by me for assessment in any other institution or University. I certify that the data collected for this project are authentic and the investigations were conducted in accordance with the ethics policies and integrity standards of Nanyang Technological University and that the research data are presented honestly and without prejudice.

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WOO YUE TING

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This thesis **does not** contain any materials from papers published in peer-reviewed journals or from papers accepted at conferences in which I am listed as an author.

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WOO YUE TING

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This was a long and grinding journey. But it was in writing this thesis that I fully grasped its premise – that I need not be afraid because I am not alone.

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Abstract

Many people believe in God, but they may not mentally represent God in the same way. Though the “anthropomorphism of God” has usually been taken to mean the ascribing of human traits and qualities to God, this paper puts forth the perspective that the way people think about their own relationship with God is also guided by social judgement. Further, I argue that because relationships with God are based on the same foundations as that with other humans, perceiving a loving and accepting relationship with God can prime people to expect a similar experience with people. Hence, I hypothesized that reminders and thoughts about being accepted by God would result in more positive expectations towards a partner in a Dictator Game than thinking about being rejected by God. Further, I predicted that participants’ expectations would affect their own willingness to be prosocial in the Dictator Game. Results from two experimental studies did not support the first hypothesis, though participants’ expectations of their partner was consistently found to be a significant predictor of their own prosociality. Four possibilities for the null findings are discussed and recommendations for future studies are made.

Keywords: anthropomorphism, God, religion, attachment security, prosocial behavior

“How bold one gets when one is sure of being loved.” – Sigmund Freud

In The Presence Of God: Does Acceptance By God Increase Prosocial Behavior?

Most people would agree that it feels good to belong and be accepted. Being social creatures, humans gain a host of physical and psychological benefits when they feel connected to others (e.g. Cohen, 2004; House, Landis, & Umberson, 1988; Uchino, Cacioppo, & Kiecolt-Glaser, 1996). In fact, the need for social connectedness is so crucial and fundamental to people’s wellbeing and functioning that humans attempt to form relationships even with non-human agents, such as pets (Sable, 1995). In this research, I examine whether, and to what extent, the feeling of being connected to one such agent – God – can influence prosocial intentions and behaviors.

God and Good

For centuries, discussions about religion have been intertwined with morality. While some believe that people cannot be good without faith in a religion (Gervais, 2013; Gervais, 2014; Gervais, Shariff, & Norenzayan, 2011), others hold that religion only encourages bigotry and division (e.g. Dawkins, 2006). But for those who favor a more nuanced approach, any religion is good as long as it teaches love and compassion. What makes this an unending debate is the fact that, regardless of one’s stance, one can always find evidence from daily observations to support it. On one hand, acts of religious extremism suggest that religion leads to violence and division. Yet, countless acts of kindness in everyday life (such as when a few Buddhist temples in Singapore kept their outdoor tentages erected during Hari Raya Haji for Muslim believers to pray under; Toh & Goh, 2018) show that this is not always the case.

This raises an important question – how and when does religion become a motivating factor for one to do good, rather than evil? The aim of this thesis is to refine the boundary conditions under which religions result in prosocial, instead of antisocial, behaviors.

Many believe in the power of religious faith in motivating prosocial behaviors. This belief is supported by science. Shariff and Norenzayan (2007) conducted two studies showing that people were more likely to behave prosocially after being reminded of God. In their experiments, participants were randomly assigned to receive experimental primes that activated either God-related ideas or neutral ideas before completing a Dictator Game as a measure of prosocial behavior. They found that participants were more generous when they had been primed with God-related ideas than neutral ones, showing experimentally that God-related thoughts may influence prosociality. Consistent with this finding, past research has uncovered positive correlations between religiosity and prosociality – both self- and peer-reported (Saroglou, Pichon, Trompette, Verschueren, & Dernelle, 2005; Tay, Li, Myers, & Diener, 2014) – and experimental evidence that subliminally priming religion can lead to increased prosocial behavior (Pichon, Boccato, & Saroglou, 2007).

However, even though there is evidence that being reminded of God increases the intention to be prosocial, it is less clear if this relationship is moderated by how the individual mentally represents God. In other words, does thinking about God encourage prosociality only when one is thinking about a *certain kind* of God?

The evidence points to a tentative yes. On one hand, there is evidence that people who believed in a harsh and punishing God were more likely to behave prosocially by cheating less when given the opportunity (Shariff & Norenzayan, 2011), and this was presumably because such a God was perceived as less tolerant of any wrongdoing compared to a gentle and compassionate one. On the other hand, researchers have found that belief –

both naturally observed and experimentally induced – in a punishing and authoritarian God was related to increased aggression and *decreased* prosocial behaviors, while believing in a benevolent God was related to the opposite (Johnson, Li, Cohen, & Okun, 2013). In an attempt to reconcile these findings with those before, Johnson and colleagues (2013) explained that belief in an authoritarian God might decrease cheating and other immoral behaviors by inciting the fear of punishment, but at the same time decrease prosocial behavior by activating aggression-related ideas and increasing (over)sensitivity towards potential freeloaders and other social transgressors. In other words, thinking about an authoritarian God may decrease prosocial behaviors by increasing the accessibility of punishment-related ideas and thereby, a readiness to see immorality in others.

What is interesting and important in Johnson and colleagues' (2013) claim is that a prosocial act might not be just a simple matter of the principles and teachings that one upholds. Rather, it is a complex decision based on a potential helper's subjective evaluation of the situation, from the contextual factors around them all the way to the assumptions they have about the recipient of help. In particular, if one was expecting to have their kindness repaid with evil, it would not be surprising if he or she felt reluctant to be prosocial.

Therefore, it is conceivable that the seemingly contradictory findings regarding the effect of religion on prosociality might be because different mental representations of God bring up different expectations of other people. To understand why this might be so, it is necessary to first examine the nature of interpersonal relationships and how people come to form expectations of others.

Social Connection: A Basic Human Need

As humans, we have a need for belonging and a sense of connectedness with those around us. From as early as six months old, infants visually attend more to human faces as

compared to other complex stimuli (Gliga, Elsabbagh, Andravizou, & Johnson, 2009), suggesting that the desire to interact and connect with other humans might be innate, present without any prior learning or socialization.

In addition, theorists of human motivation often take into account the fundamental role of feeling accepted on well-being and functioning. For example, Abraham Maslow (1943), who categorized and ranked the needs of humans into five broader themes (physiological, safety, love, esteem, and self-actualization), placed what he termed “love needs” (i.e. the need for love, affection, and belonging) as being above only physiological and safety needs – the two needs that are absolutely essential to the physical survival of the individual. Because Maslow’s pyramid-shaped hierarchy of needs was meant to represent how ‘higher-level needs’ were built upon the foundation of the fulfilment of relatively lower-level ones, the position of the love needs in the hierarchy implies that it is the basis for the fulfilment of other needs, such as that for self-esteem and purpose. In line with this, Maslow also identified unfulfilled love needs as the cause of most forms of psychopathology – a claim that has been supported by research thus far (e.g. Kessler, Price, & Wortman, 1985).

Zooming into people’s moment-to-moment functioning, the need for social connection also seems to affect the immediate thoughts and judgements of individuals. For instance, the need for social connection and affiliation has been thought to be one of three factors that underlie anthropomorphism (Epley, Waytz, & Cacioppo, 2007) – the tendency to imbue non-human agents with human characteristics – with studies showing that lonely people tend to anthropomorphize more than those who did not feel lonely, possibly as a means to fulfill their need for social connection (Epley, Akalis, Waytz, & Cacioppo, 2008). This natural inclination to ‘see’ people even when they are not there highlights the extent to

which other people are key elements in the way we perceive and think about the world. Why then is feeling socially connected so important to us?

People Feel Safer When They Are Not Alone

One possible reason can be found in evolutionary theory. Being neither particularly fast nor strong, ancestral humans would have needed to band together in order to hunt for food and protect themselves against predators (Kenrick, Ackerman, & Ledlow, 2003). This is corroborated by the presence of both physical and behavioral traits in humans that facilitate communication and encourage affiliation between individuals. For example, people have the tendency to unconsciously mimic the postures and mannerisms of others that they interact with and this has been found to increase liking and a sense of affiliation towards the mimicker (Lakin, Jefferis, Cheng, & Chartrand, 2003). Further, humans, compared to other less social species, have brains that are relatively large controlling for body size – a “social brain” that supposedly grows out of the cognitive demands of having an extensive social network (Pérez-Barbería, Shultz, & Dunbar, 2007). That natural selection favored an organ that consumes so much energy relative to the rest of our body (Dunbar, 1998) is testament to how important social networks are to our survival – a large aspect of which concerns our physical safety.

The link between the need for social connection and the need for physical safety becomes obvious when one considers the finding that the experience of social pain and that of physical pain share the same neural networks (Eisenberger & Lieberman, 2004). Perhaps because of this, people often attempt to diminish the experience of one through compensation via the other. For example, physical pleasure is frequently used to sooth social pain – such as binging on comfort food after a painful breakup. Conversely, those experiencing physical pain may attempt to alleviate their discomfort by seeking social fulfilment, such as when a

child cries for his mother after a fall. So too it is among the vulnerable members of other social species. For instance, when frightened, infant rhesus monkey orphans preferred clinging to a surrogate wire mother wrapped in cloth (which was presumably similar to holding its real mother), rather than a surrogate wire mother attached with a feeding bottle (Harlow & Zimmermann, 1959), suggesting that in times of immediate physical danger, being in the presence of a trusted other was more comforting than the fulfilment of other physiological needs.

Indeed, we see that being around a person whom we trust provides a sense of security. For example, most young children would be willing to engage in exploratory behavior when placed in a room unfamiliar to them if their mothers were also in their room, becoming distressed immediately once their mothers left their side (Ainsworth & Bell, 1970). These observations suggest that physical proximity to a trusted person, such as one's mother, can serve as a safety net against the uncertainty of a new and unfamiliar situation. Among adults, looking at pictures of one's romantic partner, in contrast to pictures of strangers or objects, have been found to decrease the experience of pain and increase activity in the ventromedial prefrontal cortex – an area in the brain related to safety-signaling (Eisenberger et al., 2011). Importantly, this finding implies that the *actual* presence of trusted individuals or companions is not necessary in evoking feelings of security; rather, the imagined presence, or even the thought of these individuals and relationships, might already be sufficient.

Prosociality Increases When People Feel Safe

Relationships, however, are not equal in their qualities and impacts. While being in the presence of people we trust might confer a sense of security, most individuals actually tend to be *more* cautious when around people whom they are not familiar with. This caution is certainly warranted. Humans are one of the main sources of danger to other humans. We

compete with, cheat, rob, harm and kill each other (Duntley, 2005). If one does not learn to be cautious towards other people, he faces the possibility of being exploited (Buss & Duntley, 2008). This danger is amplified when carelessness is costly – hence, parents tended to perceive a potentially dangerous man as being more physically formidable than non-parents did (Fessler, Holbrook, Pollack, & Hahn-Holbrook, 2014). Herein lies one of the obstacles for engaging in prosocial behavior.

By the nature of prosocial behavior and helping, a potential helper must have something of value (or so he thinks) to offer to the recipient of his prosociality. This makes the helper an attractive target for exploitation. Hence, before prosocial behavior can happen, the potential helper must first find the recipient of his help trustworthy enough, at least to the extent of feeling confident that he would not be taken advantage of by the latter. Empirical evidence supports this. For example, people are more likely to be prosocial when they perceive the cost of helping to be low, which happens especially when the potential recipient of their help is a loved one (McGuire, 2003). Yet, in modern society, many of the daily interactions that people have are not with loved ones. Given that people have little reason to trust the strangers and acquaintances that they meet in their daily lives, what then is stopping them from taking every opportunity to be self-interested?

Of course, McGuire's (2003) findings do not highlight the directionality of the relationship between trust and perceived cost of giving help – it might be that trusting someone more lowers estimates of how costly it would be to help them; or conversely, lower estimates of how costly it would be to help someone might make it easier to trust them. Regardless, the more likely people expect to be cheated out of their goodwill, the less likely they are to be prosocial. If so, one way to encourage prosocial behavior would be to induce positive expectations about other people's intentions - if people do not expect others to take

advantage of them, perhaps they would be more willing to be prosocial towards others as well. The purpose of this thesis is to investigate how we may alleviate people's expectations about being taken advantage of, and in turn encourage prosocial behavior.

Borrowing from attachment theory, which posits that past relationships serve as a 'working model' for future ones (Bowlby, 1973), an individual's experiences in past relationships can become the basis for their expectations when they form new relationships in the future. For example, adults who reported having affectionate and loving parents tend to be more secure in their romantic relationships, describing their experience of romantic love as one that is mostly happy and positive, in contrast to a relationship characterized by obsession and jealousy (Feeney & Noller, 1990; Hazan & Shaver, 1987). Consistent with this observation, a twenty-year longitudinal study conducted on fifty individuals found that barring extreme negative life events (such as the death of a parent or abuse), the attachment style of individuals remained relatively stable from infancy to adulthood (Waters, Merrick, Treboux, Crowell, & Albersheim, 2000), meaning that people tend to bring forward their expectations and behaviors from past relationships into new ones. Therefore, it follows that a re-framing of past relationship experiences would influence people's perception of what to expect in a future relationship. Specifically, one might be led to expect more positively of a potential relationship partner if they focused only on the positive aspects of their past relationships.

People Think About God as They Think About People

Importantly, "relationships" do not refer only to the connections formed within the interpersonal domain. People seek to form meaningful social connections with not only one another, but also non-human agents by imbuing them with human characteristics through the process of anthropomorphism (e.g. Barrett & Keil, 1996; Epley et al., 2008). This happens

when people feel motivated to understand and connect with non-human agents (Epley et al., 2007), as they do with certain supernatural agents like God and other deities. For instance, people often turn to religion for meaning after distressing life events and this has been found to be helpful with the restoration of subjective well-being (Park, 2005).

Beyond extraordinary events, people also turn to God and religion regarding day-to-day matters. In fact, one could even argue that God is only relevant in people's daily lives because people believe God to also be concerned with the same things that they care about in the mortal realm. In his book, Ara Norenzayan (2013) outlined his thesis that religion came to be because ancestral humans needed to ensure the honesty of the people that they met and interacted with, especially when communities and societies grew too large for people to keep track of everyone else. Norenzayan argued that God was effective as a source of moral authority because people had imbued the supernatural agent with the same moral concerns that they themselves had, hence leading them to envision a God who is ready and able to punish cheaters and wrong-doers. Supporting this argument, studies found that priming participants with concepts related to God reduced cheating to a similar extent that reminders of non-religious moral institutions (e.g. police) did (Shariff & Norenzayan, 2007), suggesting that to some degree, God may be perceived as a very powerful policeman from above.

Something that is worthy of mentioning is that the tendency to anthropomorphize God is prevalent even among believers of religions that explicitly prohibit it. For example, in a study comparing what the authors termed the "intuitive God" and the "theological God", participants who read a passage about God attending to the prayers of two people at different locations intuitively came to the conclusion that God must have answered one person's prayer first before moving on to the next person (Barrett & Keil, 1996). The authors saw this as evidence that people held intuitive beliefs about God and that these beliefs were based on

what they knew about humans, hence resulting in the assumption that God cannot be in more than one place at once. This was despite theological teachings explicitly mentioning the omnipresent nature of God. In other words, people routinely imbue God with human-like qualities, thanks to processes of anthropomorphism.

In addition to anthropomorphizing the being of God itself, *interactions* with God also resemble that between people. Many common religious activities such as praying and giving offerings can be understood as attempts at convincing or negotiating with a supernatural deity so as to obtain a desired outcome (e.g. “Dear Lord, please give me an A for my exam.”) – attempts that would be meaningless without assuming that the ideas of exchange, reciprocity and hierarchy permeating human sociality (Fiske, 1992) also applies to one’s relationship with God.

In fact, in many religions, one’s relationship with God is arguably more personal and intimate than that with actual people. Particularly, in Christianity – the dominant religion of the United States, the culture from which the samples for the present studies are drawn – the building and maintenance of a personal connection with God is emphasized. For instance, the majority of Christian Americans (82%) pray alone silently (Barna Group, 2017), highlighting that prayer in the context of Christianity is meant to be conducted as a private conversation with God. Very tellingly, the Christian God is also often referred to as “Father” (e.g. 1 Cor. 8:6 International Standard Version; Deut. 32:6; Isa. 64:8) – a title that is no mere matter of linguistics. As it turns out, the impression that people form of God tends to be correlated with that that they have of their parents (Birky & Ball, 1988). This suggests that God is not just any other supernatural human-like agent (e.g. Superman), but might play a more personal role, doling out both comfort and punishment on a day-to-day basis like parents do.

People Feel Safer When They Are Reminded of God

Parents and Gods seem to play similar roles in the context of perceived security. Parents who are sensitive and responsive to their child's needs embolden their child with the knowledge that there is a secure base on which they can fall back on (Ainsworth & Bell, 1970). Similarly, when one perceives God as being caring and present – just like a thoughtful and responsive parent – they can look to God for companionship and security in times of difficulty or uncertainty. This may be why religiosity is higher in countries where people live in more uncertain conditions than where there is greater material security (Barber, 2012).

In addition to playing a parental role in believers' lives, God's almighty nature implies that God and those that God protects need not fear anything – a critical quality in the effectiveness of a companion in alleviating anxiety and uncertainty (Epley, 1974; Rabbie, 1963). In the same paper, Epley (1974) also noted that an ideal companion is also one whom the individual can freely interact with. Again, God fits the bill by nature of its omnipresence.

Indeed, past research lends credence to the idea that God is a source of comfort and security for some. In particular, being reminded of God has been found to lead to greater risk-taking in non-moral domains (Chan, Tong, & Tan, 2014; Kupor, Laurin, & Levav, 2015), showing that thinking about God alleviates feelings of risk and uncertainty, just like how thinking about one's human relationship partners does.

And when other people are the source of danger and uncertainty, thinking about God might similarly lead to more risk-taking in the form of greater willingness to interact with others. Indeed, exposing participants to words about God led them to perceive a potential adversary as being less physically threatening (Holbrook, Fessler, & Pollack, 2016), showing that thinking about God can attenuate the risk associated with interpersonal interactions,

perhaps with the assurance that God will punish anyone who would cheat or harm the individual.

On the flip side of the same coin, studies have found a correlation between feeling abandoned by God and negative psychological outcomes such as lower self-esteem and greater anxiety (Phillips, Pargament, Lynn, & Crossley, 2004), and higher levels of depression among the terminally ill (Edmondson, Park, Chaudoir, & Wortmann, 2008). This can be analogized to the effects of parental neglect – greater attachment insecurity and worse psychological functioning (Gauthier, Stollak, Messé, & Aronoff, 1996). In other words, just as a child neglected by his parents learns that he cannot trust others (Bowlby, 1973), an individual who feels rejected by God might also harbor greater distrust of other people, especially strangers.

God: A Secure Base for Prosociality

Prior work has shown that people may become socially warmer when they feel accepted by God. In particular, participants became more prosocial towards others when they were primed with concepts related to being included by God, as compared to those about being ostracized by God (van Beest & Williams, 2011). This effect was mediated by the subjective sense of control experienced by included (vs. excluded) participants which, in turn, elicited a stronger tendency to act prosocially. This observation is consistent with prior work on attachment styles, which showed that having people who would respond promptly and effectively to one's needs when young allows one to learn that they have the ability to influence the people around them (Bowlby, 1973), hence the sense of being in control.

However, because the sense of having control is more part of one's *self*-knowledge (Markus, 1983) than what one believes about others, the account above does not tell us much about how the individual's relationship with God can influence the way that they view *other*

people. Yet, our beliefs about other people are important, perhaps even more so in the modern day when misunderstandings between religious groups are rife and often give rise to prejudice, sometimes even violence, towards members of other religions (e.g. islamophobia, anti-semitism).

Therefore, the aim of this thesis is to investigate how one's relationship with God can improve their perception of and behaviors towards other people instead.

The Present Studies

Drawing from the literature across two very different fields – God anthropomorphism and attachment styles – the present studies aimed to examine whether the experience of social acceptance by God can lead to prosociality towards others. In two studies, I hypothesized that feeling accepted and protected, as compared to feeling rejected and left alone, by God will lead people to 1) expect better of others, and 2) to behave more prosocially towards them as a result. All methods and procedures reported here were submitted to and approved by the Institutional Review Board at Nanyang Technological University (see Appendix A for IRB approval).

Study 1: Bible Passages as Prime

In Study 1, I manipulated the experience of acceptance vs. rejection by God in participants and measured its effect on prosocial behavior.

The subjective experience of acceptance (vs. rejection) by God was manipulated through the use of Bible passages relating to either being accompanied or abandoned by God. The effectiveness of using external stimuli to activate specific religious concepts in participants has been established as robust in a meta-analysis conducted by Shariff and colleagues (2016). Further, the specific manipulation used in this study was adapted from

van Beest and Williams (2011) with the intention of 1) replicating their findings, and 2) providing a starting ground for comparing the effects of different methods of manipulating the individual-God dynamic.

The dependent variable of prosociality was measured with a one-shot Dictator Game – an economic game first used by Kahneman and colleagues (1986) as a measure of people's propensity for fairness (List, 2007). The one-shot nature of the Dictator Game used in this study resembles most interpersonal interactions in modern, large-scale societies in that it involves the allocation of resources with a person whom the individual has never met. Next, to examine whether the decision to act prosocially depended on the individual's expectations of the other person, I modified the typical Dictator Game paradigm so that it also included a measure of participants' expectations about how much their partner in the game would leave for them in turn.

I predicted that exposure to Bible passages reminding participants about acceptance by God will lead them to leave more money for a partner in the Dictator Game, as compared to if they were exposed to non-religious neutral passages or Bible passages about being abandoned by God. Importantly, when compared to the other two conditions, reading about being accepted by God should result in greater positive expectations about how their partner would behave in the Dictator Game; in other words, participants should expect their partners to leave them with more money as well. This should then predict participants' giving behavior in the game.

Method

For a small payment, 153 participants were recruited via online platform Amazon Mechanical Turk and redirected to the study hosted on Qualtrics.

After consent, participants were introduced to the rules of a standard Dictator Game – an economic game whereby a player assumes the role of a giver, receives X tokens, and decides to allocate all, none, or some of these tokens to their partner – the receiver (see Appendix B for the instructions to the Dictator Game and the practice rounds). Participants were introduced to the rules of the Dictator Game at the start of the study to ensure that they were familiar with the game, while at the same time ensuring minimum delay between the experimental manipulation and the administration of the Dictator Game later on in the study. As a check of their understanding of the game, participants had to correctly state the number of coins that each party will receive in three practice rounds, before they could proceed with the next task.

Then, to manipulate the experience of acceptance vs. rejection by God, participants were randomly assigned to one of three conditions in a task ostensibly presented as a grammar quiz. To avoid the effect of demand characteristics, participants were blind to the outcome of the random assignment, meaning that they were neither informed of their assigned condition nor of the existence of the other conditions.

In the acceptance condition, the ostensible grammar quiz contained three Bible passages that highlighted the company of God such as “The LORD is the one who goes ahead of you; He will be with you. He will not fail you or forsake you. Do not fear or be dismayed” (Deut. 31:8 New American Standard Bible; see Appendix C for all passage primes). In the rejection condition, the three passages reflected instead the experience of being abandoned by God; for example, “My God, my God, why have You forsaken me? Far from my deliverance are the words of my groaning” (Ps. 22:1 English Standard Version). In addition, both versions of the quiz also contained three other non-religious passages that were neither about acceptance nor rejection. These were interspersed between the Bible passages

and acted as filler items in order to minimize the suspicion of participants. Participants in the last condition – the neutral condition – also received six passages, except that all six were non-religious in nature and neither about being accepted nor rejected, to provide a baseline of participants' expectations and prosociality, without the influence of the experience of social acceptance or rejection by God. Passages were presented one at a time to participants.

Then, as an attention check, the amount of time participants spent on each of the six items in the ostensible grammar quiz was recorded. Because the passages were relatively short and given that the average person can read about 250 words per minute (Thomas, 2010), participants who spent five seconds or less on any of the six passages were excluded from the analyses.

Next, as the dependent measure of participants' prosociality, participants played a standard Dictator Game where they were instructed to imagine themselves in the role of the giver (i.e. the player allocating the tokens), playing against a hypothetical partner who was a "*randomly selected person living in [the participant's] country*" (See Appendix B for the instructions in full). Using a slider bar presented on-screen, participants allocated 10 one-dollar coins between their partner and themselves, after being told that however many coins they did not take for themselves would be given to their partner.

Then, as a measure of their expectation of others' generosity, participants were asked to predict how much their partner would leave for them if "*the roles were switched*" so that that their partner was now the one deciding how the coins would be allocated (See Appendix B for the instructions in full). This item was not originally a part of the standard Dictator Game and was added in this study to examine participants' expectations of their anonymous partner.

Next, participants completed an instructional manipulation check to identify and remove any participants who may have failed to follow instructions during the study (Oppenheimer, Meyvis, & Davidenko, 2009). After that, they completed a demographic questionnaire about their age, gender, ethnicity, religion, and country-of-residence. Lastly, as a manipulation check of participants' relationship with God, they rated (1 = *feels very close to me*, 7 = *feels very far away from me*) their perception of the distance between themselves and God (see Appendix D for the manipulation check item). Finally, participants were debriefed about the nature of the study.

Results

Preliminary analyses.

Participant characteristics. Participants were 153 adults currently living in the United States of America (50.9% females, 48.3% males, > 1.0% others; $M_{age} = 40.26$, $SD_{age} = 11.84$). Among them, approximately half (51.0%) identified themselves as being atheistic, agnostic, having no religion, or spiritual but not religious, and were all classified as 'non-religious' participants for the purposes of this study. For participants who reported a religious affiliation, the majority (85.3%) were Christians.

Attention checks. While no participant failed the instructional manipulation check, 19 participants spent five seconds or less on at least one of the six passages presented in the ostensible grammar quiz and were excluded. Therefore, the results from the analyses reported hereafter includes only the responses from those who passed both attention checks ($N = 134$). The resulting distribution of participants across the three conditions were 32.1% ($n = 43$), 32.1% ($n = 43$), and 35.8% ($n = 48$) for the neutral, acceptance and rejection conditions respectively.

Manipulation check. A one-way ANOVA was conducted to examine the effect of the passages on participants' subjective distance from God. Contrary to expectations, the analysis revealed no significant differences between the three conditions overall ($M_{rejection} = 4.23$, $SD_{rejection} = 2.20$ vs. $M_{acceptance} = 4.81$, $SD_{acceptance} = 2.36$ vs. $M_{neutral} = 4.86$, $SD_{neutral} = 2.17$), $F(2,131) = 1.14$, $p = .324$. Zooming into the pairwise comparisons between conditions, we see that participants' subjective distance from God in the acceptance condition was not significantly different from that in the rejection condition ($p = .430$) or the neutral condition ($p = .995$). Likewise, subjective distance from God in the rejection condition did not differ from that in the neutral condition ($p = .375$). These results suggest that the Bible passage primes did not achieve their intended purpose of evoking the experience of acceptance (vs. rejection) by God.

For a closer inspection, I split the sample by religiosity and conducted a 2 (religiosity: religious vs. non-religious, between-subject) $\times$ 3 (condition: acceptance vs. rejection vs. neutral, between subject) ANOVA to look at whether participants' religiosity might have moderated the effect of the passages on the manipulation check. The test revealed a main effect of participants' religiosity, $F(1,128) = 40.69$, $p < .001$, qualified by an interaction between religiosity and condition, $F(2,128) = 3.30$, $p = .040$. Specifically, religious participants in the acceptance condition perceived God as being the nearest ($M = 3.05$, $SD = 1.96$), whereas non-religious participants in the same condition had perceived God as being the furthest ($M = 6.35$, $SD = 1.43$).

Furthermore, two separate one-way ANOVAs showed that though the experimental manipulation did not result in any significant differences in religious participants' subjective distance from God, $F(2,61) = 0.63$, $p = .535$, it was not so for the non-religious participants, $F(2,67) = 3.53$, $p = .035$. A post-hoc Tukey test revealed that non-religious participants in

the acceptance condition reported feeling significantly *further* from God ($M = 6.35$, $SD = 1.43$) than those in the rejection condition ($M = 4.90$, $SD = 2.14$; $p = .026$). These results suggest that the experimental manipulation might have produced a contrast effect (Herr, Sherman, & Fazio, 1983) on the non-religious participants, which led them to perceive God as being further away even though they had just read passages intended to remind them about being in the presence of God.

Effect of acceptance by God on prosociality. To investigate the first hypothesis that feeling accepted by God will increase prosocial behavior, a one-way ANOVA was conducted to look at the effect of the Bible passage primes on how much money participants were willing to leave for their partner in the Dictator Game. The analysis revealed no significant group difference overall ($M_{rejection} = 3.17$, $SD_{rejection} = 2.43$ vs. $M_{acceptance} = 3.53$, $SD_{acceptance} = 1.99$ vs. $M_{neutral} = 2.91$, $SD_{neutral} = 2.23$), $F(2,131) = 0.86$, $p = .427$. Post-hoc Tukey tests also found no significant differences between the acceptance condition and the rejection and neutral conditions ($p = .713$ and $p = .397$), and between the rejection condition and the neutral condition ($p = .845$). Participants' religiosity did not influence the pattern of results observed. However, because the null effects might have been a result of the ineffective manipulations, I then used participants' self-reported perceived distance from God as an alternative proxy for the experience of acceptance or rejection by God.

A simple linear regression was conducted to predict the effect of participants' perceived distance from God (i.e. the manipulation check item) on their contributions in the Dictator Game. The analysis showed that perceived distance from God was a significant predictor of prosociality in the Dictator Game, $R^2 = .03$, $F(1,132) = 4.63$, $p = .033$. Consistent with hypothesis, participants' subjective distance from God negatively predicted

their contributions in the Dictator Game, $\beta = -0.18$, $p = .033$, indicating that the closer participants felt to God, the more money they were willing to leave for their partner.

Effect of acceptance by God on expectations of others. Next, I examined the question: How would feeling accepted by God affect the individual's expectations of others? Using a one-way ANOVA, it was shown that overall, participants across the three conditions did not significantly differ in how much money they had expected to receive from their partner in the Dictator Game, $F(2,131) = 2.59$, $p = .079$. This was further confirmed by post-hoc Tukey tests revealing that participants in the acceptance condition ($M = 2.56$, $SD = 1.87$) did not expect to receive any more money than those in the rejection condition ($M = 3.65$, $SD = 2.75$; $p = .074$). Furthermore, expectations of participants from both of these conditions were not significantly different from that in the neutral condition ($M = 3.12$, $SD = 2.60$; $p_{\text{acceptance}} = .246$ and $p_{\text{rejection}} = .844$). Participants' religiosity did not influence the observed pattern of results. These null results may be attributed to ineffective manipulation, as discussed above.

Therefore, in addition to classifying participants by their assigned experimental condition, a simple linear regression was again conducted to look at the relationship between participants' subjective distance from God and how much money they had expected to receive from their partner in the Dictator Game. This analysis showed that participants' perceived distance from God did not predict their expectations in the Dictator Game, $\beta = -0.07$, $p = .453$, and this was so regardless of religiosity. These results suggest that expectations of others did not mediate the effect of acceptance by God on prosocial behavior.

Link between expectations of others and prosociality. To test if participants' expectations of others predicted their prosocial behavior, a simple linear regression analysis was conducted to predict the amount of money that they had left for their partner based on

how much money they had expected their partner to leave for them in the game. The analysis revealed that participants' expectations significantly predicted their giving, $\beta = 0.26$, $t(132) = 3.15$, $p = .002$; $R^2 = .07$, $F(1,132) = 9.90$, $p = .002$, showing that expectations are a proxy of prosocial behavior. In other words, the more one expects out of a relationship with another, the more they would be willing to give as well.

Post-hoc power analysis. Finally, to investigate if the null finding for the main hypothesis in this study can be attributed to a lack of statistical power, a post-hoc power analysis was conducted in G*Power (Faul, Erdfelder, Lang, & Buchner, 2007). The analysis revealed that the study was indeed underpowered, with a power of only .20 at $\alpha = .05$ to detect the small effect size (partial $\eta^2 = .01$) observed in the one-way ANOVA investigating the effect of the Bible passages on prosociality. An analysis with this effect size would have required a total sample size of about $N = 800$ to achieve a statistical power of .80 at the same α -level.

Discussion

Study 1 provided partial support for the hypothesis that prosocial behavior is linked to how close one feels to God. Participants shared significantly more money when they reported feeling closer to God. Also, there is evidence that one's expectations of other people affects their willingness to engage in prosocial behavior – participants' expectations of how much their partner would leave them significantly predicted how much money they themselves were willing to share. However, expectations of others might not mediate the relationship between how close one feels from God and their prosociality, as it did not change as a function of participants' perceived distance from God.

Having said this, it should be noted that the findings above were based on natural differences in participants' perceived distance from God, since the manipulation was found to

be ineffective. Hence, the findings were correlational observations and further experimental evidence must be obtained before a causal relationship between acceptance/rejection by God, expectations of others, and prosociality can be inferred.

For this reason, one weakness of Study 1 was that the Bible passage primes had failed to induce meaningful change in participants' subjective distance from God. There are two possibilities for this – 1) the prime was ineffective, or 2) the manipulation check item failed to capture the effect of the prime.

Both of these possibilities converge with the finding that the study did not have sufficient statistical power to test the main hypothesis – that acceptance by God increases prosociality. According to the meta-analysis by Shariff and colleagues (2016) on the effect of religious primes on measures of prosociality, studies involving religious priming tend to have, on average, a small to medium effect size of $d = 0.40$. This means that the effect size observed in this study (partial $\eta^2 = .01$ which translates to $d = 0.22$; Cohen, 1988, p. 276-281 cited in IBM, 2018) is smaller than would be expected, based on other studies investigating similar constructs.

Taken together, it is possible that the Bible passages prime was not as effective as expected. Therefore, in Study 2, a different manipulation involving recalled experiences was used to evoke feelings of being either accepted or rejected by God. In addition, the manipulation check item in Study 2 was placed right after the experimental manipulation (a recall task) so as to provide a more accurate assessment of its effectiveness and strength which could have worn out with time in the first study.

Study 2: Recalling Events as Reminder

In Study 2, the experience of acceptance (vs. rejection) by God was manipulated through the recall of personal events. This paradigm was used as it has been found to be effective in evoking emotions and perceptions, such as guilt (e.g. Goldsmith, Cho, & Dhar, 2012), embarrassment (e.g. Dong, Huang, & Wyer, 2013), power (e.g. Galinsky, Magee, Inesi, & Gruenfeld, 2006), and more relevantly to our purposes, loneliness (e.g. Zhong & Leonardelli, 2008). Having participants recall their own experiences might also reduce the contrast effect that was observed from the non-religious participants in Study 1, since it is less explicit than having them read passages from the Bible.

Study 2 also included a measure of attachment security towards God. Just as past relationships in childhood can affect future relationships in adulthood (Bowlby, 1973; Waters et al., 2000), participants' perception of the quality of their relationship with God should also translate to their expectations towards future relationships. In other words, feeling accepted by God (relative to feeling rejected by God) should result in lower levels of attachment *insecurity* towards God, thereby increasing participants' positive expectations and willingness to be prosocial towards others.

Hence in Study 2, I hypothesize that those who recalled an event in which they felt accepted by God, as compared to those who recalled being rejected by God, would expect their partner to leave them with more money, and this should predict an increased willingness to share in the Dictator Game. Further, levels of attachment insecurity would mediate the relationship between acceptance by God and expectations of others.

Lastly, the sample size for Study 2 was set at 300 participants. Based on the effect sizes of previous religious priming studies (Shariff et al., 2016) and the methodological design of Study 2, an *a priori* power analysis in G*Power indicates that a total sample size of 200 would have been sufficient to achieve statistical power of .80 at $\alpha = .05$ level. However,

informed by Study 1, a decision was made to recruit more participants than necessary to account for the possibility of a small effect size and to allow for participants to be dropped if they fail to pass the attention check or to meet the requirements of the recall task.

Method

For a small payment, 301 participants were recruited via the online platform Amazon Mechanical Turk and redirected to the study hosted on Qualtrics.

After consent, participants were randomly assigned to one of two conditions – acceptance condition or rejection condition. As a manipulation of the experience of either acceptance or rejection by God, participants recalled an instance in which they or someone they knew had felt either accompanied by God (acceptance condition) or abandoned by God (rejection condition). Importantly, because the study was about the psychological effects of acceptance (vs. rejection) by God, participants were specifically told to focus on what the event *felt* like, rather than on the physical details of the situation (refer to Appendix E for the instructions to the recall task). All instructions for the recall task were presented on-screen with a text field below for participants to key in their answer. To encourage participants to respond freely, no time or word limits were imposed. As per Study 1, participants were blind to both their assigned condition and the existence of the other condition.

Then, participants rated (1 = *feels very close to me*, 7 = *feels very far away from me*) their subjective distance from God, as a manipulation check (as in Study 1).

Next, as a measure of participants' attachment security towards God, they rated (1 = *disagree strongly*, 7 = *agree strongly*) their agreement to 28 items describing their relationship with God (Beck & McDonald, 2004). A high score would indicate strong

attachment *insecurity* towards God (see Appendix F for the 28-item Attachment to God inventory).

After that, all participants completed the one-shot Dictator Game against a hypothetical partner as a measure of prosociality, and as a measure of their expectations of other people, made a prediction about how their partner would have allocated the tokens had the roles been switched, as in Study 1.

Lastly, participants completed the same instructional manipulation check from Study 1 (Oppenheimer, Meyvis, & Davidenko, 2009) and answered demographic questions regarding their age, gender, ethnicity, religion, and country-of-residence. They were then debriefed about the nature of the study.

Results

Preliminary analyses.

Participant characteristics. Participants were 301 adults (49.8% females, 50.2% males; $M_{age} = 39.84$, $SD_{age} = 12.40$) currently living in the United States of America. Using the same classification criteria as in Study 1, slightly more than half of the participants (57.8%) were ‘religious’. Among them, a large majority identified themselves as being either Christian (90.8%) or followers of one of the other major Abrahamic faiths (i.e. Judaism or Islam; 5.1%).

Unexpectedly, random assignment had resulted in an asymmetric distribution of religious and non-religious participants across both conditions (Non-religious_{acceptance} = 22.6% vs. Non-religious_{rejection} = 44.6%). Taking into account that participants’ religiosity was shown to have some effects on the variables in Study 1, concerns about this asymmetric

distribution led to the post-hoc decision to include religiosity as a control variable in the present study.

Attention check. Two participants failed the instructional manipulation check item and were hence excluded from further analyses.

Recall task coding. Before formal data analysis, two independent raters blind to the purpose and hypothesis of the study evaluated the fit between participants' recalled experience and the condition to which they were assigned. Specifically, raters were told to give a dichotomous (i.e. "pass" or "fail") evaluation of whether each response depicted an experience about being 1) accompanied or abandoned (for participants in the acceptance and rejection conditions respectively), and 2) by God.

Initial agreement between both raters was moderate, $\kappa = .68$, $p < .001$. Raters then discussed with each other about the cases that they disagreed on, resulting in a unanimous decision to "fail" a total of 131 responses. To ensure the strength of the manipulation, an *a priori* decision was made to also exclude responses that the raters could not reach a consensus on.

As a result, responses from 132 participants were excluded, leaving a grand total of 167 participants in further analyses. A post-hoc check showed that the remaining sample of participants were evenly split among both conditions – 84 (50.3%) in the acceptance condition and 83 (49.7%) in the rejection condition.

Factor analysis of Attachment to God inventory. A factor analysis with Varimax rotation was conducted on the attachment ratings revealing two factors. With the exception of one item which was eventually excluded, the 28 items in the inventory loaded well onto one of two factors (i.e. factor loading of more than .40) – the anxiety dimension and the

avoidance dimension (see Table 1 for factor loadings of items in each subscale). There was high reliability between the items in the resulting inventory and also the 14-item and 13-item anxiety and avoidance dimension subscales respectively ($\alpha = .89$ for entire inventory and .95 for each subscale).

Table 1

Confirmatory Factor Analysis with Varimax rotation of Attachment to God inventory

<u>Subscale/Item</u>	<u>Mean</u>	<u>Standard deviation</u>	<u>Factor loading</u>	<u>α</u>
Anxiety about Abandonment				.95
My experiences with God are very intimate and emotional. [R]	3.84	2.13	.87	
I prefer not to depend too much on God.	4.05	2.30	.87	
My prayers to God are very emotional. [R]	3.65	2.06	.81	
I am totally dependent upon God for everything in my life. [R]	3.10	2.24	.88	
Without God I couldn't function at all. [R]	3.04	2.11	.85	
I just don't feel a deep need to be close to God.	3.63	2.28	.84	
Daily I discuss all of my problems and concerns with God. [R]	3.25	2.25	.88	
I am uncomfortable allowing God to control every aspect of my life.	3.95	2.24	.68	
I let God make most of the decisions in my life. [R]	2.78	1.94	.84	
I am uncomfortable with emotional displays of affection to God.	3.62	2.23	.71	
It is uncommon for me to cry when sharing with God.	4.38	2.07	.49	
I am uncomfortable being emotional in my communication with God.	3.60	2.17	.62	
I believe people should not depend on God for things they should do for themselves.	4.54	2.13	.76	
Even if I fail, I never question that God is pleased with me. [R]	3.80	2.13	.65	
Avoidance of Intimacy				.95

I worry a lot about my relationship with God.	2.39	1.82	.77
I often worry about whether God is pleased with me.	2.57	1.91	.66
I get upset when I feel God helps others but forgets about me.	2.43	1.73	.82
I fear God does not accept me when I do wrong.	2.46	1.84	.76
I often feel angry with God for not responding to me.	2.19	1.69	.78
I worry a lot about damaging my relationship with God.	2.40	1.79	.76
I am jealous at how God seems to care more for others than for me.	2.14	1.67	.83
I am jealous when others feel God's presence when I cannot.	2.22	1.75	.84
I am jealous at how close some people are to God.	2.20	1.75	.81
If I can't see God working in my life, I get upset or angry.	2.05	1.53	.79
Sometimes I feel that God loves others more than me.	2.30	1.80	.81
Almost daily I feel that my relationship with God goes back and forth from "hot" to "cold".	2.19	1.66	.76
I crave reassurance from God that God loves me.	2.68	1.86	.74
<i>Excluded items</i>			
My prayers to God are often matter-of-fact and not very personal.	2.90	1.65	.12/.36

Note. Items denoted with '[R]' are reverse-items.

Manipulation check. A 2 (recall condition: acceptance vs. rejection) x 2 (religiosity: non-religious vs. religious) ANOVA on participants' subjective distance from God was conducted to ascertain the effectiveness of the recall task in inducing the experience of acceptance or rejection by God. Participants' religiosity was entered as a variable-of-interest in this analysis, and not just as a control variable, because it had previously interacted with the experimental manipulation in Study 1.

The analysis revealed a significant main effect of religiosity, $F(1,163) = 36.54, p < .001$, with religious participants ($M = 3.44, SD = 1.95$) perceiving God as being significantly closer to them than non-religious participants did ($M = 5.68, SD = 2.03$). This was not surprising. Also consistent with predictions was the significant main effect of recall condition, $F(1,163) = 4.65, p = .033$, with those who recalled an episode of being abandoned by God perceiving God as being significantly *further* ($M = 4.69, SD = 2.20$) than those who recalled being in the presence of God ($M = 3.70, SD = 2.18$). The interaction between recall condition and participants' religiosity was not significant, $F(1,163) = 2.67, p = .104$. Together, this suggests that the recall task was effective in inducing the experience of either accompaniment (acceptance condition) or abandonment (rejection condition) by God. In addition, unlike in Study 1, the lack of a significant interaction between condition and religiosity suggests it is unlikely that the manipulation in this study – the recall task – had divergent effects for religious and non-religious participants.

Effect of acceptance by God on prosociality. To test if prosocial behavior could be influenced by people's perception of whether they felt accepted or rejected by God, a one-way ANOVA was conducted to investigate the effect of recall condition on how much money participants shared with a hypothetical partner in the Dictator Game. Results revealed that participants did not leave more money for their partner regardless of whether they had been primed with ideas of acceptance ($M = 3.75, SD = 2.11$) or rejection ($M = 3.65, SD = 2.51$) by God, $F(1,165) = 0.08, p = .782$. The same conclusion remained when participants' religiosity was controlled for, $F(1,164) = 0.002, p = .968$. Hence, contrary to hypothesis, these results indicate that neither feeling accepted nor rejected by God influenced prosocial behavior in this study.

Effect of acceptance by God on expectations of others. Similarly, to test if God's acceptance or rejection influenced people's expectations of others, I conducted a one-way ANOVA looking at the effect of recall condition on how much money participants had expected a hypothetical partner to leave for them in the Dictator Game. Contrary to predictions, the analysis revealed that participants in the acceptance condition ($M = 3.63$, $SD = 2.31$) did not expect significantly more nor less than those in the rejection condition ($M = 3.11$, $SD = 2.30$), $F(1,165) = 2.15$, $p = .145$. This finding indicates that participants' expectations of others were not affected by their perceived relationship with God. Controlling for religiosity similarly did not change the conclusion, $F(1,164) = 1.53$, $p = .218$.

Effect of expectations of others on prosociality. Consistent with predictions and the findings from Study 1, a simple linear regression revealed that participants' expectations of their hypothetical partner significantly predicted the amount of money that they were willing to leave behind for them, $\beta = 0.42$, $p < .001$. Participants' expectations of how much their partner would leave behind also explained a small proportion of the variance in participants' giving, $R^2 = .18$, $F(1,165) = 36.04$, $p < .001$. These results support the prediction that prosociality is closely linked to beliefs about other people's intentions.

Effect of acceptance by God on attachment security towards God. Though recall condition was found to not have influenced participants' expectations of and prosociality towards a partner in the Dictator Game in this study, it remains a question whether a temporary sense of being abandoned or accompanied by God can affect how secure people feel in their relationship with God.

To do so, the ratings of attachment ($\alpha = .89$) were averaged into a composite, with a high score representing stronger insecurity towards God. Then, data were submitted to a one-way ANOVA with recall condition as the independent variable. The analysis revealed that

participants who recalled about being abandoned by God ($M = 96.00$, $SD = 26.47$) showed a significantly higher level of attachment insecurity towards God than those who recalled about being accompanied ($M = 85.08$, $SD = 26.71$), $F(1,165) = 7.04$, $p = .009$. This pattern remained significant even after controlling for the effect of participants' religiosity, $F(1,164) = 4.09$, $p = .045$. These results give us insight into the nature of people's relationship with God by showing that it can be influenced by the memories and experiences that are salient in the moment.

Having said this, the increase in attachment insecurity after participants thought about being left alone by God seems to have been driven more by the desire to avoid a relationship with God, rather than anxiety over it. Using a composite avoidance score and composite anxiety score derived from the avoidance and anxiety subscales of the inventory respectively, I controlled for the effect of participants' religiosity and found that while recall condition had a significant effect on participants' desire to avoid a relationship with God, it did not make them more anxious over it. Specifically, those who recalled being abandoned by God reported a stronger desire to avoid intimacy with God ($M = 31.70$, $SD = 19.34$) than those who recalled an event about being in the presence of God ($M = 28.73$, $SD = 16.28$), $F(1,164) = 5.46$, $p = .021$. In contrast, the recall task did not leave participants in one condition more anxious than in the other ($M_{abandoned} = 64.30$, $SD_{abandoned} = 22.87$ vs. $M_{accompanied} = 56.36$, $SD_{accompanied} = 23.40$), $F(1,164) = 0.50$, $p = .479$.

Therefore, these findings seem to suggest that the momentary accessibility of experiences related to acceptance or rejection by God can influence how secure individuals feel in their relationship with God, and in particular, whether such a relationship is to be approached or avoided.

Effect of attachment security towards God on expectations of others. To test if one's relationship with God served as a 'working model' for future relationships, I conducted a linear regression of attachment insecurity towards God on expectations of partner in the Dictator Game. There was insufficient evidence to suggest that attachment insecurity towards God predicted how prosocial participants expected their partner to be, $R^2 < .01$, $F(1,165) = 0.03$, $\beta = -0.01$, $p = .858$. A second regression analysis further showed that this relationship was not moderated by participants' religiosity, $R^2 = .01$, $F(1,165) = 2.17$, $\beta = 0.11$, $p = .142$. This means that the degree of security that participants felt in their relationship with God likely did not affect their expectations of other people.

Post-hoc power analysis. As with Study 1, a post-hoc power analysis was conducted to investigate if the null finding in the main analysis of this study was due to a lack of statistical power. The analysis in G*Power showed that this was indeed the case. With a total sample size of 167 and an effect size of partial $\eta^2 < .01$, the one-way ANOVA comparing the amount given by participants in the two conditions only had a power of .06 at $\alpha = .05$ level.

Discussion

In summary, in Study 2, we saw evidence that participants' expectation of others' generosity had influenced their decision to be prosocial. Specifically, participants who had expected their partner to be less generous also shared less money than those who expected more generosity from their partner. However, contrary to predictions, feeling accepted by God neither affected participants' expectations of others nor their own prosociality – participants expected and left the same amount of money for their partner regardless of whether they had recalled an episode about being accompanied or abandoned by God.

Study 2 also included a measure on people's attachment security towards God and provided supportive evidence that people's attachment security towards God, much like

attachment security towards other people, can be affected by momentary cues in the environment (for example, the recall task). Again, this supports the idea that there are similarities between people's relationship with God and that with other people.

General Discussion

Why would beliefs in God invoke prosocial behaviors in some situations but not others? This research sought to reconcile the seemingly divergent effects of thinking about God, in particular by focusing on the perceived relationship that people share with God.

Specifically, I hypothesized that perceived acceptance by God would increase prosociality because reminders of a positive relationship can inform individuals' expectations of future relationships and can also act as a buffer or source of security to attenuate the risks inherent in acting prosocially. Further, based on the premise of concept activation, I used two different priming procedures to experimentally manipulate participants' experience of acceptance or rejection by God, so as to provide a basis for investigating the causal link between one's relationship with God and prosociality.

In Study 1, Bible passages were used to evoke either the subjective experience of acceptance or rejection by God. Contrary to predictions, this manipulation did not affect participants' generosity in a Dictator Game. A possible explanation for this is that the priming manipulation was ineffective, as evidenced by the finding that participants in the acceptance condition felt no closer to God than those in the rejection or neutral conditions. Having said this, regression analyses showed that participants' subjective distance from God negatively predicted their generosity in the Dictator Game, meaning that those who felt closer to God did leave more money for their partner, though it did not predict participants' expectations of their partner.

In Study 2, a recall task was used as the experimental manipulation of perceived acceptance or rejection by God. Unlike with the Bible passages in Study 1, the recall task resulted in the hypothesized effects on participants' subjective distance from God. Specifically, those who recalled being accompanied by God felt significantly closer to God than participants who recalled being abandoned. However, contrary to predictions, recalling an episode of being accompanied by God did not significantly increase nor decrease participants' willingness to be prosocial, nor did it influence their expectations of others, relative to recalling about being abandoned by God.

Expectations vs. Reality: Do Expectations of Others Really Predict Prosociality?

In hypothesizing the link between acceptance by God and prosociality, the basic premise was that most people would be more reluctant to treat others generously if they thought that the other party would not reciprocate in kind. These expectations about other people's motivations and goals were termed 'rules' by Holmes (2002), as they were theorized to guide how individuals would perceive and behave in specific social situations. In other words, the things we do to/for others may depend on our interpersonal expectations about them.

This premise was supported in both studies reported here. In both Studies 1 and 2, the amount of money that participants thought their partner would leave for them significantly predicted how much they themselves decided to leave for their partner. This shows that our behavior towards other people do reflect our expectations of them.

Importantly, because of the one-shot nature of the Dictator Game used as the dependent measure, participants in this study actually estimated the prosocial intentions of their partner without meeting or interacting with them prior. This implies that participants' expectations of their partner's prosociality might actually reveal more about the

psychological tendencies and past experiences of the participant than objective characteristics about their hypothetical partner in the game. Thus, it is consistent with past findings that people who generally trust others more behave in more trustworthy ways themselves (Glaeser, Laibson, Scheinkman, & Soutter, 2000).

In addition, the trustworthiness of trusting individuals is somewhat an objective trait as it is perceived as much by those who trust others easily and those who do not (Rotter, 1980). Hence, it appears that prosociality can be understood as a self-fulfilling prophecy (Merton, 1948); people behave more prosocially because they expect others to do the same, and it is these actions that induce others to really become more prosocial towards them. This begs the question – how can we encourage individuals to expect prosociality from others, thereby kick-starting a positive cycle of altruism? What past research (e.g. Glaeser et al., 2000; Rotter, 1980) and this paper show is that instead of encouraging prosociality through punishing self-interested behaviors, we may want to remind individuals about concepts related to prosociality and generosity instead. This speculation, grounded in the principles of accessibility (Higgins, 1996), predicts that a heightened awareness of prosociality-related concepts should lead people to apply these concepts more readily, especially in situations where there is incomplete information, such as when making a judgement about the intentions of a stranger.

Though we were not able to change participants' expectations of others in the studies reported here, the attempts to prime participants with acceptance or rejection by God was not for naught. For one, participants who recalled an experience about being abandoned by God not only felt significantly further from God than those who recalled about being accompanied, but also reported being significantly more insecure about their relationship

with God (Study 2). This has important theoretical implications for both the attachment literature and the area of religious cognition.

Beyond Traits: Attachment Security as a Construct in Religious Cognition?

Researchers of attachment security have long thought of the construct as one that is largely affected by the individual's childhood experiences. In fact, the effect of one's relationships in childhood has been found to be so far-reaching that it influences even romantic relationships in adulthood (Feeney & Noller, 1990; Hazan & Shaver, 1987). While not disputing these past findings, the conclusions gathered from Study 2 – that attachment security towards God can be influenced by the temporary accessibility of certain memories and experiences – suggest that even stable traits such as attachment security can be affected by momentary cues and reminders of relevant concepts.

In addition, by showing how the concept of attachment security can be extended beyond interpersonal relationships to one's relationship with God, the similarities between God-perception and person-perception are further re-emphasized. This informs the literature on the anthropomorphism of God as it highlights that in understanding this supernatural agent, people do not merely ascribe human traits, but also human relationships to it. In other words, people's idea of God does not just involve concepts about what kind of agent God is, but also a sense of the relationship that exists between God and the individual. Again, this does not dispute past research on the anthropomorphism of God, but can be another piece of the puzzle in our attempt to understand how people think about God and the psychological effects of different God-beliefs.

Unpacking the Present Research: Limitations and Future Directions

At this point, the elephant in the room must be addressed – that the main hypothesis in the paper remains unsupported. In the following subsections, four possibilities for the null findings in this paper are discussed. With relation to some of these possibilities, recommendations for future studies are also made.

No causal link between relationship with God and prosociality. First, simplest and most obvious, it is possible that at the conceptual level, perceiving oneself as being accepted or rejected by God has no effect whatsoever on prosociality. Yet, this is unlikely to be true for two reasons. First, past research has found strong links between people's idea of religion, God and morality (e.g. Shariff & Norenzayan, 2007). In particular, researchers have found that it is not just the general idea of God that influences people's intentions to do good, but rather specific characteristics of God that affect prosociality, sometimes even in opposite ways (e.g. Johnson et al., 2013 vs. Shariff & Norenzayan, 2011). Second, if God-perception is anything like person-perception – and there is evidence both from the two studies here and from past findings that suggest so – then we should expect attachment security towards God to increase empathic responses and intentions, just like attachment security towards other humans do (Mikulincer et al., 2001; Mikulincer & Shaver, 2005; Mikulincer, Shaver, Gillath, & Nitzberg, 2005). Hence, given the strong theoretical rationale behind this study, it is unlikely that there simply exists no causal link between one's relationship with God and prosocial behavior at the theoretical level; possible issues with the operationalization of the independent and dependent variables are discussed next.

Ineffective manipulations. In both studies, priming was used to remind participants about concepts related to either acceptance or rejection by God. However, as previously established, the Bible passage prime in Study 1 failed to exert any significant effects on the manipulation check – that is, it failed to cause participants who read the Bible passages to

feel any nearer or further from God than those who had read neutral passages. Of course, this could be due to the ineffectiveness of the manipulation check in capturing the psychological effects of acceptance/rejection by God. However, given the face validity of this one-item measure and the empirical link between social acceptance/rejection and distance perception (Knowles, Green, & Weidel, 2014), this is unlikely to be true. Furthermore, as noted in the Discussion section of Study 1, the effect of the Bible passage prime on participants' behavior in the Dictator Game was weak compared to past findings. Therefore, it is likely that the Bible passage prime in Study 1 had not worked as intended.

In contrast, the recall task in Study 2 did exert the expected effects on the manipulation check, suggesting that it was a more effective manipulation than the Bible passages. Having said this, it should be noted that the effect size of the recall task on the prosociality measure was still weak in comparison to past studies, and that the task had an unexpectedly high failure rate – 44.1% of responses were excluded following coding by independent raters. Hence, even though the recall task appears to be a more effective manipulation than the Bible passage prime, future studies employing the use of recall should still consider strategies, such as having a guided recall instead of an open-ended one, to improve the quality of participants' responses and the overall efficiency of the task.

On retrospect, more care should have been taken to investigate the interaction between traits that God is thought to have and the relationship that one is perceived to have with God. For example, it is likely that perceiving the presence of (or being left alone by) a mean and punishing God would lead to very different results than having a loving and benevolent God do the same. This possibility was not explicitly accounted for in the two studies reported as I assumed, with the use of random assignment, that participants in both the acceptance and rejection conditions were equally likely to hold either views of God.

However, this distinction between ‘traits’ and ‘relationships’ might explain why the priming manipulation in Study 1 (the Bible passages prime) failed to have an effect on the manipulation check while the recall task in Study 2 did. It is likely that the impersonal Bible passage primes merely activated the idea of an inclusionist (or exclusionist) God – in other words, a God that is willing (or unwilling) to accept and protect – rather than the feeling of *personally* being accepted or rejected by God that may have been elicited in the recall task. Hence, to fully account for the interaction between traits of God and relationship with God when it comes to the effect of God-beliefs, a future experimental study manipulating both variables is necessary.

Ineffective dependent measure. Further, it is possible that the dependent measure – the one-shot Dictator Game – had failed to adequately capture the influence of one’s relationship with God on prosociality. That is, theoretically, there exists a causal link between feeling accepted by God and prosociality, but empirically, this link was not captured by the dependent measure. In particular, critics might argue that the Dictator Game is more a measure of fairness than prosociality because of how the task is framed as the allocation of a common pool of resources, rather than the giving away of one’s own assets. However, the desire for fairness and the intention to be prosocial are not mutually exclusive. In particular, when it is easy to act in a self-interested manner, behaving fairly can be seen as a sacrifice for the benefit of another; in other words, an act of prosociality. In Dictator Games, givers appear to be tempted by self-interests, often choosing to give less money than more (Bolton, Katok, & Zwick, 1998). Hence, one could argue that to a certain extent, especially in the context of a Dictator Game, fairness norms are prosocial in nature.

In addition, as previously mentioned, the one-shot Dictator Game was chosen as it was the best representation of the kind of interpersonal interactions that I was most interested

in – that between strangers who have never met and is unlikely to ever meet again. Having said this, given that there is some evidence that the effects of attachment security only appear after a few rounds of an economic game, especially after a defection by the other party (Twenge, Baumeister, DeWall, Ciarocco, & Bartels, 2007), future studies should definitely take this possibility into account, perhaps by offering two versions of the Dictator Game – a one-shot version and another involving turn-taking.

On top of this, future studies looking to investigate the causal link between religious cognition and prosociality should also consider extending the operationalization of prosociality to other domains, such as the providence of emotional or physical help. It would also be interesting to look at whether self-reported prosociality reflects actual helping behavior.

Generalizability of past findings to people of different religiosities. Apart from these possible empirical issues, some might question the very foundations upon which this paper is based – in particular, the generalizability of past findings to people of different religiosities and religious identities. As a result, proponents of this argument might find the theoretical reasoning presented here to be weak, especially when non-religious people or people of other faiths are included in the sample. If past findings are indeed ungeneralizable to the larger population, then the liberal criteria for participant selection in the current two studies might have contributed to the lack of findings. In other words, critics might perhaps point out that the paper was too ambitious and should have focused only on religious people, specifically those who identified as Christians.

This possibility is unlikely to be true. Because God-perception largely uses the same underlying mechanisms that person-perception does, it is unlikely that being non-religious would turn off these mechanisms completely. Put another way, because the mechanisms for

God-perception still exists within non-religious people and people of other faiths, they too should be sensitive to the cues that religious, Christian people are. It is also worth noting that in Study 2, even after statistically controlling for the effect of participants' self-reported religiosity, the priming manipulation was still found to have had a significant effect on participants' attachment security towards God, suggesting that there might be more similarities between religious and non-religious people than we think.

With these considerations in mind, I hope future investigations can benefit from the findings and insight of the present research, which aimed to fit perceived relationships with God as a piece in the larger puzzle linking God-perception and prosocial behaviors.

Conclusion

In summary, two studies were conducted in an attempt to highlight the effects of feeling accepted or rejected by God on individuals' prosociality towards others. Though the main hypothesis in both studies were unsupported, important lessons and implications for future studies surfaced. For one, the present studies add to the growing literature on the mechanisms underlying the anthropomorphism of God, particularly that anthropomorphism involves more than just ascribing human traits to a non-human agent but also includes applying the same framework for relationship formation as that of person-person interactions. Future studies should clarify the distinction, and investigate the interaction, between the traits that God is believed to have and the relationship that one is believed to have with God.

How bold one gets when one is sure of being loved. The question remains – do we use this courage for good, or for evil?

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Appendix A

IRB Approval

Research Support Office

Reg. No. 25C604893R

IRB-2014-07-021 amendment

26 October 2015

Assistant Professor Lee Kai Chung (Albert)
School of Humanities and Social Sciences

NTU INSTITUTIONAL REVIEW BOARD APPROVAL

Project Title: The Psychology of Religion and Supernatural Beliefs

I refer to your application for ethics approval with respect to the above project.

The Board has deliberated on this application and accepted the change in:

1. End date to 19 August 2018

The Board is therefore satisfied with the bioethical considerations for the project and approves the ethics application

A handwritten signature in black ink, appearing to read "Lee Sing Kong".

Professor Lee Sing Kong,
Chair, NTU Institutional Review Board
encl.

cc: Chair, School of Humanities and Social Sciences
Members, NTU Institutional Review Board

Appendix B

Dictator Game Instructions

Study 1

Introduction about a standard Dictator Game presented before the practice rounds at the start of the study

In this section, you will be learning the rules to a newly developed economic game.

Here are the rules of the game:

This game involves two players - the giver and the receiver. The giver, will have access to 10 one-dollar coins. **The giver's role is to take and keep as many of these coins they would like, knowing that however many they leave, if any, will be given to the receiver to keep.**

After this, the game ends.

Instructions for practice rounds

To see if you have properly learnt the rules of the game, you will now be asked to calculate the returns for both players in three hypothetical scenarios.

You may proceed when you are ready.

1. Scenario:

The giver takes no money for themselves. The game ends.

How much money does the giver and the receiver each finish the game with?

Giver (1) _____

Receiver (2) _____

2. Scenario:

The giver takes \$5 for themselves. The game ends.

How much money does the giver and the receiver each finish the game with?

Giver (1) _____

Receiver (2) _____

3. Scenario:

The giver takes all \$10 for themselves. The game ends.

How much money does the giver and the receiver each finish the game with?

Giver (1) _____

Receiver (2) _____

Instructions for Dictator Game

1. Now, recall the economic game that you learnt at the beginning of the session.

Imagine you are playing the game as the giver.

The receiver is a randomly selected person currently living in your country.

How much money would you leave for the receiver?

2. Now, imagine that the roles were switched.

In other words, imagine you are now playing the game as the receiver.

The giver is a randomly selected person currently living in your country.

How much money do you think the giver would leave for you?

Study 2 Instructions for Dictator Game

In this section, you will be learning the rules to and playing a newly developed economic game.

Here are the rules of the game:

This game involves two players - the giver and the receiver. The giver, will have access to 10 one-dollar coins. **The giver's role is to take and keep as many of these coins they would like, knowing that however many they leave, if any, will be given to the receiver to keep.**

After this, the game ends.

1. Imagine you are playing the game as the giver.
The receiver is a randomly selected person currently living in your country.

How much money would you leave for the receiver?

2. Now, imagine that the roles were switched.

In other words, imagine you are now playing the game as the receiver.
The giver is a randomly selected person currently living in your country.

How much money do you think the giver would leave for you?

Appendix C

Bible Passage Primes (Study 1)

Acceptance Condition

1. *Where can I go from your Spirit? Where can I flee from your presence? If I go up to the heavens, you are there; if I make my bed in the depths, you are there. If I rise on the wings of the dawn, if I settle on the far side of the sea, even there your hand will guide me, your right hand will _____ me fast. (Excerpt from Psalm 139:7-12)*
 - a. hold
 - b. holds
 - c. held
2. *My meaning is, that no man can expect his children to _____ what he degrades. (Excerpt from Martin Chuzzlewit)*
 - a. respect
 - b. respects
 - c. respected
3. *It was, in short, on one of those mornings, when it is hot and cold, wet and dry, bright and lowering, sad and cheerful, withering _____ genial, in the compass of one short hour. (Excerpt from Barnaby Rudge)*
 - a. or
 - b. then
 - c. and
4. *I had considered how the things that never happen, are often as much realities to us, in their _____, as those that are accomplished. (Excerpt from David Copperfield)*
 - a. affects
 - b. effects
 - c. infects
5. *When you pass through the waters, I [the LORD] will be with you; And through the rivers, they will not overflow you. When you walk through the fire, you will not be scorched, Nor will the flame _____ you. (Excerpt from Isaiah 43:2)*
 - a. burns
 - b. burned
 - c. burn
6. *The LORD is the one who goes ahead of you; He will be with you. He will not fail you or forsake you. Do not fear or _____ dismayed. (Excerpt from Deuteronomy 31:8)*
 - a. at
 - b. be
 - c. let

Rejection Condition

1. *My God, my God, why have You forsaken me? Far from my deliverance are the words _____ my groaning. (Excerpt from Psalm 22:1)*
 - a. of
 - b. off
 - c. oft
2. *My meaning is, that no man can expect his children to _____ what he degrades. (Excerpt from Martin Chuzzlewit)*
 - a. respect
 - b. respects
 - c. respected
3. *It was, in short, on one of those mornings, when it is hot and cold, wet and dry, bright and lowering, sad and cheerful, withering _____ genial, in the compass of one short hour. (Excerpt from Barnaby Rudge)*
 - a. or
 - b. then
 - c. and
4. *I had considered how the things that never happen, are often as much realities to us, in their _____, as those that are accomplished. (Excerpt from David Copperfield)*
 - a. affects
 - b. effects
 - c. infects
5. *Has His loving kindness ceased forever? Has His promise come to _____ end forever? (Excerpt from Psalm 77:8)*
 - a. it
 - b. a
 - c. an
6. *For you know that even afterwards, when he desired to inherit the blessing, he was rejected [by the LORD], for he found no place for repentance, though he _____ for it with tears. (Excerpt from Hebrews 12:17)*
 - a. seek
 - b. sought
 - c. seeks

Neutral Condition

1. *You might have married him not because you loved him, but because you didn't love anybody else. When one is young, one marries out of mere curiosity, just to see what it's _____. (Excerpt from The Philanderer)*
 - a. like
 - b. likes
 - c. liked
2. *My meaning is, that no man can expect his children to _____ what he degrades. (Excerpt from Martin Chuzzlewit)*
 - a. respect
 - b. respects
 - c. respected
3. *It was, in short, on one of those mornings, when it is hot and cold, wet and dry, bright and lowering, sad and cheerful, withering _____ genial, in the compass of one short hour. (Excerpt from Barnaby Rudge)*
 - a. or
 - b. then
 - c. and
4. *I had considered how the things that never happen, are often as much realities to us, in their _____, as those that are accomplished. (Excerpt from David Copperfield)*
 - a. affects
 - b. effects
 - c. infects
5. *They never pulled the curtains till it was too dark to see, nor shut the windows till it was too cold. Why shut _____ the day before it was over? The flowers were still bright; the birds chirped. (Excerpt from Between the Acts)*
 - a. under
 - b. down
 - c. out
6. *There is no way of writing well and also _____ writing easily. (Excerpt from Barchester Towers)*
 - a. oft
 - b. of
 - c. off

Appendix D

Manipulation Check Item

Study 1

God may feel quite close or far away depending on one's theological beliefs. Think about a/the God that you believe in. How near does this God feel to you in the present moment?

1						7
Feels very close to me	2	3	4	5	6	Feels very far away from me

Study 2

God may feel quite close or far away depending on one's religious faith. Think about a/the God that you believe in. How close does this God feel to you in the present moment?

1						7
Feels very close to me	2	3	4	5	6	Feels very far away from me

Appendix E

Recall Task Instructions (Study 2)

Accepted Condition

People often describe themselves as being accompanied by God. Using the space below, please recall a situation in which one might feel so. This person could be you or someone you know.

What was the situation like? What did the experience feel like? Please describe the situation, and any thoughts and feelings you/they experienced, as detailed as possible so that someone reading your entry would understand the event and how it felt.

Rejected Condition

People often describe themselves as being abandoned by God. Using the space below, please recall a situation in which one might feel so. This person could be you or someone you know.

What was the situation like? What did the experience feel like? Please describe the situation, and any thoughts and feelings you/they experienced, as detailed as possible so that someone reading your entry would understand the event and how it felt.

Appendix F

Attachment to God inventory (Study 2)

Rate your agreement with each of the following statements.

Item	1 Disagree strongly	2	3	4 Neutral/ Mixed	5	6	7 Agree strongly
My experiences with God are very intimate and emotional. <i>[R]</i>	1	2	3	4	5	6	7
I prefer not to depend too much on God.	1	2	3	4	5	6	7
My prayers to God are very emotional. <i>[R]</i>	1	2	3	4	5	6	7
I am totally dependent upon God for everything in my life. <i>[R]</i>	1	2	3	4	5	6	7
Without God I couldn't function at all. <i>[R]</i>	1	2	3	4	5	6	7
I just don't feel a deep need to be close to God.	1	2	3	4	5	6	7
Daily I discuss all of my problems and concerns with God. <i>[R]</i>	1	2	3	4	5	6	7
I am uncomfortable allowing God to control every aspect of my life.	1	2	3	4	5	6	7
I let God make most of the decisions in my life. <i>[R]</i>	1	2	3	4	5	6	7
I am uncomfortable with emotional displays of affection to God.	1	2	3	4	5	6	7
It is uncommon for me to cry when sharing with God.	1	2	3	4	5	6	7
I am uncomfortable being emotional in my communication with God.	1	2	3	4	5	6	7
I believe people should not depend on God for things they should do for themselves.	1	2	3	4	5	6	7

My prayers to God are often matter-of-fact and not very personal.	1	2	3	4	5	6	7
I worry a lot about my relationship with God.	1	2	3	4	5	6	7
I often worry about whether God is pleased with me.	1	2	3	4	5	6	7
I get upset when I feel God helps others but forgets about me.	1	2	3	4	5	6	7
I fear God does not accept me when I do wrong.	1	2	3	4	5	6	7
I often feel angry with God for not responding to me.	1	2	3	4	5	6	7
I worry a lot about damaging my relationship with God.	1	2	3	4	5	6	7
I am jealous at how God seems to care more for others than for me.	1	2	3	4	5	6	7
I am jealous when others feel God's presence when I cannot.	1	2	3	4	5	6	7
I am jealous at how close some people are to God.	1	2	3	4	5	6	7
If I can't see God working in my life, I get upset or angry.	1	2	3	4	5	6	7
Sometimes I feel that God loves others more than me.	1	2	3	4	5	6	7
Almost daily I feel that my relationship with God goes back and forth from "hot" to "cold."	1	2	3	4	5	6	7
I crave reassurance from God that God loves me.	1	2	3	4	5	6	7
Even if I fail, I never question that God is pleased with me. [R]	1	2	3	4	5	6	7