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Big Gods, small wonder: supernatural punishment strikes back

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Ara Norenzayan's book *Big Gods* argues that the problem of maintaining cooperation in burgeoning human civilizations since the agricultural revolution was solved by the cultural evolution of omniscient, omnipotent, and moralizing "supernatural watchers" who could monitor good and bad behavior better than humans. Norenzayan's theoretical and experimental work in the new field of evolutionary religious studies has been inspirational and groundbreaking, and *Big Gods* represents a significant advance in the debate. To the audience of this journal, however, I do not need to further extol the many virtues of *Big Gods* and Norenzayan's remarkable contributions. Instead, I focus on critiquing *Big Gods* from the perspective of its main "rival" – the Supernatural Punishment Hypothesis (Johnson, *in press*; Johnson & Bering, 2006; Johnson & Krüger, 2004; Schloss & Murray, 2011). I argue that, in fact, they are not different theories at all. They differ in their emphasis on evolutionary mechanism (biological vs. cultural selection) and era of focus (Pleistocene vs. Holocene), but they both argue that belief in supernatural punishment fosters cooperation. The Supernatural Punishment Hypothesis is, however, more general on several dimensions and thus *Big Gods* can be seen as a subset of it. But this overlap is a good thing rather than bad. The key role of supernatural punishment is strongly corroborated by both approaches, they are complementary rather than conflicting, and a fuller understanding of the evolution of religion is likely to come from their integration.

1. Toothless gods: the primacy of punishment

Big Gods centers on the idea of "supernatural watchers," "supernatural monitoring," and "supernatural surveillance." The key concept is *observation*, because "watched people are nice people." But this is an odd hook on which to hang the theory, because observation on its own is toothless. In this framing, gods are more perverts than police. Whatever perspective one takes – game theory, natural selection, rational choice – being observed is irrelevant. The only thing that matters is *consequences* – that is, anticipated rewards or punishments. Only consequences can change expected payoffs and thus alter people's behavior. In fact, Norenzayan goes on to agree that punishment is key, and that it is punishment, rather than rewards, that is the more powerful of the two possible forms of supernatural consequences. As he puts it, "the action is in the fear of supernatural punishment" (p. 45) and he presents copious evidence of exactly this. Even where

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cheating declines and punishment becomes rare, observation alone is not enough because the threat of punishment must remain as a credible deterrent. History has shown numerous times and in numerous ways that observation is not enough to maintain social cooperation – you also need some form of policing and sanctions (Sigmund, 2007). Britain has two million CCTV cameras on its streets, yet plenty of crimes are committed under their gaze. What the cameras do is help the police to find and punish perpetrators. Experimental studies support this basic point: agents with the capacity to punish can alter people's behavior, but agents that just watch have no effect (Purzycki et al., 2012).

Perhaps the reason for this difference in focus is disciplinary. As a social psychologist, Norenzayan thinks in terms of people's social context, and how they are *seen* by others, whereas as (originally) a biologist, I think in terms of fitness consequences, and how people *perform* in competition with others. But it is not just a matter of perspective if we are exploring the *evolution* of religion. Social context is part of the problem, but fitness consequences provide the Darwinian bottom line. Punishment appears to be key, and what is striking is that, after much independent research and reflection, Norenzayan has come to exactly the same conclusion. Supernatural “watchers” offers new packaging, but *Big Gods* is the Supernatural Punishment Hypothesis with a nicer name.

2. Beyond god: other sources of supernatural punishment

Big Gods stands on another shaky pillar: it argues that supernatural monitoring and punishment come from gods (or just God). However, although this is the most obvious and most discussed form of supernatural agency, it is merely one source of supernatural consequences of our actions. Numerous other sources are found in spirits, ancestors, ghosts, angels, demons, animals, witches, sorcerers, jinns, and a variety of other beings. Sometimes they are not even personified agents at all. Many cultures believe that behavior is rewarded and punished by impersonal forces governing the universe, such as karma, not by any particular agent. Big Gods are the exception, not the norm. Once this is recognized, supernatural punishment – from all sources – suddenly becomes a good explanation for a wide range of formidable anomalies for Norenzayan's theory, including: (1) major world religions that do not have an omniscient, omnipotent God, such as Buddhism and Hinduism; (2) small-scale societies, many of whom do not believe in a God or gods, or even any personified rewarding or punishing agents, but rather supernatural forces that nevertheless have powerful effects on behavior, such as *mana* among the Hawaiians or *orenda* among the Iroquois; and (3) even atheists who, despite lacking religious beliefs, nevertheless have underlying cognitive tendencies to anticipate supernatural causes and consequences of behavior (hence phenomena such as just world theory and immanent justice). Our undue focus on gods as agents of doom only gives us half the picture. With a fuller range of supernatural agents and consequences, many of these anomalies fall into place. People expect payback, but only sometimes from gods. *Big Gods* does not represent the big picture.

3. Small gods punish too

A core claim of *Big Gods* is that powerful, moralizing, punishing gods only emerged recently in human societies with the agricultural revolution some 10,000 years ago. Norenzayan therefore derives the reverse prediction that, among small-scale societies typical of the Pleistocene in which we evolved: (1) supernatural punishment is absent or rare; and (2) gods are amoral. I think that these claims are false. First for the claim that

supernatural punishment is absent or rare in small-scale societies. There are in fact numerous traditional societies that believe in direct supernatural consequences of behavior – and again punishment looms large. For example, a study of economic behavior in Burkina Faso found that traditional beliefs increased cooperative behavior, because “people believe spirits and ancestors enforce the moral code... Supernatural forces punish anyone who violates the moral code, whether [by] severe illnesses, accidents or death” (Hadnes & Schumacher, 2012, p. 692). And this is not unique to the region. Supernatural consequences for violating social norms is a widespread feature of sub-Saharan religions, and can be found among many or even most small-scale and traditional societies around the globe. Ironically, Norenzayan himself gives us plenty of examples of supernatural punishment in small-scale societies. For example, he describes the Kwaio of the Solomon Islands as having “interventionist spirits who are constantly monitoring and meddling” (p. 130) and “help those who follow social norms, and punish transgressors” (p. 26).

Even in parts of the book where Norenzayan becomes conscious of the contradiction, he acknowledges that supernatural punishment *is*, in fact, a common feature of small-scale societies. For example, he cites Boehm’s (2008) study of 18 hunter-gatherer societies – a subsample of small-scale societies selected to better represent the types of societies in which we evolved during the Pleistocene – as evidence that many such societies *do not* believe in supernatural punishment for moral transgressions. He notes, for instance, that in 11 of them gods do not “prohibit murder” (p. 137). But that means that seven of them *do*. And there are similar beliefs in supernatural sanctions for a variety of other behaviors. Overall, all of these societies had supernatural sanctions of one sort or another “to enforce moral codes,” 12 state the importance of supernatural punishment in general, and 16 state specific offenses that trigger it (all of which are antisocial). The only question is how such different conclusions can be drawn from the same evidence. Norenzayan wants to see no supernatural punishment in small-scale societies, since that is what the *Big Gods* idea predicts, so he emphasizes the proportion of societies that lack supernatural sanctions. But one can just as well point to the proportion that do have supernatural sanctions.

Supernatural punishment may not be universal (why should it be?), but quantitative and qualitative evidence from a variety of large-sample cross-cultural studies, in both early and recent literature, show that supernatural sanctions – of one form or another – are widespread among small-scale and traditional societies (Hartberg et al., *in press*; Johnson, 2005; Malinowski, 1935; Murdock, 1980; Swanson, 1960; Whitehouse, 2008). The often-cited idea that it is absent appears to be a myth. The myth, I believe, stems from our Western bias to look for gods as the source of supernatural punishment, and to look for violations of our own form of morals. This latter problem I address next.

4. Small gods are not amoral

Big Gods argues that supernatural agents in small-scale societies are not concerned with moral behavior. However, the term and common conceptualization of “morality” is a recent and Western phenomenon. Indeed, it is a feature of the very WEIRDos (Western, educated, industrialized, rich, democratic people) that Norenzayan warns us about. He explicitly points out that WEIRDos have “a narrow conception of morality that revolves around caring/not harming, fairness, and justice” (p. 53). Yet this same pitfall is evident in Norenzayan’s own interpretation of evidence. He says, for example, that among Boehm’s 18 societies, gods and spirits “typically care little about human affairs that we would consider falling under the label *moral*” (p.126, original emphasis). But this is exactly the point. We should be asking whether supernatural punishment affects people’s adherence to

the norms of their society – whatever those norms may be. Whether those norms conform to our own “morals” or not is irrelevant in the eyes of evolution. What matters is how belief in supernatural punishment affects Darwinian fitness. Sometimes this can be through “prosocial” behavior and cooperation, which is what Norenzayan is looking for. But sometimes it may be through dominance, stealing or killing. Why would (evolutionarily adaptive) gods necessarily condemn behavior if it is in one’s own, or indeed the group’s, genetic interest? Prosocial behavior is not synonymous with adaptive behavior.

Our own cultural perspective traps us into thinking that religion and gods are *about* morality. The error is striking, because Norenzayan cites Swanson on exactly this point (p. 131), but it pervades the pages of *Big Gods* despite an awareness of the danger. Certainly, moralizing gods may have spread and strengthened in recent millennia, but supernatural punishment for norm transgressions is clearly evident in many hunter-gatherer societies as well. Human cognitive dispositions underlying supernatural punishment beliefs have not changed, but norms have. If we want to understand the evolution of religion, it is not morality that we should be looking for but adaptive behavior, and adaptive behavior – just like predation, fighting, or coercion – may appear “immoral” rather than “moral” to us. WEIRDos might care about the difference, but natural selection does not.

5. *Big Gods* and the Supernatural Punishment Hypothesis: two theories or one?

5.1. Differences between *Big Gods* and the Supernatural Punishment Hypothesis

There are differences between *Big Gods* and the Supernatural Punishment Hypothesis, but these are primarily differences of emphasis and scope of application (see Table 1). It is a shame that *Big Gods* does not engage with the extensive debate on evolutionary theories of supernatural monitoring and punishment published in this journal in 2011 (Schloss & Murray, 2011, and commentaries). Schloss and Murray’s target article quite usefully explored distinctions between the *Big Gods* argument and the Supernatural Punishment Hypothesis. They distinguished them by their *function*: the Supernatural

Table 1. Differences between *Big Gods* and the Supernatural Punishment Hypothesis. The latter is more general on several dimensions.

| | <i>Big Gods</i> | Supernatural Punishment Hypothesis |
|-----------------------------------|---|--|
| Evolutionary problem | cooperation in large groups | selfishness in small groups |
| Era | Holocene | Pleistocene and Holocene |
| Mechanism | cultural selection | natural selection and cultural selection |
| Source of supernatural punishment | moralizing gods | gods, other supernatural agents, and impersonal agency |
| Applies to major world religions | yes (but not all, e.g., Buddhism, Hinduism) | yes |
| Applies to small-scale societies | no | yes |
| Applies to atheism | no | yes |

Punishment Hypothesis was argued to be essentially about “punishment avoidance” in small-scale societies (a mind-guard to avoid real-world punishment for selfish behavior and norm transgressions), while the *Big Gods* idea was argued to be essentially about “cooperation enhancement” in large societies (boosting cooperation in the face of anonymity). This suggests that there are *two different puzzles* at issue, not two rival theories. Puzzle 1 is the evolutionary *origins* of religion in the Pleistocene (what problems, if any, did it emerge to solve?). Puzzle 2 is the *spread* of large-scale religions in the Holocene (why did some religious forms spread and others die out?). Norenzayan focuses on the second puzzle and explicitly excludes the former. By contrast, the Supernatural Punishment Hypothesis focuses on the first puzzle, but does not exclude the latter and in fact explicitly included it (Johnson, 2011; Johnson & Krüger, 2004). Norenzayan’s focus is solely on the problem of anonymity in big societies – how do you achieve trust and cooperation among strangers? From this perspective, hunter-gatherer societies seem qualitatively different – for one thing, no one is anonymous. But there is a bigger, broader, and older *biological* problem in the real-world consequences of selfish behavior. This problem emerged long ago with the advent of theory of mind and complex language, but it did not end with the Pleistocene. A parsimonious theory has to deal with both eras and both puzzles.

5.2. Similarities between Big Gods and the Supernatural Punishment Hypothesis

Despite variations in emphasis, the similarity between *Big Gods* and the Supernatural Punishment Hypothesis is much more striking than any differences – and certainly would be to people outside the field of evolutionary religious studies. Both say, basically, that cooperation is enhanced by a fear of supernatural punishment. Figure 1 sets out the elements of each theory, revealing that they are essentially saying the same thing. Although the motivating puzzle may be different, the explanandum and explanans are the same.

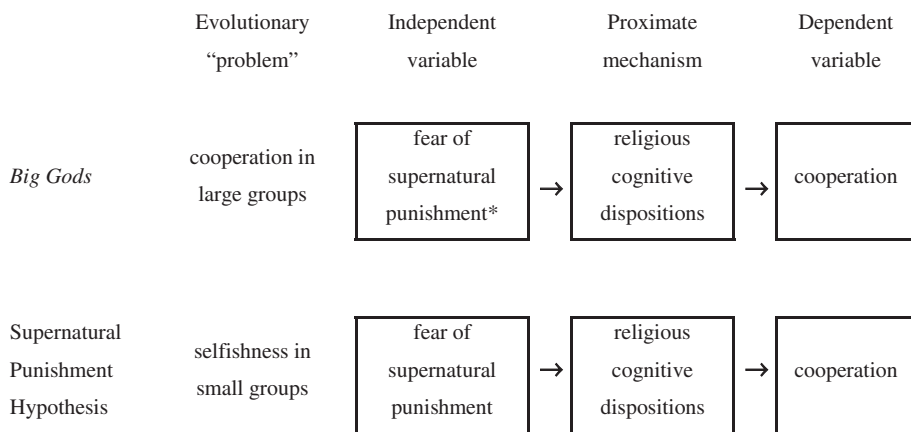


Figure 1. Similarities between *Big Gods* and the Supernatural Punishment Hypothesis.
 *The focus and language in *Big Gods* is on supernatural “watchers,” “surveillance,” and “monitoring,” but it is explicitly stated that negative consequences – punishment – is the key driver of behavioral change.

The only big difference is the emphasis on cultural selection instead of natural selection. But that leaves little to argue about, because the origins and development of the *cognitive dispositions* underlying religious beliefs – during the Pleistocene – is bound to be a natural selection story, whereas the emergence and spread of *cultural manifestations* of religious beliefs – during the Holocene – is obviously going to be a cultural evolution story. What else could it be? This is precisely why I also advocated a role for cultural evolution throughout the development of the Supernatural Punishment Hypothesis. The reason we pushed the individual selection approach is because explaining costly behavior with group selection is easy, but explaining costly behavior in terms of individual selection is harder. Although both may ultimately be at work, identifying individual Darwinian fitness benefits should be the first goal, and is likely to have been the stronger form of selection in human evolution (West, El Mouden, & Gardner, 2011; Williams, 1966). Nevertheless, we also pointed out that cultural selection effects could be rapid and powerful when the necessary conditions are present.

Starting with the original “Good of Wrath” paper in 2004, Oliver Krueger and I explicitly pointed out that “[n]atural selection, then, may have favoured epigenetic predispositions receptive to religious norms of behavior that promoted cooperation” and “more specifically, a combined product of human adaptation and culture (i.e. genetic and/or cultural selection)” (Johnson & Krüger, 2004, p. 169, 169 fn. 42). Again in 2005, I wrote:

Group selection [biological or cultural] may be at work as well (if supernatural punishment promotes cooperation, groups with it would do better than those without), but while certainly adding significantly to a selective process, group selection need not be relied upon for the mechanism to operate. (Johnson, 2005, p. 433)

In 2006, Jesse Bering and I again emphasized that although we focused on individual selection, “any group selection effects, though they are not necessary, would help drive the system” (Johnson & Bering, 2006, p. 221). We also wrote:

[A]lthough we have highlighted a central role for individual selection in our theory, which we believe could drive the system on its own, any inter-group advantages leading to the group selection of such morally bound cooperative behavior would augment the process [refs]. Indeed, group selection would lead to a much more rapid dominance of god-fearing strategies, since groups with Machiavellians will suffer by comparison. (Johnson & Bering, 2006, p. 228)

These recurrent nods to cultural group selection are precisely the *Big Gods*’ point.

6. God genes? Mischaracterizing the Supernatural Punishment Hypothesis

Big Gods and the Supernatural Punishment Hypothesis are, in fact, so similar that in order to distinguish them Norenzayan was led to construct a straw man. Norenzayan depicts the Supernatural Punishment Hypothesis as claiming “an innate fear of divine retribution” which is a “genetic adaptation” (p. 136) and that “supernatural punishment is a human universal,” which leads to “the wholesale suppression of selfish behavior.” None of these is true. The notion of a genetic, innate fear of “divine retribution” is obviously ludicrous. There can be no gene for a complex cultural idea. There is also absolutely no biological reason whatsoever to imagine that belief in supernatural punishment – even if it were somehow “genetic” – would be a human universal. Epigenetics, individual variation, and ecological conditions, not to mention cultural factors, mean that even

hardwired traits can be expressed in markedly different ways, or not at all. Supernatural punishment may be common but it need not be universal. Finally, Bering and I carefully explained that it was not about the “wholesale suppression” of selfish behavior – such an inflexible strategy would be outcompeted by Machiavellians (Johnson & Bering, 2006). The trick is to increase prudence in the face of social transparency, to balance the costs of mistakes with the costs of missed opportunities (Johnson, 2009).

What *can* be genetic, of course, are the underlying cognitive mechanisms that give rise to “religious”-like beliefs and expectations of supernatural consequences in the first place. But only cultural evolution can fill in the details of whence these consequences come and what they are – whether karma, ghosts, or God, and reincarnation, misfortune, or Hell. The Holocene did not herald the emergence of beliefs in supernatural consequences; it was merely a new landscape in a longer evolutionary story. Norenzayan is on precisely the same page with regard to the underlying – and genetically based – cognitive mechanisms, and yet unwilling to recognize supernatural punishment at work in human beings that live outside big societies. It is odd to claim that these remarkable cognitive dispositions had zero effect on fitness for tens of thousands of years *prior* to the Holocene, and then suddenly did.

As we have come to understand in recent years, any perceived dichotomy between genetic and cultural evolutionary theories is a false dichotomy. Most human traits are complex and influenced by both nature and nurture, and “multi-level selection” holds the key to understanding the relative contributions of different mechanisms of the evolutionary process. Norenzayan treads an unnecessarily adversarial path in pitching the argument as genes vs. culture. It is clearly both. *Big Gods* suggests that human cooperation is promoted by supernatural agents, and that punishment is the key driver of the relationship. This argument is big, bold, important, and, I think, correct. But it is not new. It is the Supernatural Punishment Hypothesis at work in big groups.

7. The bigger the gods, the smaller the theory

Recent years have seen an explosion of theories on the evolution of religion. The problem is typically couched in terms of a puzzle: how can we explain religious beliefs and behaviors within the logic of Darwinian natural selection, given that they are costly in terms of time, effort, and missed opportunities? Today, however, the problem is less about unearthing a good explanation and more about sifting through the multitude of existing explanations – is a given feature of religion better explained by supernatural punishment, costly signaling, elite manipulation, ritual cohesion, group identity, competition, or numerous other proposals? The evolution of religion is, therefore, “over-determined.” We have good explanations already that appear to account for much of the variance, and the acid test for any new theory is what, if anything, does it add? Does it explain variation that other theories cannot? From this perspective, *Big Gods* is rather limited.

To me, *Big Gods* actually limits and hobbles the explanatory power of supernatural punishment, rather than extending it, because: (1) it *narrows the scope* by explaining cooperation in the Holocene alone; (2) it *weakens the logic* by focusing on toothless “monitoring”, rather than the game-changing power of punishment; (3) it *reduces generality* by limiting the sources of supernatural punishment to gods (excluding other supernatural agents and impersonal sources such as karma and superstition); and (4) it *limits the evolutionary logic* by resorting to group selection (albeit the “safe” kind, in

cultural group selection). The challenge of the Supernatural Punishment Hypothesis has been to transcend such limitations – to offer an account of the origin of religious beliefs (as well as their spread), to explain why punishment has such leverage (compared to monitoring or rewards alone), to account for widely different sources of supernatural consequences (gods are only one means to an end), and to identify individual fitness benefits of costly religious beliefs and behaviors – over and above any group selection story.

This does not mean that the issue is resolved, of course. Many outstanding questions demand attention, not least the role of elites and power in originating and maintaining supernatural punishment beliefs. After all, it is the perfect instrument of subordination (Cronk, 1994; Schloss & Murray, 2011). This is an especially important problem – indeed, a rival theory – in the Holocene, and yet is hardly discussed in *Big Gods*. And this brings us to a final point: the rise of “Big Gods” is inextricably linked with Western dominance and expansion. As Abrahamic religions and their cultures spread around the world, so too did technology, governance, science, and numerous other cultural traits. Big Gods are evidently a *feature* of big societies, but there is little reason to assume that they are a cause of them, and many reasons to believe that they are in fact a consequence. If so, which way do the causal arrows of *Big Gods* point?

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The problems and origins of belief in Big Gods

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Once in a great while, an intellectual comes along and provides a story that makes sense of the “big” questions within a discipline. We are fortunate enough that Norenzayan (2013) has done just that in *Big Gods: How Religion Transformed Cooperation and Conflict*. This book not only synthesizes the decade’s most important studies in the cognitive science of religion (CSR) and the evolutionary study of religion (ESR), it also delivers a compelling account regarding two long-standing puzzles in the social sciences:

- (1) How did large-scale anonymous societies emerge?
- (2) Why did moralizing gods come to dominate so many religions?

These are indeed puzzles. In order for large-scale societies to emerge, there must have been a mechanism for widespread cooperation, but that would have required “scaled-up” costs (p. 6). Put simply, cooperation demands punishing free-riders, overcoming collective-action problems, and instilling widespread trust. But what mechanism could accomplish these on a large scale? Turning to religion, it is mysterious that moralizing gods came to “colonize the minds of so many people” during the Holocene and thereafter (p. 8), given that spirits and deities of hunter-gatherer societies do not have widespread moral concerns. How and why did this shift in belief happen?

According to Norenzayan, the answer to both puzzles is the emergence of “Big Gods” – that is, “gods who watch, intervene, and demand hard-to-fake loyalty displays” (p. 8). To defend this thesis, Norenzayan draws from the most important studies in CSR and ESR, including the byproduct thesis (e.g., Boyer, 2001), minimally counter intuitive concepts (MCIs) (e.g., Barrett & Nyhof, 2001), the supernatural punishment hypothesis (e.g., Norenzayan & Shariff, 2008), costly signaling theory (e.g., Bulbulia & Sosis, 2011), credibility signals (CREDS) (e.g., Henrich, 2009), and the co-emergence of prosocial religion and agriculture (e.g., Cauvin, 1994). Besides synthesizing these into a compelling narrative, Norenzayan brings them together to make the following argument, comprised of seven premises:

- (1) Human beings inherit cognitive functions whose byproducts are religious intuitions (pp. 15–19).
- (2) Sometime around the Holocene, these intuitions engendered the belief in interventionist Big Gods (pp. 7, 19–32, 118–124).
- (3) Because these beliefs discouraged free-riding, those who held them could be trusted more than those who did not (pp. 33–93).

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