

# Karma and God: Convergent and Divergent Mental Representations of Supernatural Norm Enforcement

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Few studies have directly examined mental representations of supernaturally monitored morality, as they are reflected in world religions as conceptions of karma and God. In seven samples (total  $N = 3,861$ ), we use an open-ended free-list task to investigate participants' mental representations of God and karma, among culturally diverse samples from the USA and India, including Hindu, Buddhist, Christian, and nonreligious participants. Key results showed that (a) there is substantial consensus among believers that actions relevant to interpersonal cooperation (e.g., generosity, harm, fairness, and honesty) are highly relevant to both karma and God beliefs; however, (b) God is prototypically represented as a personified, social agent, who believers have a devotional relationship with, whereas karma is more commonly conceived of as a nonagentic causal process, through which moral actions generate commensurate good and bad consequences; (c) God—but not karma—is expected to reward and punish acts of religious devotion, in addition to the harm and fairness norms that characterize interpersonal prosociality; and (d) karma—more than God—is expected to reward generosity and punish greed. These findings show how culturally constructed religious beliefs shape expectations about the consequences of moral behavior. A greater understanding of the mental representations of karma and God contribute to cultural evolutionary theories of supernatural norm enforcement and its role in large-scale cooperation.

*Keywords:* karma, God, religion, morality, prosociality

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The expectation that what goes around comes around—that virtuous people are rewarded for their prosociality and hard work, and bad people are punished for their misdeeds—is a hallmark of norms in interpersonal relationships and, for many people, this reciprocity also characterizes the universe more broadly, through the intervention of supernatural entities. The belief in supernaturally enforced consequences for norm violations is widespread around the world, but comes in many varieties, including gods, ancestral or nature spirits, witches and sorcerers and demons, nonagentic forces like karma, and an afterlife determined by one's actions on earth (Johnson, 2015; Purzycki, 2013; Purzycki et al., 2016; Purzycki & Holland, 2018; Singh, 2020; White & Norenzayan, 2019).

The growing literature regarding how supernatural punishment beliefs shape prosociality has largely focused on understanding beliefs about gods—powerful supernatural agents who monitor and police human moral behavior and who enter into personal relationships with their devotees. But in many religious traditions, especially in non-Western contexts, another source of supernatural

punishment is karma—an ostensibly nonagentic causal process through which human actions beget morally congruent consequences. While preliminary evidence indicates that both karma beliefs and God beliefs encourage prosociality toward anonymous strangers (White, Kelly, et al., 2019), and play a role in increasingly complex societies (e.g., Roes & Raymond, 2003; Watts et al., 2015), relatively less is known about the mental representations of these different supernatural beliefs and their moral content. The present research investigates whether similarities and differences in beliefs about karma and beliefs about gods manifest in unique patterns of beliefs about supernatural monitoring of interpersonal morality. We address this question in religiously diverse samples from the USA and India.

## Similarities in Belief in God and Karma in Relation to Interpersonal Morality

Belief in a moralizing God and belief in karmic causality are widespread around the world, as central tenets of several world religions (Christianity, Islam, Judaism, Hinduism, and Buddhism) that have billions of adherents, and as beliefs held by spiritual people unaffiliated with any particular religious tradition (White & Norenzayan, 2019). Beliefs about a moralizing God (or gods) and karma are culturally widespread, in part, because they arise from similar intuitive cognitive biases in how people perceive the world (White et al., 2021), and also because of convergent cultural evolutionary pressures that have shaped cooperation among interactants in large groups of anonymous

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strangers through the threat of supernatural punishments and rewards (McKay & Whitehouse, 2015; Norenzayan et al., 2016).<sup>1</sup>

In recent cross-cultural studies sampling from a significant portion of global variability in religious beliefs and in social complexity, curbing interpersonal transgressions emerged as a central feature to descriptions of moralizing gods' desires (Lang et al., 2019; Purzycki et al., 2012, 2016; Purzycki & Holland, 2018); in turn, commitment to these gods was found to be related to greater impartiality toward coreligionist strangers in these samples (Lang et al., 2019; Purzycki et al., 2016). Recent research supports a broad association between supernatural punishment beliefs and prosociality, which is not limited to belief in gods per se. Experimental reminders of religion increase prosocial behavior (Shariff et al., 2016), and this prosocial effect has been found for both reminders of God and reminders of karma (White, Kelly, et al., 2019; Willard et al., 2020). Using a large database of historical information about Austronesian societies, Watts et al. (2015) found that social complexity is sustained by belief in a variety of supernatural punishments, not merely belief in morally concerned high gods. These results support a general association between prosociality and both God and karma beliefs, but do not directly address the moral content of these supernatural beliefs, or whether other differences between god beliefs and karma beliefs are evident in different expectations about how each entity enforces moral norms.

### Differences Between Beliefs About Karma and Beliefs About God

In this article, we specifically test whether the different mental representations of God and karma—supernatural norm-enforcement beliefs that share different cultural histories and different patterns of religious devotion (White & Norenzayan, 2019)—result in as-yet-untested divergences between which interpersonal behaviors are monitored by each entity.

Believers typically view God as a social agent (Heiphetz et al., 2016; Shtulman & Lindeman, 2016). God has thoughts and motivations independent of human beings, and people can enter into a devotional relationship with God much as they would with other authorities (Rai & Fiske, 2011) or attachment figures (Davis et al., 2013; Granqvist et al., 2010). By performing appropriate actions, including both prosocial behavior toward other people and appropriate deference and devotion to God, believers can have a loving, protective, personal relationship with God (Johnson, Cohen, et al., 2016; Johnson et al., 2015). God's role as a creator who has an undiscernible plan for human lives, petitionary prayers, devotional rituals, songs of praise, sacrificial offerings, and anthropomorphic depictions in literature and visual art all reinforce this view. It is because of this agentic representation of God that believers can fruitfully apply their sociocognitive capacities to think about God (Epley et al., 2009; Grafman et al., 2020; van Elk & Aleman, 2017).

It is less evident that believers think about karma as a social agent. Karma is often depicted as a law-like cause-and-effect principle (i.e., actions lead to morally congruent outcomes without the mediation of natural or supernatural agents) or according to a resource-like metric (i.e., actions generate merit or demerit that is accumulated, quantified, and exchanged for particular experiences, Bronkhorst, 2011; Daniel, 1983). For example, in

one study of Buddhist, Taoist, Christian and nonreligious individuals in Singapore, karma was typically described in open-ended responses as the consequences of actions, like the Golden Rule, or, to a lesser extent, as rewards, punishments, and actions—with participants rarely, if ever, mentioning divine intervention, indicating that karma is perceived as distinct from moralizing gods (Willard et al., 2020). Hindus and Buddhists typically express both belief in karma and belief in a variety of gods-like supernatural agents (White, Norenzayan, et al., 2019), but whereas anthropomorphic visual depictions and devotional worship toward gods is common, no analogous depictions or worship is directed to karma, and karma is believed to operate independently of the will of the gods. Additionally, different behavioral scripts are used to ameliorate bad experiences believed to be caused by God and karma, with petitionary prayer and rituals being more effective when dealing with gods, and divination, penitential actions, and rituals for accumulating karmic merit being more effective for improving karmic outcomes (Aktor, 2012; Aulino, 2016; Cadge, 2005; Fuller, 2004; Nuckolls, 1991, 1992; Purzycki & Holland, 2018; Young et al., 2011).

Psychological studies that directly ask participants whether karma has agentic qualities—such as whether karma “can think,” “can see into people's hearts and know their thoughts and feelings,” and “can communicate with people”—have found that believers are somewhat willing endorse these personified descriptions, but they tend to do so much less strongly and less consistently than they do for God (Exline et al., 2021; White et al., 2021). It therefore remains an open question how believers prototypically think about karma, and how this compares to how people think about God, which we investigate in the present studies.

### Hypothesized Divergences Between Salient Norms Enforced by Karma and by God

To complement this theological and anthropological evidence of divergences between karma and God beliefs, the present studies aim to investigate whether mental representations of karma differ from mental representations of God in some important respects. We test the novel prediction that the different relationships that believers have with particular supernatural entities will manifest in their perceptions of which human actions are subject to supernatural norm enforcement. While norm enforcement is not the only domain where beliefs about God and karma may diverge, the question of when (and how) these supernatural entities respond to morally relevant actions addresses key theoretical questions about the role of religions in the cultural evolution of large-scale cooperation (Norenzayan et al., 2016).

We specifically expect that if mental models of karma rely more on notions of exchange, then human actions reminiscent of giving

<sup>1</sup> We note that the same cooperative impulse can be harnessed to build social solidarity within the group, as well as, under some conditions, mobilize against perceived outgroups. In fact, empirical evidence and mathematical modeling show that it is especially under conditions of intergroup conflict that intragroup cooperation flourishes (Bowles, 2008; Fletcher & Doebeli, 2009; Henrich, 2020; Henrich et al., 2019). There are currently lively discussions on the role of religion in this evolutionary dynamic (Atran & Ginges, 2012; Lang et al., 2019; McKay & Whitehouse, 2015; Norenzayan et al., 2016).

or taking from others (e.g., sharing, helping, volunteering, and other personally costly prosociality; greed and selfishness) may be especially salient in karmic rewards and punishments. Conversely, due to the personal relationships that believers have with agentic gods, descriptions of God are likely to emphasize acts of religious devotion (e.g., performing appropriate rituals, obeying religious guidelines for behavior, believing in and loving God), which are only minimally relevant when describing karma. Consistent with this prediction, Willard et al. (2020) recently documented in Singapore that Christians (a religious group centered on belief in God) reported that Piety/Impiety was the most salient action that leads to a good or bad afterlife, whereas Buddhists and Taoists (religious groups that endorse karmic causality as the determinant of one's afterlife) reported that charity, kindness, and harm were the most salient actions that determine a good or bad reincarnation. These patterns are also likely to appear in the appropriate way to escape supernatural punishments meted out by each entity, with prayer being viewed as an effective way to reconcile oneself with God, whereas good deeds being the best way to offset bad deeds policed by karma. Beliefs about karma and God may sometimes provide culturally convergent solutions to recurrent problems of human social life that undermine large-scale cooperation (Norenzayan et al., 2016; Watts et al., 2015; White, Kelly, et al., 2019), but we hypothesize that these beliefs will also have distinct domains of relevance due to their unique cultural histories and mental representations within particular religious communities.

## Overview of Studies

In this article, we document mental representation of karma and God, and the implications for beliefs about supernatural norm enforcement, across seven religiously diverse samples of Americans and Indians. Study 1 explores the general patterns of beliefs, and Study 2 provides a confirmatory preregistered test of focal hypotheses derived from Study 1. These samples test the replicability and generalizability of our key findings across both contexts where karma is long entrenched in dominant cultural narratives—Indian, Hindu, and Buddhist samples—and contexts where karma is more novel and not a part of one's religious affiliation—a general sample of Americans (mostly White and from Christian and Nonreligious families) who claim to believe in karma (Bronkhorst, 2011; White & Norenzayan, 2019).

To capture mental representations of karma and God, we use an open-ended task in which participants freely listed the features of karma or God. Free-list methodologies are widely used in anthropological and cross-cultural psychology studies to assess the salient features of people's concepts, and have previously been used to examine beliefs about gods (Fincham et al., 2019; Purzycki & Holland, 2018), the afterlife (Willard et al., 2020), and characteristics of a good, moral person (e.g., Buchtel et al., 2015; Purzycki et al., 2018; Vauclair et al., 2014). By soliciting responses to open-ended questions, rather than using more specific questionnaires, researchers can capture whatever is most salient in participants' mental models without biasing their responses to particular content. To investigate specific differences between mental representations of God and karma, we conducted targeted comparisons of responses consistent with an agentic/devotional representation—hypothesized to characterize God—and responses

consistent with a moralized causality representation—hypothesized to characterize karma. We conducted these targeted comparisons across three different types of questions, including (a) free lists of the features of each target, (b) free lists and directed questions about supernatural rewards and punishments, and (c) questions about how to escape from supernatural punishments for misdeeds. In addition to group-level analyses contrasting responses regarding God and karma, additional exploratory analyses were conducted to test whether descriptions of features, rewards and punishments, and escape strategies were correlated at an individual-difference level. Overall, our results provide a comprehensive description of morally relevant beliefs about karma and God across religiously diverse American and Indian samples.

## Study 1

### Method

#### Participants

Participants were recruited from MTurk and Qualtrics to complete a survey that began with an experimental test of how thinking about karma and God affects prosociality (results reported in White, Kelly, et al., 2019) followed by the focal measures of this manuscript.<sup>2</sup> We recruited three samples of karma believers. The first sample consisted of 341 American participants recruited through Amazon's Mechanical Turk (MTurk), in December 2016, who scored above scale midpoint in agreement with the statement, "Karma is a force that influences the events that happen in my life." These participants were predominantly Christian or nonreligious, therefore we also recruited two additional samples—200 American Hindus and 204 American Buddhists through Qualtrics' online panels, in March 2017—to gain participants for whom karma is a central religious doctrine. We also recruited two samples of God believers, including 413 American MTurk participants who agreed with the statement "I believe that God exists," and 203 Americans recruited through Qualtrics who selected "Christian" as their religious affiliation. These sample sizes (>200) have at least 80% power to detect correlations of .20, between-subjects differences of  $d = 0.28$  in a  $t$ -test, or an odds ratio of  $>1.66$  or  $<0.60$  in a logistic regression. Full demographic details are available in Table 1, and they largely echo the demographic patterns of karma belief and god belief reported in previous work (White & Norenzayan, 2019).

#### Materials and Procedure

Each sample completed a larger survey designed to answer several loosely related questions, which consisted of a brief demographic survey (e.g., age, gender, political orientation, and religious affiliation), followed by a multitrial dictator game in which participants had the opportunity to share money with a stranger, free-list

<sup>2</sup> Methods were preregistered on the OSF prior to data collection, although the analyses reported here were not preregistered and should be considered exploratory. Following preregistered criteria, out of the total participants who completed the survey we excluded an additional four MTurk and 221 Qualtrics participants failed an attention check question, and 5 Qualtrics participants who took less than 1/3 the median time to finish the survey. MTurk samples: <https://osf.io/trnx7/>, Qualtrics samples: <https://osf.io/2jyde/>, all data and analysis code are available at <https://osf.io/8qkac/>.

**Table 1**  
*Demographic Composition of Samples*

Recruitment source	Study 1: Exploratory Sample					Study 2: Confirmatory Sample	
	MTurk		Qualtrics			MTurk	
	Karma believers	God believers	Hindus	Buddhists	Christians	USA	India
<i>N</i>	341	413	200	204	203	340	798
Gender (%)							
Female	69	65	59	66	60	70	32
Male	31	35	41	34	40	30	68
Age, <i>M (SD)</i>	36.76 (12.01)	38.05 (12.82)	39.92 (14.07)	48.85 (14.79)	53.12 (12.05)	37.30 (11.99)	32.03 (7.91)
Ethnicity (%)							
Caucasian	80	78	4	37	85	76	1
Asian	6	6	92	52	4	4	95
Other	14	19	4	11	11	20	4
Religion (%)							
Christian	54	83	—	—	100	74	11
Nonreligious	35	11	—	—	—	10	0.3
Hindu	1	1	100	—	—	1	81
Buddhist	4	1	—	100	—	2	0.3
Other	6	4	—	—	—	13	7
Belief in karma, <i>M (SD)</i>	3.39 (0.59)	2.76 (0.81)	3.73 (0.72)	3.63 (0.67)	2.77 (0.71)	3.66 (0.43)	3.86 (0.45)
Belief in God, <i>M (SD)</i>	3.61 (1.40)	4.67 (0.48)	4.29 (1.02)	3.18 (1.27)	4.50 (0.97)	4.46 (0.54)	4.32 (0.58)
Religiosity, <i>M (SD)</i>	2.49 (1.40)	3.53 (1.26)	3.02 (1.04)	2.53 (1.12)	3.38 (1.10)	3.35 (1.07)	3.82 (0.85)

*Note.* Confirmatory sample demographics reflect only participants who scored above scale midpoint in both belief in karma and belief in God. See [Supplemental Materials](#), for analyses regarding nonbelievers in these samples.

and moral-judgment tasks (the focal measures described below), and additional questions about demographics and supernatural beliefs (e.g., belief in karma, belief in the existence of God, religious commitment). Additional analyses utilizing a broader set of available measures are in the [Supplemental Materials](#).

**Free-List Descriptions of Karma and God.**

**Instructions.** Participants provided free-list descriptions of karma and God according to three prompts: (a) the features of God/karma, (b) actions that elicit supernatural rewards, and (c) actions that elicit supernatural punishments. MTurk God believers and Christians completed free-list questions about God, and MTurk Karma believers, Hindus, and Buddhists completed free-list questions about karma.

Participants were first asked, “We are interested in knowing what you think karma [God] is. Based on your personal beliefs, describe the features or abilities that karma [God] has. Write first those characteristics that are most important to describing karma, or those characteristics that come first to mind when you think about karma. Please list five characteristics of karma.” Participants were then asked, through analogous questions, to describe things that a person could do “that would lead to good consequences because of karma [God]” (*supernatural rewards*) and “that would lead to bad consequences because of karma [God]” (*supernatural punishments*). The limit of five responses for each of these lists captures whichever traits were most salient to participants, but provides a conservative underestimate of how many participants think any given trait is descriptive of God or karma.

**Coding Strategy.** Responses were coded into categories of semantically similar words (e.g., “has mercy,” “forgiving,” and “forgives people” were all categorized into a single “forgiveness” category). Coding schemes were developed by the first author by

coding a portion of the data in this study, and then applied to the data (including the entirety of the data in Study 2) by a second, independent research assistant.<sup>3</sup> The coding scheme applied in this project is not the only way in which these data could be analyzed (a topic we return to in the discussion), but they provide the first attempt to identify the prevalence of theoretically interesting categories of responses. Importantly, coders were blind to the sample and cultural background of the participants who supplied the responses and whether they were describing God or karma in a given instance. This means that any idiosyncrasies created by the specific coding scheme that was applied might bias the assignment of responses to one category rather than another (e.g., “harm” vs. “greed”), but they would not bias comparisons made *within* a given category regarding descriptions of karma versus God, or regarding descriptions provided by participants from different samples. It is these within-category variations across targets and samples that we focus on in our analyses below.

Coders agreed on the categorization of 55%–97% of responses into each of the broad categories analyzed below (77%–82% of the generosity/greed and religious devotion/violation categories that we focus on below). Any discrepancies between coders were resolved through discussion. These categories were grouped into broader categories of conceptual interest for analysis (e.g., categories for “giving to charity and volunteering,” “generosity,” “selflessness,”

<sup>3</sup> Research assistants were undergraduate students attending a Canadian university. Although the coding scheme applied in this study was not verified by any experts in religion, theology, and morality, the research assistants came from the same sorts of cultural backgrounds as the participants in these studies (e.g., being born in India, East Asia, and the United States, as well as Canada). The coding scheme developed on the exploratory data was refined in consultation with these research assistants, and they used their best judgment about how to classify each response.

and “helping others” were grouped into a broad “generosity” category). Responses were recoded as missing data if coders determined that they obviously did not answer the intended question, such as if instead of describing actions with good consequences, participants reported an obviously bad action (e.g., “murder”), a good consequence rather than the action that leads to those consequences (e.g., “eternal life in heaven”), something that is not a plausible action (e.g., “oceans”), or if they said that they do not know the answer.

Analyses presented below focus on comparing descriptions of God and karma on the following theoretically relevant dimensions: For features of each entity, we focus on personality traits (e.g., forgiving, fair, kind, or mean); social roles (e.g., savior, teacher, protector, king, judge, helper, healer, father); supernatural powers (e.g., almighty, omniscient, omnipotent, eternal, creator); nonagentic attributes (e.g., balance, causality [without moral connotations], luck, fate; force-like, resources-like, or contagion-like features); and moralized causality (e.g., good actions lead to good outcomes, bad leads to bad outcomes, the Golden Rule, morality, or general goodness and badness). For actions eliciting supernatural rewards and punishments, analyses focus on two broad categories of responses: Religious devotion and violations of religious responsibilities (e.g., [lack of] religious behavior, [not] giving to the church/temple, confession, attendance at religious services, evangelizing, prayer, meditation, [lack of] devotion/belief/faith); and generosity (e.g., giving to charity or volunteering, generosity, selflessness, helping others) and greed (e.g., selfishness, greed, attachment to worldly things). Full details of the coding schemes are available in the [Supplemental Materials](#).

**Analysis Strategy.** We first quantified the salience of each action category in the free list. Salience scores for each item were computed for each response using the *AnthroTools* package in R (Purzycki & Jamieson-Lane, 2017), as the inverse order of responses listed divided by the total number of responses listed by each participant (Quinlan, 2005; Smith & Borgatti, 1997; Smith et al., 1995). All participants were asked to list five items (and they listed more than four items on average, across all samples and question types), but the actual number of items listed differed across participants due to missing data (and nonsensical or inappropriate responses which were recoded as missing data). We computed average salience scores for each category in each group, using the highest salience whenever participants listed multiple items fitting the same category. This provided a score for each response ranging from 0 to 1, with higher numbers associated with greater frequency and an earlier order on the free list.

**Escape From Supernatural Consequences.** Participants were asked to “Imagine that you did something bad, and you were worried that you will face negative consequences, because of karma [God]. What could you do to escape these bad consequences?” Participants’ open-ended responses were coded by a research assistant for whether they mentioned (a) doing a good deed to make amends (either directly to the person harmed, or a nonspecific good deed unrelated to the victim) or (b) religious actions, such as praying, asking God for forgiveness, confession, repentance, or engaging in other religious rituals. This question revealed which actions are believed to be effective ways to prevent supernatural punishment.

## Results

### Analysis Strategy

Analyses below, unless otherwise noted, combined God believers and Christians into a single sample that described God, Hindus and Buddhists into a single sample of participants from karmic religious traditions that described karma, and the general sample of American karma believers who described karma (free-list results did not meaningfully differ between the Hindu and Buddhist samples, but analyses that for all five separate subsamples are available in the [Supplemental Materials](#)). Below, we first describe the overall patterns of the free-listed features of karma and God, and the free-listed actions punished and rewarded by karma and God, then present targeted comparisons that test whether agentic, devotional beliefs are more common in representations of God and whether moralized causality beliefs are more common in representations of karma.

### Overview of Features of God and Karma

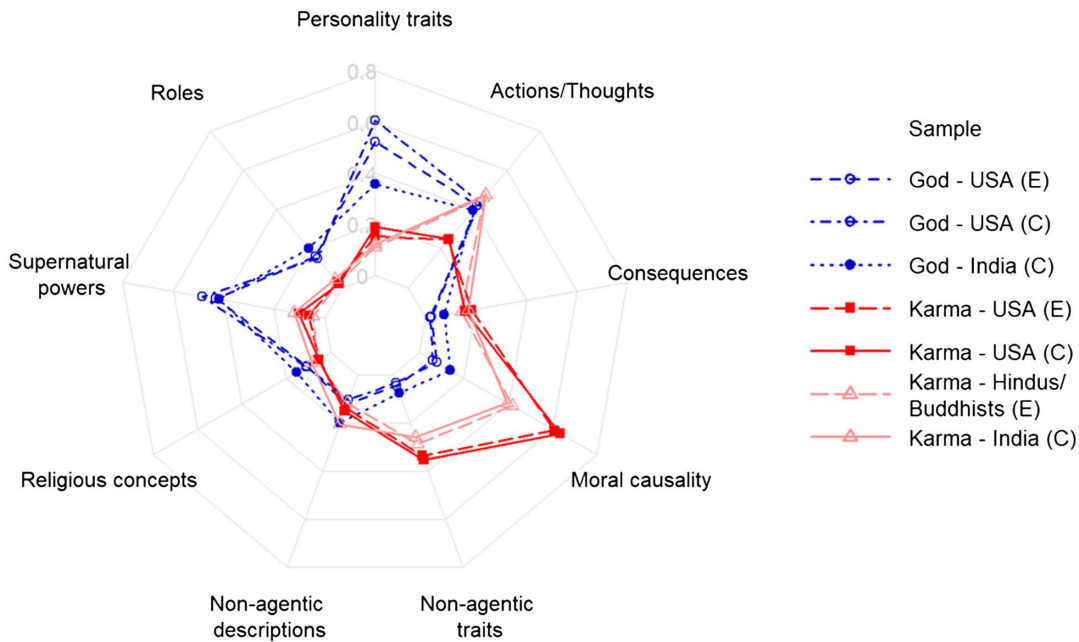
Figure 1 depicts the salience scores for free-list descriptions of karma and God. In descriptions of God, all samples frequently listed personality traits (e.g., being loving and kind) and supernatural powers (e.g., being an almighty, omniscient, creator), with other social roles (e.g., father, teacher) and actions/thoughts also being quite often. Moralized causality, nonagentic traits, and nonagentic descriptors were rarely mentioned. In contrast, when describing karma, all samples frequently listed moralized causality (e.g., good actions lead to good consequences) and nonagentic traits (e.g., balance, causality, or force), and rarely mentioned social roles or supernatural powers. (They also did not mention gods or Buddha when describing karma.) Personality traits and actions/thoughts were listed moderately frequently for karma (especially by Hindus and Buddhists), as well as being present in descriptions of God, indicating that some degree of agentic mental representations is a part of karma as well as God.

### Overview of Actions Rewarded and Punished by God and Karma

As displayed in Figure 2, in all samples generosity (e.g., giving to charity, sharing, helping others, and being selfless) and caring for others (e.g., love, kindness, compassion, friendliness, and not causing harm) were highly salient actions resulting in good consequences, and cheating, unkindness, harm, and greed were highly salient actions resulting in bad consequences—that is, most common were prototypical examples of morality previously documented outside of religious contexts (Purzycki et al., 2018; Schein & Gray, 2015; Vauclair et al., 2014). Honesty, tolerance/intolerance and generally doing good or bad things were also listed quite often. Also showing up occasionally, in all groups, were items referring to hard work and dedication to fulfilling one’s responsibilities—traits which are not obviously prosocial/antisocial, but are consistent with the idea that, as part of secular or supernatural justice, hard work will lead to the successful achievement of long-term goals (Hafer & Rubel, 2015; Laurin & Kay, 2017).

(Dis)loyalty, (dis)respect for authority, and bodily or sexual (im)purity were mentioned much less often. This is true even though our samples contain American Christians and Hindus—

**Figure 1**  
Group-Averaged Salience of Features Attributed to God (Blue/Circles) and Karma (Red/Squares/Triangles)



*Note.* E = Study 1: Exploratory sample; C = Study 2: Confirmatory sample. Values range from 0 to 1, with higher scores indicating that the response was listed earlier in the list and by more participants. See the online article for the color version of this figure.

groups who have been found, in past research to personally moralize issues of respect, loyalty, and purity, as much as they moralize harm and fairness concerns (Graham et al., 2013; Graham & Haidt, 2010; Hone et al., 2021; Johnson, Hook, et al., 2016; McCullough et al., 2012; Shweder et al., 1997; Weeden et al., 2008; Weeden & Kurzban, 2013). All participant groups responded very similarly, despite variability in their religion affiliations, ethnicities, and how they learned about God and karma.<sup>4</sup> The only category that strikingly deviates from this pattern involves religious devotion and religious violations, which were highly salient when describing God, but uncommon for karma. Additional analyses (available in the Supplemental Materials) confirmed that participants were listing actions that were perceived as morally relevant in general. Participants tended to report that actions with supernatural punishments were morally wrong and somewhat harmful to both the actor and to other people, while actions with supernatural rewards were morally good and somewhat helpful to both the actor and to others.

### Agency and Religious Devotion as Characteristic of God Versus Karma

To further investigate specific differences between mental representations of God and karma, we used logistic regressions to predict the presence/absence of a given category in the free lists (0 = never mentioned, 1 = mentioned one or more times across any of the five possible responses) from participant group (dummy coded).

### Feature Free List: Personality Traits Versus Nonagentic Traits.

As depicted in Figure 1, Hindus/Buddhists were substantially less likely to describe karma as having personality traits,  $OR = 0.09$  [0.06, 0.12], a role,  $OR = 0.13$  [0.07, 0.21], or supernatural powers,  $OR = 0.06$  [0.04, 0.09], and karma was much higher in nonagentic attributes,  $OR = 8.76$  [6.00, 13.09], compared to descriptions of God. Karma believers were also substantially less likely to describe karma as having personality traits,  $OR = 0.11$  [0.08, 0.15], a role,  $OR = 0.15$  [0.09, 0.25], or supernatural powers,  $OR = 0.09$  [0.06, 0.12], and karma was much higher in nonagentic attributes,  $OR = 12.00$  [8.16, 18.04], all  $p_s < .001$ . Hindus/Buddhists and karma believers did not significantly differ in ratings of karma's personality traits, roles, or supernatural powers, but Hindus/Buddhists were less likely to ascribe nonagentic qualities to karma than were karma believers,  $OR = 0.73$  [0.54, 0.98].

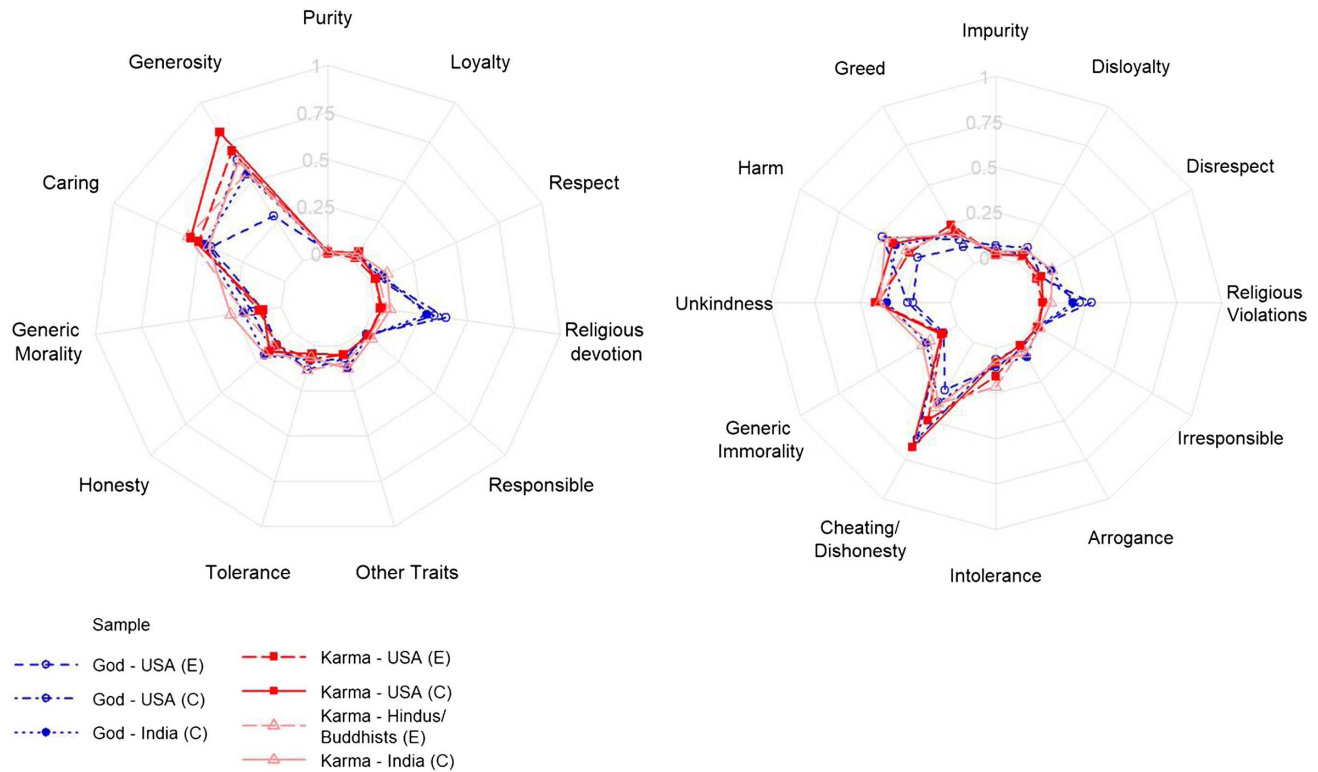
### Morality Free List: Religious Devotion.

For all analyses of the reward and punishment free lists, analyses were performed separately for actions with good consequences (reward free list) and actions with bad consequences (punishment free list) because we had no specific hypotheses about valence differences and including valence in the analysis led to convergence problems in several analyses. We also controlled for participants' religiosity (standardized) in these analyses, to ensure that it was not simply group-level differences in religiosity driving these relationships.

<sup>4</sup> Additional analyses, available in the Supplemental Materials, tested whether individual differences in Moral Foundations or political orientation predicted free list responses, and failed to find any consistent relationships between these individual differences and descriptions of karma and God.

**Figure 2**

Group-Averaged Salience of Actions Leading to Good Consequences (Left) and Bad Consequences (Right), Because of God (Blue Circles) and Karma (Red Squares/Triangles)



Note. E = Study 1: Exploratory sample; C = Study 2: Confirmatory sample. Values range from 0 to 1, with higher scores indicating that the response was listed earlier in the list and by more participants. See the online article for the color version of this figure.

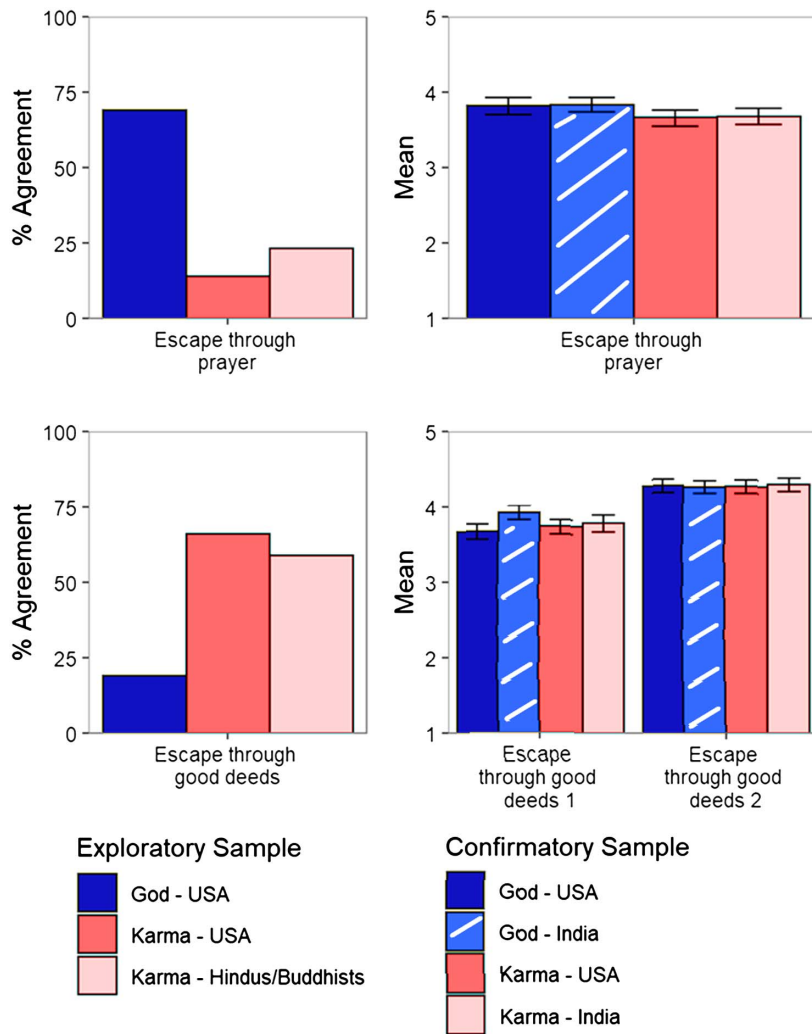
More religious participants were more likely to list religious morality in the free-list responses,  $OR_{reward} = 1.50 [1.29, 1.75]$ ,  $OR_{punishment} = 1.80 [1.50, 2.18]$ ,  $p_s < .001$ , but substantial differences remained between descriptions of God and karma even after controlling for religiosity. As depicted in Figure 2, free-list responses broadly referring to religious devotion (e.g., faith, religiously prescribed morality, attending religious services and engaging in rituals, prayer, and meditation, evangelizing, and giving money to church) were mentioned substantially less by karma believers,  $OR = 0.12 [0.07, 0.18]$ ,  $p < .001$ , or Hindus/Buddhists describing karma,  $OR = 0.21 [0.14, 0.29]$ ,  $p < .001$ , than by participants describing God. Likewise, responses referring to a lack of religious devotion (e.g., sinning, unbelief, lack of devotion, and failure to engage in religious rituals) were also mentioned substantially less by karma believers,  $OR = 0.04 [0.02, 0.09]$ ,  $p < .001$ , or Hindus/Buddhists describing karma,  $OR = 0.08 [0.04, 0.14]$ ,  $p < .001$ , than by participants describing God.

**How to Escape Supernatural Punishments.** As depicted in Figure 3, engaging in a religious action to escape supernatural punishment (such as asking God for forgiveness, prayer, or other rituals) was mentioned generally more by participants who were more religious,  $OR = 1.72 [1.56, 1.90]$ ,  $p < .001$ , and significantly

less by karma believers,  $OR = 0.09 [0.07, 0.12]$ , or Hindus/Buddhists describing karma,  $OR = 0.16 [0.13, 0.20]$ ,  $p_s < .001$ , than by participants describing God.

**Individual-Level Consistency in Descriptions of God.** We conducted additional exploratory analyses to test whether, for each subsample, free-list descriptions of God predicted the presence of religious devotion in the reward/punishment free lists, and whether these feature and reward/punishment free lists predicted the view that prayer is an effective strategy to escape punishment from God. There was no consistent evidence of individual-level associations between the features freely attributed to God and other aspects of god beliefs. Ascribing personality traits to God, or describing God nonagentically, did not significantly predict the tendency to report that God would reward religious devotion,  $OR_{personality} = 1.19 [0.84, 1.69]$ ,  $OR_{nonagentical} = 1.09 [0.77, 1.57]$ ,  $p_s > .33$ , and punish religious violations,  $OR_{personality} = 0.57 [0.27, 1.15]$ ,  $OR_{nonagentical} = 1.06 [0.52, 2.08]$ ,  $p_s > .13$ . However, mental representations of God did predict open-ended descriptions of how to escape God's punishments: Participants who described God as possessing personality traits were more likely to report that transgressions can be escaped through prayer (open-ended question),  $OR = 1.83 [1.27, 2.63]$ ,  $p < .001$ , and describing God as possessing nonagentical traits negatively predicted escape through prayer,  $OR = 0.50 [0.25, 0.98]$ ,

**Figure 3**  
*Effective Strategies to Escape Supernatural Punishments, According to Open-Ended Descriptions in Study 1 (Exploratory Sample; Left) and Closed-Ended Responses in Study 2 (Confirmatory Sample; Right)*



Note. See the online article for the color version of this figure.

$p = .041$ . Listing religious devotion in morality free list also positively predicted the perceived efficacy of prayer,  $OR = 3.70$  [2.51, 5.54],  $p < .001$ .

**Moralized Causality and Generosity as Characteristic of Karma Versus God**

**Feature Free List: Moralized Causality and Actions.** As depicted in Figure 1, Hindus/Buddhists were substantially more likely to describe karma as moralized causality,  $OR = 9.71$  [6.98, 13.70], or consequences,  $OR = 7.22$  [4.47, 12.16], than were participants describing God. Karma believers were also substantially more likely to describe karma as moralized causality,  $OR = 19.91$  [14.06, 28.62], or consequences,  $OR = 10.62$  [6.60, 17.88], and less likely to describe karma as action,  $OR = 0.48$  [0.36,

$0.63]$ ,  $p_s < .001$ , compared to participants describing God. Compared to karma believers, Hindus/Buddhists were less likely to describe karma as moralized causality,  $OR = 0.49$  [0.36, 0.66],  $p < .001$ , or consequences,  $OR = 0.68$  [0.48, 0.95],  $p = .026$ , and more likely to describe karma as actions,  $OR = 2.40$  [1.79, 3.23],  $p < .001$ .

**Morality Free List: Generosity and Greed.** As depicted in Figure 2, free-list responses broadly referring to generosity (e.g., sharing, generosity, charitable giving, volunteering, helping others, and engaging in other selfless behavior) were mentioned substantially more by karma believers,  $OR = 5.05$  [3.75, 6.87],  $p < .001$ , or Hindus/Buddhists describing karma,  $OR = 3.04$  [2.34, 3.96],  $p < .001$ , than by participants describing God. Likewise, responses referring to greed (e.g., selfishness, attachment to worldly goods, and refusing to help others) were also mentioned substantially more



by karma believers,  $OR = 2.52$  [1.87, 3.39],  $p < .001$ , or Hindus/Buddhists describing karma,  $OR = 2.24$  [1.69, 2.98],  $p < .001$ , than by participants describing God. Other cooperative actions, such as “honesty,” which lack connotations of giving and exchange, did not differ between descriptions of karma and God, in any sample (see Supplemental Materials).

**How to Escape Supernatural Punishments.** As depicted in Figure 3, open-ended descriptions of how to escape supernatural punishments for misdeeds revealed that doing a good deed was mentioned significantly more by karma believers,  $OR = 8.34$  [6.75, 10.34],  $p < .001$ , and Hindus/Buddhists,  $OR = 6.25$  [5.12, 7.64],  $p < .001$ , describing karma, than by participants describing God.

**Individual-Level Consistency in Descriptions of Karma.** Finally, we investigated consistency in individual differences in mental representation of karma, across the feature free list, reward/punishment free list, and means of effective escape questions. Exploratory analyses were conducted separately for each subsample. The presence of moral causality in the feature free list predicted the presence of generosity as something rewarded by karma, among Hindus/Buddhists,  $OR = 1.55$  [1.02, 2.37],  $p = .042$ , and was in the same direction but not statistically significant among Karma believers,  $OR = 1.55$  [0.91, 2.63],  $p = .10$ . Moral causality in karma’s features also predicted the presence of greed in the morality free list, among Karma believers,  $OR = 1.69$  [1.05, 2.76],  $p = .032$ , and Hindus/Buddhists,  $OR = 1.77$  [1.17, 2.68],  $p = .007$ .

The efficacy of good deeds to escape from karmic consequences was not significantly associated with the presence of moral causality in the feature free list, in any sample except Karma believers,  $OR = 1.76$  [1.10, 2.17],  $p = .036$ . However, escape through good deeds was predicted by generosity in the free list of karma’s rewards, among Karma believers,  $OR = 1.83$  [1.08, 3.09],  $p = .024$ , and Hindus/Buddhists,  $OR = 2.68$  [1.75, 4.13],  $p < .001$ . Therefore, there was some consistency in the tendency for individuals who describe karma as moral causality to also list generosity and greed and the free list of karma’s rewards/punishments, and to subsequently rate good deeds as efficacious to escape karmic punishments. This shows a consistent pattern in mental representations of karma, which is not clearly evident in mental representations of God.

## Discussion

Results from these exploratory samples provided initial evidence that there is substantial overlap between mental representations of God and karma, despite differences in the cultural history of the two constructs. Nevertheless, there was also evidence for distinct mental representations of karma and God. Most people described karma as moralized causality, and ascribe nonagentive features of karma, as well as describing karma as partially about actions and personality traits—consistent with the perspective that human actions initiate the process of karmic causality. In contrast, moralized causality was rarely mentioned in descriptions of God, which were more centrally about God’s personality traits, supernatural powers, and social roles. These differences also showed up as different priorities when describing which human actions elicit supernatural rewards and punishments, with generosity being mentioned more frequently when thinking about karma than God, and religious devotion being highly salient when thinking

about God as almost never mentioned for karma. Likewise, good deeds were more often listed as ways to escape karmic punishments, whereas prayer was more frequently listed as a means to escape God’s wrath. These results show similarities as well as clear differences in expectations about supernatural norm enforcement depending on whether God or karma is the focal supernatural entity.

## Study 2

Study 2 provided a preregistered replication of the focal patterns of mental representations of karma and God, reported in Study 1. This confirmatory sample also addresses methodological limitations of the previous study: In Study 1, participants described either karma *or* God, meaning that observed differences might be due to differences between samples (e.g., Christians vs. Hindus) rather than differences between targets (God vs. karma). In Study 2, participants described both karma *and* God, to investigate whether the same individuals hold different mental models of karma and God. We also attempted to replicate patterns in the importance of religious devotion and the efficacy of prayer to escape supernatural punishment (found to be highly salient in open-ended descriptions of God but not karma), using closed-ended questions. This tests whether observed differences between targets resulted only from certain features being especially salient in mental models or whether these differences persist after being brought to mind by direct questions.

## Method

### Participants

Participants were recruited from the USA and India through MTurk, and also included participants who do not believe in God or karma, thus allowing us to explore the responses of nonbelievers. The sampling strategy, exclusion criteria, and measures were preregistered on the OSF prior to data collection,<sup>5</sup> and prior to data analysis we also preregistered an analysis plan and hypotheses regarding targeted comparisons of interest in the free-list data. In August 2017, we aimed to recruit a sample of approximately 1,250 participants from each country. The final sample consisted of 1,263 American and 1,237 Indian participants. All surveys were conducted in English; as a result, Indian participants were likely wealthier and more educated than the general population, but, importantly, participants’ religious affiliation matched general demographic trends in these countries, with American participants being primarily Christian or nonreligious, and Indian participants being primarily Hindu.

Following preregistered criteria, analyses reported below focus on a subset of participants from this larger sample who (a) claimed to

<sup>5</sup> Methods: <https://osf.io/37xd6/>; Analysis plan: <https://osf.io/nhev5/>. Following preregistered criteria, participants were excluded from the final sample if they did not complete all six dictator games ( $n = 139$ ), failed to correctly answer a question testing English speaking ability ( $n = 8$ ), or failed more than one of the other three attention checks placed within the survey ( $n = 71$ ). We had initially required participants to pass all three attention checks, but preliminary analyses showed an extremely high exclusion rate, due to one question that participants were required to leave blank, but were not able to correct after clicking on it. We, therefore, altered our criteria to only require 2/3 correct attention checks.

believe in karma and God (i.e., scored above scale midpoint in both belief in karma, according to a questionnaire developed by White & Norenzayan, 2019, or a 3-item measure of belief in the existence of God, adapted from Willard & Norenzayan, 2013); (b) reported that “I believe in karma, and I responded based on my personal beliefs about karma,” rather than reporting that they do not believe or were responding based on other people’s beliefs; and (c) provided an appropriate response to the first item listed in the relevant free list (i.e., provided a response that was not coded as nonsense by the independent coders, using the procedure described below; patterns of results did not meaningfully differ when including these participants in the analyses). Participants were excluded on a case-by-case basis, according to whoever provided appropriate responses to the relevant items used in each analysis reported below.

Following these criteria, the focal sample included 338 Americans and 780 Indians who believed in both God and karma; after further excluding nonsensical responses to the free lists, samples sizes ranged from 316 to 528 participants in each of the analyses described below. These samples sizes have at least 80% power to detect correlations of  $r = .15$ , between-subjects differences of  $d = 0.22$  in a  $t$ -test, or an odds ratio of  $>1.49$  or  $<0.67$  in a logistic regression.

### Materials and Procedure

Participants in Study 2 completed the same type of survey as in Study 1, which included a demographic questionnaire, a multirial dictator game (results available in the Supplemental Materials, and not directly relevant to the focal results), the free-list and moral-judgment task, followed by several measures of supernatural beliefs (a full set of materials completed by participants is available in the preregistration documents).

**Free-List Descriptions of Karma and God.** The free-list task was identical to that in Study 1 (and was coded and analyzed using the same method), but in Study 2 all participants answered free-list questions about both God<sup>6</sup> and karma (order randomly assigned). To make instructions intelligible to all participants included in this study, believers were instructed to answer these questions “based on your own personal beliefs and experiences” and participants who did not believe in the relevant target were asked to “think about how other people in your culture would answer these questions, if they believed in karma [God] (please describe what other people think about karma [God]).”

**Closed-Ended Questions About Supernatural Rewards/Punishments.** In addition to the open-ended questions used in Study 1, we attempted to replicate patterns in the importance of religious devotion using closed-ended questions. After listing and evaluating the free-list actions participants reported whether someone who is “not very committed to their religion (e.g., they did not attend many religious services, they did not pray very much, or they did not have faith)” will experience bad consequences caused by God and bad consequences caused by karma (7-point scale, *definitely will not* to *definitely will*).

**Escape From Supernatural Consequences.** Means of escape from supernatural consequences were included as part of the evaluations of free-list responses. For free-listed actions resulting in bad consequences, participants reported whether (a) prayer and (b) good deeds could reduce the likelihood of the bad consequences for this action (1 = *more likely* to 5 = *less likely* to face bad

consequences). Participants also reported whether doing good deeds to escape bad consequences makes someone a good person or a bad person. For actions resulting in good consequences, participants reported whether engaging in the free-list behavior “could make up for something bad that they did in the past,” (1 = *more likely* to 5 = *less likely* to face bad consequences).

## Results

### Overview of Features of God and Karma

The salience scores for free-list descriptions of karma and God are depicted in Figure 1, and largely replicated the pattern of responses from Study 1. In descriptions of God, all samples frequently listed personality traits, supernatural powers, and social roles, whereas moralized causality, nonagentic traits, and nonagentic descriptors were rarely mentioned. In contrast, when describing karma, both samples frequently listed moralized causality and nonagentic traits, and rarely mentioned social roles or supernatural powers. Personality traits and actions/thoughts were listed moderately frequently for karma (especially by Indians), as well as being present in descriptions of God, indicating that some degree of agentic mental representation was part of karma as well as God.

In this sample, we analyzed the overall similarity between descriptions of God and karma using a multilevel logistic regression model predicting the presence/absence of each trait in descriptions of karma from the presence/absence of that trait in descriptions of God (including random intercepts nested within participant, and random intercepts nested within free-list category). Americans’ descriptions of God were not associated with their descriptions of karma,  $OR = 1.06$  [0.88, 1.28],  $p = .53$ , but Indians who listed a particular trait when describing God were 2.48 times, 95% CI [2.20, 2.80], more likely to list that trait when describing karma,  $p < .001$ , indicating an especially large association between descriptions of God and karma among Indians, interaction  $OR = 2.33$  [1.89, 2.89],  $p < .001$ .

### Overview of Actions Rewarded and Punished by God and Karma

The free list of actions rewarded and punished also replicated the patterns of findings from Study 1. As displayed in Figure 2, actions pertaining to interpersonal prosocial were highly salient in descriptions of God and descriptions of karma: In all samples, generosity and caring for others were highly salient actions resulting in good consequences, and cheating, unkindness, harm, and greed were highly salient actions resulting in bad consequences. (Dis)loyalty,

<sup>6</sup> The notion of “God” may differ between (primarily Christian) American and (primarily Hindu) Indian samples, in part, due to Hindu polytheism making the concept of God more ambiguous and resulting in differences depending on which god each participant chose to describe. We chose to merely refer to “God” in both samples due to previous evidence that Hindus understand different gods to be specific manifestations of an overreaching God concept (Fuller, 2004), which has a prototypically structured mental representation (Fincham et al., 2019), analogous to that documented in Western conceptions of a monotheistic god. We also asked Indian participants if they were thinking of any particular God when answering these questions, and free-list responses did not meaningfully differ depending on which god they chose to describe (see Supplemental Materials).

(dis)respect for authority, and bodily or sexual (im)purity were mentioned much less often. The only category that strikingly deviated from this pattern involved religious devotion and religious violations, which were highly salient when describing God, but uncommon for karma.

We also analyzed the overall similarity between descriptions of God and karma, using a multilevel logistic regression model predicting descriptions of karma from descriptions of God. Americans who listed a particular item when describing God's punishment were 6.35 times, 95% CI [4.30, 9.36], more likely to list items from that same category when describing karma's punishment, and Indians' descriptions of God's punishments were 9.69 times, 95% CI [6.70, 14.01], more likely to appear in descriptions of karma's punishments,  $p_s < .001$ , indicating an especially large association between descriptions of God and karma among Indians, interaction  $OR = 1.53$  [1.22, 1.91],  $p_s < .001$ . Similarly, items present when describing God's rewards were 3.87 times [2.64, 5.68] more likely to appear in Americans' descriptions of karma's rewards, and 4.00 times [2.80, 5.72] more likely to appear in Indians' descriptions of karma's reward,  $p_s < .001$ , an association that was similar in both countries, interaction  $OR = 1.03$  [0.82, 1.30],  $p = .78$ . Additional exploratory analyses (reported in the [Supplemental Materials](#)) indicated that both believers (i.e., the focal sample) and nonbelievers exhibited a nearly identical pattern of free-list responses, providing strong evidence of cultural consensus about "God" and "karma" concepts, regardless of whether or not participants believed these entities were real.

### ***Agency and Religious Devotion as Characteristic of God Versus Karma***

To further investigate specific differences between mental representations of God and karma, we used logistic regressions to predict the presence/absence of a given category in the free lists (0 = never mentioned, 1 = mentioned one or more times across any of the five possible responses) from participant group (dummy coded).

**Feature Free List: Personality Traits Versus Nonagentic Traits.** Americans were substantially less likely to describe karma as having personality traits,  $OR = 0.07$  [0.05, 0.12], a role,  $OR = 0.12$  [0.07, 0.21], or supernatural powers,  $OR = 0.08$  [0.05, 0.12], and karma was much higher in nonagentic attributes,  $OR = 10.44$  [6.43, 16.95] compared to Indians' descriptions of God,  $p_s < .001$ . Likewise, compared to Americans describing God, Indians were substantially less likely to describe karma having personality traits,  $OR = 0.17$  [0.12, 0.24], a role,  $OR = 0.13$  [0.09, 0.20], supernatural powers,  $OR = 0.19$  [0.14, 0.26], and more likely to describe karma as having nonagentic attributes,  $OR = 4.09$  [2.95, 5.67],  $p_s < .001$ . The difference between descriptions of God and karma was larger in the USA than India for personality traits, interaction  $OR = 2.24$  [1.36, 3.96],  $p = .001$ , and supernatural powers, interaction  $OR = 2.43$  [1.50, 3.96],  $p < .001$ , and nonagentic traits, interaction  $OR = 0.39$  [0.22, 0.69],  $p = .001$ , but was of a similar size for both countries for roles, interaction  $OR = 1.11$  [0.56, 2.20],  $p = .77$ .

**Morality Free List: Religious Devotion.** As preregistered, we predicted the presence of religious devotion from the target, country, participants' level of religiosity (standardized), and all interactions

between these variables (similar target differences are found when not including religiosity as a covariate). Results are depicted in [Table 2](#), Models A and B. Free-list responses referring to religious devotion and religious violations were mentioned substantially less when describing karma than when describing God, but as hypothesized there was a significant target by country interaction, such that God's and karma's concern for religious actions was more similar among Indians than Americans. Unlike in Study 1, religiosity was only a weak predictor of listing religious actions: Only American participants describing God were more likely to list religious actions if they were themselves more religious,  $OR_{reward} = 1.88$  [1.21, 3.06],  $p = .007$ ,  $OR_{punishment} = 2.77$  [1.18, 8.12],  $p = .036$ , while this simple effect was not statistically significant among Indians describing God or among either group describing karma.

In contrast to the large differences in free-list frequency, a direct question about likely supernatural consequences revealed that *both* karma and God were believed to punish a lack of religious devotion, especially among participants who themselves were highly religious (see [Table 2](#), Model C). In India, religious immorality was approximately equally likely to be punished by God,  $M = 4.18$ ,  $SD = 1.62$ , or karma,  $M = 4.42$ ,  $SD = 1.59$ , whereas in the USA, punishment was slightly more likely to come from God,  $M = 3.73$ ,  $SD = 1.44$ , than karma,  $M = 3.50$ ,  $SD = 1.34$ —a difference that is statistically significant but is substantially smaller than differences observed in free-list responses.

**How to Escape Supernatural Punishments.** As another indicator of whether God and karma were believed to respond to religious actions, participants reported whether prayer could help them to escape the bad supernatural consequences of the free-list actions. As preregistered, prayer was viewed as a more effective way to escape bad consequences caused by God than karma, in the USA and in India (see [Table 2](#), Model D, and [Figure 3](#)). Participants' religiosity did not predict the perceived efficacy of prayer.

**Individual-Level Consistency in Descriptions of God.** We conducted additional exploratory analyses to test whether free-listed descriptions of God predicted the presence of religious devotion in the reward/punishment free lists, and whether these feature and reward/punishment free lists predicted the view that prayer is an effective strategy to escape punishment from God. There was no consistent evidence of individual-level associations between the features freely attributed to God and other aspects of god beliefs. Ascribing personality traits to God, or describing God nonagentially, did not predict the tendency to report that God would reward religious devotion and punish religious violations,  $ORs$  range from 0.65 to 1.33,  $p > .10$ . There was also no association between God's personality traits or nonagentic traits and the efficacy of prayer,  $b_s < .22$ ,  $p > .11$ , but there was an association between the presence of religious devotion in the morality free list and the perceived efficacy of prayer, among Americans,  $b = 0.24$  [0.09, 0.39],  $p = .001$ , and Indians,  $b = 0.30$  [0.15, 0.46],  $p < .001$ .

### ***Moralized Causality and Generosity as Characteristic of Karma Versus God***

**Feature Free List: Moralized Causality and Actions.** Americans were substantially more likely to describe karma as moralized causality,  $OR = 20.00$  [12.58, 31, 79], or consequences,  $OR = 5.85$  [3.33, 10.26], and less likely to describe karma as action,  $OR = 0.39$

**Table 2**

*Regressions Predicting the Likelihood of Rewards for Religious Devotion, Punishment for Religious Violations and Lack of Religious Commitment, and Escape of Punishment Through Prayer, Believers Only*

Predictors	Model A: Religious devotion in free list		Model B: Religious violations in free list		Model C: Punishment for lack of religious commitment		Model D: Escape through prayer	
	OR [95% CI]	<i>p</i>	OR [95% CI]	<i>p</i>	<i>b</i> [95% CI]	<i>p</i>	<i>b</i> [95% CI]	<i>p</i>
Target (0 = God, 1 = karma)								
USA	0.07 [0.04, 0.11]	<.001	0.04 [0.01, 0.09]	<.001	-0.23 [-0.36, -0.10]	.001	-0.15 [-0.28, -0.02]	.028
India	0.28 [0.22, 0.37]	<.001	0.34 [0.23, 0.49]	<.001	0.10 [-0.00, 0.21]	.06	-0.14 [-0.25, -0.03]	.014
Country (0 = USA, 1 = India)	0.58 [0.43, 0.77]	<.001	0.71 [0.51, 0.98]	.036	0.20 [-0.01, 0.41]	.056	-0.02 [-0.18, 0.14]	.83
Target × Country	4.12 [2.34, 7.50]	<.001	8.68 [3.41, 30.13]	<.001	0.33 [0.16, 0.50]	<.001	0.01 [-0.16, 0.19]	.90
Relig.	1.17 [0.96, 1.45]	.13	1.14 [0.91, 1.44]	.25	0.22 [0.07, 0.37]	.003	0.08 [-0.03, 0.20]	.15
Target × Relig.	1.60 [0.98, 2.71]	.069	2.42 [1.00, 7.26]	.076	0.02 [-0.10, 0.13]	.79	0.00 [-0.12, 0.12]	.99
Country × Relig.	0.75 [0.56, 0.99]	.042	1.01 [0.73, 1.40]	.97	0.24 [0.04, 0.45]	.022	-0.05 [-0.21, 0.10]	.50
Target × Country × Relig.	0.85 [0.46, 1.55]	.61	0.48 [0.15, 1.28]	.17	0.08 [-0.09, 0.24]	.34	-0.08 [-0.25, 0.09]	.37

*Note.* Relig. = Religiosity. Target: 0 = God, 1 = karma. Analyses of direct questions about religious immorality and prayer were conducted as mixed-effects models including random intercepts for each participant, to account for the within-subjects nature of the data. Random intercepts were not included in free-list analyses due to model convergence problems, but were included in the other models. Primary analyses provide estimates with the USA as the reference group. To ease comparison across countries, this table also provides the simple effects of target in India.

[0.28, 0.55],  $p_s < .001$ , than they were to describe God using these traits. Likewise, compared to Indians describing God, Indians were substantially more likely to describe karma as moralized causality,  $OR = 5.68$  [4.18, 7.70], or consequences,  $OR = 3.16$  [2.14, 4.66],  $p_s < .001$ , and equally likely to describe karma as action,  $OR = 1.08$  [0.84, 1.39],  $p = .55$ . The difference between descriptions of God and karma were larger in the USA than India for moralized causality, interaction  $OR = 0.28$  [0.17, 0.47],  $p < .001$ , and actions, interaction  $OR = 2.73$  [1.80, 4.16],  $p < .001$ , and not significantly different for consequences, interaction  $OR = 0.54$  [0.28, 1.05],  $p = .068$ .

**Morality Free List: Generosity and Greed.** Preregistered analyses depicted in Table 3 (and Figure 2) confirmed that free-list responses broadly referring to generosity (Model A) were mentioned more often when describing karma than when describing God, by both Americans and Indians. Greed (Model B) was also mentioned slightly more often when Americans described karma compared to God, although there was no difference in greed between Indians’ descriptions of karma and God.

**How to Escape Supernatural Punishments.** A preregistered test of this hypothesis using closed-ended question did not replicate the pattern found in Study 1. Engaging in good deeds to escape the bad free-list action, or engaging in the good free-list action to escape past misdeeds, was rated as a highly effective (Figure 3), regardless of whether participants were describing God or karma, in the USA and India. Unlike the large target differences in Study 1’s open-ended responses, these direct questions revealed that good deeds were generally perceived as efficacious, with few meaningful target differences (see Table 3, Models C and D).

**Individual-Level Consistency in Descriptions of Karma.** Finally, we explored the consistency in individual differences in

mental representation of karma, across the feature free list, reward/punishment free list, and means of effective escape questions. The presence of moral causality in the feature free list predicted the presence of generosity as something rewarded by karma, among Indians,  $OR = 1.99$  [1.53, 2.60],  $p < .001$ , and was in the same direction but not statistically significant among Americans,  $OR = 1.67$  [0.91, 2.99],  $p = .086$ . The efficacy of good deeds to escape from karmic consequences was not significantly associated with the presence of moral causality in the feature free list. However, escape through good deeds was predicted by generosity in the free list of karma’s rewards, among Americans,  $b = 0.30$  [0.05, 0.55],  $p = .017$ , but not significantly among Indians,  $b = 0.10$  [-0.06, 0.26],  $p = .22$ . Therefore, replicating the pattern from Study 1, there is some consistency in the tendency for individuals who describe karma as moral causality to also list generosity and greed and the free list of karma’s rewards/punishments, and to subsequently rate good deeds as efficacious to escape karmic punishments. This shows a consistent pattern in mental representations of karma, which is not clearly evident in mental representations of God.

**Discussion**

Study 2 replicated the pattern, documented in Study 1, that karma and God are mentally represented in similar but distinct ways and these representations are associated with differences in which actions are salient elicitors of supernatural rewards and punishment. Importantly, these results were found in a sample of people who believe in the existence of both karma and God, and who reported their beliefs about both entities, meaning that the observed differences between karma beliefs and God beliefs were not attributable to

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**Table 3**

*Regressions Predicting the Likelihood of Generosity and Greed in Free Lists, and the Effectiveness of Good Deeds to Escape Supernatural Punishment, Believers Only*

Predictors	Model A: Generosity in free list		Model B: Greed in free list		Model C: Good free-list action to escape bad consequences		Model D: Good deed to escape from bad free-list action	
	OR [95% CI]	<i>p</i>	OR [95% CI]	<i>p</i>	<i>b</i> [95% CI]	<i>p</i>	<i>b</i> [95% CI]	<i>p</i>
Target (0 = God, 1 = karma)								
USA	5.19 [5.13, 28.87]	<.001	1.51 [1.02, 2.22]	.038	-0.01 [-0.10, 0.09]	.89	0.07 [-0.05, 0.19]	.25
India	1.46 [1.00, 2.13]	.048	1.19 [0.87, 1.64]	.27	0.06 [-0.02, 0.13]	.15	-0.07 [-0.36, 0.03]	.16
Country (0 = USA, 1 = India)	0.34 [0.19, 0.64]	.001	1.03 [0.69, 1.53]	.88	-0.04 [-0.17, 0.09]	.51	0.21 [0.06, 0.36]	.007
Target × Country	0.28 [0.13, 0.60]	.001	0.79 [0.48, 1.31]	.36	0.06 [-0.06, 0.18]	.31	-0.14 [-0.29, 0.01]	.076

*Note.* Analyses were conducted as mixed-effects models including random intercepts for each participant, to account for the within-subjects nature of the data. Primary analyses provide estimates with the USA as the reference group. To ease comparison across countries, this table also provides the simple effects of target in India.

different groups of people projecting different moral values onto each entity. Responses rather reflect distinct perceptions of different supernatural entities, which appear across individuals from a variety of cultural and religious backgrounds.

### General Discussion

In several religiously diverse samples from the United States and India, we have documented both similarities and differences between mental representations of karma and God. Both karma and God involve belief in a supernatural entity who rewards and punishes human moral action. Both entities are believed to be especially likely to enforce norms regarding harm, care, and fairness, which are prototypical elements of interpersonal morality in many cultures. But there are also divergences between mental representations of karma and God, as some behaviors are more relevant to karma, while others are more relevant to God. Together, these results are consistent with the perspective that while karmic and theistic beliefs can sometimes provide alternative ways of motivating similar interpersonal prosociality, they are also part of distinct patterns of devotion and norm adherence that could shape believers' behavior in unique ways.

### What Are God and Karma?

Most participants described God as possessing human-like personality traits, and fulfilling social roles, in addition to possessing super-human powers as an omniscient, almighty creator of the universe. This anthropomorphic view of God facilitates believers' tendency to enter into a personal relationship with God, engage in petitionary prayer and acts of religious devotion (e.g., Davis et al., 2013; Exline et al., 2021; Granqvist et al., 2010; Luhmann, 2012; Schjoedt et al., 2009).

In contrast, karma was rarely ascribed supernatural powers or social roles, and was much more often described through non-agentic causal processes (e.g., balance, cycles) especially in moral contexts (e.g., do good things and get good outcomes, payback for bad deeds, see Willard et al., 2020, for a similar description of karma among participants from Singapore). Personality traits,

actions, and thoughts were also listed at moderate rates by all groups describing karma, and actions were especially common among Hindus and Buddhists (consistent with a longer cultural history of perceiving karma as part of the general causal structure of the universe, not restricted to *moral* actions per se, Bronkhorst, 2011; Fuller, 2004; Kyabgon, 2015; Obeyesekere, 2002). These descriptions of karma might indicate that believers are, at times, willing to think about karma as a social agent, similar to how god believers describe God. However, this does not mean that participants were simply describing gods when asked to think about karma: This view of karma was prevalent even among participants who do not necessarily believe in God (e.g., Buddhists and nonreligious karma believers in Study 1, nonbelievers in Study 2). Alternatively, this may be another indicator of the tendency to view human moral action as central to karma, such that humans who express these positive and negative personality traits are part of the operation of karmic processes. This ambiguity in views of karma suggests that it might be an especially promising future avenue for research to experimentally manipulate agentic versus nonagentic views of supernatural entities and measure the psychological effects. Our findings provide preliminary correlational evidence that belief in a nonagentic entity, like karma, is associated with specific norm-enforcement beliefs. Compared to God, karma is especially likely to reward generosity and allow compensation of bad deeds through good deeds, and these patterns were especially strong among participants who viewed moralized causality as central to their definition of karma. These patterns could be experimentally verified in future studies.

### Which Actions Are Monitored by Karma and God?

Actions pertaining to harm and injustice were highly salient in all samples (consistent with a general moral relevance of harm and injustice, Baumard et al., 2013; Gray & Keeney, 2015; Schein & Gray, 2015; Sousa & Piazza, 2014), but karma and God do not care about all domains of action with equal relevance. When God was the target of judgment, actions relating to religious devotion appeared quite frequently, but when thinking about karma, acts of religious

devotion were rarely mentioned. This was true even in Hindu samples, where participants were highly religious and karma is part of their religious belief system. Instead, acts relating to generosity and helping were especially salient when describing karma, compared to descriptions of God. This pattern is consistent with the evidence that believers hold different mental representations of God and karma, which may be analogous to different relationship models. Belief in God may reflect a relationship guided by communal sharing principles (love, devotion, and care for dependents) or authority ranking principles (respect for hierarchy and the commands of authority figures). In contrast, belief in karma may be analogous to relationships guided by principles of equality matching (relying on principle of reciprocity) or market pricing (exchange based on some kind of currency, Fiske, 1992; Rai & Fiske, 2011).

This pattern indicates the limited explanatory power of the hypothesis that supernatural norm-enforcement beliefs merely arise from people projecting their own moral values onto supernatural entities (Baumard & Boyer, 2013; Epley et al., 2009). Rather, beliefs about God and karma's moral concerns are specifically tied to a broader network of mental representations of these supernatural entities, which can diverge from interpersonal moral values (see also divergences between God's and humans' attitudes toward prosocial lying, Heiphetz et al., 2018, and valuation of outgroup members, Ginges et al., 2016). Further research, using longitudinal and experimental methods, is required to determine the causal pathways through which secular moral values might shape supernatural beliefs, and vice versa. This future research may also target certain predictors that uniquely shape norm-enforcement beliefs separately from mental representations, and may find that karma and god beliefs have divergent effects in other psychological domains, such as processes of spiritual coping that shape believers' subjective well-being in the face of struggles and misfortunes in life.

### Closed-Ended Versus Open-Ended Methodologies

Our findings highlight the advantages of using open-ended questions to reveal what is most salient in participants' mental representations. This method revealed robust differences between descriptions of karma and God, which persisted across samples with different cultural backgrounds. These differences between karma and God did not show up as consistently in closed-answered questions designed to address the same hypotheses (e.g., whether karma and God punish a lack of religious devotion). This does not mean that one method is inherently better or provides more accurate insight into psychological processes, but they are likely relevant predictors of behavior in different contexts: Open-ended responses, by revealing what is most salient, reveal the concepts that come spontaneously to mind. Closed-ended responses may reflect both these salient beliefs and other concepts that are less salient, but which nonetheless drive behavior when elicited by external forces, such as when making decisions in a particular context that emphasizes certain values, or when people remind others of certain concepts to persuade them to engage in certain behavior.

Our studies also only applied one possible method of quantifying open-ended data: relying on human coders to classify responses into different categories. This method is often used in psychological and anthropological research into mental models of supernatural entities and moral values (e.g., Buchtel et al., 2015; Fincham et al., 2019;

Purzycki et al., 2018; Purzycki & Holland, 2018; Vaclair et al., 2014; Willard et al., 2020), and it has the advantage of allowing researchers to focus on classifying responses into categories that are theoretically meaningful to a particular research question, especially when no predefined dictionary is available. However, this method is limited in its ability to quickly analyze large data sets and is potentially biased by the particular categories that were chosen to be coded in a given study. Future research may therefore also wish to use other methods to address these hypotheses (e.g., counting the frequency of words according to alternative, independently developed dictionaries of concepts; or using machine learning and other natural language processing methods for an entirely data-driven approach), and could also attempt to replicate these patterns of mental representations of karma and God using other corpuses of qualitative data.

### Conclusion

Our results document beliefs about God and karma in religiously diverse samples of Americans and Indians, with implications for psychological surveys about religion, morality, and prosocial behavior. These findings add to the mounting evidence that beliefs about supernatural forces, like God and karma, reflect issues that are central to governing human social life, alongside other elements that are unique to the relationships that believers have with supernatural agents and causal processes that ensure cosmic justice.

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