International Journal for the Psychology of Religion
Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t775653664

Mean Gods Make Good People: Different Views of God Predict Cheating Behavior

Azim F. Shariff[a]; Ara Norenzayan[b]
[a] Department of Psychology, University of Oregon, [b] Department of Psychology, University of British Columbia, Canada

Online publication date: 19 April 2011

To cite this Article Shariff, Azim F. and Norenzayan, Ara(2011) 'Mean Gods Make Good People: Different Views of God Predict Cheating Behavior', International Journal for the Psychology of Religion, 21: 2, 85 — 96
To link to this Article: DOI: 10.1080/10508619.2011.556990
URL: http://dx.doi.org/10.1080/10508619.2011.556990

The International Journal for the Psychology of Religion, 21:85–96, 2011

ISSN: 1050-8619 print/1532-7582 online
DOI: 10.1080/10508619.2011.556990

Routledge
Taylor & Francis Group

RESEARCH

Mean Gods Make Good People: Different Views of God Predict Cheating Behavior

Azim F. Shariff
Department of Psychology
University of Oregon

Ara Norenzayan
Department of Psychology
University of British Columbia, Canada

Fear of supernatural punishment may serve as a deterrent to counternormative behavior, even in anonymous situations free from human social monitoring. The authors conducted two studies to test this hypothesis, examining the relationship between cheating behavior in an anonymous setting and views of God as loving and compassionate, or as an angry and punishing agent. Overall levels of religious devotion or belief in God did not directly predict cheating. However, viewing God as a more punishing, less loving figure was reliably associated with lower levels of cheating. This relationship remained after controlling for relevant personality dimensions, ethnicity, religious affiliation, and gender.

The belief in supernatural agents has been a powerful force found throughout all cultures and across all of recorded human history (Atran & Norenzayan, 2004; Boyer, 2001; Guthrie, 1993). One of the most common (if controversial) assumptions about these beliefs is that they encourage moral behavior. A number of researchers and theorists even suggest that these beliefs persisted and proliferated precisely because of the social utility served by these purported prosocial effects (for recent examples, see Johnson & Krüger, 2004; Wilson, 2002).

For years, however, these theories were left empirically wanting. Most of the confirmatory evidence was anecdotal, and the empirical research that did investigate trait religiosity and

Correspondence should be sent to Azim F. Shariff, Department of Psychology, University of Oregon, 1227 University of Oregon, Eugene, OR 97403, USA. E-mail: shariff@uoregon.edu

prosocial behavior in the lab historically failed to find any marked effects[1] (Batson et al., 1993). In recent years, an increasing number of studies demonstrate that religion does indeed foster prosocial behavior under specific conditions (see Norenzayan & Shariff, 2008, for a review). For example, psychological experiments have shown how implicitly activating religious thinking in the moment can encourage prosocial behavior. Implicitly priming religious thoughts is found to increase generosity in anonymous economic games, even though trait religiosity is found to be unrelated to generosity (Ahmed & Salas, 2008; Shariff & Norenzayan, 2007). Similar priming effects have been shown to activate prosocial thoughts and increase general prosocial concern (Newton & McIntosh, 2009; Pichon, Boccato, & Saroglou, 2007). Implicit and subliminal priming of religious ideas has also been shown to more directly increase honest behavior,[2] but again, among unprimed participants, trait religiosity was unrelated to honesty (Randolph-Seng & Nielsen, 2007).

These types of studies have begun to show the conditions under which religion plays a role as a facilitator of cooperative behavior among large groups of anonymous individuals. People's opportunistic selfishness can be reined in by a belief in, devotion to, and fear of supernatural beings (Norenzayan & Shariff, 2008). Nonetheless, these studies have relied on priming religious thinking in the moment, revealing much about the religious *situation* but little about the religious *disposition*. When psychological researchers have looked at whether *trait* religiosity is associated with reduced cheating behavior, the vast majority of studies have found no correlation. Contrary to theoretical predictions, religiosity, as measured by both belief and religious attendance, has not been found to predict cheating behavior (Nowell & Laufer, 1997; Randolph-Seng & Nielsen, 2007; Sierles, Hendrickx, & Circle, 1980; Smith, Wheeler, & Diener, 1975). A minority of studies has even shown a positive trend—increased religiosity being associated with *more* cheating (Guttman, 1984; Pruckner & Sausgruber, 2008). How does religion's role in enforcing moral behavior square with these empirical results?

In this article, we focus specifically on the question of whether there are any aspects of religiosity, measured as an individual difference, that are related to reducing counternormative behaviors such as cheating. The possibility we consider is that by examining the degree of religious belief, researchers may have missed a different and possibly more potent aspect of belief. Johnson and Krüger (2004) suggest that it is the concept of *punishing* supernatural agents, in particular, that has been instrumental at reducing normative transgressions—a theory they term the supernatural punishment hypothesis (SPH). Although recent research indicates that positive rewards can encourage cooperative behavior when there is an opportunity to form social relationships (Rand, Dreber, Ellingson, Fudenberg, & Nowak, 2009), the SPH specifically predicts that it is the punishing aspects of gods and the threat of divine punishment, rather than any loving or compassionate traits, which are responsible for keeping adherents from crossing ethical boundaries in anonymous situations where they would otherwise be tempted. Consistent with this idea, game theoretical work demonstrates that, when it comes to deterring normative transgressions in anonymous situations, the stick holds considerably more power that the carrot

[1]With the exception of circumstances that allowed one to project a prosocial image to oneself or others (Batson, Schoenrade, & Ventis, 1993).

[2]A similar study by Bering, McLeod, and Shackleford (2005) showed that priming supernatural agents—in the form of ghosts—also decreases willingness to cheat, but information about religiosity or religious identification was not reported.

(Fehr & Gachter, 2002; Johnson & Bering, 2006). The temptation to cheat cannot be overcome by the promise of reward nearly as much as it can be overcome by the threat of punishment. To quote Johnson and Krüger (2004), "'Carrots' are not enough because, although they may encourage some people to cooperate, they do not prevent all of them from cheating" (p. 163). Indeed, lab experiments reveal that without the possibility of punishing cheaters, cooperation cannot be effectively cultivated (Fehr & Gachter, 2002).

Therefore, if gods make people good, it may be because of the credible threat of their punitive tendencies. As a result, the SPH specifically predicts that a belief in fearful and punishing aspects of supernatural agents should be associated with honest behavior, whereas a belief in the kind, loving aspects of gods should be less relevant. The current research aims to test this prediction directly. In two studies, we examined whether beliefs in both the "positive" (e.g., loving, compassionate) and "negative" (e.g., punishing, vengeful) aspects of God predict cheating behavior in a controlled laboratory setting free from human monitoring.

STUDY 1

Participants

Sixty-seven undergraduate students participated in exchange for partial course credit. Six participants who indicated suspicion about one of the tasks in the study, or the true nature of the experiment, were excluded from analysis. The ages of the remaining 61 participants (44 female) ranged from 18 to 22 ($M = 20.2$). Euro-Caucasians made up 31% of the sample, East Asians made up another 31%, South Asians comprised another 26%, and the remaining 12% were classified as "Other."

Procedures

Under the guise of participating in a study addressing the effect that different forms of test taking had on emotions, the students were given a computer-based "test" that contained a reading comprehension task and a math task (actually the cheating measure).

We operationalized cheating using a well-researched social psychology laboratory tool (von Hippel, Lakin, & Shakarchi, 2005). The measure involved a simple but tedious math task that required participants to calculate the sums of 20 sets of 10 numbers (ranging from −20 to 20) without using scratch paper or a calculator. During this task, the participant was alone in a small room with a closed door. A purported "glitch" in the programming of the task resulted in the answer appearing on screen a few seconds after the question first appeared, provided that participants did not first press the spacebar. Participants were told about the glitch and asked to make sure they "press the spacebar as soon as the question appears in order to honestly simulate a real test-taking experience." The number of items, out of 20, on which a participant did not press the spacebar before the answer appeared, was used as our measure of cheating. Again, participants who displayed suspicion about the cheating task were dropped from the final analyses.

Following the cheating task, participants completed a suspicion probe, the Hoge (1972) scale of intrinsic religiosity, a Views of God scale, and a set of demographic questions. The

intrinsic religiosity scale contained 10 items (e.g., "My religion or faith is an important part of my identity"; Cronbach's $\alpha = .97$).

The Views of God scale comprised 14 traits, of which 7 pertained to "positive" qualities (*forgiving, loving, compassionate, gentle, kind, comforting*, and *peaceful*; $\alpha = .97$), and 7 to "negative" qualities (*vengeful, harsh, fearsome, angry, punishing, jealous*, and *terrifying*; $\alpha = .88$). Participants were asked, on a 7-point Likert scale, to describe how much each trait applied to their conception of their God or Gods, or, if the subject was a nonbeliever, how much they felt each trait applied to their culture's conception of God or Gods. Following completion of all tasks, participants were fully debriefed about all aspects of the study, given their credit, thanked, and dismissed.

Results and Discussion

Views of God and cheating. The positive and negative qualities were averaged to create a "Loving God" and "Punitive God" measure, respectively. These two measures were negatively correlated for the entire sample, $r(60) = -.24$, $p = .06$. The Loving God average was then subtracted from the Punitive God average to yield an overall God Negativity Score, with larger numbers indicating more negative views. As cheating rates were nonnormally distributed among participants, Kolmogorov-Smirnov(61) = .15, $p = .001$, we carried out a logistic regression, which makes no assumptions about normality, to assess the relationship between views of God and cheating. To do so, we dichotomized the continuous cheating measure into high (cheated on 10 or more out of 20 questions, 51% of sample) and low (cheated on 9 or fewer questions, 49% of sample) cheaters. We controlled for religion devotion, as well as sex and ethnicity, both of which predicted cheating behavior in our previous studies (with East Asians and women cheating more). Consistent with predictions, higher God Negativity Scores were associated with lower levels of cheating (Wald = −4.16, odds ratio = .95, $p = .04$; see footnote 3). Neither religious devotion nor ethnicity had an effect on likelihood of cheating, but a sex difference was found showing higher cheating behavior among women (see Table 1). There was no hint of multicollinearity (all Fs < 2). Figure 1 represents zero-order cheating correlations with each item reflecting positive or negative views of God.

Differences in cheating between believers and nonbelievers. No differences in cheating were found between self-described believers and nonbelievers, $\chi^2(1, N = 61) = .21$, $p = .65$, *ns*, with both groups cheating on an average of 11 of the 20 items. Cheating was uncorrelated with intrinsic religiosity, $\beta = .02$, $t(59) = .13$, $p = .90$, *ns*, or the single item assessing belief in God, $\beta = .03$, $t(59) = .23$ $p = .82$, *ns*.

These results offer initial support for the SPH. However, this finding is correlational, and two possible alternative explanations are immediately apparent that need to be addressed. First, common personality factors associated with cheating tendencies, particularly low conscientiousness (Nathanson, Paulhus, & Williams, 2006) might account for both the tendency to cheat less and

[3]This relationship was also statistically significant if cheating behavior was kept as a continuous measure and entered into a linear regression with the same controls, $\beta = -.26$, $t(61) = 2.00$, $p = .05$. Logistic regression, however, is the more appropriate strategy in this study because it makes no assumptions about the normality of the distributions.

TABLE 1
Summary of Logistic Regression Analysis for Variables Predicting Cheating Behavior in Study 1

				95% Confidence Interval for OR	
Study 1[a]	*Wald*	*Sig.*	*OR*	*Lower*	*Upper*
Step 1					
God Negativity Score	4.16	.04*	.95	.91	.99
Religious devotion	.47	.49	.98	.95	1.02
Ethnicity	2.41	.12	1.62	.88	2.98
Sex	4.57	.03*	.23	.06	.88
Constant	1.64	.20	.27		

Note. Asterisks are used to highlight effects significant at the $p < .05$ level. OR = odds ratio.
[a]$n = 61$.

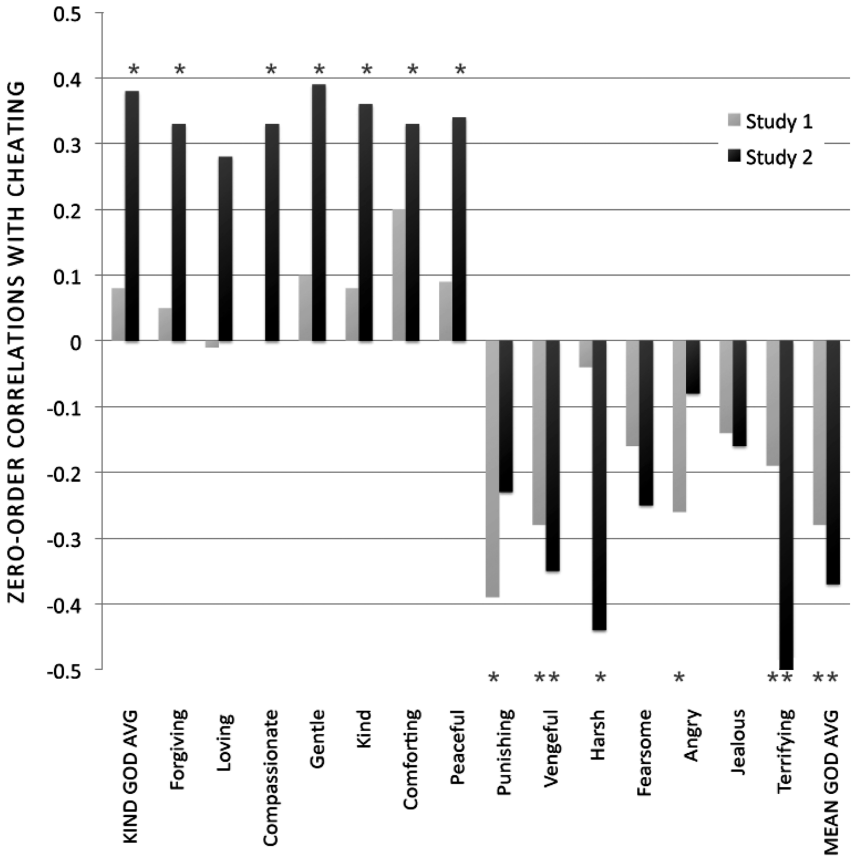

FIGURE 1 Zero-order correlations between cheating and individual attribute items on the Views of God measure. *Note.* Negative correlations indicate lower levels of cheating. Asterisk denotes significance at the $p < .05$ level.

the tendency to see God as an angry and punishing agent. Second, because the Views of God measure was completed after the cheating measure, it is possible that these views may have been contaminated by participants' cheating behavior. That is, participants who did cheat may have been motivated to see their deity as a little more forgiving and a little less harsh than had they not transgressed a moral norm. In addition, information regarding religious affiliation was not collected. Our second study sought to replicate the main finding, and discount these two alternative explanations, while controlling for conscientiousness as well as religious and ethnic affiliation.

STUDY 2

Participants

Of forty-six undergraduate participants who completed the study for partial course credit, 3 were dropped from analysis for suspicion about the experimental tasks or hypothesis, and 4 more were dropped for failing to complete the online pretest questionnaire component of the experiment (which included all the belief measures; see what follows). The ages of the remaining 39 participants (28 female) ranged from 17 to 28 ($M = 19.8$). Euro-Caucasians accounted for 21% of the sample, East Asians made up 46%, South Asians 18%, and the remaining 15% were classified as "Other." In terms of religious affiliation, the nonreligious (atheist or agnostic) made up 36% of the sample, whereas Christians made up 26%; Buddhists made up 7.5%; Muslims 5%; Jews, Hindus, and Sikhs each made up 2.5%; and the remaining 18% indentified as "Other."

Procedures

To avoid contamination between the Views of God measure and the cheating task, participants were instructed to complete an online questionnaire at any time in the days before they came into the lab for their scheduled experiment. The Views of God scale and a single item assessing belief in God (replacing the Hoge scale from Study 1) were embedded within a more extensive set of questions, the majority of which (85%) consisted of dummy questions about birth order, gender stereotypes, test-taking preferences, and demographics. This dilution of the religion questions was done to prevent participants from guessing the hypothesis and thereby contaminating the results.

After participants arrived at the lab, they were administered a computer-based "test," which was identical to that in the first study save the exclusion of the reading comprehension component. In this version, participants were all told they had been randomly assigned to the math test condition. Following completion of the math/cheating task, participants completed the Positive and Negative Affect Scale (Watson, Clark, & Tellegen, 1998), the 44-item Big Five Inventory (John & Srivastava, 1999), and a suspicion probe. Participants were fully debriefed and dismissed following completion of these tasks.

Results and Discussion

Views of God and cheating. As in Study 1, the positive and negative qualities were averaged to create Loving God ($\alpha = .96$) and Punishing God ($\alpha = .89$) measures, respectively.

TABLE 2
Summary of Linear Regression Analysis for Variables Predicting Cheating Behavior in Study 2

	Coefficients				
	Unstandardized Coefficients		*Standardized*		
Study 2[a]	*B*	*SE*	*Coefficients: Beta*	*t*	*Sig.*
(Constant)	7.473	7.190		1.039	.31
God Negativity Score	−1.295	.414	−.583	−3.124	.004*
Belief in God	−.259	.378	−.120	−.686	.50
Conscientiousness	−.065	.147	−.073	−.441	.66
Ethnicity	.613	.844	.115	.726	.47
Sex	−.824	1.884	−.073	−.437	.67
Religious affiliation	−.306	.288	−.166	−1.064	.30

Note. Asterisks are used to highlight effects significant at the $p < .05$ level.
[a]$n = 39$.

The two scales were negatively correlated, $r(39) = -.32$, $p = .04$. The Loving God average was then subtracted from the Punishing God average to yield an overall "God Negativity Score." Unlike in the previous study, the cheating scores here were normally distributed and thus did not require transformation into a dichotomous measure, Kolmogorov-Smirnov(38) = .80, $p = .54$. Instead, we entered the continuous cheating measure into a linear regression (Table 2). In addition to controlling for belief in God, sex, and ethnicity, we also controlled for religious affiliation and conscientiousness. Replicating our main findings from Study 1, more punishing views of God predicted lower levels of cheating ($\beta = -.58$, $p = .004$).[4] No other variables were significant. One would expect that believing in a punitive God matters primarily if one is already a strong religious believer. Although this interaction between God Negativity Scores and Belief in God did trend in this direction, it did not reach statistical significance ($\beta = -.63$, $p = .13$).

As in Study 1, there was no evidence of multicollinearity (all Fs < 2). The small sex difference from the first study was not replicated here, $t(37) = .72$, $p = .48$, *ns*, and no affective measures such as guilt or shame showed any significant relationship with cheating. Zero-order cheating correlations, with each item reflecting positive or negative views of God, once again showed that negative and positive qualities of God predicted cheating in opposite directions (Figure 1).

Differences in cheating between believers and nonbelievers. As before, no relationship emerged between cheating and belief in God (see Table 2). Self-described believers were no more or less likely to cheat than nonbelievers, $\chi^2(1, N = 39) = .26$, $p = .61$, *ns*.

[4]This relationship remained significant if cheating behavior was analyzed as a dichotomous measure and entered into a logistical regression as it was in Study 1 (Wald = 4.08, odds ratio = .59, $p = .04$).

GENERAL DISCUSSION

The Supernatural Punishment Hypothesis

In two studies, participants who attributed greater levels of punishing attributes to supernatural agents were less likely to cheat on a behavioral task. In fact, across both studies, the relative God Negativity Score and the absolute ratings of Negative Views of God were stronger predictors of cheating than any other measured variable, including sex, personality, ethnicity, affect, and religious devotion.

Notably, levels of religiosity or belief in God had no effect on cheating rates. Believers cheated just as much as nonbelievers. This null effect mirrors previous research on religion and cheating, which consistently fails to find any substantial difference based on religiosity or belief in God (Randolph-Seng & Nielsen, 2007; Smith et al., 1975). However, the current results provide initial support for the more nuanced thesis regarding the relationship between religion and honest behavior that is suggested by the supernatural punishment hypothesis. Successfully enforcing honesty may not depend on the belief in just any supernatural agent but may require deities who are able to elicit credible fears of punishment. In other words, how much you believe in God matters less than what kind of God you believe in. Our laboratory findings are consistent with intriguing cross-cultural evidence indicating that supernatural punishment plays a role in the economic sphere. Although national levels of religiosity are inversely correlated with levels of economic prosperity in general, among developing nations, belief in hell, but not belief in God or belief in heaven, is associated with more economic growth (Barro & McCleary, 2003).

The zero-order correlations found in Study 2 (and displayed in Figure 1) further suggest an intriguing possibility as to the effect of beliefs in kind and loving agents. When analyzed separately (instead of as an aggregate God Negativity Score), the Punitive God and Loving God significantly predicted cheating in opposite directions (see Figure 1). The null correlations repeatedly found in the previous literature may thus have been the result of these two opposing trends washing each other out. Moreover, it is at least within the realm of possibility that the few studies that have shown positive correlations between cheating behavior and religiosity may have done so because of an especially rosy view of God among their sample set.

That believing in a comforting and forgiving God is related to greater levels of cheating is a provocative claim, and one that certainly requires more evidence before it can be made with any confidence. Future research should examine not only whether this is a robust effect across different types of normative trangressions but also what mechanisms are responsible. For example, is there a crucial third variable that we failed to account for? Or does the opportunity for divine forgiveness actually provide believers the moral license to transgress (cf. Zhong & Liljenquist, 2006)?

Implications for Religious Prosociality

A number of theorists have suggested that belief in morally concerned gods may have played a critical role in the development of large-scale group living (Alexander, 1987; Norenzayan & Shariff, 2008; Shariff, Norenzayan, & Henrich, 2009; Wilson, 2002; see also Bulbulia, 2004;

Johnson & Kruger, 2004, for distinct but related arguments). As societies expand in size, social relations become more anonymous; anonymity, in turn, makes it harder to monitor and punish cheating and uncooperative behaviors, and as a result levels of trust plummet and freeloading becomes rampant. In the absence of successful social monitoring, societies collapse (Dunbar, 2003; Henrich, 2006; Roes & Raymond, 2003). The historical outsourcing of human social monitoring (in all its limitations) to the widespread belief in omniscient and morally involved agents could have vastly increased the population of people who could be trusted not to cheat, freeride, or otherwise transgress established moral norms (Bering, 2006; Johnson & Krüeger, 2004; Roes & Raymond, 2003). These data support the idea that belief in *punishing* gods, in particular, may have been especially effective for this end. In this regard, the classic *self-serving bias* (Miller & Ross, 1975), coupled with Morewedge's (2009) finding that people have a *negative agency bias*—a tendency to more often ascribe agentic qualities to negative events—provides one mechanism by which belief in punishing gods may have even been easier to emerge and stabilize in the infancy of civilization than belief in more benevolent gods. Throughout time, people would have more often ascribed positive events to their own doing and negative events to an external, and possibly supernatural, agent. The resultant base rate difference in what types of events gods were responsible for, coupled with existing cognitive tendencies to overinfer intentionality and teleology (Pyysiäinen, 2009), would have easily led individuals to see early Gods as the punitive arbiters of much misfortune. In modern times, however, this is not the case. For instance, Spilka and Schmidt (1983) show that people are now more likely to attribute positive—not negative—events to God. Moreover, most people view God as benevolent, and many reinterpret God's role in negative events as benign (Pargament, 1997). Punishing Gods, it seems, are outnumbered in the pantheon. This issue is considered in the next section.

Limitations and Future Directions

The theoretical justification and empirical support for the association of punishing God beliefs with reduced cheating raise questions about the persistence and modern pervasiveness of beliefs in kind, compassionate, loving gods. Indeed, across both studies, mean ratings for positive qualities were more than twice as high as negative ones. If the more negative aspects of supernatural deities are predictive of less cheating, it is worth briefly considering why those positive aspects have persisted, and even thrived in the marketplace of cultural ideas. Intuitively, the most apparent appeal to seeing God as forgiving and compassionate rather than vengeful and angry is that this view is both more comfortable and more comforting. A loving God, therefore, may be a better selling point for proselytizing religions looking to attract new members. Recent surveys indicate that a surprisingly large percentage of Americans—44%—have switched religious affiliations at least once in their lives (The Pew Forum on Religion and Public Life, 2008). In fluid and competitive religious markets, a nicer God may be an effective recruiting tool. This would be especially true if the existence of well-established secular institutions for social monitoring can offset the costs to cooperation and honesty that beliefs in kinder Gods may have otherwise elicited. If so, the concept of a kind God would be expected to be more prevalent among societies with effective social institutions and high trust levels. Conversely, the concept of a punishing God should be expected to be more widespread in societies where the threat of freeloading

is high, such as those lacking effective social institutions, experiencing internal or external threats, or both. This hypothesis raises the possibility that the widespread belief in benevolent deities is a modern phenomenon—the consequence of a gradual change in religious beliefs.

Another possibility is that punishing Gods and compassionate Gods may serve different moral purposes. Following research on the differential effects of punishment and reward (e.g., Rand et al., 2009), punitive deities may be more effective at keeping anonymous strangers from cheating each other, whereas rewarding deities may be more effective at encouraging more trust and cooperation within groups of people who interact recurrently. The cross-cultural work by Barro and McCleary (2003), discussed earlier, is supportive of this possibility. Their finding that supernatural punishment is related to economic growth in developing nations suggests that the prevalence of these types of deities (or the attributes of the same deity) may systematically vary depending on the social conditions that exist in particular cultures at particular times. These possibilities are ripe for future study.

A related question that cannot be addressed with the current data is that of religious differences. Given the vast variation in the types of supernatural agents across religions, an important empirical question is whether these beliefs are differentially successful at reducing cheating and fostering honest behavior. Although religious affiliation did not predict cheating behavior in Study 2, the size and diversity of our samples were too limited to adequately address this question. Indeed, our small sample sizes generally limited our analysis of relevant moderating variables. Future studies using larger sample sizes and selective sampling of different religions could contribute much to addressing these fascinating theoretical issues.

Finally, three methodological issues limit the conclusions that can be drawn from the current findings. First, the artificiality of the employed cheating measure needs to be considered when making claims based on these data. That said, although identical or closely related variants of this paradigm have been used before (e.g., Bering, McLoed, & Shackelford, 2005; Vohs & Schooler, 2008), all lab-based cheating measures have their weaknesses. Thus, replicating the present findings with complementary studies conducted outside the lab, with more naturalistic measures of cheating, would increase confidence in our conclusions.

Second, the link between views of God and cheating behavior revealed by the current data is a correlational finding and therefore should be interpreted with caution. Although a correlational design is appropriate given that our question of interest was specifically concerned with how chronic dispositional beliefs are related to behavior rather than the acute situational effects seen in recent priming studies (Randolph-Seng & Neilsen, 2007; Shariff & Norenzayan, 2007), causal direction cannot be unambiguously determined from such designs. That said, the current relationship persisted after controlling for relevant personality dimensions and demographic background, and after ruling out any possible influence of cheating on views of God. Therefore, at least with reference to the factors we tested, third variable and reverse causation explanations of the data were not supported.

Third, the two samples in this study consisted of North American university students, which limits claims of generalizability across populations. Although there was considerable ethnic and religious diversity, students samples in general are often psychological outliers and data that rely on these samples exclusively should be interpreted with caution (Henrich, Heine, & Norenzayan, 2010).

Conclusion

These two studies provide evidence that the connection between religion, measured as an individual difference variable, and counternormative behavior is more complex than simply finding relationships with trait religiosity. The current research is consistent with the prior findings that overall religiosity is unrelated to cheating but supports the hypothesis that belief in fearsome punishing supernatural agents—mean gods—does predict more honest behavior in anonymous situations.

REFERENCES

Ahmed, A. M., & Salas, O. (2008). *In the back of your mind: Subliminal influences of religious concepts on prosocial behavior*. Available at EconPapers: http://econpapers.repec.org/RePEc:hhs:gunwpe:0331.

Alexander, R. D. (1987). *The biology of moral systems*. New York: Aldine de Gruyter.

Atran, S., & Norenzayan, A. (2004). Religion's evolutionary landscape: Counterintuition, commitment, compassion, communion. *Behavioral and Brain Sciences, 27*, 713–770.

Barro, R., & McCleary, R. (2003). Religion and economic growth across countries. *American Sociological Review, 68*, 760–781.

Batson, C. D., Schoenrade, P., & Ventis, W. L. (1993). *Religion and the individual.* New York: Oxford University Press.

Bering, J. M. (2006). The folk psychology of souls. *Brain and Behavioral Sciences, 29*, 453–462.

Bering, J. M., McLeod, K. A., & Shackelford, T. K. (2005). Reasoning about dead agents reveals possible adaptive trends. *Human Nature*, *16*, 60–81.

Boyer, P. (2001). *Religion explained: The human instincts that fashion Gods, spirits, and ancestors.* London: William Heinemann.

Bulbulia, J. (2004). Religious costs as adaptations that signal altruistic intention. *Evolution and Cognition, 10*, 19–38.

Dunbar, R. I. M. (2003). The social brain: Mind, language, and society in evolutionary perspective. *Annual Review of Anthropology, 32*, 163–181.

Fehr, E., & Gachter, S. (2002). Altruistic punishment in humans. *Nature, 415*, 137–140.

Guthrie, S. G. (1993). *Faces in the clouds: A new theory of religion*. Oxford, UK: Oxford University Press.

Guttman, J. (1984). Cognitive morality and cheating behavior in religious and secular school children. *Journal of Educational Research, 77*, 249–259.

Henrich, J. (2006). Cooperation, punishment, and the evolution of human institutions. *Science, 312*, 60–61.

Henrich, J., Heine, S. J., & Norenzayan, A. (2010). The weirdest people in the world? *Behavioral and Brain Sciences, 33*, 61–135.

Hoge, R. (1972). A validated intrinsic religious motivation scale. *Journal for the Scientific Study of Religion, 11*, 369–376.

John, O. P., & Srivastava, S. (1999). The Big Five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (pp. 102–138). New York: Guilford.

Johnson, D. D. P., & Bering, J. M. (2006). Hand of God, mind of man: Punishment and cognition in the evolution of cooperation. *Evolutionary Psychology, 4*, 219–233.

Johnson, D. D. P., & Krüger, O. (2004). Supernatural punishment and the evolution of cooperation. *Political Theology 5*, 159–176.

Miller, D. T., & Ross, M. (1975). Self-serving biases in the attribution of causality. *Psychological Bulletin, 82*, 213–225.

Morewedge, C. K. (2009). Negativity bias in attribution of external agency. *Journal of Experimental Psychology: General, 138*, 535–545.

Nathanson, C., Paulhus, D. L., & Williams, K. (2006). Predictors of a behavioral measure of academic cheating: Personality and competence but not demographics. *Contemporary Educational Psychology, 31*, 97–122.

Newton, A. T., & McIntosh, D. (2009, January). *Is the cookie good or is it *good*? The effect of religious imperatives on opting for virtue*. Presented at the Society for Personality and Social Psychology meeting, Tampa, FL.

Norenzayan, A., & Shariff, A. F. (2008). The origin and evolution of religious prosociality. *Science, 322*, 58–62.

Nowell, C., & Laufer, D. (1997). Undergraduate cheating in the fields of business and economics. *Journal of Economic Education, 28*, 3–12.

Pargament, K. I. (1997). *The psychology of religion and coping: Theory, research, practice*. New York: Guilford Press.

The Pew Forum on Religion and Public Life. (2008). *U.S. Religious Landscape Survey, February 2008.* Washington, DC: Author. Retrieved November 13, 2008, from http://religions.pewforum.org/reports#

Pichon, I., Boccato, G., & Saroglou, V. (2007). Nonconscious influences of religion on prosociality: A priming study. *European Journal of Social Psychology, 37*, 1032–1045.

Pruckner, G. J., & Sausgruber, R. (2008). *Honesty on the streets—A natural field experiment on newspaper purchasing.* Available at Social Science Research Network: http://ssrn.com/abstract=1277208

Pyysiäinen, I. (2009). *Supernatural agents: Why we believe in souls, gods, and Buddhas*. New York: Oxford University Press.

Rand, D. G., Dreber, A., Ellingson, T., Fudenberg, D., & Nowak, M. A. (2009). Positive interactions promote public cooperation. *Science, 325*, 1272–1275.

Randoplh-Seng, B., & Nielsen, M. E. (2007). Honesty: One effect of primed religious representations. *The International Journal for the Psychology of Religion, 17*, 303–315.

Roes, F. L., & Raymond, M. (2003). Belief in moralizing gods. *Evolution and Human Behavior, 24*, 126–135.

Shariff, A. F., & Norenzayan, A. (2007). God is watching you: Priming God concepts increases prosocial behavior in an anonymous economic game. *Psychological Science, 18*, 803–809.

Shariff, A. F., Norenzayan, A., & Henrich, J. (2009). The Birth of High Gods: How the cultural evolution of supernatural policing agents influenced the emergence of complex, cooperative human societies, paving the way for civilization. In M. Schaller, A. Norenzayan, S. Heine, T. Yamagishi, & T. Kameda (Eds.), *Evolution, culture, and the human mind*. New York: Psychology Press.

Sierles, F. S., Hendrickx, I., & Circle, S. (1980). Cheating in medical school. *Journal of Medical Education, 55*, 124–125.

Smith, R. E., Wheeler, G., & Diener, E. (1975). Faith without works: Jesus people, resistance to temptation, and altruism. *Journal of Applied Social Psychology, 5*, 320–330.

Spilka, B. & Schmidt, G. (1983). General attribution theory for the psychology of religion: The influence of event-character on attributions to God. *Journal for the Scientific Study of Religion, 22*, 326–339.

Vohs, K. D., & Schooler, J. W. (2008). The value of believing in free will: Encouraging a belief in determinism increases cheating. *Psychological Science, 19*, 49–54.

von Hippel, W., Lakin, J. L., & Shakarchi, R. J. (2005). Individual differences in motivated social cognition: The case of self-serving information processing. *Personality and Social Psychology Bulletin, 31*, 1347–1357.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS Scales. *Journal of Personality and Social Psychology, 54*, 1063–1070.

Wilson, D. S. (2002). *Darwin's cathedral: Evolution, religion, and the nature of society*. Chicago: University of Chicago Press.

Zhong, C., & Liljenquist, K. (2006). Washing away your sins: Threatened morality and physical cleansing. *Science, 313*, 1451–1452.