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Belief in moralizing gods

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Abstract

According to Alexander's [Alexander, R. D. (1987). The biology of moral systems. New York: Aldine de Gruyter] theory of morality, human social groups became large as a result of between-group competition over preferred habitats and resources, but although larger social groups are more successful in competition, they also experience more pressures to fission. Morality unites a society by limiting infringements upon the rights of other society members, so if larger societies are indeed more likely to split, then those that remain intact may be expected to have more effective inviolable moral rules, such as those imposed by moralizing gods. Cross-cultural analyses support this line of thought: more competition between societies is found in environments rich in resources and larger societies tend to occupy these environments; large societies engage in external conflicts at higher rates and are more often characterized by beliefs in moralizing gods. An additional explanation is briefly discussed, and we speculatively picture the historical chain of events giving rise to a belief in moralizing gods.

Keywords: Morality; Gods; Religion; Society size; Competition between societies; Internal conflicts; Stratification; External threats; Water scarcity

1. Introduction

Beliefs in gods differ across time and place (Eliade, 1949). Anthropologists have classified such beliefs. The subject of this paper is belief in moralizing gods, that is, gods who tell

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people what they should and should not do. As we shall see, such gods are especially frequent in relatively large societies, a pattern that we shall explain in terms of Alexander's (1987) theory of morality. We begin by summarizing relevant parts of his theory, and then test a number of hypotheses, which in our view follow from it.

1.1. Why live in groups?

Conflicts of interest are inevitable in sexually reproducing organisms and group living often exacerbates them. Those who live in close proximity compete for mates and other resources, and also transmit diseases relatively easily. In short, living in groups is costly and there must be countervailing advantages for group living to persist. Alexander argues that these advantages fall into five classes: aggregation at common resources, which may then permit information sharing, predator avoidance (selfish herds *sensu*; Hamilton, 1971), active defence against predators, nepotistic investments in kin, and cooperative hunting and killing of otherwise unattainable large prey.

At first sight, none of these advantages of group living seems capable of explaining the existence of large human groups. Clumped resources, protection from predators, and kin selection obviously fail to explain the large size of human societies, as well as their growth in size through history. Furthermore, Alexander (1987, p. 79) argues that, "As hunting weapons and skills improved, group sizes should have decreased." His proposed solution is that other human groups were the "predators" who prompted people to live in ever-larger societies. This hypothesis is attractive because it can explain any size of society in terms of balance-of-power races, and it accords with the ecological dominance of humans as a species. In rich habitats, smaller, weaker groups or societies are overwhelmed by larger societies, or pushed from the habitat to ecological outskirts, like deserts or tundras. "In effect, organized in competitive groups, humans have become their own principal 'hostile force of nature'" (Alexander, 1987, p. 79). Alexander considers this idea of human intergroup competition central to his theory of morality. We test the following hypotheses derived from this account:

I. Conflict and war will be relatively frequent in habitats that are relatively favorable for human living.
II. The frequency of conflict and war will be positively correlated with society size.
III. The size of societies will be relatively large in preferred habitats.

Notice that large society size is not an automatic consequence of rich habitats, because many small societies could instead occupy these habitats.

With increasing social group size, fissioning becomes more likely, but is also more dangerous because other, large, competing groups can profit from such a split. Conflicts can be quite intense even in small units like families, so a large group has to solve the problem of internal conflicts to prevent fission. Alexander suggests that moral rules keep a human group or society together, by proscribing infringements (beyond a certain point) on the rights of other group members. So if larger societies experience more pressures to split but also pay

greater costs for doing so, we may expect them to manifest a greater emphasis on moral rules that prevent in-group infringements.

Moral rules imposed by humans invite the suspicion that some members of the group will profit more from these rules than others, but such concerns are alleviated if the rules are convincingly portrayed as having been imposed by impartial gods without material or reproductive interests. If obedience to a certain religious moral rule indeed serves the interests of certain people, they may be expected to deny selfishness and to maintain that the rule reflects the will of the moralizing god. Finally, gods are often considered immortal, so their rules may last for many generations. We therefore suggest that an effective way to impose moral rules on society members is to have these rules prescribed by gods. Belief in these gods signals acceptance of the rules and, for the reasons stated above, we expect more support for the rules (and thus more belief in moralizing gods) in larger societies. Thus, we hypothesize that:

IV. Society size is positively correlated with belief in moralizing gods.

2. Material and methods

2.1. Data sources and variables

In 1962, George P. Murdock initiated a systematic data base of the best early descriptions of hundreds of human societies, for the purpose of testing cross-cultural hypotheses. The earliest descriptions of societies were preferred, in an attempt to minimise the influence of western, European culture on the data. Since describers themselves often were western and, since many societies were "pacified" by the West around or shortly before the time of earliest description, the influence of western culture on the data may still be considerable, but coders have tried to minimise such biases (Ember & Ember, 1992).

The first *Ethnographic Atlas* (Murdock, 1967) coded 862 societies on over 100 variables. Murdock and others continued to add new societies, to correct errors, and to add new information, and a second edition, covering 1267 societies, was published by Douglas White in 1990, followed by a revised 1999 edition with these same 1267 societies, published by Patrick Gray. We report results using this 1999 edition, as well as a few statistics to indicate that the same results would hold if earlier editions were used.

The *Standard Cross-Cultural Sample* (SCCS) is composed of 186 societies, chosen to represent the known cultural types of the world from among the societies in the Ethnographic Atlas. The SCCS was constructed in an attempt to avoid or at least reduce the magnitude of "Galton's problem," the statistical non-independence of different societies as a result of cultural diffusion. The latest edition has over 1800 variables, so the SCCS contains much more information about fewer societies than the EA. Because new variables about warfare were added in 1995, we distinguish between two editions: SCCS 1986 and SCCS 1995. The other SCCS variables used by us remained unchanged. We used both the EA (because of the greater number of cases) and the SCCS (to avoid Galton's problem), although several variables needed for our tests are only available in the SCCS.

2.1.1. Moralizing gods

These beliefs are coded as EA variable 34 (“High Gods”) and (identically) as SCCS variable 238. A “High God” is described as “a spiritual being who is believed to have created all reality and/or to be its ultimate governor, even though his/her sole act was to create other spirits who, in turn, created or control the natural world.” The values of this variable are: (1) absent or not reported; (2) present but not active in human affairs; (3) present and active in human affairs but not supportive of human morality; and (4) present, active, and specifically supportive of human morality. We recoded values 1–3 into 1, thus, creating a variable that we call *Moralizing Gods*, with two values: either supportive of human morality, or not.

2.1.2. Society size

The size of societies was estimated using EA variable 33 (SCCS variable 237): “jurisdictional hierarchy beyond local community.” The codes are: (1) no levels (no political authority beyond community); (2) one level (e.g., petty chiefdoms); (3) two levels (e.g., larger chiefdoms); (4) three levels (e.g., states); (5) four levels (e.g., large states).

2.1.3. Resource base

SCCS variable 859, resource base, is classified in three groups: low resources: (1) hunting and/or marine animals, (2) gathering, (3) fishing; unstable resources: (4) mounted hunting, (5) shifting cultivation, with digging sticks or wooden hoes, (6) anadromous fishing, (7) horticultural gardens or tree fruits; high resources: (8) intensive agriculture, with no plow, (9) advanced horticulture, with metal hoes, (10) shifting cultivation, with metal hoes, (11) pastoralism, (12) intensive agriculture, with plow. We recoded values 1–3 as 1 (*low resources*), 4–7 as 2 (*unstable resources*), and 8–12 as 3 (*high resources*).

2.1.4. External conflict

We constructed a synthetic variable as the mean of six SCCS 1986 variables that concern external warfare and other forms of hostilities toward members of other societies: 774 external warfare (with other societies), 780 hostility toward other societies, 783 acceptability of violence toward people in other societies, 892 frequency of external war — attacking; 893 frequency of external war — being attacked, and 907 value of war: violence/war against nonmembers of the group. The six variables correlate significantly ($P < .01$) among themselves, and the new synthetic variable “external conflict” correlates positively ($P < .001$) with each constituent variable. In SCCS 1995, two new variables were used to measure external conflict: 1650 frequency of external war, resolved ratings, and 1653 reliability of external warfare ratings.

2.1.5. Internal conflict

This variable was similarly constructed as the mean of six variables in SCCS 1986 about conflicts within societies: 666 moderate or frequent interpersonal violence, 767 conflict (social or political) in the local community, 768 conflict between communities of the same society, 770 resort to physical force by disputants in settling disputes, 773

internal war (between communities of the same society), and 891 frequency of internal war. All six variables correlate significantly with one another ($P < .01$), except that the relation between 666 and 891 is not significant, and that between 770 and 891 only at the .05 level. In data source SCCS 1995, two new variables were used to measure internal conflict: 1649 frequency of internal warfare, resolved ratings, and 1652 reliability of internal warfare ratings.

2.1.6. Region

This variable (number 200 for the SCCS and 90 for the EA, 91 for EA 1999) describes in which of the six geographical areas (Africa, Circum-Mediterranean, East Eurasia, Insular Pacific, North America, and South America) each society is located.

2.2. Statistics

Associations among these predominantly ordinal variables were assessed with Kendall rank-order correlation coefficients, and Kendall partial rank-order correlation was used whenever the influence of a third (qualitative) variable had to be eliminated (Moran, 1951; Siegel & Castellan, 1988). To assess an association between focal variables while controlling for more than one putative confounds, a multidimensional contingency table was built and analysed with a multinomial linear model. A complete model, which included all single variable effects and all possible interaction terms, was first built, then simplified according to standard procedures (Crawley, 1993): higher interaction terms were first tested, and the least and nonsignificant ($P > .05$) ones were removed. This process was continued until all remaining terms were significant ($P < .05$). Whenever present, overdispersion was corrected. The interaction between the two focal variables was then tested in presence of all other remaining terms. All computations were performed with GLIM version 4 (Baker, 1987). All *P*-values are two-tailed.

3. Results

Tests of the cross-cultural associations predicted by Hypotheses I to IV are presented in Table 1. All four are supported by modest but highly significant correlations. Competition between societies (external conflict), resource-rich environments, and society size are all positively associated with one another. These results support Carneiro's (1970) theory of the origin of the state; to our knowledge, this is the first statistical test of his theory.

Table 1 and Fig. 1 also show that large societies are more often characterized by a belief in moralizing gods. (Essentially, identical results are obtained if one analyzes data from earlier editions of the *Ethnographic Atlas*.) This is consistent with previous work stating that religious beliefs are correlated with existing social relations in a given society, and in particular with the prediction that large communities are likely to have high gods (Peregrine, 1996; Swanson, 1960).

Table 1
Test of the four hypotheses, using data of the EA and the SCCS

Hypotheses	*n*	Kendall's τ	*P*-value	Data source
I. Resource base and external conflict	176	0.16	.01	SCCS 1986
	154	0.21	.002	SCCS 1995
II. External conflict and society size	174	0.23	$<10^{-4}$	SCCS 1986
	152	0.22	.001	SCCS 1995
III. Resource base and society size	184	0.48	$<10^{-4}$	SCCS
IV. Moralizing gods and society size	167	0.29	$<10^{-4}$	SCCS
	724	0.37	$<10^{-4}$	EA 1999

Variables are (re)coded in such a way that correlations are positive if they meet the theoretical expectations. Tests are two-tailed.

3.1. Putative confounding variables

3.1.1. Region

Some variables may have particular values mainly in some parts of the world, thus, creating a spurious correlation. When the variable "region" is taken into account, all hypotheses are still statistically supported (Hypothesis I: $P<.01$, Hypotheses II–IV: $P<10^{-4}$).

3.1.2. Classical religions

We also evaluated the influence of "classical religions" such as Christianity, Islam, Hinduism, and Buddhism. These religions have recently spread, so when they are found in ostensibly distinct societies, these are not really independent cases and, if these classical

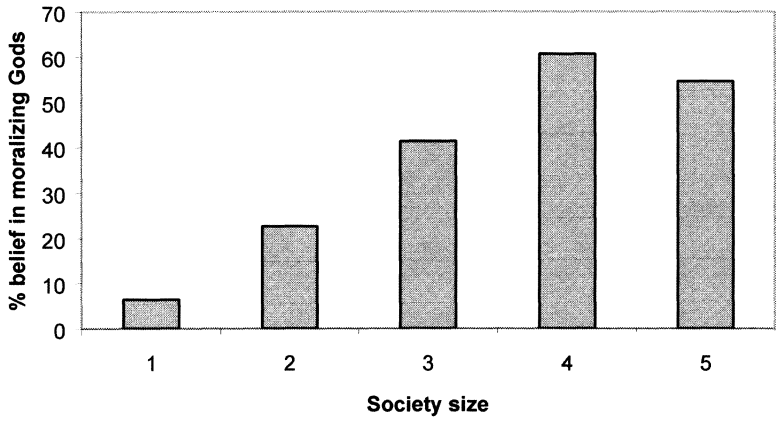

Fig. 1. Society size and belief in moralising gods. The size of a society is estimated by the jurisdictional hierarchy beyond the local community, from 1 (no levels, i.e., no political authority beyond community) to 5 (four levels, e.g., large states). Data from the 1990 edition of the Ethnographic Atlas. A similar shape found with the EA 1967, EA 1999 and the SCCS. See Section 2.1.

religions are moralizing *and* found in large societies, this would explain the relationship found between society size and a belief in moralizing gods. SCCS variable 713, "religion" codes religions as being either preclassical, classical, or a mix of the two; Table 2 shows that Hypothesis IV remains significant when SCCS variable 713 is controlled.

3.1.3. Population density

Another possibility is that it is not society size itself, but the population density associated with large societies, that somehow engenders belief in moralizing gods. However, Hypothesis IV remains significant when "population density" (SCCS variable 64) is controlled (Table 2).

3.1.4. Stratification

An alternative, "Marxist" explanation for beliefs in moralizing gods in large-scale societies focuses on stratification: power and wealth distinctions between groups. In societies with large power differences, moral rules could be presented as divine creations in order to render them nonnegotiable, protecting the privileges of the powerful and wealthy (Cronk, 1994, p. 90; Irons, 1991, p. 72). Large societies do tend to be class- or caste-stratified: society size is highly correlated with variable EA 65 "class stratification" (Kendall's $\tau = 0.51$, $P < 10^{-4}$, $n = 1025$) and with variable EA 67 "caste stratification" (Kendall's $\tau = 0.32$, $P < 10^{-4}$, $n = 1017$), so stratification, not society size per se, could be the real source of beliefs in moralizing gods. However, when class or caste stratification are controlled, the correlation between society size and belief in moralizing gods remains highly significant (for EA 1990: class stratification, partial Kendall's τ: 0.30, $P < 10^{-4}$; caste stratification, partial Kendall's τ: 0.22, $P < 10^{-4}$; similar results for EA 1967 and EA 1999). Since further correlations between caste and class stratification and region (geographical area) might still be relevant, Hypothesis IV was also tested with a multinomial linear model (see Table 2): a

Table 2
Test of Hypothesis IV (society size and moralizing gods), in the presence of alternative hypotheses

		Partial correlation		Linear model	
Alternative hypotheses	n	Partial Kendall's τ society size vs. moralizing gods	P-value	Interaction: society size vs. moralizing gods (change in deviance)	Data set
Class stratification, caste stratification and region	591	–	–	$\chi^2 = 20.6$, $df = 4$, $P = .0004$	EA 1990
Classical religion	85	0.16	.031	–	SCCS
Population density	165	0.31	$< 10^{-4}$	–	SCCS

"Moralizing gods," "class stratification," "caste stratification," "classical religion" and "population density" are variables (re)coded in such a way that correlations are positive if they meet the theoretical expectations.
Partial correlations are computed by controlling for one alternative hypothesis.
For the linear model, the interaction between society size and moralizing gods (i.e., Hypothesis IV) is tested in presence of all other significant interactions (i.e., alternative hypotheses).
Test are two-tailed.

linear model was built with the two focal variables ("moralizing gods" and "society size") and three others ("region," "class stratification," and "caste stratification"), corresponding to a five-dimensional contingency table, and was then simplified following Crawley (1993). All nonsignificant ($P > .5$) interaction terms were removed, which eliminated all three-, four-, and five-way interactions. The resulting model explains 91.9% of the total scaled deviance, with no overdispersion (scaled residual deviance/residual $df = 0.92$). The interaction between "moralizing gods" and "society size" was tested by removing the corresponding term from the model, in presence of all other remaining terms ($\chi^2 = 20.6$, $df = 4$, $P = .0004$). In this model, the interaction between "moralizing gods" and "class stratification" is not significant ($P > .8$), whereas that between "moralizing gods" and "caste stratification" is ($P = .0054$).

The "Marxist explanation" is therefore not rejected, since it is supported for caste stratification. Both the "Alexander" and the "Marxist" explanation may thus be true. Caste stratification is a more extreme form of stratification than that by class, since the former is endogamous, so one could conclude that stratification becomes more predictive of beliefs in moralizing gods as it gets more extreme. This makes sense: why bother to impose a religion in defence of stratification, if the society is not very stratified in the first place?

After evaluating the above four possible confounding variables, we conclude that all four hypotheses are supported empirically by our analysis of several editions of the databanks.

3.2. Internal conflicts

More internal conflicts (presumably causing fissions) were not found with increasing society size in data source SCCS 1986 (Kendall's $\tau = 0.075$, $P = .21$, $n = 171$), but in SCCS 1995, society size does correlate significantly with "frequency of internal warfare, resolved ratings" (# 1649), Kendall's $\tau = 0.24$, $P < 10^{-4}$, $n = 150$; controlling for "reliability of internal warfare ratings" (# 1652): partial Kendall's $\tau = 0.13$, $P = .023$, $n = 149$. The difference may stem from the fact that in SCCS 1986, the definition of internal war excludes feuding: warfare between political communities within the cultural unit, i.e., contiguous political communities that are culturally similar.

Somewhat puzzling is our inability to find less internal conflict in societies with a belief in moralizing gods. In the SCCS 1986: "moralizing gods" by "internal conflicts": Kendall's $\tau = 0.002$, $P = .98$, $n = 157$; in SCCS 1995: Kendall's $\tau = 0.019$, $P = .80$, $n = 139$. Controlling for "reliability of internal warfare ratings" (# 1652): partial Kendall's $\tau = -0.012$, $P = .83$, $n = 138$.

Do humans actually follow the moral and religious rules that they publicly endorse? We speculate that they do, depending on the sanctions involved. In a society dominated by certain (religious) moral rules, adhering to them must often bring respect and acceptance, while rejecting them can cause isolation and failure. People will therefore usually embrace publicly accepted moral rules, but rational, "selfish" individuals are not expected to follow *all* moral rules *all* the time, especially if following a certain moral rule in a certain situation would seriously hurt self-interest. But there are times, as with the threat of another, hostile society, when moral rules rise in importance, and it is then that we expect a measurable effect of a

belief in moralizing gods, and of morality in general, on the frequency of internal conflicts. We were unable to test this, since neither the EA nor the SCCS codes for situations when collective, unified action is perceived as vital for a society and actions provoking internal conflicts are clearly not accepted.

3.3. Related research

Swanson (1960) attempted to show that belief in high gods (whether moralizing or not) is related to political complexity. Underhill (1975) argued that economic complexity is more important. Note that both sides in this debate seek the reasons for a society's features, including religion, in its *internal* workings. Alexander, by contrast, hypothesises that the size of societies, their moral systems, and the complexity of a society's political and economic organisation are all *responses* to competition with other societies and the maintenance of balances of power between societies. The support that Swanson and Underhill find for their respective hypotheses does not contradict Alexander's more general, evolutionary theory of morality.

3.4. An additional explanation

Snarey (1996) has proposed that religious belief has an ecological rationale, arguing that the survival of social groups in very dry environments would be promoted by a supreme deity's legitimisation of moral codes that protect natural resources, and that the members of such societies will therefore be relatively likely to conceive of a supreme deity who prescribes human morality. Snarey coded his own variables in the SCCS and found belief in moralizing gods to be more prevalent where water is scarce. Using variables available in the SCCS, we find similar results. For instance, in SCCS variable "niche rainfall" (# 855), we recoded the wet environments into one value (values $1–4=1$) and found a significant correlation (Kendall's $\tau=0.385$, $P<10^{-3}$, $n=168$) between this recoded variable and "moralizing gods." This significant correlation still holds when controlling sequentially for society size, population density, region, classical religion, or stratification. However, we found no relation between the dryness of the environment and society size, in contrast to the relation between external conflict and society size. It may be adaptive to increase society size in response to the threat of other human societies, but not in response to the threat of drought. (In the EA, which Snarey did not use, no variable like "niche rainfall" is available, and our efforts to address the issue using a recoded version of variable 95, climate: primary environment, produced equivocal results.)

4. Discussion

Imagine a society confronted with a threat of disaster. The reaction of most members of that society might be to display (sincerely or otherwise) a willingness to be altruistic and cooperative. In other words, they show their willingness for collective action (Olson 1965), in order to deal with the threat. Now suppose that this imaginary society is not characterised by

belief in a moralizing god. We presume that a single threat of disaster will usually not cause a switch in prevailing beliefs, but what if threats recur more or less regularly, as is likely when there are large, hostile neighbouring societies, or recurring droughts? Then, there will be a need to be prepared for the next threat and a need to induce society members to cooperate with one another for that purpose. In the case of hostile neighbouring societies, this means cooperation for defensive reasons and, in that of recurring droughts, the maintenance of irrigation networks and restraint in water usage. Cooperation between large numbers of people invariably means moral rules regulating relations between them and prescribing what is right and what is wrong, and with these recurring threats, the moral rules should be imposed with authority. How better than by a moralizing god? Our results, and those of Snarey, support the idea that societies confronted with recurring threats to their existence are likely to be characterised by beliefs in such gods.

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