

## COMMENTARY

### Big Gods Were Made For Big Groups

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Schloss and Murray's (S&M) thoughtful map of the supernatural watcher hypothesis' current landscape sizes up its two theoretical peaks and empirical valleys. The Cooperation Enhancement (CE) and Punishment Avoidance (PA) accounts both recognize the prosocial effects of religious systems but diverge in their analysis of who directly benefits from this prosociality—individuals or groups. As important as the distinction between whether supernatural punishment is a group- or individual-level adaptation, is the distinctions as to whether these adaptations are genetic or cultural in origin. Each combination of factors (see Figure 1) requires different theoretical commitments and makes different empirical predictions that can then be tested against existing evidence. I want to take this opportunity to briefly review both debates and explain why I believe the CE account rests on firmer empirical ground.

		MODE OF SELECTION	
		Genetic	Cultural
BENEFICIARY	Individual	<i>Does not explain cultural variability in god-beliefs</i>	<i>Does not fit the pattern of ethnographic evidence</i>
	Group	<i>Neither early nor modern human societies meet the necessary preconditions for viable GGS of cooperation</i>	<i>Empirically sound and plausible</i>

Figure 1

#### Cultural versus Genetic Origins

S&M are for the most part mute on the issue as to whether the belief in supernatural punishing agents represents a genetic adaptation or a cultural one. However, this debate is worth briefly engaging, as it can constrain the viable set of solutions to the other debates that are raised.

Before fully wading into the CE territory, S&M make a short note about the long-standing debates over group selection, warning their fellow explorers that, however attractive the arguments that lie ahead may be, *here be dragons*. The authors are right to

be wary of explanations of human cooperation that heavily rely on *genetic* group selection. The strict preconditions (small group size, intense selection pressures and very limited between-group migration) required for genetic group selection are not met by either early or modern human societies. However, though often conflated with its genetic cousin, the *cultural* group selection argument requires fewer and less strenuous situational preconditions and is very plausible mechanism for the selection and transmission of cooperative norms (Henrich, 2004). As a result, cultural—and not genetic—group selection provides a more viable explanation for the origins of supernatural punishment beliefs.

Individual-level genetic explanations of supernatural punishment beliefs also run into a number of challenges (see Shariff, Norenzayan & Henrich, 2009). Most prominent is the marked variability in god-beliefs across both cultures and time. If beliefs in omniscient and punitive gods were genetic adaptations rooted in our Pleistocene past, we would expect these beliefs to be psychological universals, or, at the very least, more prevalent in hunter-gatherer societies. Neither is true. Zuckerman (2007) estimates that there are 700 million atheists in the world, and there are many millions more who do not believe in the type of “big gods” that meet the requirements for establishing credible deterrence. Indeed, anthropological studies of foraging societies tend to reveal beliefs in local gods with limited monitoring and punitive powers (Boehm, 2008).

Big gods with omniscient scope and ultimate punitive abilities tend to be relatively recent Holocene innovations and ones that developed only in large, complex societies (Henrich et al. 2010; Roes & Raymond, 2005; Snarey, 1996). This pattern of evidence is most consistent with these beliefs originating as byproducts of existing cognitive adaptations, emerging relatively late in human history (5,000-10,000 years), and spreading culturally, rather than genetically.

### **Individual- versus Group-Level Selection**

Thus focusing solely on cultural evolution, the PA and CE accounts can be distinguished as to whether supernatural punishment beliefs benefit the individual and are transmitted via conformity biases, prestige biases, etc., or whether the beliefs confer benefits on the group and are transmitted via cultural group selection.

The ethnographic evidence just discussed is of note here, as well. The PA account predicts that as the benefits of defection rise in comparison to the costs, the defection-suppressant effects of big gods would become less adaptive and the gods themselves would wane. The CE account instead predicts that as defection becomes more tempting for individuals, and thus more liable to destabilize groups, the need for big gods increases.

The evidence supports the latter account. The big gods most effective at enforcing norm-following behavior have been shown to emerge as societies grow larger and more complex, more market integrated or more reliant on cooperation to address scarce resource allocation (Roes & Raymond, 2005; Henrich et al. 2010; Roes & Raymond, 2005; Snarey, 1996)—that is, as societies grow more vulnerable to being undermined by individual defection, and individuals see more opportunity and benefit for gaming the system. These examples feature societies where defection becomes increasingly valuable for the individual, increasingly costly to the society, or both. They thereby comprise (to my knowledge) the best existing evidence pitting the individual and group-level explanations against each other.

Thus, my reading of the empirical work on this issue currently favors the cultural, group-level selection account (again, see Shariff et al., 2009, for more detail).

### **Addressing Issues with the Cultural Group Selection Account**

S&M spread their criticism judiciously between the various positions and raise a number of outstanding issues for this account. For one, S&M question whether belief in supernatural punishing agents can really serve as an actual human punishment replacement when such a belief deviates so starkly from reality. I refer readers to Johnson's (this issue) remarkably thorough response explaining why such agents are not only highly effective at establishing cooperation via the threat of punishment, but also cognitively 'cheap' (making them ideal candidates for culturally selected evolutionary byproducts).

S&M also raise the important issue of disbelief, which presents a significant threat to any cooperative system that relies on sustained widespread belief for its function. However the dire need for mechanisms within religions to minimize disbelief can provide a mutually revelatory explanation for the power and peculiarity of anti-atheist prejudice (AAP). Though research on the topic is thin, recent studies show AAP to be more robust than "standard-fare" outgroup hostility, despite the fact that atheists form neither a coherent nor an especially visible group (Gervais, Shariff & Norenzayan, under review). Moreover, consistent with predictions made by the discussed theories, experiments show that the negativity directed towards non-believers is driven primarily by distrust, rather than dislike, and this distrust is powerfully predicted by endorsement of the belief that a supernatural monitor encourages good behavior.

Numerous aspects of religions can be seen as mechanisms aimed at deflecting or disincentivizing doubt (see Dennett, 2006), but AAP represents a particularly necessary and overt one. Admittedly, to sustain cooperation, these mechanisms would have *had* to be very effective at minimizing disbelief within those societies that relied on supernatural sanctioning to sustain cooperation<sup>1</sup>. Keeping levels of defection-by-disbelief low enough to prevent overwhelming freeriding has in all likelihood been one of the primary selective challenges in the evolution of religious system. The religions of today bear the marks of that legacy; more than a few researchers have noted the remarkable effectiveness of religions (more so than any other cultural institution) at preventing defection under even the most extreme circumstances (e.g. Berman, 2009). Indeed, one could argue that's what they were built to do.

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<sup>1</sup> When we look at the world today, it at least *seems* that those societies that rely least on religious beliefs to do the heavy lifting of cooperation are also those that are most tolerant of religious disbelief – though this awaits proper empirical testing that takes into account the numerous possible confounds.

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