How “big gods” make us play nice

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Gods are *everywhere*. In all recorded societies, people believe in some form of spiritual beings, whether gods, spirits, ancestors, ghosts – or all of the above. But they aren’t all the same. For example, if you cheat, steal, or murder, the God of the Bible will definitely get cross with you. But in many traditions, gods and spirits don’t especially care whether you behave badly, as long as you respect them. Interestingly, these differences in gods’ moral interests may be related to the type and scale of their host cultures. A burgeoning line of research is investigating whether moral gods influence how societies evolve and how big they get. Three recent papers – one each from 2014, 2015, and this year – use unique, creative methods to test this hypothesis.

In village or band societies, where everyone personally knows and recognizes everyone else, the kind of morality that involves fairness, reciprocity, and doing good often takes care of itself: cheat your neighbor, and he’ll know exactly who to blame. Your reputation will suffer, and pretty soon, you’ll *have* to beg your neighbor’s forgiveness. In such societies, many researchers think that there’s little need for a supernatural policeman.

But in larger-scale societies, where social networks are too sprawling to keep track of each person’s reputation – and where people regularly interact with people they’ll never see again – another level of oversight may be needed. Specifically, gods who care about human morality may facilitate cooperation in these contexts by enforcing a sense of ubiquitous, invisible oversight. When you share with strangers the belief that God can see everything you do, then you might be more likely to behave nicely toward each other, even if you’re strangers. Then – *bam!* – you’ve got the scaffolding for a big civilization, with trading routes, markets, cities, and agriculture.

It’s a compelling hypothesis. But because it makes predictions about events that happened thousands of years ago – when small-scale societies made the first transitions to larger, more complex forms – testing it is a complicated affair. However, some recent studies have used

novel methods to make some much-needed progress. The first, a 2014 paper authored by Carlos Botero of North Carolina State University along with an international team of collaborators, used detailed ethnographic statistics and climate data to test a complicated hypothesis about the prevalence of moral "big gods," or spiritual beings who care directly about human morality. Botero and colleagues postulated that societies in more ecologically difficult or unpredictable environments would be more likely to have moral gods because challenging environmental circumstances require greater cooperation, and moral gods (according to their model) enable tighter, more reliable cooperation.

The researchers took their ethnographic data from a recent version of the Ethnographic Atlas, a well-known worldwide survey of more than 1,200 societies. The Atlas includes data on such questions as whether societies have animal husbandry, agriculture, multiple layers of government or hierarchy, and what form their religious beliefs take. The researchers then took climate data from a variety of sources – including NASA – and tested to see whether climate and economic variables could predict whether societies had moral high gods.

Their results were intriguing. Societies that inhabited more ecologically challenging environments were, indeed, more likely to have gods who cared about human morality. Additionally, having the institution of private property rights was a strong predictor of having moral gods, as was political complexity (that is, having layers of hierarchy above the band or village level). Together, the model could predict whether a society had moral gods with more than 90% accuracy.

Unlike some previous tests of the moral high gods hypothesis, Botero's model statistically controlled for whether societies were linguistically or historically related to each other. This control was important, because common ancestry could easily confound the results – for example, both the Pennsylvania Amish and village Sicilians have a moral high god (the Christian God), but only because they're both inheritors of medieval European Christianity. Controlling for such common descent enabled Botero and colleagues to get a cleaner window into the specific ecological and economic predictors of moral gods.

But Botero's model still didn't specifically test whether moral gods actively *helped* the development of complex, hierarchical cultures with property rights. That is, the direction of causality wasn't clear – it could just as easily be that societies tended to first develop complex governments, and only then to come up with moral gods. Another paper, published in 2015 by Joseph Watts of the University of Aukland along with an international team of co-researchers, set out to fix this problem.

Watts and colleagues used a Bayesian analysis of linguistic data to build family trees of 400 Austronesian societies (that is, Indian and Pacific Ocean island cultures) that established their likely pathway of descent. Using ethnographic data taken from periodicals, journal

articles, and encyclopedia articles, the researchers searched for information about these societies' level of social complexity and religious beliefs, coding the societal characteristics of the 96 Austronesian cultures that had the richest records.

Importantly, Watts and colleagues distinguished between "broad supernatural punishment" and "moral high gods" – something Botero's team didn't do. In a nutshell, broad supernatural punishment refers to *any* instance of spiritual beings or forces taking an interest in humans' moral behavior. This could include ancestor spirits, local forest gods, or even the Hindu concept of karma. The designation of "moral high god," on the other hand, is restricted to gods who are considered the creator of the universe *and* take an active, punitive interest in human moral affairs. (This combination isn't as common as you might think – many societies have creator gods who are "otiose," or uninterested in human life.)

Using the family trees of all Austronesian societies, Watts and colleagues then ran statistical models to test whether supernatural punishment or moral high gods were historically likely to appear *before* or *after* social complexity. This process isn't too different from using the similarities between, say, German and English to determine what their common ancestor language must have been like, and when they split from each other.

The results offered qualified – not perfect – support for the moral-gods hypothesis. Statistically, broad supernatural punishment was likely to *precede* societal complexity. That is, societies that came up with spirits who cared about human morality tended to later become more politically complex. But on the other hand, moral high gods tended to appear only *after* political complexity was achieved. So "big gods" didn't help societies get bigger, but only appeared once societies got big. Meanwhile, neither moral high gods nor local moral gods predicted the *stability* of complex cultures. Complex societies with or without morally concerned spiritual beings were equally likely to lose their complexity and revert to small-scale life over time. So supernatural morality seemed to play a role in larger-scale societal cooperation, but the story wasn't perfectly straightforward.

Of course, both of the previous studies used only ethnographic data. Fortunately, just this year – in early 2016 – a team led by Benjamin Purzycki of the University of British Columbia published a study in *Nature* that adds experimental findings to the mix. Rather than merely doing retrospective analyses of society-level data, Purzycki and his colleagues went to eight wildly different societies around the world – from Vanuatu and Fiji to Mauritius and the Tyva Republic in Russia – and tested whether people's ideas about the morality of their gods influenced how they actually behaved.

Specifically, the researchers asked local residents to play a resource-sharing game in which participants were given two cups, 30 coins, and a single die with only two colors (three sides of each color). There were two versions of the game: a "self" game, in which one cup stood for the

participant and the other stood for a distant (anonymous) member of their own religion; and a "local co-religionist" game, in which one cup stood for a local member of their religion, and the other stood for a distant member of the same faith. For each die roll, subjects were asked to *mentally* choose a cup. If the die roll came up one color, they would put a coin in the cup they'd chosen. If it came up another color, they'd put the coin in the cup they hadn't chosen. Simple enough, right?

Of course, since there was no record of each turn's choice, participants could easily put the coin in whatever cup they liked, and claim that they were following the die roll. Since each participant got exactly 30 coins to play with, and since each turn was decided by a simple 50/50 die roll, an even split should be expected – about 15 coins for the one cup and 15 for the other. But since the game allowed unmonitored cheating, in reality, participants tended to fudge a little – they put more coins in their own cup than would be expected by chance in the "self" game, and more in the local co-religionist's cup in the "local co-religionist" game. (There was real money at stake – the experimenters actually gave the coins to the people represented.) However, this trend was moderated by whether participants thought their high gods knew, cared about, and punished unfair behavior. Namely, participants who believed that their high gods cared about people's moral behavior tended to put nearly equal amounts into the anonymous other's cups and into their own (or their local neighbor's). These effects were highly significant, suggesting that the effect was robust across different societies and environments. Interestingly, participants were also asked about *local* gods' knowledge about and interest in human morality – but these responses didn't predict their behavior in the coin-and-cup game at all. It was only *high gods* who seemed to influence people to behave fairly and impartially.

Taken together, these three studies suggest that gods' moral interests may genuinely be related to whether societies grow larger and more complex, as well as to how people actually behave in resource-sharing situations. According to Purzycki and colleagues,

> when people are more inclined to behave impartially towards others, they are more likely to share beliefs and behaviours that foster the development of larger-scale cooperative institutions, trade, markets and alliances with strangers. This helps to partly explain two phenomena: the evolution of large and complex human societies and the religious features of societies with greater social complexity that are heavily populated by such gods.

In other words, believing that God or gods take an interest in human morality encourages people to treat each other more impartially (as long as they share the same God, of course). In turn, these moral-god beliefs can help stabilize and spread social institutions that depend on anonymous cooperation, such as market economies and large governments. While still

contested, this hypothesis (or family of hypotheses, really) has gained some formidable support in these three very different studies. In my next post, I'll discuss some of the implications of these research papers – and some questions they raise.

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*The question of whether and how religious ideas influenced the development of complex civilizations is a **super** interesting one, with lots of very smart people on both sides of the debate. As it happens, the research project I'm involved with, the Modeling Religion Project, is tackling this question with models that investigate how religious ideas (like moralizing gods) might affect wide-scale cooperation – and competition. Interested? Check out my new dedicated blog at the Huffington Post to follow the Modeling Religion Project as it unfolds.*

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