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Rewarding the good and punishing the bad: The role of karma and afterlife beliefs in shaping moral norms

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ABSTRACT

Moralizing religions encourage people to anticipate supernatural punishments for violating moral norms, even in anonymous interactions. This is thought to be one way large-scale societies have solved cooperative dilemmas. Previous research has overwhelmingly focused on the effects of moralizing gods, and has yet to thoroughly examine other religious moralizing systems, such as karma, to which more than a billion people subscribe worldwide. In two pre-registered studies conducted with Chinese Singaporeans, we compared the moralizing effects of karma and afterlife beliefs of Buddhists, Taoists, Christians, and the non-religious. In Study 1 ($N = 582$), we found that Buddhists and Taoists (karmic religions) judge individual actions as having greater consequences in this life and the next, compared to Christians. Pointing to the specific role of karma beliefs in these judgements, these effects were replicated in comparisons of participants from the non-karmic religions/groups (Christian and non-religious) who did or did not endorse karma belief. Study 2 ($N = 830$) exploited religious syncretism in this population by reminding participants about either moral afterlife beliefs (reincarnation or heaven/hell), ancestor veneration beliefs, or neither, before assessing norms of generosity in a series of hypothetical dictator games. When reminded of their ancestor veneration beliefs, Buddhists and Taoists (but not Christians) endorsed parochial prosocial norms, expressing willingness to give more to their family and religious group than did those in the control condition. Moral afterlife beliefs increased generosity to strangers for all groups. Taken together, these results provide evidence that different religious beliefs can foster and maintain different prosocial and cooperative norms.

1. Introduction

Recent decades have seen a proliferation of research across the social sciences examining the relationship between religion and morality (Oviedo, 2016). This literature suggests that religion and moral/prosocial behavior *are* related, with religions promoting prosocial behavior (Norenzayan et al., 2016; Shariff, Andersen, & Norenzayan, 2016), though others disagree with the direction of this relationship (Baumard & Boyer, 2013; Baumard, Hyafil, Morris, & Boyer, 2015). Regardless, many aspects of this relationship remain under explored (McKay & Whitehouse, 2015). Moralizing religions appear to support and enforce cooperative rules via beliefs in punitive deities in large-scale societies (Johnson, 2015; Norenzayan et al., 2016; Norenzayan & Shariff, 2008; Watts et al., 2015), but other widespread supernatural moralizing systems, such as karma, have been largely neglected.

This neglect stems, in part, from the reliance on WEIRD (Western, Educated, Industrialized, Rich and Democratic) samples (Henrich, Heine, & Norenzayan, 2010). Although the volume of cross-cultural research on religion and morality is increasing, the focus has still been predominantly on the effects of beliefs in moralizing gods and Abrahamic traditions (Norenzayan, 2016). Yet different groups moralize gods to different degrees, and some research suggests that the more people moralize their god(s), the more generous they are likely to be towards an anonymous stranger and the less likely they are to cheat in interactions (Lang et al., 2019; Purzycki et al., 2016). Moral concerns vary across religious traditions (Cohen, 2015). Within Christianity alone, broad cultural differences can affect how people think about God, what God cares about, and what God punishes (McNamara, Willard, Norenzayan, & Henrich, 2019; Willard & McNamara, 2019). This suggests there is underexplored variation in the ways in which religion affects cooperation. More diverse sampling and deeper consideration of the beliefs of diverse religious traditions is needed to obtain a fuller understanding of how religion may have culturally evolved to support and sustain cooperation in different ways in different cultural contexts.

Over 1.6 billion people follow Hinduism or Buddhism (karmic religions), while another 394 million follow Traditional Chinese Religion (Pew, 2017), which also includes karmic beliefs. Many smaller religious

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groups, such as Sikhs and Jains, also hold karmic beliefs. Although psychological research into the role of karma in moral reasoning remains sparse (White, Sousa, & Prochownik, 2016), there is some evidence that karma beliefs increase generosity to strangers in some samples (White, Kelly, Shariff, & Norenzayan, 2019), but not others (Berniūnas, Dranseika, & Tserendamba, 2019).[1]

As well as looking at the overall moralizing effects of karma and reincarnation beliefs, we make predictions about how these different belief systems might produce differences in prosocial norms, thus promoting different kinds of cooperation. We sampled Chinese Singaporeans aligning with Christian, Buddhist, Taoist, or non-religious belief systems and exhibiting syncretism (endorsing beliefs from more than one religious tradition). Comparing diverse religious groups within a single ethnic group and country increases the confidence with which we can attribute any observed differences to religion rather than other dimensions of cultural difference.

We investigated two questions: 1) Does belief in different systems of supernatural moral monitoring – karma and the Christian God – differentially affect how people judge the consequences of good and bad actions?; and 2) does varying the salience of different beliefs – specifically moralized afterlives and ancestor veneration – influence who people believe they should normatively cooperate with?

1.1. Moral religions

Cultural evolution research on religion has highlighted the role religions play in enforcing large-scale cooperation (Norenzayan et al., 2016). Religious beliefs that expand what gods know and care about beyond local concerns and the local group, and increase gods' ability to punish rule breakers, may have contributed to sustaining cooperation at larger scales (Norenzayan, 2013; Purzycki & Sosis, 2011). These beliefs create the perception that one's bad actions will be punished supernaturally, even if undetected by others, and can expand the circle of cooperation to anonymous strangers. Religions that lay out rules for cooperative behavior, and systems to enforce that cooperation, may create more stable and successful groups (e.g. Sosis & Bressler, 2003), perhaps increasing the ability of these groups and their religious beliefs to survive and spread (Norenzayan et al., 2016).

One such religious belief is the belief that punishments will be doled out in an afterlife. This implies that for believers there is no hope of breaking the rules and escaping all consequences. Interestingly, the literature suggests that the prosocial effects of these beliefs are more closely tied to the threat of punishment than the promise of reward (Purzycki et al., 2018; Shariff & Rhemtulla, 2012; Yilmaz & Bahçekapili, 2016).

1.2. The cultural evolution of karma and reincarnation

Like many features of religion, both karma and reincarnation appear to emerge from basic human intuitions shaped by cultural transmission (C. J. M. White, Baimel, & Norenzayan, 2017). Karma-like intuitions are based on 'immanent justice' intuitions that bad things happen to bad people and good things to good people (Baumard & Chevallier, 2012; White & Norenzayan, 2019). Such intuitions are evident across a variety of human societies, and may lay the foundations for a wide range of religious moral beliefs (Baumard & Boyer, 2013).

Although intuitive justice beliefs are directly linked to moral behavior, the implications differ from those of beliefs in moralizing gods. First, these intuitions (outside of a religious context) are generally related to rewards and punishments in a relatively short time span, often within a lifetime (Callan, Ellard, & Nicol, 2006); the good and bad things that happen to us are because of good or bad things we did in our remembered past. Religious karmic beliefs build on these intuitions and apply them *across* lifetimes. Second, karma is in principle neither an agent nor governed by any agent (Bronkhorst, 2011). Thus, karma as a system of moral monitoring is likely to cue different types of representations than moralizing gods in the minds of believers. Though some believers may treat Buddha much like a moralizing God (Purzycki & Holland, 2019), karma works separately from Buddha as a moralizing system (see Berniūnas et al., 2019).

As with many theistic religious beliefs, karma impacts morality via beliefs about postmortem rewards and punishments (Obeyesekere, 2002). Reincarnation beliefs themselves are widespread and appear independently in diverse cultures around the world (Parry, 1982; C. White, 2016). However, most reincarnation beliefs found outside of Indic religious traditions take the form of beliefs that one's deceased family members can come back in the form of one's children - and are *not* moralized. These transitions likely function to create stronger kin relationships within extended family groups (Malinowski, 1922). The innovation in Indic religions comes from tying the outcome of reincarnation to a person's good and bad actions, using karma as the accounting system (Obeyesekere, 2002). This pairing means that one's actions in this life have implications in an unknowable future in a way that can never be avoided or disconfirmed.

Karma beliefs, particularly among Buddhists, are like a bookkeeping system in which good and bad thoughts and deeds are debited and credited (Bronkhorst, 2011; Gowans, 2014). It is the balance of these accounts that ultimately matters. This type of incremental impersonal accounting of karmic gains and losses differs from the moral judgment made by gods. In both Christianity and Islam, sins can be forgiven by God, for example in response to repentance or even simply by fiat. In contrast, there is no court of final appeal in karmic systems. The clear accounting of every action may increase the moral salience and significance of every single action as compared with a system based on an ultimate final moment of judgment by a deity. Thus, this type of incremental accounting may put more emphasis on *doing* good deeds rather than just *not doing* bad deeds.

Research on moralizing gods has suggested that it is the fear of punishment rather than the promise of reward that impacts people's cooperative behavior (Purzycki et al., 2018). This may be different in a karmic system. Though living a karma-neutral life is the ultimate goal within Buddhism, this is an exceedingly difficult task. A believer in karma and reincarnation may be drawn to do good deeds to reverse the effects of their transgressions (see Gowans, 2014). This suggests that believers in karma should see good deeds as more important than Abrahamic believers do.

1.3. Religion in Singapore

Singapore is a multi-ethnic and multi-religious urban society. Chinese Singaporeans, the focus of this paper, constitute 74.3% of the population. Ethnic Malays constitute an additional 13.4% of the population and Indian Singaporeans 9%, with smaller minority groups making up the rest. Within the Chinese population alone, there are several religious divisions. The largest group are Buddhists (42.3%), with sizable groups of Christians (20.9%), Taoists (12.9%), and non-religious (23.3%). The Malays are primarily Muslim (99.2%) and the Indians are majority Hindu (59.9%; an additional 21.3% are Muslim; Statistics Singapore, 2015).

Buddhists in Singapore primarily follow the Mahayana tradition (Eng, 2008). Taoists do not adhere to a single tradition, but rather an assortment of traditional Chinese religious beliefs. We use the term 'Taoist' here because it is the relevant census category in Singapore with which people are familiar. Christians in Singapore span numerous denominations, with 38.5% identifying as Catholic and 61.5% identifying with other denominations (Statistics Singapore, 2015). Christianity has spread more recently in Singapore, largely in the past 20 years (Goh, 2009).

[1] Both conditions in this study showed high levels of generosity, rather than just the experimental condition.

Table 1
Demographics (Chinese participants only).

	N	Age (mean; range)	Female (%)	Education (mean years)	HH Income in SGD (monthly median)
Christians	137	33.63 (18–65)	46.82%	16.31	$10,000 to $14,999
Buddhists	237	32.52 (18–64)	47.92%	15.39	$10,000 to $14,999
Taoists	101	32.49 (18–66)	50.50%	15.79	$10,000 to $14,999
Non-religious	107	31.97 (18–81)	45.67%	16.11	$10,000 to $14,999

Religious syncretism – the tendency to combine beliefs from different religious traditions (Eng, 2008) – is common in Singapore. In particular, those who follow Christianity or Buddhism tend to also keep Traditional Chinese beliefs and practices such as ancestor veneration. Ancestor veneration involves the ritual veneration of one's deified ancestors who watch over the family, and as a way to connect to a higher power (Eng, 2008). This complicates the division of religious beliefs; there are no clean lines between religious groups, as they may hold many of the same beliefs. It also affords an opportunity to cue different normative beliefs within the same group by making participants focus on different types of belief content.

1.4. Current research

Our goal was to examine whether beliefs in different types of supernatural monitoring can impact 1) the value people place on individual good and bad actions, and 2) normative beliefs about whom one should cooperate with. Specifically, we were interested in the difference between karmic and non-karmic religions and how believers relate systems of supernatural reward and punishment to morally relevant thoughts and behaviors.

In Study 1, we examined the perceived consequences of good and bad actions on outcomes in this life and the next, predicting that: (1) the incremental nature of karma beliefs should make the moral consequences of individual actions more salient in karmic believers than those who believe in a moralizing God; and (2) although punishment is more impactful than reward in Abrahamic religions, this will be less true for karmic religions.

Our vignettes described good or bad actions at varying levels of intention (see McNamara et al., 2019). With this variation, we examined if the content of one's mind is subject to moral judgment even when there is no action (hindered intent) – a level of moral judgment that is beyond what can be accomplished by one's peers, who cannot directly know the content of one's mind. The belief that one can be punished for hidden intentions as well as actions is a cultural innovation that is capable of prompting guilt even before the transgression has occurred. Thus, these beliefs may have a preventative effect on moral transgressions that social sanctions alone cannot achieve. Intention is emphasized in Buddhism, suggesting that karma is believed to be affected by internal mental states, but this is yet to be tested directly in either Buddhists or non-Buddhist karmic believers.

In Study 2, we examined how different types of beliefs might affect the perception of cooperative norms in a hypothetical dictator game. Here, we exploited the syncretic beliefs of our participants to see if first reminding them of specific beliefs would produce differences in expectations about normative generosity towards different targets (i.e. how participants think others *want* them to behave). Specifically, we predicted that reminding participants of their moral afterlife beliefs (e.g., heaven/hell, reincarnation) would increase the belief that they were expected to be more generous to strangers and other potential cooperative partners. When prompted to consider ancestor veneration, we predicted different effects between religious groups. Ancestor veneration should be less easy to integrate into a belief in reincarnation than a belief in heaven and hell. Within Christianity, ancestors can be seen as residing in heaven and looking after their family. This integration is more difficult with reincarnation, the belief that one will be reborn into a new life. Because of this, we predicted that Buddhist and Taoist participants would show more differentiation between these beliefs than Christians and thus be more parochial when reminded of their ancestors than Christians.

2. Study 1

Related to our first aim, we expected that a) adherents to both karmic and non-karmic religions will perceive actions to have greater consequences, particularly in the next life, compared with non-religious participants; b) adherents to karmic religions should care more than the other groups about the consequences of individual actions, particularly for outcomes in the next life; and c) adherents to karmic religions should care more about positive actions than members of all the other groups.

2.1. Methods

2.1.1. Participants

Singaporean participants ($N = 839$) were recruited through Qualtrics panels across six different religious groups. The study was conducted in English (the official language of Singapore). Those who were not fluent in English, did not correctly answer either of two screening questions or who finished the survey in less than half the median time were excluded from the data before it was passed on to the researchers. Additional participants were excluded from certain analyses based on their ethnicity or religious affiliation, as most analyses only looked at Chinese participants who were Christian, Buddhists, Taoist, or non-religious (those who self-reported no religious affiliation; see Table 1). Indian and Malay participants were not included in the analyses of Chinese participants ($N = 582$; see supplemental for analyses of non-Chinese participants; S1.4.5).[2] Participants' self-reported primary religious affiliation was used in the analyses. Participants were able to pick additional affiliations, but only 12.7% of participants picked any additional secondary affiliations.

2.1.2. Materials

Twenty vignettes were created across five different situations and four behavior types. The moral vignettes entailed helping, harming, giving, and stealing. An additional disgust vignette was used where the character did not bathe (analyzed in the supplemental, S1.4.6). The behavior types were no action, accidental action, hindered action (intended to act, but missed the opportunity), and intentional action. In the no action vignette, the character did not notice the incident in question and therefore did nothing.

Each participant saw five vignettes covering one of each moral situation and each behavior type, with one behavior type being repeated for the disgust vignette. Thus, all participants were exposed to all moral situations and behavior types despite only seeing a subset of all possible vignettes. Vignettes were followed up with three questions asking about the likely consequences of these events: 1) “Will something good or bad happen to [character] in her/his life because of her/his actions?” (*this life*); 2) “Will something good or bad happen to [character] in her/his next life because of her/his actions?” (*next life*); and 3) “If you did what

[2] This division was pre-registered.

[character] did would you think about your behavior causing good or bad things to happen in your life?" (*self*).

Participants where then asked about their belief in karma and the afterlife. Participants who answered yes to believing in karma and/or the afterlife were asked some follow up open-ended questions about what karma/the afterlife was.[3] Participants answered basic demographic questions assessing their level and type of religious belief, age, gender, ethnicity, education, and income.

All materials, data, analysis scripts, and pre-registration are available at https://osf.io/4v5cf/.

2.2. Results

2.2.1. Open ended answers

Participants who said yes to the question "Do you believe in karma?" ($N = 294$) and/or "Do you believe in an afterlife?" ($N = 193$) were asked the open-ended questions, "What is karma to you?" and/or "What is the afterlife you believe in?" Responses were coded by two coders into 6 discrete categories (plus an 'other' category; 86% agreement).

Across all groups, the most common description of karma was the consequences of one's actions (Fig. 1; see S1.3 for details). No group substantially indicated that karma was divine intervention, suggesting karma is seen as separate from moralizing gods.

For afterlife beliefs, Christians were more inclined to say heaven and hell and all other groups more inclined to say reincarnation. Taoists reported both with similar frequency. Almost every category was endorsed across groups, reflecting the religious syncretism in Singapore.

2.2.2. Vignettes

Models were analyzed in a Bayesian framework (compiled with the *brms* package for *R*; Bürkner, 2017) with weakly normalizing priors (S1.4.1). Good behaviors (helping/giving) and bad behaviors (harming/stealing) were analyzed separately, as were the three associated questions, making six models in total. Behavior type (help, give, harm, and steal) was modeled with a random intercept to account for the repeated measures. This assumes that the two good vignettes or bad vignettes may have a different effect at the intercept (i.e. in the no violation condition), but that the slopes for behavior types is the same across both vignettes. Age, gender, education, income, and religiosity were included in all models as control variables (see supplemental for regression equations and full tables; S1.4.2). Interactions were included between religious group and vignette type to assess whether groups differed from Christians on each type of action (compared to no action). This allows us to look at the effects of religious affiliation only among the participants for whom other cultural norms should be highly similar. For all results, positive numbers represent increasing belief that good things will happen, and negative numbers represent increasing belief that bad things will happen.

Fig. 2 illustrates the average effects across groups for each action type and divergences between good and bad behavior. Specific to our hypothesis, Buddhists rated good actions as having a greater impact on the *next life* (hindered $\beta = 0.53$; intentional $\beta = 0.40$) than Christians (Table 2), as well as *this life* (hindered $\beta = 0.21$; intentional $\beta = 0.21$) and *self* questions (hindered $\beta = 0.29$; intentional $\beta = 0.28$), though credibility intervals crossed zero for the *this life* and *self*. Taoists credibility intervals for all differences crossed zero, and only intentional actions for *this life* ($\beta = 0.32$) and the *next life* ($\beta = 0.33$) showed predominantly positive effects. For both Buddhists and Taoists, even where the credibility intervals crossed zero, the posterior distributions favor an interpretation of more emphasis on good compared to Christians. These effects were not found for Taoists on hindered actions, suggesting that this difference may be specific to Buddhism. For concern about the impact on *self*, Taoists showed effects for accidentally doing good ($\beta = 0.38$) compared to Christians. This effect was not predicted.

We found similar effects when we looked at the ratings for the bad action vignettes (Table 3). Across all three question types, Buddhists were more concerned than Christians with hindered actions (*this life* $\beta = -0.46$; *next life* $\beta = -0.45$; *self* $\beta = -0.37$) and intentional actions (*this life* $\beta = -0.95$; *next life* $\beta = -0.78$; *self* $\beta = -0.91$), suggesting again that Buddhists see people's intentions to behave badly as more impactful than Christians do within this context. Similar effects were seen for Taoists on the intentional action vignettes only, but the credibility intervals on these effects crossed zero (*this life* $\beta = -0.24$; *next life* $\beta = -0.42$; *self* $\beta = -0.30$). For hindered action, Taoists again showed no differing effect from Christians.

Karma beliefs were endorsed by 67% of Christians and 68% of the non-religious. In an attempt to better disentangle karmic belief from affiliation with a karmic religion, we included an additional exploratory analysis comparing karma and non-karma believers among the Christians and non-religious participants. Interaction effects were included between karma belief/no belief and action type rather than religion and action type. The results of which are shown in Fig. 3. For the good action vignettes, karma believers cared more about intentional actions (*this life* $\beta = 0.69$; *next life* $\beta = 0.70$; *self* $\beta = 0.61$), and small effects that crossed zero for hindered actions (*this life* $\beta = 0.21$; *next life* $\beta = 0.23$; *self* $\beta = 0.24$), across all domains (Table 4). This analysis across all groups is included in the supplemental (S1.4.4). For the bad action vignettes, we find strong effects of karma only for intentional action in the *next life* question ($\beta = -0.49$; Table 5).

Taken together, this suggests that a belief in karma increases concern with the immediate and next life impacts of actions. In all cases these differences were stronger for good behaviors than bad. This suggests that karma belief increases concern with actions, and particularly *good* actions, but Buddhism uniquely increases concern for good and bad intentions when they are decoupled from outcomes. The inclusion of karmic believers in both the Christian and non-religious groups in the analyses presented in Tables 2-3 may have dampened the size of effects. This seems particularly likely for the good action vignettes, as the main effects for both *hindered* and *intentional action* (Christians in Tables 2-3 and non-Karmic believers in Tables 4-5) are substantially lower in the karma analysis than in the religious group analysis.

2.3. Discussion

When asked to describe what karma is, all groups predominantly reported that karma is the consequences of one's actions; i.e., if a person does good or bad things, good or bad things will happen to them. Only very rarely did a participant in any group suggest that karma was controlled or used by God or Buddha or any other supernatural agent.

Across all vignettes, we found evidence that different religious beliefs shaped expectations about the rewards and punishments for individual actions, both in this life and the next. Buddhists, and with less confidence Taoists, were more concerned than Christians with the outcome of intentional bad behavior in both this life and the next, and more concerned than Christians with outcomes of intentional good behavior in the next life. These effects were relatively small. This may be, in-part, due to the syncretic belief in karma held by Christian and non-religious participants. When we compared Christian and non-religious participants who endorsed karma beliefs to those that did not, we found larger effects. This suggests that karmic beliefs specifically that makes people more concerned about individual actions, rather than something about claiming a Buddhist or Taoist affiliation. We also observed a greater emphasis on doing good deeds among karma believers compared to karma non-believers in this analysis than in the

[3] Participants were additionally asked free-list questions about the consequences of various acts, and what causes good and bad karma/outcomes in the afterlife. Analyses of these questions and related pre-registered hypotheses will be included in a future publication.

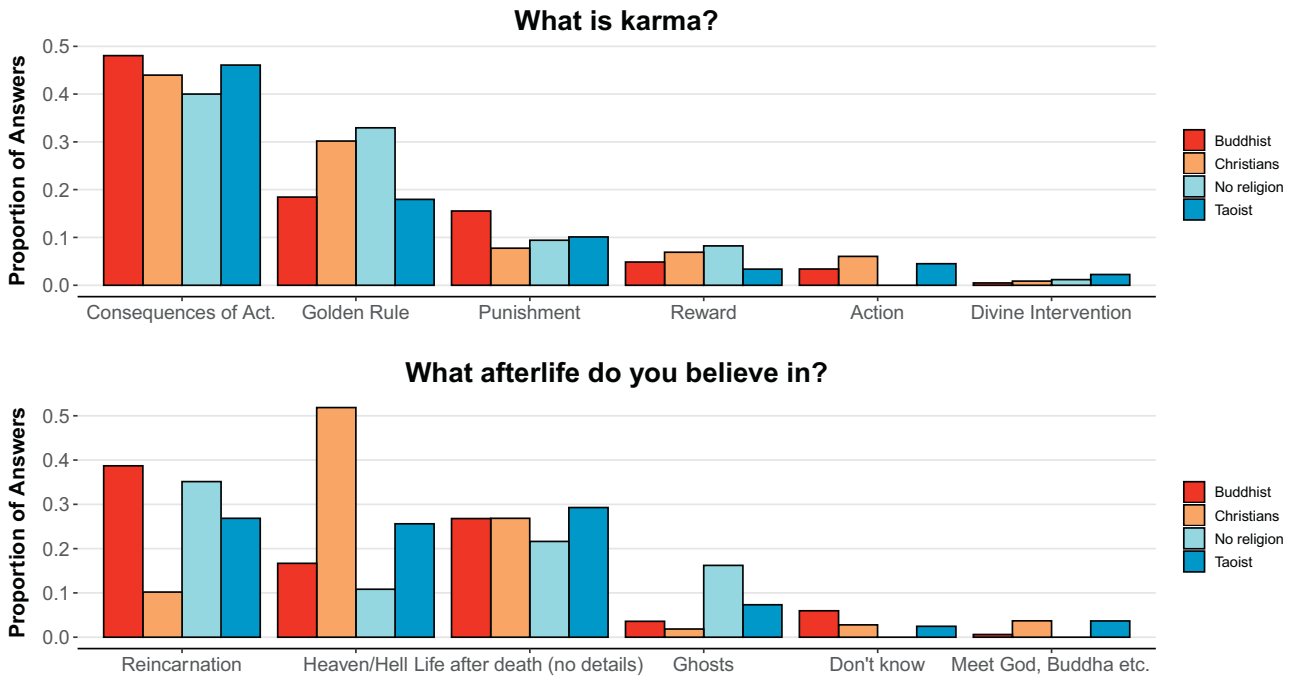

Fig. 1. Proportion of answers for each religious group in each category for "What is karma" and "What afterlife do you believe in?" among participants who reported belief.

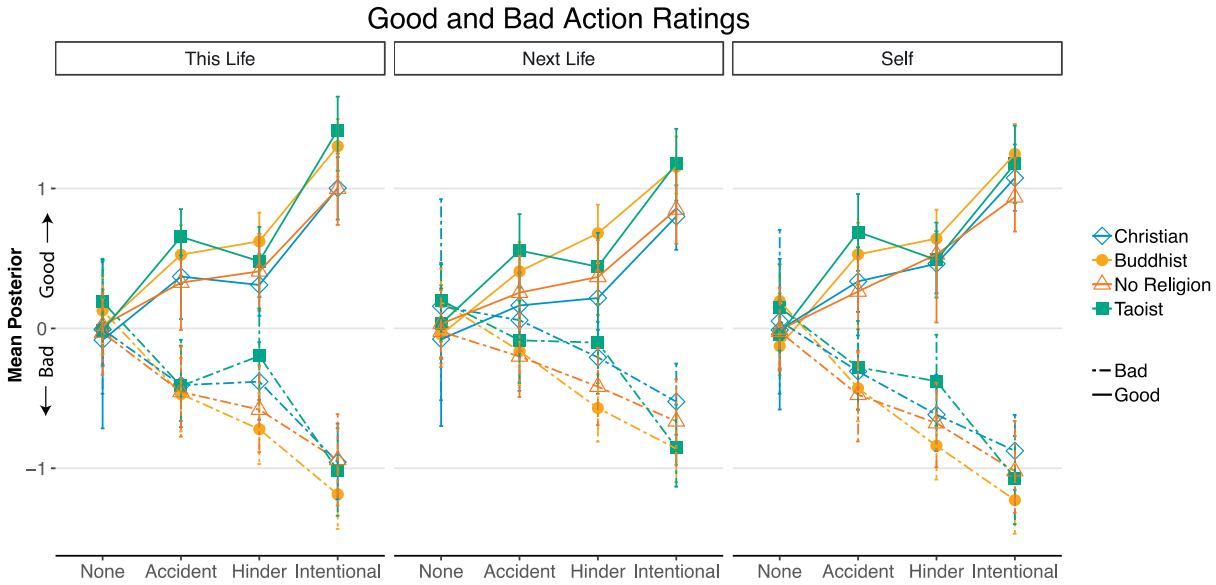

Fig. 2. Posterior mean effects for the impacts of good and bad actions for all religious groups (Tables 2 and 3). Error bars are 95% credibility intervals derived from the posterior distribution.

analysis of all religious groups. This supports our prediction that karma increases the value people see in doing good deeds as a way of improving their afterlife/next life.

For Buddhists, we see these same effects for hindered actions, suggesting that they uniquely see intention separated from actual action as having greater moral consequences. Despite this difference, all groups rated the impact of hindered actions as greater than no action, suggesting that to some degree, both karma and God weigh intentions even when no action is taken. Interestingly, across all groups, the positive and negative impacts for good and bad actions were rated higher/lower for the questions about this life than the next. Our participants see retribution as more likely within one's lifetime than in the next. Counter to our predictions, non-religious participants did not differ from religious participants on their belief in good and bad results of actions in this life or the next.

3. Study 2

Researchers have found that moralizing religions extend norms of generosity and cooperation beyond family and local communities, increasing the rate people cooperate with the broader religious community and anonymous strangers (Henrich et al., 2010; Lang et al., 2019). Here, we tested if different religious beliefs can impact generosity norms directly by exploiting the syncretic nature of beliefs among the Singaporean Chinese. Within this population, Traditional Chinese Religious beliefs, including ancestor veneration, are commonly held

Table 2
Effects of intention and religion on consequences of good actions.

Good	This life		Next life		Self	
Predictors	Est.	CI (95%)	Est.	CI (95%)	Est.	CI (95%)
Intercept	−0.11	−1.64–1.38	−0.13	−1.40–0.74	−0.03	−1.14–0.91
Accident	**0.37**	0.14–0.59	0.25	−0.02–0.50	**0.34**	0.11–0.58
Hindered	**0.39**	0.18–0.61	**0.30**	0.05–0.56	**0.47**	0.24–0.70
Intentional	**1.08**	0.85–1.31	**0.97**	0.71–1.23	**1.08**	0.84–1.31
Buddhist	0.10	−0.11–0.29	0.00	−0.22–0.24	−0.11	−0.31–0.09
Taoist	0.07	−0.18–0.31	0.10	−0.19–0.39	−0.03	−0.29–0.23
No Religion	0.10	−0.17–0.36	0.10	−0.20–0.39	0.00	−0.27–0.26
Accid*Budd	0.14	−0.14–0.44	0.27	−0.07–0.60	0.30	−0.01–0.60
Hinder*Budd	0.21	−0.07–0.49	**0.53**	0.19–0.85	0.29	−0.01–0.59
Intent*Budd	0.21	−0.09–0.49	**0.40**	0.06–0.74	0.28	−0.02–0.58
Acci*Tao	0.22	−0.14–0.58	0.34	−0.08–0.76	**0.38**	0.00–0.76
Hinder*Tao	0.10	−0.25–0.45	0.15	−0.26–0.58	0.06	−0.31–0.42
Intent*Tao	0.32	−0.04–0.67	0.33	−0.10–0.76	0.13	−0.24–0.50
Accid*No Rel	−0.14	−0.49–0.23	0.01	−0.38–0.40	−0.07	−0.42–0.28
Hinder*No Rel	−0.01	−0.36–0.35	0.08	−0.32–0.48	−0.13	−0.50–0.22
Intent*No Rel	−0.10	−0.45–0.25	−0.04	−0.45–0.35	−0.14	−0.49–0.23

Intercepts: 2.
Observations: 933.
Note: Bold values are for estimated where credibility intervals do not cross 0. Comparison conditions for religion is Christianity, and for action is no action. Additional control variables: Age, gender, education, income, and religiosity.

Table 3
Effects of intention and religion on consequences of bad actions.

Bad	This life		Next life		Self	
Predictors	Est.	CI (95%)	Est.	CI (95%)	Est.	CI (95%)
Intercept	−0.06	−1.09–0.97	0.02	−2.80–2.07	0.00	−1.13–1.26
Accident	**−0.41**	−0.66 to −0.14	**−0.39**	−0.67 to −0.11	**−0.35**	−0.62 to −0.08
Hindered	**−0.38**	−0.66 to −0.11	**−0.42**	−0.71 to −0.13	**−0.66**	−0.94 to −0.38
Intentional	**−0.95**	−1.21 to −0.69	**−0.78**	−1.07 to −0.50	**−0.91**	−1.18 to −0.65
Buddhist	0.13	−0.11–0.37	0.04	−0.22–0.30	0.15	−0.10–0.39
Taoist	0.18	−0.12–0.49	0.05	−0.27–0.38	0.11	−0.19–0.41
No Religion	−0.03	−0.32–0.25	−0.20	−0.51–0.10	−0.07	−0.37–0.23
Accid*Budd	−0.19	−0.53–0.15	−0.01	−0.37–0.34	−0.27	−0.61–0.09
Hinder*Budd	**−0.46**	−0.80 to −0.10	**−0.45**	−0.81 to −0.09	**−0.37**	−0.72 to −0.01
Intent*Budd	**−0.36**	−0.71 to −0.01	**−0.42**	−0.78 to −0.04	**−0.50**	−0.83 to −0.15
Accid*Tao	−0.18	−0.62–0.24	0.07	−0.40–0.50	−0.08	−0.51–0.33
Hinder*Tao	0.00	−0.45–0.43	0.08	−0.39–0.52	0.13	−0.30–0.55
Intent*Tao	−0.24	−0.67–0.17	−0.42	−0.88–0.02	−0.30	−0.72–0.11
Accid*No Rel	−0.01	−0.43–0.40	0.19	−0.26–0.61	−0.09	−0.52–0.32
Hinder*No Rel	−0.17	−0.57–0.24	−0.04	−0.46–0.37	0.00	−0.39–0.41
Intent*No Rel	0.04	−0.36–0.46	0.04	−0.38–0.49	−0.07	−0.49–0.35

Intercepts: 2.
Observations: 934.
Note: Bold values are for estimated where credibility intervals do not cross 0. Comparison conditions for religion is Christianity, and for action is no action. Additional control variables: Age, gender, education, income, and religiosity.

alongside other religious beliefs. This allowed us to test whether these different belief systems, when made salient, cue different normative beliefs about whom one is supposed to share resources with.

Specifically, we predicted that reminders of a) one's moral afterlife beliefs would increase generosity towards all external groups (i.e. strangers, non-family) for all groups; b) ancestor veneration beliefs would parochially increase preference for the family for all groups; c) ancestor veneration would still increase generosity to non-family groups in Christian participants,[4] but less so in Buddhists and Taoists, because ancestors can be seen as presiding in the afterlife and may still function as a reminder of heaven and hell beliefs, but ancestor continuing to exist as spirits are less easily integrated into reincarnation beliefs; and e) both afterlife conditions would produce a stronger preference for the religious group among Christians, because Christianity has a more distinct religious group identity.

3.1. Methods

3.1.1. Participants

Ethnically Chinese participants ($N = 830$) were recruited by Qualtrics Panels from three different religious groups in Singapore: Christian, Buddhist, and Taoist (Table 6). Exclusion criteria were the same as Study 1. Questionnaires were completed in English (the official language of Singapore).

3.1.2. Materials

There were three conditions in this study followed by a hypothetical money division task asking 1) how participants would divide the money, and 2) how other people would expect them to divide the money. Because we were interested in perceived norms, question 2 was

[4] This prediction is based on the experience of one of the authors (J.J.) with Chinese Christian communities in Malaysia.

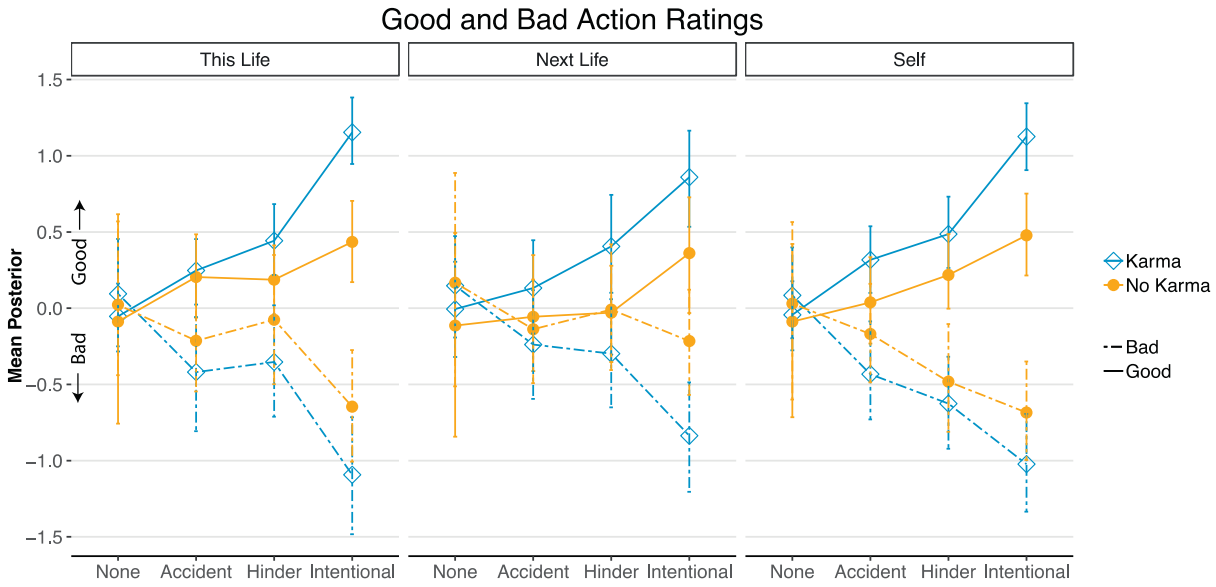

Fig. 3. Posterior mean effects for the impacts of good and bad actions for karma believers among the Christian and non-religious participants only (Tables 4 and 5). Error bars are 95% credibility intervals derived from the posterior distribution.

Table 4
Effects of karma beliefs on consequences of good actions among Christians and the not religious.

Good	This life		Next life		Self	
Predictors	Est.	CI (95%)	Est.	CI (95%)	Est.	CI (95%)
Intercept	−0.15	−1.66–0.67	−0.18	−1.36–0.95	−0.09	−1.68–1.29
Accident	**0.29**	0.02–0.57	0.10	−0.22–0.40	0.11	−0.17–0.38
Hindered	**0.27**	0.05–0.51	0.20	−0.07–0.46	**0.29**	0.06–0.52
Intentional	**0.51**	0.25–0.80	**0.40**	0.10–0.71	**0.55**	0.27–0.82
Karma	0.03	−0.19–0.26	0.06	−0.21–0.30	0.03	−0.20–0.25
Accid*Karma	0.01	−0.33–0.34	0.16	−0.22–0.57	0.25	−0.07–0.59
Hinder*Karma	0.21	−0.11–0.53	0.23	−0.13–0.60	0.24	−0.09–0.56
Intent*Karma	**0.69**	0.35–1.01	**0.71**	0.32–1.09	**0.61**	0.27–0.94

Intercepts: 2.
Observations: 412.
Note: Bold values are for estimated where credibility intervals do not cross 0. Comparison conditions for karma is no karma, and for action is no action. Additional control variables: Age, gender, education, income, and religiosity. Bolded numbers have credibility intervals that do not cross zero.

Table 5
Effects of karma beliefs on consequences of bad actions among Christians and the not religious.

Bad	This life		Next life		Self	
Predictors	Est.	CI (95%)	Est.	CI (95%)	Est.	CI (95%)
Intercept	−0.02	−1.23–1.52	−0.04	−3.12–1.72	−0.03	−1.49–1.42
Accident	−0.21	−0.54–0.10	−0.22	−0.55–0.12	−0.20	−0.51–0.10
Hindered	−0.22	−0.58–0.13	−0.14	−0.51–0.25	−0.51	−0.86 to −0.17
Intentional	**−0.75**	−1.06 to −0.44	**−0.48**	−0.80 to −0.14	**−0.71**	−1.02 to −0.41
Karma	0.06	−0.24–0.34	0.01	−0.29–0.32	0.05	−0.24–0.33
Accid*Karma	−0.32	−0.69–0.08	−0.14	−0.55–0.26	−0.31	−0.68–0.06
Hinder*Karma	−0.31	−0.71–0.10	−0.39	−0.85–0.03	−0.19	−0.59–0.22
Intent*Karma	−0.29	−0.67–0.08	**−0.49**	−0.90 to −0.08	−0.39	−0.75–0.01

Intercepts: 2.
Observations: 412.
Note: Bold values are for estimated where credibility intervals do not cross 0. Comparison conditions for karma is no karma, and for action is no action. Additional control variables: Age, gender, education, income, and religiosity. Bolded numbers have credibility intervals that do not cross zero.

more relevant to our purposes as it assessed how participants' beliefs about what others expected of them might change under the influence of different supernatural beliefs.

In the moralized afterlife condition, Christians were asked a series of questions and completed two open-ended free-lists (Purzycki & Jamieson-Lane, 2017) about their afterlife beliefs before they answered the money division questions. Buddhists and Taoists were asked a matched set of questions about reincarnation. In the ancestor veneration condition, all groups were asked a matched set of questions about ancestor veneration. In the neutral condition, participants did the money division task first, and then answered either the moralized afterlife questions or the ancestor veneration questions.

Table 6
Demographics Study 2.

	N	Age (mean; range)	Female (%)	Education (median level)	HH Income in SGD (monthly median)
Christians	312	43.57 (20–80)	58.51%	University Degree	$10,000 to $14,999
Buddhists	309	40.53 (20–77)	53.39%	University Degree	$10,000 to $14,999
Taoists	209	38.62 (19–73)	57.99%	University Degree	$10,000 to $14,999

Table 7
Results of money division question by condition and religious group.

	Self vs Stranger		Odds	Self vs Family		Odds
	Est.	CI (95%)		Est.	CI (95%)	
Intercept	**−1.55**	−1.60 to −1.49	0.21	**−0.38**	−0.43 to −0.33	0.68
Moral	**0.17**	0.09–0.24	1.19	**0.12**	0.08–0.19	1.13
Ancestor	**0.61**	0.54–0.68	1.84	**0.20**	0.14–0.26	1.22
Buddhist	**−0.09**	−0.16 to −0.01	0.91	**0.16**	0.11–0.22	1.17
Taoist	**−0.22**	−0.31 to −0.13	0.80	−0.05	−0.11–0.01	0.95
Moral*Budd	**0.23**	0.13–0.34	1.26	−0.01	−0.09–0.07	0.99
Moral*Tao	**0.37**	0.25–0.48	1.45	**0.15**	0.06–0.24	1.16
Ancest*Budd	**−0.44**	−0.55 to −0.34	0.64	−0.02	−0.10–0.06	0.98
Ancest*Tao	−0.10	−0.21–0.02	0.90	**0.31**	0.22–0.40	1.36
	Obs.	**811**		**Obs.**	**823**	
	Self vs Member of Religion			Family vs Stranger		
Intercept	**−1.00**	−1.05 to −0.96	0.37	**−1.45**	−1.51 to −1.40	0.23
Moral	**0.28**	0.21–0.34	1.32	0.02	−0.05– 0.09	1.02
Ancestor	**0.45**	0.39–0.51	1.57	**0.25**	0.18–0.32	1.28
Buddhist	**−0.12**	−0.19 to −0.06	0.89	**−0.11**	−0.18 to −0.04	0.90
Taoist	**0.08**	0.01–0.14	1.08	**−0.21**	−0.29 to −0.12	0.81
Moral*Budd	**0.17**	0.09–0.26	1.19	**0.51**	0.41–0.61	1.67
Moral*Tao	0.02	−0.07–0.11	1.02	**0.26**	0.15–0.38	1.30
Ancest*Budd	−0.01	−0.10–0.08	0.99	**−0.25**	−0.35 to −0.15	0.78
Ancest*Tao	**−0.11**	−0.20 – - 0.02	0.90	−0.05	−0.18 - 0.06	0.95
	Obs.	**825**		**Obs.**	**814**	
	Member of Religion vs Stranger			Family vs Member of Religion		
Intercept	**−1.18**	−1.23 to −1.13	0.31	**−0.97**	−1.02 to −0.92	0.38
Moral	**0.29**	0.22–0.35	1.34	**0.22**	0.17–0.28	1.25
Ancestor	**0.36**	0.29–0.42	1.43	**0.25**	0.19–0.31	1.28
Buddhist	**−0.07**	−0.13 to −0.00	0.93	**−0.11**	−0.17 to −0.05	0.90
Taoist	−0.01	−0.08–0.07	0.99	0.02	−0.05–0.08	1.02
Moral*Budd	−0.01	−0.10–0.08	0.99	**0.21**	0.13–0.29	1.23
Moral*Tao	**−0.22**	−0.33 to −0.12	0.80	0.02	−0.07–0.11	1.02
Ancest*Budd	**−0.26**	−0.35 to −0.16	0.77	0.02	−0.06–0.11	1.02
Ancest*Tao	**−0.11**	−0.21 to −0.01	0.90	0.02	−0.07–0.11	1.02
	Obs.	**815**		**Obs.**	**822**	

Note: Bold values are for estimated where credibility intervals do not cross 0. Negative numbers are increased odds of giving to first label, and positive numbers are increased odds of giving to second label.
Additional control variables: Age, gender, education, income, and religiosity. Bolded numbers have credibility intervals that do not cross zero.

For the money division task, participants were given a series of questions about how to divide a windfall of $100 between themselves, a family member, a member of their religious group, and a stranger on a sliding scale between $0 and $100, and what other people would expect the division to be. Targets were always presented in pairs (i.e. self vs stranger). All possible combinations of targets were included. Participants also provided basic demographic information and responded to questions about their religious beliefs.

All materials, data, analysis scripts and pre-registration can be found at https://osf.io/7deh8/.

3.2. Results

3.2.1. Money division

Models were analyzed in a Bayesian framework (compiled with the *brms* package for *R*) with weakly normalizing priors (S2.3.1). Because the amount given to one person directly affected the amount given to the other person for each question, and because distributions were skewed towards the lower bound, models were fit to binomial curves between 0 and 100. Effect sizes are presented as odds ratios. All models include age, gender, education, income, and a rating of belief in the relevant afterlife (reincarnation, heaven/hell, ancestor veneration).

Self ("How much money would you give to a [family member/religious community member/stranger]?") and *Norm* ("What would other people think is the right amount to give to a [family member/religious community member/stranger]?") questions were analyzed separately, and only the results for *Norm* questions are presented here (Table 7). Results for the *Self* questions are not meaningfully different and can be found in the supplemental (S2.3.3), as well as a model with both questions analyzed together. Positive coefficients indicate increased odds of giving money to the less parochial group (i.e. family over self, stranger over family, etc.) and negative coefficients indicate decreased odds.

When cued to think about moralized afterlife beliefs, Buddhists

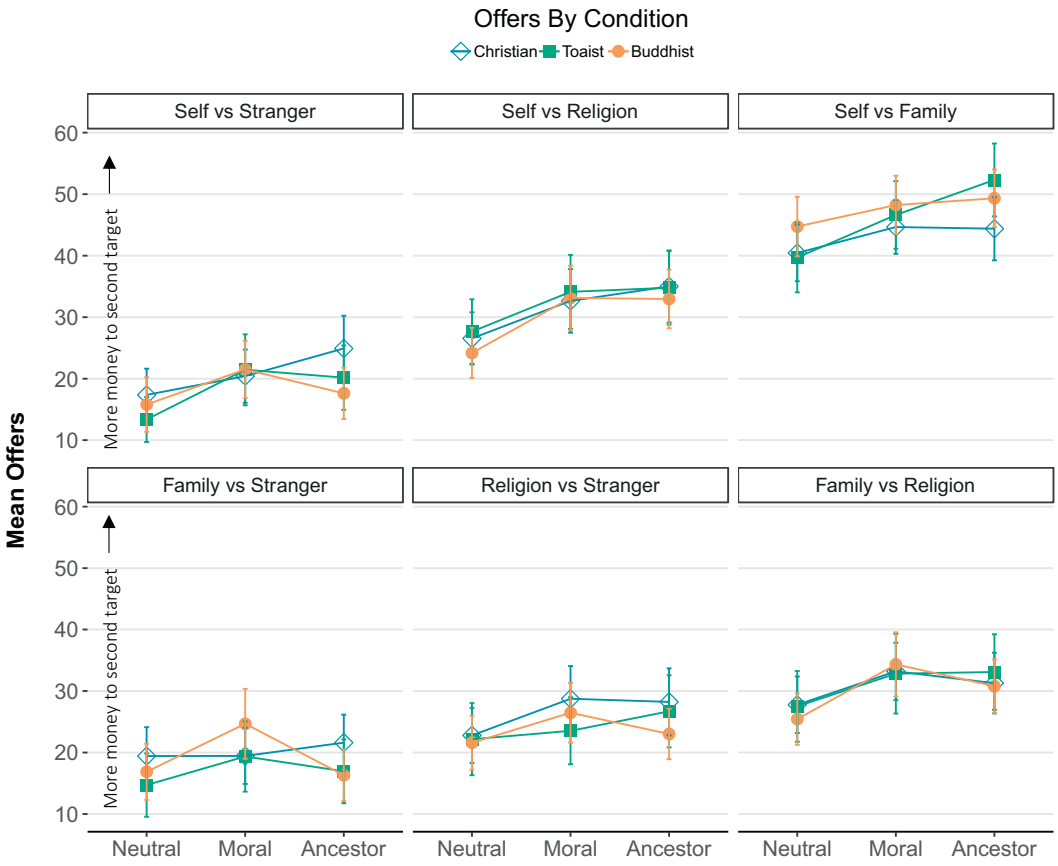

Fig. 4. Mean offers (raw scores) by different religious groups across all questions. Error bars are 95% confidence intervals.

showed larger increases across almost all questions than Christians in what they believed was the normative amount to give. This effect is driven by Buddhists claiming weaker norms of giving than Christians in the neutral conditions on many of the questions. Though the moralized afterlife prime produced a greater change here, it brings both groups up to relatively similar normative amounts (see Fig. 4). The ancestor condition generated weaker prosocial effects for Buddhists and Taoists on allocations to strangers than for Christians. In fact, the Christians showed a stronger effect here than anticipated, and the effects of the ancestor condition were stronger than those of the moralized afterlife condition on all questions. Predictions and results are summarized in Table 8.

3.2.2. *Free-list analysis*

All participants generated lists of up to three responses to questions about what causes 1) good and 2) bad things to happen in the afterlife (heaven/hell, reincarnation, or ancestors). Lists were coded by two independent coders into 48 discrete categories across all list types (84.6% agreement). Disagreements were decided by a third coder. Salience scores for items were calculated based on ranking and frequency across lists (Purzycki & Jamieson-Lane, 2017).

Christians showed high salience of piety/impiety for all free-list questions. Filial piety/respect (i.e. respect for one's ancestors or elders) did not appear as salient for Christians for any question (Fig. 5). The inclusions of piety and impiety for Christians suggests that, for this group, ancestor beliefs did cue similar afterlife type beliefs as the moral afterlife. For all three groups, there was an overall similarity to what causes good or bad things to happen in the afterlife in both the moral condition and the ancestor condition. Lists generated by Buddhists and Taoist were quite similar overall, with a stronger emphasis on filial piety and being unfilial in the Taoist lists compared to the Buddhist ones.

3.3. *Discussion*

Reminders of a moralized afterlife increased the perceived norms of generosity towards all groups across all questions. Consistent with our predictions, Christians claimed norms of greater generosity in both the ancestor veneration and moral afterlife conditions than in the neutral condition. Among Buddhists, cuing ancestor veneration produced norms of lower generosity towards strangers, but not towards family or coreligionists, compared to Christians. Preferences among Taoists were more mixed, but our results indicate a general preference for family/religious group in the ancestor veneration condition, compared to Christians. The idea that these beliefs might create two different preferences for norms is not entirely unprecedented. Previous work has shown similar effects in Fiji where reminders of different types of religious beliefs have produced different types of cooperative behavior (McNamara & Henrich, 2017; McNamara, Norenzayan, & Henrich, 2016).

Free-list analyses revealed that for all groups, charity was highly salient in both the moral and ancestor afterlife conditions. Piety was highly salient to Christians, even in the ancestor condition. This suggests that this condition did cue thoughts of Christian beliefs, not just traditional Chinese beliefs in this group. Filial piety/respect (respect for one's parents and elders) and being unfilial was particularly salient to Taoists. Overall, the similarity of these lists across groups and conditions suggests that beliefs about which thoughts or behaviors might have good or bad consequences is quite stable across the whole population.

4. General discussion

Across both studies we found support for our two main predictions: 1) the system of supernatural moral enforcement a person believes in

Table 8
Predictions and results.

Base	Target	Pre-reg. prediction	Results	Match
Self	Stranger	Moral and Ancestor[a] will increase allocations to strangers.	Moral increased odds of allocating to strangers. Ancestor increased allocations for Christians, but not Taoists. Ancestor decreased allocations for Buddhists.	Part
		The effect of Moral will be larger for Buddhists than Christians.	The effects of Moral were larger for Buddhists than Christians. Also true for Taoists	Yes
		The effect of Ancestor will be larger for Christians than Buddhists.	The effects of Ancestor were larger for Christians than Buddhists.	Yes
Self	Family	Ancestor will increase allocations to family.	Ancestor increased allocations to family. Stronger effect for Taoists	Yes
Self	Religion	Moral & Ancestor will increase allocations to religion.	Moral & Ancestor increased allocations to religion for all groups.	Yes
		The effect of Moral will be larger for Buddhists than Christians.	The effects of Moral were larger for Buddhists than Christians.	Yes
		The effect of Ancestor will be larger for Christians than Buddhists.	The effects of Ancestor were not larger for Christians than Buddhists, but were larger for Taoists.	No
Family	Stranger	Moral will increase allocations to strangers.	Moral increased allocations to strangers for all groups.	Yes
		Ancestor will decrease allocations to stranger.	Ancestor increased allocations to strangers for Christians, not decreased, but there was some decrease for Buddhists (though not Taoists).	No
Religion	Stranger	Moral will increase allocations to strangers.	Moral increased allocations to strangers for Christians and Buddhists, but not for Taoists.	Part
		This effect will be larger for Buddhists than Christians.	This effect was not different for Buddhists and Christians, and lower for Taoists.	No
Family	Religion	Moral will increase allocations to Religion.	Moral increased allocations to Religion for Christians and Buddhists, but not Taoists.	Part
		Ancestor will decrease allocations to religion.	Ancestor increased allocations to religion for all groups.	No

[a] In retrospect, the idea that ancestor worship would increase allocations to strangers is not a great prediction and does not follow well from the theory, which would suggest that these effects would remain parochial. It was included in the pre-registration, so we have left it here.

can change the value they place on individual good and bad actions, and 2) different religious beliefs can differentially impact endorsed cooperative norms. In Study 1, we found that karmic believers perceived stronger consequences of both good and bad actions in this life and the next. Though previous research has suggested that it is fear of supernatural punishment rather than the chance of supernatural reward that motivates people's moral actions (Purzycki et al., 2018; Shariff & Rhemtulla, 2012; Yilmaz & Bahçekapili, 2016), we see some indication here that all groups care about supernatural reward, and that karma believers might care more. This effect is more apparent in the analysis of karmic believers within the Christian and non-religious than in the between-religion analysis. In Study 2, we found the salience of different sets of religious beliefs impacted the expected cooperative norms among believers. This suggests that these different religious beliefs promote different generosity norms, even within groups.

Despite Buddhists and Taoists claiming good actions as having more of an impact on the next life than Christians in Study 1, these groups claimed lower norms of generosity in the neutral condition for almost every money division question in Study 2. The only context in which we did not see this effect for Buddhists was when asked about how they should divide up money between themselves and a family member. Here, they gave more to the family member than Christians in the neutral condition. This suggest some mismatch between the explicit belief about the impact of one's actions and the norms associated with charitable giving.

Although both studies supported many of our predictions, the effects were quite small. We chose to do this research with Chinese Singaporeans because this offered an opportunity to test the effects of different religious beliefs within a single population, but religions are not the only source of cultural norms. Thus, it is unsurprising that these differences are small. Further, Christianity and non-religion have a much shorter history in this population than Buddhism and Taoism. Only a couple of generations ago, Christianity was largely absent in Singapore, making up only 2% of the population in 1970, rising to about 10% by 2000 (Goh, 2009), and 18.7% by 2015 (Singapore Statistics, 2015). For Christianity to have had *any* noticeable effect on the moral norms of believers speaks to the strength of these beliefs in impacting cooperative norms. We would expect that the effects of these religious differences over long periods of history could potentially shape some of the cultural differences we see in the world today (e.g., Schulz, Bahrami-Rad, Beauchamp, & Henrich, 2019).

This points to a potential limitation of this study. It may be the case that the observed differences are due to the changes in norms brought on by Christianity, rather than any influence of karma or reincarnation beliefs. Two findings offer some counter evidence to this point. First, when we compared Christians and non-believers, belief in karma still produced the same effects on the anticipated consequences of actions, suggesting that it is karma beliefs specifically that are creating this effect. These are the largest effects we found. Second, in Study 2, differences between conditions primarily manifested among the Buddhists, suggesting that the two sets of beliefs held by this group have differing effects on the perception of who one should cooperate with. Neither of these findings make an entirely conclusive case, and more research is needed.

Regardless, these findings have broader implications for how we think about the relationship between religion and morality. This research demonstrates that religious beliefs impact how we think about the consequences (reward and punishment) of our actions, and how we think about moral norms. These findings suggest that it is not just being religious that matters, but rather the content of one's beliefs. This content, and the related cooperative norms, should be expected to differ with the specific needs of the societies that hold them (Purzycki, 2011).

4.1. Moving beyond WEIRD

It seems obvious that when investigating topics such as the effects of

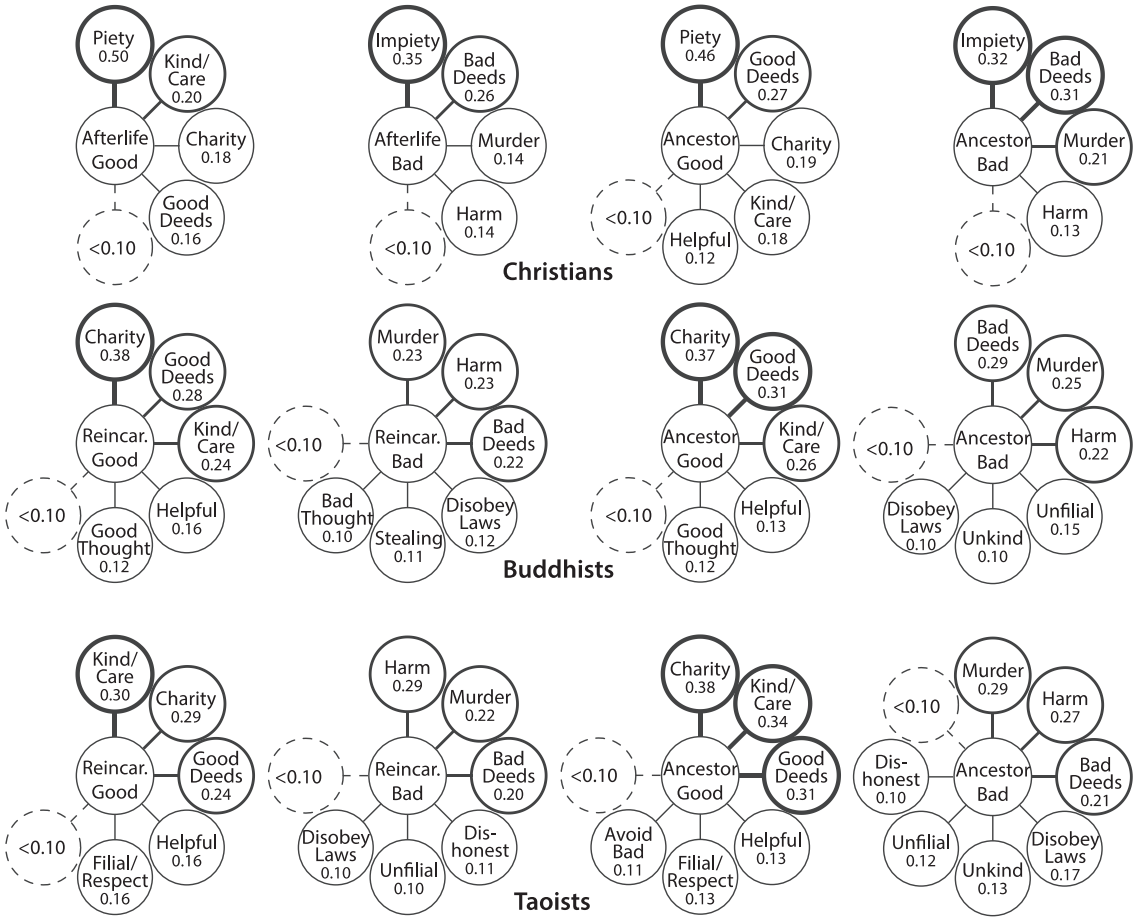

Fig. 5. Salience scores based on rank and frequency in lists for good and bad outcomes in the afterlife for each condition (heaven/hell, reincarnation, and ancestor veneration).

religion on norms and behavior, research needs to account for cultural differences in belief. Despite this, the evolutionary literature on religion still has a Western and Abrahamic bias. If we are seeking to answer questions of why humans are religious, and the impacts that religions have on societies, we need to broaden the cultural scope of our research. This paper does that in only a limited way. Singapore differs from WEIRD populations on a single dimension; it is not western. Singapore is highly educated, industrialized, rich, and democratic. It has strong secular institutions and has become westernized in many ways (see Muthukrishna et al., 2020). Still, sampling this population allowed us to look across diverse and syncretic sets of widely held beliefs frequently overlooked in the literature. Because we cannot effectively change a person's religious beliefs in the lab, Singapore's religious diversity provided an opportunity to examine questions that are difficult to test in standard participant pools. Like with any sample, it is difficult to know how far these effects generalize beyond the population tested. Still, by seeking samples that vary culturally in ways that might impact the findings, we can increase the precision and ecological validity of insights into the relationship between religion and morality.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.evolhumbehav.2020.07.001.

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