

**Good Gods Almighty:
A report concerning divine attributes from a global sample**

Abstract

If “Big Gods” evolved in part because of their ability to morally regulate groups of people who cannot count on kin or reciprocal altruism to get along (Norenzayan, 2013), then powerful gods would tend to be good gods. If the mechanism for this cooperation is some kind of fear of supernatural punishment (Johnson & Bering, 2006), then we may expect that mighty gods tend to be punishing gods. The present study is a statistical analysis of superhuman being concepts from 20 countries on five continents to explore whether the goodness of a god is related to its mightiness. Gods that looked more like the God of classical theism and gods that were low in anthropomorphism were more likely to be regarded as morally good and to be the target of religious practices. Mighty gods were not, however, especially likely to punish or to be a “high god.”

Key Words: anthropomorphism, cognitive science of religion, god concepts, religious evolution

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Good Gods Almighty:

A report concerning divine attributes from a global sample

“Good God Almighty!” is an irreverent exclamation with a long pedigree in popular culture, but are good superhuman beings or gods really almighty? That is, does goodness attributed to gods correspond to the degree of mightiness that they are thought to have? If so, does any such correspondence provide clues to the cognitive origins or evolution of god concepts? The present report considers broad patterns in 108 god-like concepts from 20 different nations.

A reasonable null hypothesis is that the moral goodness attributed to a god varies independently of more distantly related properties such as the god’s power, knowledge, mortality, and so on. Perhaps as unbridled products of human imagination, gods can take on almost any constellation of features. So, weak, uninformed, immortal, and good gods may be just as common as morally bad, powerful, and knowledgeable but mortal gods.

Alternatively, it may be that the traits of gods tend to cluster in predictable ways, even when the gods in question come from cultures with relatively little historical interaction. Why might that be? Depending upon one’s theoretical orientation, different predictions can be made concerning whether or not the moral goodness of gods will tend to co-vary with other traits. For instance, if one believes that people postulate powerful gods to help explain chaos and suffering in the world, then the power of gods would probably correspond with greater moral badness instead of goodness. Even if there are good gods, their power seems to be no match for the power of bad gods. If, however, one is more attracted to comfort-oriented theories of gods, one may expect the power and goodness of gods to be positively correlated. For gods to provide comfort in the face of

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4 uncertainty, they must be morally good. Morally bad but powerful gods would actually
5 threaten comfort. Indeed, this is one reason why Pascal Boyer is not satisfied with
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7 comfort explanations for gods. Drawing upon his own anthropological fieldwork among
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9 the Fang people of Cameroon, he writes:
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14 A religious world is often every bit as terrifying as a world without supernatural
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16 presence, and many religions create not so much reassurance as a thick pall of
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18 gloom. . . .Most Fang admit that the balance of powers is tipped the wrong way.
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20 Indeed, they see evidence of this all the time, in crops that fail, cars that crash and
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22 people who die unexpectedly. If religion allays anxiety, it cures only a small part
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24 of the disease it creates. (Boyer 2001, p. 20)
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29 Boyer seems to think that the power and goodness of gods do not correlate strongly
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31 enough to support a comfort explanation. Is this correct?
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34 Though Boyer finds comfort theories lacking, cognitive approaches of the sort
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36 that he offers may actually predict a correlation between the power and moral goodness
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38 of gods in some conditions but for importantly different reasons. Justin Barrett, working
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40 in a similar cognitive-selectionist framework as Boyer, has argued that very powerful,
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42 very knowledgeable gods may also be predicted to be morally very good because of these
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44 traits' conceptual resonance with each other:
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48 The combination of being superknowing and superperceiving and supremely
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50 powerful may rest comfortably with being morally good as well—at least better
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52 than a fairly stupid and unformed, weak god. If Boyer's and others' analyses are
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54 correct, we assume that a superknowing and superperceiving being will know
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4 what is morally right in a given situation. In contrast, a being with limited
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6 knowledge and perception is likely to make mistakes in moral judgment as well.
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8 Perhaps, too, a being powerful enough to create a universe is powerful enough to
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10 satisfy any and all desires it might have without resorting to immortal
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12 behavior....A weak god may have to do immoral things to get what it wants,...”
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16 (Barrett, 2012, p. 125.)¹
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19 Hence, gods that have a suite of super properties may also be more likely to be regarded
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21 as morally good. Such concurrence may arise because such properties could conceptually
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23 support each other either analytically or intuitively. It may be that having positive super
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25 properties such as super power or knowledge creates a “halo effect” such that other
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27 personal traits will likewise be positive (Thorndike, 1920). Note, however, that merely
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29 being powerful may not be enough to confidently predict goodness. Boyer could still be
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31 correct in his suspicion that sometimes the more powerful gods are also morally bad, but
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33 they are also not super knowing, immortal creators.
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38 In addition to the cognitive approaches represented by Boyer and Barrett, other
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40 contemporary approaches to the study of god concepts seem to bear upon whether or not
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42 the moral goodness of gods correspond to other traits. Specifically, adaptationist accounts
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44 commonly regard gods that are morally interested regulators of human social behavior as
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50 ¹ Along similar lines, philosopher Richard Swinburne argues that an omniscient,
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52 omnipotent, bodiless, and perfectly free god will also be perfectly good. See Swinburne
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54 (2008, Chapter 1).
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4 having survived and spread due to their ability to improve inter-personal trust and
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6 cooperation (e.g., Johnson & Bering, 2006, Norenzayan, et al. 2016). From this
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8 perspective, if a god is morally interested and can punish immoral behavior more surely
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10 and effectively than humans can, such a god's adherents will enjoy a fitness advantage
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12 and so that god concept, too, is more likely to persist and spread. What, then, are the traits
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14 that would allow for a morally-interested god to serve this role? Presumably the god will
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16 need to know what is morally right and wrong, know who is 'naughty and nice' by their
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18 actions and intentions (requiring super-human knowledge and/or perception), and have
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20 the power and inclination to punish, generally through non-mundane means such as
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22 through disease, infertility, or calamity—all requiring super human power. Though gods
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24 being morally good themselves is not strictly necessary, humans may generally have the
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26 intuition that a morally bad person (even a divine one) is unlikely to try to promote moral
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28 behavior or be a sure judge of it. For these reasons, then, we may hypothesize that
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30 powerful gods will be morally good.
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38 Different theoretical perspectives give different motivations for predicting the
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40 moral goodness (or badness) of gods is not arbitrarily attached to other attributes of those
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42 gods. The present analysis is aimed at creating a general profile of contemporary, morally
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44 good gods in contrast with evil ones, and more specifically examining whether these
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46 superhuman beings who are regarded as good are also those regarded as having greater
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48 power. Are good gods almighty, and are almighty gods good? This question was
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50 addressed by examination of a new database of descriptions of superhuman beings (SBs)
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52 that was compiled from 2016-2017. See Appendix A for further details.
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Method

Because the database contains over 100 different items used to characterize each god, two theoretically-driven omnibus measures of “mightiness” were created to simplify the analysis. The “anthropomorphism index” was derived from 15 individual items and represented the degree to which a god in question was similar to a human or animal in terms of various physical, perceptual, conceptual, and physiological properties (see Table 1). An ordinary human would score 3 out of 3 on this scale. A zero score would identify a god-like being that is perfectly devoid of human/animal limitations and, hence, make it mighty in an important sense. Such a being would be able to do anything it is possible to do, including pass through solid objects, and would see and hear everything. Two of the items (having to be near something to see it and to hear it) were averaged because preliminary analyses showed their answers were nearly indistinguishable ($r = .86$). This average score was averaged with the remaining 13 items. Items were reverse-coded as needed. Missing data points were simply left out of the averages. If a god did not have at least 10 data points contributing to its anthropomorphism index, that god was dropped, yielding 106 gods with an anthropomorphism score. This 14-item index yielded a Cronbach’s alpha of .817.

A second measure of “mightiness” was the “classical god index.” This index was calculated from a subset of 5 of the 15 items used for the anthropomorphism index (see Table) and roughly map onto the “omni” features often associated with so-called classical

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4 theism: omnipotence, omnipresence, omniscience, and immortality.² Goodness was not
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6 included so that the relationship between goodness and these other attributes could be
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8 tested. Each attribute had a one-item proxy with the exception of “immortality,” which
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10 was the average of two items: whether a being needs to eat to survive, and whether a
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12 being needs to sleep or rest to survive. These two items were very highly correlated with
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14 each other, $r = .78$. This immortality composite was averaged with the other four scores
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16 and then reverse coded to produce the classical god index. Higher scores indicated being
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18 more like a classical god. Of the original 108 gods, 98 had enough data points for a
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20 classical god index score. This index had a Cronbach’s alpha of .678.

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26 A final measure of might was the one item gauging whether a god “can do
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28 anything that is possible to do.” Arguably such an item covers the logical (if not
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30 psychological) reach of the other items, and we will refer to this item as “omnipotence.”

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34 If the characteristic ways that human minds process information imposes selection
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36 pressure on cultural expression the way that cognitive science of religion scholars and
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38 cognitive anthropologists suggest (e.g., Atran, 2002; Barrett 2011; Boyer 2001;
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40 McCauley 2011; Sperber, 1996), examination of cross-cultural datasets like this one may
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42 aid in detecting broad patterns. Nevertheless, features of the dataset demand tentativeness
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44 in interpreting results. Any number of selection biases could have been at play in the
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51 ² Immutability was left out of this index because it is less strongly motivated by the
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53 cognitive literature and it showed markedly weaker bivariate correlations with the
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55 remaining items comprising the index.
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4 generation of god concepts, because informants were allowed to describe any SB that
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6 they wished to describe. It may be that informants were more likely to describe SBs that
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8 were more relevant to their daily activities, eager to describe SBs that they thought the
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10 project team might want to hear about, or less likely to mention dangerous or taboo ones.
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12 Such biases would not necessarily be reflected in relationships among features of the SBs
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14 even if the frequency of SBs of some types are proportionally inflated, but caution is still
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16 merited.
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21 It is also likely that many of these SBs, especially those from similar regions,
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23 have common cultural ancestry and, hence, are not strictly independent data points. Even
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25 though the aim of this analysis is not to test hypotheses concerning cultural evolution, the
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27 findings need to be held loosely as some “families” of SBs may be over-represented even
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29 beyond what the irregular geographical distribution may suggest.
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33 **Results & Discussion**

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35 All but four SBs could be grouped into four major regional clusters: Africa (38,
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37 almost exclusively west Africa), Asia (21, all Far East except for Nepal), Indonesia (26),
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39 and Melanesia/Oceania (10). Though the present aim is to report general patterns and not
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41 regional ones, we examined whether any of these four regions was distinctive on the four
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43 primary variables of interest. Because three variables (goodness, anthropomorphism
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45 index, and classical god index) were scored continuously, and omnipotence was scored
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47 from 0 to 4 at intervals, we relied on the robustness of one-way ANOVAs with
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49 subsequent Bonferroni comparisons. All four ANOVAs were significant (see Table 2).
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4 the other regions. Indonesian SBs were less morally good, more anthropomorphic, and
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6 less like a classical god, than each of the three other regions (all $ps \leq .001$). Concerning
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8 omnipotence, Melanesian/Oceanian SBs were regarded as more powerful (on average)
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10 than those from Indonesia.
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14 Because of these differences in elevation of scores, bivariate correlations between
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16 goodness and the three measures of might were examined for each of the four regions to
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18 see if they differed from each other or from any main effects. In only one case did a
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20 particular region break from the general patterns reported as is noted below.
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23 *Are good gods almighty?*

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25 The dataset includes goodness scores for 98 of the 108 superhuman beings (gods) in this
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27 database. On a scale of 0 to 100, with 0 being “unquestionably evil” and 100 indicating
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29 “unquestionably good,” the average score was 43.42 ($SD = 38.68$, $CI [35.76, 51.08]$).³
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33 The most typical response was an unquestionably evil 0 (29.6% of the responses), but the
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35 second most typical response was that the being was perfectly good 100 (15.3%). Other
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37 responses were fairly uniform in their distribution between 0 and 100.
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41 Goodness scores predicted all three measures of mightiness. Scores on goodness
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43 were negatively correlated with anthropomorphism scores ($r = -.55$, $N = 98$, $p < .001$).
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45 SBs with more human- or animal-like limitations were given lower goodness (or higher
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47 evilness) scores. Goodness also correlated with classical god index scores ($r = -.616$, $N =$
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53 ³ These figures differ slightly from Table 2 because Table 2 does not include the four SBs
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55 from Latin America and Europe.
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4 91, $p < .001$), such that SBs that scored more similar to a classical god also scored higher
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6 on goodness. Indeed, all of the items that comprised the classical god index were
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8 significantly correlated with goodness at the .005-level (uncorrected), including the third
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10 measure of might, omnipotence, $r = -.303$, $N = 84$, $p = .003$. The Indonesian sample may
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12 have been an exception to this pattern of relationship between the omnipotence item and
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14 goodness scores, $r = .039$, but the same directionality held for the other three regions, $r =$
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16 $-.377$ (Africa), $r = -.329$ (Asia), $r = -.248$ (Melanesia/Oceania).
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21 To more thoroughly explore what makes for a good or evil god, we predicted
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23 goodness scores with linear multiple regressions that included the classical god index as
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25 one among a number of predictor variables.⁴ The remaining predictor variables were
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27 those for which there was some prima facie reason for thinking it could be related to the
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29 degree of good or evil in an SB: whether the SB had previously been a human (e.g. a
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31 ghost or evil spirit), was a supreme high god, was a non-human spirit, was part of a
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33 pantheon, was best described as “like a human” with some special properties (as opposed
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35 to like an animal, object, or force, which may be harder to characterize as morally good
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37 or evil), was the target of religious rituals, rewards people, and punishes people. Because
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46 ⁴ The classical god index was used instead of the anthropomorphism index or the single
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48 omnipotence item because of its stronger simple relationship with goodness. Results are
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50 not meaningfully different using the anthropomorphism index in such a regression model:
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52 whether the SB is best characterized as “like a human with special properties” is the only
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54 predictor that is no longer significant.
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4 we had no strong theoretical reason for thinking that some class of these traits is more
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6 fundamental or causally prior, we entered all candidate predictor variables into the
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8 regression model simultaneously and allowed them to compete for variance explained.
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10 The worst performing predictors were removed from the model sequentially until only
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12 variables with significant partial correlations remained. This process yielded a significant
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14 model with five significant partial correlations (see Table 3).⁵ SBs resembling a classical
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16 god that reward people and were previously human spirits, but did not punish and were
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18 not best characterized as like a human, were regarded as higher on goodness.
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24 Because this multiple regression could only consider SBs with data on all
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26 variables and many SBs were missing data points, and to better characterize the simple
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28 relationships between the grouping variables and goodness, independent t-tests were
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30 conducted (see Table 4). SBs that were the target of rituals, that rewarded, and were
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43 ⁵ Because of Indonesia's deviance from the rest of the sample on variables of interest, we
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45 also ran this analysis using whether the SB was from Indonesia as a covariate. The
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47 resulting model did not include whether the SBs were human like or previously human
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49 spirits, but being from Indonesia remained a significant (negative) predictor of goodness,
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51 along with the classical god index, rewarding, and punishing. A strikingly similar model
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53 is obtained if the anthropomorphism index is used instead of the classical god index.
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4 formerly human spirits each had significantly greater goodness scores than those SBs
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6 lacking these attributes.⁶
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9 What is the profile of a very good god? If we consider those gods scoring 80 or
10 more on goodness ($N = 29$), we can create a profile of very good gods.⁷ At least in this
11 sample, very good gods tended to:
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- 15 • possess the divine attributes of classical theism, classical god index $M = 1.86$ (on
16 a scale of 0 to 3), $SD = .68$, $CI [1.59, 2.13]$, $t(24) = 2.61$, $p = .015$, one-sample t -
17 test with a test value of 1.5;
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19 • be the focus of religious or ritual practices, 82.1% of the time, $p < .001$, sign-test;
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36 ⁶ Because this analysis is largely exploratory and the significant bivariate correlations are
37 already suggested by the multiple regression analysis, we are reporting uncorrected p -
38 values as well as confidence intervals and effect sizes, and allowing the reader to judge
39 which variables are likely to have genuine relationships. We focus our discussion on
40 those findings with which we have most confidence: that seem to repeatedly emerge
41 regardless of the particular analysis or measure of mightiness used.
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50 ⁷ These especially good gods hail from Africa (9, Djibouti, Guinea, Ivory Coast, Mali),
51 Asia (12, China, Nepal, Thailand), Oceania (6, Papua New Guinea, New Zealand-Maori),
52 Europe (1, Spain), and Latin America (1, Costa Rica).
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- not possess human/animal-like limitations, anthropomorphism index $M = 1.05$ (on a scale of 0 to 3), $SD = .52$, $CI [.86, 1.24]$, $t(28) = 4.70$, $p < .001$, one-sample t -test with a test value of 1.5.

Very good gods were often a former human spirit (50% of the time), as opposed to a supreme high god (24.1%), or a non-high god, non-human spirit (27.6%), but these distributions did not significantly distinguish them from the general sample of SBs. These very good gods were about as likely to reward and punish as not, and to be characterized as “like a human with some special properties” as not (e.g., “like a force with some special properties,” “like an animal...,” or “like a natural object...”).

In summary, generalizing from this sample, good gods tend to be mighty gods—able to do much, and resembling classical gods but not humans—and the focus of religious or ritual practice. They do not, however, have a marked tendency to be supreme high gods or especially associated with rewarding or punishing.

Are mighty gods good?

Though good gods tended to be mightier than average, it does not automatically follow that mighty gods are particularly good. To further explore the relationship between goodness and mightiness in gods, we examined the correlates of both of our indexes of might: the anthropomorphism index and the classical god index. As when examining goodness, we used multiple regressions to model these measures of mightiness.

Classical god index scores had three significant partial predictors in the final model, $F(3,72) = 24.64$, $p < .001$, $r^2 = .51$. Goodness scores ($\beta = .431$, $p < .001$), being the target of ritual or other practices ($\beta = .283$, $p = .004$), and being a supreme high god

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4 ($\beta = .26, p = .004$) were all significant contributors. That is, gods that were supreme high
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6 gods, the target of ritual practices, and high in goodness, also tended to resemble classical
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8 gods.⁸
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11 Greater scores on the classical god index predicted the other scores that comprised
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13 the anthropomorphism index. All simple linear correlations were significant at the .005-
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15 level. The classical god index was also related to gods being considered a supreme high
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17 god ($r = .371, p < .001$) and was weakly related to whether gods “bestow rewards,” $r =$
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19 $.21, p = .04$. In terms of simple correlations, higher classical god scores were also
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21 associated with being the target of religious practices ($r = .54, p < .001$) and being a
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23 previously human spirit ($r = .26, p = .02$).
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34 ⁸ If whether the SB was from Indonesia was included in the model, then being the target
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36 of religious practices fell out of the model whereas being a supreme high god ($\beta = .215, p$
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38 $= .006$), goodness ($\beta = .37, p < .001$), and being from Indonesia ($\beta = -.364, p < .001$)
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40 were significant predictors. That is, supreme high gods high in goodness not from
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42 Indonesia tended to be high on the classical god index. A very similar model emerged
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44 when anthropomorphism was the dependent variable. Being a supreme high god ($\beta =$
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46 $-.252, p = .003$), and goodness ($\beta = -.418, p < .001$) both had significant negative partial
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48 correlations with anthropomorphism, and being from Indonesia also made a sizable
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50 contribution in the opposite direction ($\beta = .194, p = .063$) to a moderately strong model,
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55 $F(3,94) = 22.77, p < .001, r^2 = .42$.
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4 If one were to characterize the gods scoring particularly high as classical gods (2
5 or higher, $N = 21$),⁹ the data suggest that these gods were:

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 - 10 ● not at all human-like in limitations,
 - 11 ● good, not evil, $M = 78.28$, $SD = 32.22$, $t(17) = 10.11$, $p < .001$, one-sample t-test
12 against test value of 50;
 - 13 ● likely to be the focus of religious or ritual practices, 88.9%, $p = .001$, sign-test;
14 but
 - 15 ● are not more likely than chance (50%) to be high gods or to reward or punish.

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23 When predicting anthropomorphism scores, a similar model emerged as for
24 classical gods, but only goodness ($\beta = -.528$, $p < .001$) and being a supreme high god (β
25 $= -.306$, $p < .001$), made significant contributions to the overall model, $F(2,95) = 31.55$, p
26 $< .001$, $r^2 = .40$. Supreme high gods with high goodness scores tended to be low on
27 anthropomorphic limitations. Unsurprisingly, when considering simple correlations,
28 scores on goodness were negatively associated with anthropomorphism index scores, $r =$
29 $-.55$, $N = 98$, $p < .001$. Good gods were less limited by human-like traits. “Supreme high
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43⁹ Of these 21 superhuman beings/gods, ten are from Africa (Djibouti, Guinea, Ivory
44 Coast, Nigeria), five are Asian (China, Japan, Nepal, Thailand), four are from
45 Australia/Melanesia (Maori/New Zealand, Papua New Guinea), one is Latin American
46 (Costa Rica), and one is from Europe (Germany). Fourteen of these were among those
47 that scored particularly low (1 or less) on the anthropomorphism index. Twelve of these
48 were among the 29 gods that scored 80 or higher on goodness.
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4 gods” also had significantly lower anthropomorphism scores ($M = 1.18, SD = .77$)
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6 compared to non-high gods ($M = 1.54, SD = .44$), $t(31.91) = 2.30, p = .028, r = -.28$.
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9 Having fewer anthropomorphic limitations was also related to being the focus of
10 religious or ritual practices. Those SBs that were the focus of such practices had lower
11 anthropomorphism scores ($M = 1.26, SD = .56, CI [1.12, 1.40]$) than those not the target
12 of religious practices ($M = 1.66, SD = .56, CI [1.46, 1.86]$), $t(87) = 3.22, p = .002, r = -$
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21 Correspondingly, if we consider just those gods that scored very low on
22 anthropomorphism (1 or less),¹⁰ we can see that these mighty gods were:
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- 24 ● likely to be regarded as good, $M = 77.73, SD = 28.98, t(16) = 5.18, p < .001$;
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26 ● likely to be the focus of religious or ritual practices, 69.6% of the time, $p = .008$,
27 sign-test;
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29 ● may be a god that punishes, 78.0%, $p = .01$, sign test; and
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31 ● regarded as supreme high gods (41.7%) and giving rewards (70.0%), greater than
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38 typical if not greater than chance.
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40 If this sample is representative of gods more broadly, we may generalize that gods
41 without human/animal-like limitations are considered good, are more often than typical
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48 ¹⁰ Of these 19 superhuman beings/gods, nine are from Africa (Djibouti, Guinea, Ivory
49 Coast), five are from Asia (China, Nepal, Thailand), four are from Australia/Melanesia
50 (New Zealand, Papua New Guinea), and one is Latin American (Costa Rica). Eleven of
51 these 19 were among the 29 gods scoring 80 or higher on goodness.
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4 supreme high gods, and they are often the focus of practices but are not especially
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6 remarkable otherwise (given the variables under consideration).
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9 In summary, for our sample, gods scoring high on the classical god index were
10 very similar to gods with few anthropomorphic limitations in their relationships with
11 other variables. These “mighty” gods tend to be good gods that are also the focus of
12 religious or ritual practices.
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18 **Conclusions**

19 If the database used here is a fair representation of gods worldwide, it appears that
20 good gods actually do tend to be particularly powerful or mighty, even among
21 superhuman beings. Being good instead of evil correlated with mightiness as indexed by
22 a score representing the classical omni- god traits, and by a score representing the sorts of
23 physiological, psychological, and physical limitations that humans experience. Might and
24 goodness appear to travel together, and both also appear to correspond with whether the
25 god in question is the focus of religious and ritual practices of some sort.
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38 Nevertheless, goodness and might did not necessarily correspond to a greater
39 tendency for the god in question to reward and punish. The rate at which especially good
40 or mighty gods were said to reward humans was not significantly greater than 50%. That
41 is, even very good and/or mighty gods may be just as likely as not to reward. Punishment
42 was only associated with low levels of anthropomorphism but not with goodness or being
43 like a classical god.
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52 Good gods and mighty gods also bore some correspondence with “supreme high
53 gods,” but the relationship was far from perfect. Only 6 of those 15 SBs that were both
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4 high on goodness (80+) and low on anthropomorphism (≤ 1) were supreme high gods, a
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6 rate of 40% compared to 26% for the sample as a whole. None of the 11 SBs that were
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8 especially low on goodness (≤ 20) and high on anthropomorphism (2+) were supreme
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10 high gods. Though “good gods” approximate “almighty gods,” their conjunction only
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12 roughly approximates “high gods.”
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16 The aim of this analysis was not to conclusively adjudicate among the various
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18 cognitive or evolutionary accounts of god concepts and beliefs, but only to provide some
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20 evidence that might reduce the number of plausible accounts. If good gods are not also
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22 mighty gods, it would be hard for them to grant any sense of control or comfort to their
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24 followers. It appears, however, that good gods, in fact tend to be mighty gods. If mighty
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26 gods, (those that have access to human thought and behavior and can act on that
27
28 information) are not particularly good, it seems less likely that they would have any
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30 interest in or ability to promote moral behavior in humans. Mighty gods, for the most part
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32 appear to be good gods. If gods are principally devices for accounting for pain, suffering,
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34 and calamity in the world, we might expect powerful gods to be primarily evil, but this
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36 dataset suggests the opposite.
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43 If “Big Gods” evolved in part because of their ability to morally regulate groups
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45 of people who cannot count on kin altruism or reciprocal altruism to get along (e.g., see
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47 Norenzayan, 2013), then we would expect that powerful gods tend to be good gods and
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49 that appears to be the case. If the predominant mechanism for this cooperation is some
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51 kind of fear of supernatural punishment (e.g., Johnson & Bering, 2006; Shariff &
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53 Norenzayan, 2011), however, then we may have expected a stronger correspondence
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between mighty gods and punishment than was found. Of course, it could be that cognitive factors have driven the coalescence of certain god-like attributes and many available configurations could have served as well to drive cooperation in groups with these god concepts.

It seems, then, that goodness and might sit easily together in concepts of god-like beings from around the world. It may be that these positive traits mutually support each other (being exceptionally good may require exceptional knowledge and exceptional freedom from mortal and other limitations), or it may be that for other reasons these traits cluster. At any rate, we can provisionally reject the null hypothesis that the goodness or evilness of contemporary gods and their super-making features coincide as haphazard accidents of local histories.

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Appendix A

The present report summarizes analyses from a dataset gathered from informants from 20 countries from April 2016 to April 2017. Initially, the project team contacted alumni of Fuller Graduate School of Intercultural Studies to serve as informants. These alumni, most of whom received at least some post-graduate training in anthropology, intercultural communication, and comparative theology, live in over 100 nations, often with decades of experience living and working in their current cultural context. Additionally, the second author contacted scholarly colleagues who live in Asia, Oceania, or Africa to serve as informants or find informants (e.g., among their students). Because generally these informants have considerable experience considering how religious beliefs of different peoples compare to Christian beliefs, it is possible that they would over recruit SBs that differ from Christianity, but the converse is possible as well. As is probably evident from the analyses provided here and Barrett, et al., (this issue), there is no strong reason to suspect that the SBs were, on the whole, very much like the Christian God.

Informants were invited to consult with other people in the local context if that would help them produce confident answers. Of this first wave of informants, the average years living in the cultural context for which they provided data was 30.5 (median = 30 years), and ranged from 2 to 50 years. Of these 41 informants, 68.3% regarded themselves as fluent and 17.1% were claimed to be “nearly fluent” in the predominant local language. The rest were either conversational or functional. Thirteen (31.7%) of the informants were women, and a plurality (57.5%) were 31-50 years old with 25% over 50-years-old. These informants provided answers for 1.56 SBs on average, with 61%

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4 describing only one SB. Data were collected via a structured interview using an online
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6 Qualtrics survey. A second wave of data collection consisted of face-to-face recruiting
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8 and direct structured interviewing of over 100 people by the project team. The project
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10 team used translators when necessary. These interviews were conducted in Indonesia,
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12 Nepal, Papua New Guinea, Thailand, and the United States.
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16 Informants were asked to answer questions about a SB familiar to them. SBs were
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18 circumscribed as “forces that have the will and ability to act in this world,” “are generally
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20 talked about as having their own thoughts,” and “have properties that set them apart from
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22 the natural/material world.” “These include gods, spirits, demons, ancestors, and totemic
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24 beings (among others), which may be considered positive, negative, or neutral. They need
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26 not be exceptionally powerful or the focus of devotion, although they may be.” It was
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28 stressed that informants should respond according to how they perceived ordinary
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30 laypeople, not necessarily religious authorities or specialists, thought about the SBs.
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32 Informants then answered approximately 100 questions for each SB. The specific number
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34 of questions varied depending upon previous answers. The specific questions were
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36 inspired or adapted from Barrett (1998), Purzycki (2013), and, primarily, the Database of
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38 Religious History (<http://religiondatabase.org/landing/>).
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46 Because SBs were the unit of analysis, if multiple informants described the same
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48 SB (e.g., same name, same tradition, similar features), these descriptions were collapsed
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50 into a single set of scores. Nevertheless, we erred on the side of inclusion, particularly if
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52 the nation or language group differed between the two SBs in question. Only six clearly
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54 redundant SB descriptions were identified and removed for the analyses reported here.
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Table 1

Key Variables			
Items <i>(scored from 0 = “strongly disagree” to 3 = “strongly agree” unless otherwise indicated; (rev) indicates reversed coding)</i>	Anthropo- morphism Index $\alpha = .817$	Classical God Index $\alpha = .678$	Descriptive Statistics
Can pass through solid objects (rev)			$N=97, M=1.37(.96)$ CI [1.18, 1.56]
Can only be in one place at a time			$N=95, M=1.89(1.09)$ CI [1.67, 2.11]
Needs to eat to survive		Averaged	$N=71, M=1.30(.99)$ CI [1.07, 1.53]
Needs to sleep or rest to survive			
Changes over time (rev)			$N=64, M=1.30(1.00)$ CI [1.05, 1.54]
Knows everything (rev)			$N=95, M=1.86(1.08)$ CI [1.64, 2.08]
Can pay attention to many different things at once (rev)			$N=91, M=1.64(1.08)$ CI [1.42, 1.86]
Sometimes forgets things			$N=73, M=1.22(1.00)$ CI [.99, 1.45]
Has to be near something to see it	Averaged		$N=90, M=1.63(1.05)$ CI [1.41, 1.85]
Has to be near something to hear it			$N=87, M=1.72(1.02)$ CI [1.51, 1.93]
Can see everything (rev)			$N=91, M=1.65(1.07)$ CI [1.43, 1.87]
Can hear everything (rev)			$N=96, M=1.07(.95)$ CI [.88, 1.26]
Can do any number of things at the same time (rev)			$N=91, M=1.65(1.07)$ CI [1.43, 1.87]
Can do anything that is possible to do (rev)			$N=91, M=1.33(.84)$ CI [1.16, 1.50]
Has a solid physical body			$N=97, M=1.38(1.07)$ CI [1.17, 1.59]
Is best characterized as “like a human with some special properties” (0, 1)			77 (71.3% of 108)
Is a “supreme high god” (0, 1)			28 (25.9% of 108)
Is a former/previously human spirit? (e.g., as in the spirit of a former human, ancestor spirit, ghost, etc.?) (0,1)			28 (26.7% of 108)
Is a type of non-human superhuman spirit/being (SB)? (0,1)			24 (22.2% of 108)
Other type of divine being? (0,1)			13 (12.4% of 108)
Part of a pantheon of supernatural beings (0,1)			52 (51.5% of 101)
The focus of any religious or ritual practice (0,1)			62 (68.1% of 91)
Punishes people (0,1)			69 (66.3% of 104)
Bestows rewards (0,1)			58 (55.2% of 105)

Please rate how good or evil this SB is considered to be (use the slider to identify: far left (0) is unquestionably evil, far right (100) is unquestionably good and midpoint is neutral (50))			<i>N</i> =98, <i>M</i> =43.42 (38.68) CI [35.76, 51.08]
Index Summaries	<i>N</i> =106 <i>M</i> =1.49(.56) CI [1.38, 1.60]	<i>N</i> =98 <i>M</i> =1.31(.78) CI [1.16, 1.46]	

Key Variables			
Items <i>(scored from 0 = “strongly disagree” to 3 = “strongly agree” unless otherwise indicated; (rev) indicates reversed coding)</i>	Anthropomorphism Index $\alpha = .817$	Classical God Index $\alpha = .678$	Descriptive Statistics
Can pass through solid objects (rev)	✓		<i>N</i> =97, <i>M</i> =1.37(.96) CI [1.18, 1.56]
Can only be in one place at a time	✓	✓	<i>N</i> =95, <i>M</i> =1.89(1.09) CI [1.67, 2.11]
Needs to eat to survive	✓	Averaged	<i>N</i> =71, <i>M</i> =1.30(.99) CI [1.07, 1.53]
Needs to sleep or rest to survive	✓		
Changes over time (rev)	✓		<i>N</i> =64, <i>M</i> =1.30(1.00) CI [1.05, 1.54]
Knows everything (rev)	✓	✓	<i>N</i> =95, <i>M</i> =1.86(1.08) CI [1.64, 2.08]
Can pay attention to many different things at once (rev)	✓		<i>N</i> =91, <i>M</i> =1.64(1.08) CI [1.42, 1.86]
Sometimes forgets things	✓		<i>N</i> =73, <i>M</i> =1.22(1.00) CI [.99, 1.45]
Has to be near something to see it	✓	Averaged	<i>N</i> =90, <i>M</i> =1.63(1.05) CI [1.41, 1.85]
Has to be near something to hear it			<i>N</i> =87, <i>M</i> =1.72(1.02) CI [1.51, 1.93]
Can see everything (rev)	✓		<i>N</i> =91, <i>M</i> =1.65(1.07) CI [1.43, 1.87]
Can hear everything (rev)	✓		<i>N</i> =96, <i>M</i> =1.07(.95) CI [.88, 1.26]
Can do any number of things at the same time (rev)	✓		<i>N</i> =91, <i>M</i> =1.65(1.07) CI [1.43, 1.87]
Can do anything that is possible to do (rev)	✓	✓	<i>N</i> =91, <i>M</i> =1.33(.84) CI [1.16, 1.50]
Has a solid physical body	✓		<i>N</i> =97, <i>M</i> =1.38(1.07) CI [1.17, 1.59]
Is best characterized as “like a human with some special properties” (0, 1)			77 (71.3% of 108)
Is a “supreme high god” (0, 1)			28 (25.9% of 108)
Is a former/previously human spirit? (e.g., as in the spirit of a former human, ancestor spirit, ghost, etc.?) (0,1)			28 (26.7% of 108)
Is a type of non-human superhuman spirit/being (SB)? (0,1)			24 (22.2% of 108)
Other type of divine being? (0,1)			13 (12.4% of 108)
Part of a pantheon of supernatural beings (0,1)			52 (51.5% of 101)
The focus of any religious or ritual practice (0,1)			62 (68.1% of 91)
Punishes people (0,1)			69 (66.3% of 104)
Bestows rewards (0,1)			58 (55.2% of 105)

Please rate how good or evil this SB is considered to be (use the slider to identify: far left (0) is unquestionably evil, far right (100) is unquestionably good and midpoint is neutral (50))			<i>N</i> =98, <i>M</i> =43.42 (38.68) CI [35.76, 51.08]
Index Summaries	<i>N</i> =106 <i>M</i> =1.49(.56) CI [1.38, 1.60]	<i>N</i> =98 <i>M</i> =1.31(.78) CI [1.16, 1.46]	

Table 2.

Descriptive Statistics for Each Primary Variable by Region

Variable	Region	N	Mean	SD	SE	95% CI	
						Lower Bound	Upper Bound
Goodness	Africa	38	48.97	28.85	4.68	39.49	58.46
	Asia	21	64.43	39.07	8.53	46.64	82.21
	Indonesia	26	5.77	16.29	3.19	-.81	12.35
	Melan/Ocea.	10	69.90	41.35	13.07	40.32	99.48
	Total	95	42.77	38.26	3.93	34.97	50.56
Anthrop. Index	Africa	43	1.35	.62	.09	1.16	1.54
	Asia	21	1.34	.40	.09	1.15	1.52
	Indonesia	28	1.89	.20	.04	1.81	1.97
	Melan/Ocea.	10	1.01	.63	.20	.56	1.46
	Total	102	1.46	.56	.06	1.35	1.57
Classic God Index	Africa	35	1.53	.80	.14	1.26	1.81
	Asia	21	1.53	.51	.11	1.30	1.76
	Indonesia	28	.55	.32	.06	.43	.67
	Melan/Ocea.	10	1.99	.65	.21	1.52	2.45
	Total	94	1.29	.78	.08	1.13	1.45
Omni- potence	Africa	33	1.27	.94	.16	.94	1.61
	Asia	17	1.41	.80	.19	1.00	1.82
	Indonesia	27	1.56	.64	.12	1.30	1.81
	Melan/Ocea.	10	.60	.70	.22	.10	1.10
	Total	87	1.31	.84	.09	1.13	1.49

One-way ANOVAs:

Goodness: $F(3,91) = 19.75, p < .001.$

Anthropomorphism Index: $F(3,98) = 10.98, p < .001.$

Classic God Index (reverse scored): $F(3, 90) = 20.84, p < .001.$

Omnipotence: $F(3, 83) = 3.55, p = .018.$

Table 3.

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	58759.989	5	11751.998	16.742	<.001 ^b
Residual	44925.511	64	701.961		
Total	103685.500	69			

a. Dependent Variable: Goodness

b. Predictors: (Constant), Previously Human Spirit, Rewards, Like a Human, Classical God, Punishes

$$R^2 = .567$$

Model		Unstandardized Coefficients	Standardized Coefficients	
		Std. Error	Beta	<i>p</i> -values
	Constant	9.176		.284
	Classical God	4.961	.527	<.001
	Like a Human	8.109	-.182	.044
	Punishes	7.139	-.274	.004
	Rewards	7.217	.328	.001
	Previously Human	7.292	.265	.004

Table 4.

Goodness/Evilness by Features of Gods											
	Yes				No				<i>t</i> -tests		
	<i>N</i>	Mean	<i>SD</i>	95% CI	<i>N</i>	Mean	<i>SD</i>	95% CI	Test stats.	<i>p</i> -value	Effect size
Like a Human?	72	40.43	38.49	31.54, 49.32	26	51.69	38.74	36.80, 66.58	$t(96) = 1.28$	n.s.	$r = .13$
Formerly Human?	26	56.08	37.05	41.84, 70.32	52	33.46	37.50	23.27, 43.65	$t(76) = 2.52$.014	$r = .28$
Supreme High God?	22	49.45	38.42	33.4, 65.51	76	41.67	38.83	32.94, 50.4	$t(96) = .83$	n.s.	$r = .08$
Target of Religious Action?	56	56.05	36.21	46.57, 65.53	27	32.11	37.25	18.06, 46.16	$t(81) = 2.80$.006	$r = .30$
Rewards?	49	50.63	38.43	39.87, 61.39	46	33.54	36.70	22.93, 44.15	$t(93) = 2.21$.029	$r = .22$
Punishes?	60	40.50	34.06	31.88, 49.12	34	46.88	45.16	31.7, 62.06	$t(92) = .77$	n.s.	$r = .08$