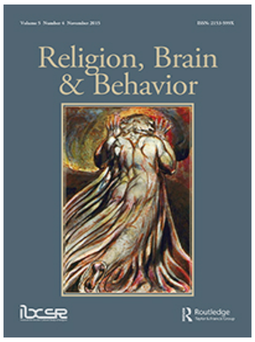

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The problems and origins of belief in Big Gods

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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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(4) Trustworthy persons then grouped together and, to prevent free-riding, adopted hard-to-fake commitments, such as costly signals and CREDs (pp. 94–117)

(5) Through the solidarity-promoting mechanisms of costly signals and CREDs, prosocial religions emerged, giving rise to large-scale societies (pp. 124–139).

(6) Over the centuries, however, prosocial religions and large-scale societies brought about secular governments, which are replacing the need for Big Gods (pp. 170–192).

(7) Thus, although Big Gods were necessary for the emergence of prosocial religions and large-scale societies, they may no longer be needed in the contemporary secular world (pp. 12, 172–175, 192).

This is a valid argument that Norenzayan convincingly defends, and in so doing captures the current paradigm in the science of religion. However, like any good argument, it makes clear which premises are potentially unsound or in need of further justification. In what follows we engage with those points (viz., premises 2 and 3 from above), identifying several ideas that require clarification or highlight avenues for future research.

The problem of belief

Norenzayan argues that the necessary precondition for large-scale cooperation and prosocial religions is the belief in interventionist Big Gods who punish wrongdoers: “Belief in certain kinds of supernatural watchers – Big Gods – is an essential ingredient that, along with rituals and other interlocking sets of social commitment devices, glued together total strangers into ever-larger moral communities” (p. 10). This is certainly a justified claim. Many of the most advanced theories in the evolution of religion, including Wilson’s (2002) group-selectionist model and Whitehouse’s (2004) modes theory, are based on it. Furthermore, as cogently argued by Norenzayan, an overwhelming amount of evidence supports the claim that people who are socially monitored (e.g., Bateson, Nettle, & Roberts, 2006) or undertake hard-to-fake commitments (e.g., Sosis, 2005) are more prosocial than those who do otherwise. Hence, once the human mind produced the idea of interventionist Big Gods, belief in that idea catalyzed rituals and social commitments that brought about large-scale cooperation and prosocial religions (p. 106).

To be sure, Norenzayan argues that belief preceded hard-to-fake commitments (see premises 2 and 3). After all, the conception of interventionist Big Gods must have come prior to the rituals made on their behalf (p. 6). It is important to stress here that Norenzayan uses the term “belief” in the same sense as other cognitive scientists of religion – that is, as a mental image or idea rather than a knowledge claim (e.g., “a talking tree” vs. “2 + 2 = 4,” respectively). These early beliefs were therefore not propositional assertions but rather intuitions that were themselves byproducts of evolved cognition (p. 16). Yet, because these intuitions were so catchy and encouraged prosocial behavior, they quickly propagated from one mind to the next, eventually spreading to larger populations (pp. 106–110). Nevertheless, to solidify these beliefs, communities began to engage in worship, ritual, and other religious actions, which also served as hard-to-fake commitments and the foundations for large-scale societies (p. 99).

Hence, it was religious belief that drastically changed human environments: belief catalyzed ritual, ritual united communities, and united communities engendered large-scale societies – to the extent that belief in Big Gods produced the agricultural revolution, and not vice versa (p. 120), a point we return to in the next section. With so much of his argument resting on "belief," Norenzayan thus offers several important caveats about belief, which deflate traditional epistemic problems (e.g., foundationalism, coherentism, reliabilism, etc.). For instance, Norenzayan shows that beliefs depend upon context (p. 39), require enculturation to be held across the life span (p. 113), and need ritual to produce shared intentionality (p. 114). Yet, despite these caveats, Norenzayan leaves several other points about belief unexplored, which render premises 2 and 3 needing further qualification.

Above all, there is a gap in Norenzayan's account about the onset of believing in interventionist gods as "contagious ideas" (p. 106) and "passionate commitments" (p. 110). While the former is holding an MCI (i.e., remembering something counter-intuitive), the latter is being in a dispositional state to behave as if the MCI were true. One of the problems is determining the link between the two with respect to the emergence of interventionist Big Gods. According to Norenzayan (p. 8), the belief in such gods arose as a "mutant" byproduct of cognition, meaning that it was an MCI. He goes on to say, however, that people who believed this would have been trusted more than nonbelievers, implying that some were in a dispositional state such that they were passionately committed to the idea (pp. 60–61). This begs the question: which of the two mental states was it? Was it catching the "contagious idea" of interventionist Big Gods? Or was it seeing oneself as being in the purview of such gods? Although Norenzayan often equivocates between the two, his overall account puts a great deal of stress on the latter (p. 10), leading to the following questions that beg clarification regarding premises 2 and 3: how did the earliest believers transition from simply holding a "contagious idea" about interventionist Big Gods to having a "passionate commitment" toward them? Moreover, how would others have known who simply held the contagion and who had passionate commitments?

These queries underscore the following problem of belief: because belief is an internal mental-state subjectively known only (if at all) to the self, it is a private affair that is objectively difficult for others to discern. Yet religion evolved to find a way around this problem. As anthropologist Roy Rappaport (1999, pp. 119–120) has observed, the solution is ritual, which serves the dual function of (1) signaling commitments to others and (2) accepting for oneself the beliefs associated with the rituals in question (Sosis, 2003). Although Norenzayan (p. 103) recognizes the first function, he neglects to consider the second. Importantly, it is the second that is necessary for turning MCIs into passionate commitments, for it is through participation in ritual that participants accept whatever is encoded in the ritual itself, thus amplifying beliefs, constructing ideologies, and reifying social orders (Rappaport, 1999, pp. 129–130). If the idea of interventionist Big Gods arose among people already engaged in religious rituals, which is likely (e.g., Alcorta & Sosis, 2005), those rituals would have been the necessary and sufficient conditions for converting a "contagious idea" into a "passionate commitment." This conditional not only qualifies premises 2 and 3, but also changes Norenzayan's overall account in an important way. It was ritual – not belief – that drastically changed human environments, transforming MCIs into passionate commitments and thus engendering hard-to-fake commitments. Thus, the cornerstone of prosocial religion – and all religion for that matter – would be ritual, not belief (Rappaport, 1999, p. 26).

By focusing so much on belief, Norenzayan faces yet another problem. This is to characterize religion and the lack thereof as ways of believing or not believing, respectively (p. 47). However, as anthropologists repeatedly find through fieldwork, religion is less about believing a set of propositions and more about forging social commitments and maintaining social identities (e.g., see Rappaport, 1999). Nowhere is this point more clearly needed than with Norenzayan's discussion of atheism. Although Norenzayan provides a brilliant analysis of the varieties of atheism (mind-blind atheism, analytic atheism, incredulous atheism, and apatheism; see pp. 178–190), he nonetheless treats atheism, like belief, as a steady way of thinking about the world (p. 47). However, this overlooks the fact that belief and disbelief are not steady cognitive styles but rather social commitments and identities that develop and fluctuate across the life span. Like the above comments on ritual, this point does not challenge Norenzayan's argument but rather his overall story. If atheism is a social commitment and identity – instead of being a simple lack of belief – it may be on the rise today not because people are believing less in Big Gods, but rather they are finding new forms of social commitment and identities outside of traditional prosocial religions.

The origins of belief

Turning more closely to premise 2, Norenzayan argues that belief in Big Gods and the expansion of large-scale cooperation originated in the Near East around the Holocene (pp. 7, 19–32, 118–124). Above all, Norenzayan should be commended for delving into the archaeological record. However, despite finding compelling evidence for communal ritual practices at the Pre-Pottery Neolithic A–B (PPNA–B) site of Göbekli Tepe, the debate over whether early religion drove the transition to farming or the opposite is far from settled. Archaeologists have long debated the drivers of this major turning point in human history. These range from climatic change (Childe, 1971; Richerson et al., 2001) to demographic pressure (Binford, 1968; Bocquet-Appel, 2011; Flannery et al., 1969) and increased social demands (Cauvin, 2002).

Ritual practices documented at PPN archaeological sites at the time of the agricultural transition, such as Göbekli Tepe, are thought to reflect a new ideological system often cited as the harbinger of established formal religious systems to come (Cauvin, 1994). Norenzayan references Cauvin (1994), who proposed that the birth of the gods likely predated plant and animal domestication, because he believed that agriculture would not have been possible without a prior mental transformation allowing people to conceive of controlling their environment. However, other archaeologists argue that humans were active in the construction of their environments long before domestication occurred (Miller, 2011; Stiner et al., 2000). Likewise, several lines of evidence suggest that domestication may have already begun in the surrounding region by the time that Göbekli Tepe was occupied. Because human control over local species, especially plants, had likely already started by the time that rituals were practiced at Göbekli Tepe, Cauvin's argument that religion came first may not fit Norenzayan's application.

Norenzayan finds that the "early stirrings to worship Big Gods" (p. 120) came before agriculture at the unprecedented ritual center of Göbekli Tepe based on the lack of domesticated species at the site, but this does not necessarily mean that early religion predates the early stirrings of agriculture in the region. It is difficult to detect the earliest phases of the domestication process that lasted about 4000 years (Zeder, 2011). Göbekli Tepe was first used at the early date of 11,500 years ago (BP) and the earliest evidence for fully (morphologically) domesticated wheat from the nearby site of Nevali Çori (c. 50 km from Göbekli Tepe) dates to 10,500 BP (Nesbitt, 2002). This may seem to support the interpretation that plants were domesticated in the region after the Göbekli Tepe rituals took place. However, the early stages of domestication are not marked by morphological change and are often difficult to detect in the archaeological record. Humans began managing the movements of wild animals and cultivating strands of wild plants to control the availability of dietary resources thousands of years before morphological changes occurred. Thus, non-morphological markers must be used to assess whether the communities practicing communal rituals at Göbekli Tepe engaged in animal management (i.e., human control over the movement and culling of animal herds; see Zeder & Hesse, 2000) and the selective cultivation of plants. The earliest evidence of animal management found near to Göbekli Tepe is also from Nevali Çori (10,500 cal. BP; see Arbuckle & Özkaya, 2006), but more distantly, interesting finds on Cyprus indicate that animals were sufficiently controlled by humans to have been transported to the island by boat as early as about 11,400 cal. BP (Vigne et al., 2011). This establishes that the management of animals on the mainland began earlier than the current evidence suggests, closer to the time when rituals were practiced at Göbekli Tepe.

The early stages of the animal domestication process (management) occur before morphological changes appear and are best detected using demographic (age/sex) methods. However, demographic methods may not be appropriate to investigate management at Göbekli Tepe due to the ritual nature of the site. The population structure of sheep from Göbekli Tepe favors prime-aged animals, the expected pattern for a hunted wild population (Peters et al., 2013) where humans are expected to preferentially target the largest and fattest animals. However, according to the ethnographic record, specific animals of certain ages and sexes are often selected for ritual activities, in particular adult animals that can feed more people and often have increased symbolic importance (Twiss, 2008). Therefore, the faunal evidence may correctly indicate that fully domesticated animals were not used at the site, but the use of animals in the early stages of animal management or the intentional selection of wild animals over managed animals for ritual activities cannot be ruled out based on the current evidence.

Regardless of the problems associated with assessing the stage of plant and animal domestication at Göbekli Tepe, the site clearly "attracted pilgrims from a wide range of locations" (p. 120), as indicated by the stone tools that came from as far west as Cappadocia and as far east as Lake Van (c. 600 km range; see Carter et al., 2013), so settlement sites where the pilgrims lived should be examined to assess whether they had started the shift from foraging to farming. Evidence of early plant cultivation within a 200 km radius indicates that the transition to agriculture had already begun in communities that likely used the site for ritual activities beginning by 11,500 BP, including Hallan Cemi (11,500 BP), Demirkoy (11,400 BP), and Queramel (11,500 BP) (Tanno & Willcox, 2012). These sites were within the range of eastern stone sources that were exploited to make the tools found at Göbekli Tepe (Carter et al., 2013). Cultivated plants or knowledge of the domestication process would likely have been brought to Göbekli Tepe along with the materials for stone tools that originated near these sites. Even earlier evidence for weedy species shows that fields were under cultivation by 13,000–12,000 cal. BP at the more distant sites of Abu Hureyra and Mureybet in modern-day Syria (Zeder, 2011). Thus, several indicators establish that the management and cultivation of wild plant species had long been underway in the greater region by the time that rituals occurred at Göbekli Tepe. Even though only wild species have been found at the site thus far, knowledge of the early agricultural processes of plant and animal management was available to communities that used Göbekli Tepe and wild species may have been preferred for their symbolic value in ritual activities, which likely differed from that of domesticated varieties (Arbuckle, 2009; Shanklin, 1985).

One additional problem with Norenzayan's discussion of early belief is that although ideological change could potentially predate agriculture, belief in Big Gods is nearly impossible to detect in the archaeological record. The shift to Big God beliefs may be better documented by focusing on the later shift to the doctrinal mode of religiosity that Whitehouse and Hodder (2010) documented after the forager-to-farmer transition, but before the advent of writing at the site of Çatalhöyük. Göbekli Tepe may be situated too early to examine the Big God beliefs that concern Norenzayan, because rituals there likely reflect the imagistic mode. Although a significant increase in the visibility of ritual activity reflecting larger-scale and increasingly public ritual practice appears in the archaeological record during the PPN period when Göbekli Tepe was used (Goring-Morris & Belfer-Cohen, 2011) and this generally indicates that changes in ritual practices occurred during the shift to agriculture, Big God beliefs are more likely associated with doctrinal mode rituals (Atkinson & Whitehouse, 2011), which appear later with full-fledged farming and thus, were not likely a part of the mode of religiosity present at Göbekli Tepe.

In sum, Norenzayan's discussion of the rise of large-scale, cooperative groups that practice prosocial religion and agriculture is appealing, but the origin of this shift is difficult to pinpoint using only one narrow time frame from one ritual-use site. Other permanent habitation sites in the surrounding region provide better contexts to track the state of domestication during the PPNA when rituals were practiced at Göbekli Tepe. Moreover, the success of religion in facilitating the high level of cooperation needed to practice agriculture may be better studied not by examining the early origins of this transition, but rather the end of the PPN culture. A hiatus in the archaeological record beginning c. 8500 BP indicates that the PPN culture eventually collapsed and was replaced by full-fledged agriculturalists practicing rituals characteristic of the doctrinal mode of religiosity c. 1000 years later. Perhaps the type of religion documented at Göbekli Tepe did not produce a level of cooperation that could fully overcome the many challenges documented during this period, such as climate change, deforestation, and disease (Goring-Morris & Belfer-Cohen, 2010). Even if religion could have driven the shift to agriculture, in its early form it was not enough to sustain early farming groups in the long run.

Conclusion

As mentioned, Norenzayan's text presents a timely and synthetic account of CSR and ESR that, with further considerations to the soundness of his argument, could become the paradigmatic outlook in the contemporary science of religion. For this reason we look forward to his reply, and the many discussions that will result from his important book.

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Big Gods and the greater good

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Ara Norenzayan's proposal that "prosocial religions, with their Big Gods who watch, intervene, and demand hard-to-fake loyalty displays, facilitated the rise of cooperation in large groups of anonymous strangers" (p. 8) is one of the most plausible and promising general accounts on offer. But the "devil is in the details." And so are the gods. Here we argue that some details of Norenzayan's proposal appear to be internally inconsistent or are (as yet) not to be preferred over alternative accounts in light of available data. We should start by saying – lest we be smitten from above – that our goal is not to win an intellectual contest but to clarify contours of the playing field. Indeed, we ourselves are agnostic on many of the following questions that we raise.

Adaptation and the arrow of religious history

Norenzayan's claim is that moralizing gods are a cultural adaptation that arose in the Holocene and facilitated levels of group cooperation that competitively displaced other religions. We think that this is probably right, but the following questions remain unresolved.

To begin with, it is not completely clear that the historical arrow actually flies in this direction. As Norenzayan acknowledges, current foragers do not necessarily represent religions of the late Pleistocene. Moreover, neither extant forager nor cosmopolitan religions are as divergent as he describes. It is not uniformly the case that forager religions have "no religious morality, no belief in an afterlife – theirs is nothing like the major religions" (p. 8). (Indeed, if dualism is a native cognitive disposition as Bloom (2005, 2007) proposes and Norenzayan endorses, it would be surprising if afterlife beliefs are cultural innovations of the last few millennia. This alone seems to pose a problem for Norenzayan's position.) Nor is it agreed that the gods of large-scale societies were moral deities. Baumard and Boyer (2013) characterize the gods of cosmopolitan Greek, Roman, Mayan, Aztec, Chinese, and Hindu religions as generally uninterested in human morality. And leaving aside the issue of Eastern or classical religious traditions, Semitic textual scholarship would not affirm that "everywhere in the Hebrew Bible… it is asserted that God sees everything" (p. 24). There are many Gods in the Hebrew Bible, commanding allegiance of the henotheistic Hebrew people at different times, not all of whom

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