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What is This?

The Birth of the Gods Revisited: A Partial Replication of Guy Swanson's (1960) Cross-Cultural Study of Religion

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Guy Swanson's classic study The Birth of the Gods *provides a general theory and set of hypotheses about the origins of religious beliefs that have found wide acceptance in the sociological and anthropological study of religion. Although these hypotheses seem both logical and persuasive, the cross-cultural methods Swanson used to evaluate them seem less compelling. This article examines Swanson's sample and methodology, and, through a replication employing a sample of 72 native North American societies, finds several significant problems in Swanson's work. However, the replication also demonstrates that, despite methodological problems, Swanson's hypothesis concerning beliefs in a high god are supported. The implications of this partial replication, both for our interpretation of Swanson's work and for our understanding of the origins of religious beliefs, are explored.*

It has been more than 3 decades since Guy Swanson first published his groundbreaking comparative work on the origins of religious beliefs, *The Birth of the Gods* (1960). The intervening years have seen it become a standard work in the anthropological study of religion. However, Swanson's work was conducted at a time when modern cross-cultural research was in its infancy, when methodological issues of sampling and measurement in cross-cultural research had not been widely addressed, and when available statistical techniques were limited to those that could be done by hand, slide rule, or mechanical calculator. This article presents the preliminary results of a replication of Swanson's work, informed by the past three decades of research in ethnological theory and method, and aided by powerful computer-based statistical analyses.

This is not the first replication of Swanson's work to be attempted. Davis (1971) performed a replication similar to this one with inconclusive results. Underhill (1976) attempted to replicate one of Swanson's hypotheses concerning the presence of a belief in high gods, and although successful, his work shares a common problem with Davis's. Both used data sets that did not control for societies whose religious beliefs had been altered by missionization. In addition, Davis's replication had what I consider to be unacceptably low coder reliability. For these reasons, I felt an additional replication of Swanson's influential work was warranted.

SWANSON'S ORIGINAL STUDY

Swanson's (1960) work addressed a fundamental question: "From what experiences do the ideas of the supernatural arise" (p. 1)? Swanson immediately rejected two potential but untestable answers to the question: (a) that they arise from the experiences of prehistoric peoples, as survivals from the past; and (b) that they arise from real interactions with the supernatural (pp. 5-6). He argued, contrary to these ideas, that we must seek the roots of supernatural beliefs in the world of living humans and their relations with one another (pp. 14-18).[1]

Swanson (1960) developed a general theory for the origins of religious beliefs based on Durkheim's notion that social experiences are the most likely source of religious concepts (pp. 18-19). Swanson argued that religious beliefs will reflect "specific groups

that persist over time and have distinctive purposes," and he defined these types of groups as "sovereign" (p. 20). By sovereign, Swanson meant groups that have "original and independent jurisdiction over some sphere of life" (p. 20). For Swanson, the structure or organization of the supernatural reflects the structure of sovereign groups in a given society, and relations with the supernatural reflect the relations between individuals and the sovereign groups in that society (pp. 26-27).

Swanson (1960) set out to test this general theory on seven specific aspects of religious beliefs: monotheism, polytheism, ancestor worship, reincarnation, prevalent witchcraft, immanence of the soul, and supernatural sanctions on morality. I discuss his specific hypothesis concerning the origins of each of these beliefs below. Swanson tested these hypotheses using a cross-cultural sample of 50 societies, selected from a subsample of societies that had extensive descriptions of religious beliefs and practices chosen from Murdock's (1957) World Ethnographic Sample and specifically selected using random sampling stratified by each of Murdock's 50 world regions (Swanson, 1960, pp. 32-37). Swanson coded a total of 39 variables concerning sociopolitical organization and religious beliefs for each of these 50 societies (pp. 37-53).

THE REPLICATION

SAMPLE

The sample I used for this replication is a regional one, consisting of 72 native North American societies (not folk cultures or ethnic groups) selected from the *Encyclopedia of World Cultures, Volume 1: North America* (O'Leary & Levinson, 1990). I chose this volume as my sampling frame because its editors suggest that "for researchers interested in comparing cultures, the encyclopedia serves as the most complete and up-to-date sampling frame from which to select cultures for further study" (p. xviii). The specific sample I used were those native North American societies covered by full ethnographic descriptions in the encyclopedia. These had been selected by the editors "to ensure that the full range of cultural variation among Native American cultures" was covered (p. xxv), and thus I felt they would provide a reasonably broad and

unbiased sample. In addition, the full ethnographic descriptions available for these societies allowed both initial coding and the location of additional references, and therefore made this particular sample of societies very attractive (the names of these societies are listed in the appendix).

I decided to use a regional sample of native North American societies for two primary reasons. First, I specifically wanted to apply Swanson's theory to my research on the evolution of chiefdoms in North America (Peregrine, 1992). Second, regional samples are particularly useful for replications. As Burton and White (1991) suggest, "Worldwide studies require for their validity, where possible, replication across different regions" (p. 71). In terms of actually performing a replication with a regional sample, Burton and White explain that "replication can occur either by first constructing a regional model and then attempting to replicate it within other regions or by first constructing a worldwide model and then testing whether it replicates within regions" (p. 62). This replication takes the latter tack, testing Swanson's general model to see if it applies to a regional sample of native North American societies.

CODING METHODS

Because this is a replication and not an original piece of research, a primary methodological issue was trying to recreate Swanson's methods of operationalizing his variables. Swanson (1960) provided a fairly detailed account of his variables and coding scheme (pp. 32-54, 194-213), but because many of the variables are quite abstract or complex (such as unlegitimated contacts) and/or involve subtle distinctions (such as measuring the prevalence of witchcraft), re-creating his exact methods of operationalization was fairly difficult. I first looked at five of the eight societies in my sample that overlapped with Swanson's (Blackfoot, Iroquois, Pomo, Western Shoshone, and Winnebago) and attempted to code them based on his written operational definitions. I found significant differences between my codes and his on many of the variables. I then tried to determine how, or by what logic, I could arrive at the same coding Swanson did for each variable. I recoded those five groups from scratch, some several times, until I felt I understood how Swanson had operationalized his variables. I then coded

five additional societies, three of which (Yokuts, Yurok, and Zuni) overlapped with Swanson's sample, and found my results to be fairly consistent with his (although I did not do a formal reliability estimate because there were only three societies).[2]

Once I was able to reliably reconstruct Swanson's methods of operationalization, I trained two students in Swanson's coding methods using the same 10 societies, and together we developed a set of general principles and decision-making strategies for coding. During the summer of 1992, the two students independently coded the remaining 62 societies in the sample (the codebook they used is given in the appendix). The students used the *Encyclopedia of World Cultures* (1990) and the *Handbook of North American Indians* (1978) as their basic sources of information and coded all the variables they could from them. Information not contained in those two references was sought in other sources. If little or no information was available for a particular variable, it was coded as missing data. In all cases, the students coded the society as it was at the time of first European contact, although they did not code specific focal communities.

The students and I met weekly to compare the cases they had coded. When their codes for a particular variable conflicted, the students discussed their rationale for coding the case in a particular way, and they came to a consensus on the coding. I acted as mediator and as Swanson's interpreter in these discussions. In some cases, the students were unable to reach consensus, and, in those cases, the variable in question was coded as missing data.

ANALYSES AND RESULTS

I tried to recreate the analytical techniques used by Swanson (1960) to test his hypotheses. In some cases, I went beyond those techniques or modified them, but always in the spirit of conducting an analysis that closely resembled Swanson's own. One must recognize that when Swanson did this study, computers were not typically used in social research, so all his calculations were done by hand (and without a pocket calculator). Evaluating hypothesis using chi-square tests with multiple control variables, for example, would have been very difficult for Swanson, and he apparently took a number of shortcuts (like combining categories) to make the job easier—shortcuts I could and did avoid where possible.[3]

TABLE 1
Cross-Tabulation of High God by
Levels of Sovereign Organization

	Levels of Sovereign Organization			
	One or Two	*Three*	*Four or More*	*Row Total*
High god				
Absent	20	10	2	32
	(15.6)	(10.0)	(6.4)	71.1%
Present	2	4	7	13
	(6.4)	(4.0)	(2.6)	28.9%
Column total	22	14	9	45
	48.9%	31.1%	20.0%	100.0%

$\chi^2 = 14.66939$, $df = 2$, $p = .00065$

NOTE: Expected values given in parentheses.

Monotheism. Swanson (1960) defined societies as monotheistic if there was a high god (defined as the creator of all things and/or controller of all things) present in the society's belief system, regardless of whether or not other gods were also present (pp. 55-57). Swanson's primary hypothesis concerning monotheism was that it will exist where "there are three or more types of sovereign groups ranked in hierarchical order" (pp. 64-65). Swanson also hypothesized that high gods are more likely to be active in human affairs where there are three or more sovereign groups (p. 78). My replication supports Swanson's first hypothesis (Table 1) and may support his second (although low expected frequencies, some less than one, make this result tenuous), even though Swanson himself was not able to support his second hypothesis. In addition, Swanson hypothesized that high gods are likely to be active in human affairs when there are many nonsovereign groups affecting daily life (p. 79). Although Swanson found strong support for this hypothesis in his sample, I did not.[4]

Polytheism. Swanson (1960) defined societies as polytheistic if superior gods (supernatural beings who control one or more human activities) were present (pp. 82-84). He suggested that "when different activities become clearly distinguished as the occupations of some, but not all, adults, a model for the superior god is present"

(p. 86). Based on this, Swanson hypothesized that polytheism will be present when a society has a large number of either communal or noncommunal specialists (p. 86) (communal specialists are public officials who meet a "customary criteria of performance" that are not normally met by individuals in the society, whereas noncommunal specialists produce goods or services for specific individuals in the society, and also meet some customary criteria of performance in their production or service—see Swanson, 1960, 201-202). Whereas Swanson found support for a relationship between polytheism and the presence of noncommunal specialists (p. 86), I did not find support for either of his hypotheses.[5]

Swanson (1960) expanded this idea and hypothesized that "in kin societies, the number of superior gods will be a function of the number of communal specialists. . . . [Whereas] in non-kin societies, the number of superior gods will be a function of the number of non-communal specialists" (p. 93). Swanson tested this idea (p. 93), and although he suggested finding support, he admitted his sample and statistical techniques make the findings tenuous. Because there are four variables (communal specialists, noncommunal specialists, sovereign groups based on kinship, and superior gods) affecting one another in a predicted manner, I attempted to evaluate this hypothesis using log-linear analysis. The null hypothesis for this analysis was simply that there was no association between the variables. I tested several alternative models, one that is predicted based on Swanson's hypothesis, and three that contradict Swanson's hypothesis. The null hypothesis had a higher p value than any of the other models, suggesting no association between these variables.[6]

Active ancestral spirits. Swanson (1960) hypothesized that "we shall expect to find active ancestral spirits in societies which have kinship organizations more embracive than the nuclear family, organizations that continue to embody the purposes which, as former members of these groups, the ancestors shared" (p. 100), although he suggested this may not be the case where the ultimately sovereign group (that is, the most inclusive sovereign group) is based on kinship (p. 102). Swanson found a significant relationship between these variables (pp. 103-104), whereas I found none.[7]

Reincarnation. According to Swanson (1960), beliefs in reincarnation are "likely to appear where the pattern of settlement is by small hamlets, compounds of scattered rural neighborhoods, or other units smaller than a village" (p. 113), and he found support for this hypothesis in his sample (p. 114). However, Swanson also suggested this may not be the case if the ultimately sovereign group is the nuclear family or is even based on kinship (pp. 113-115). I could not find support for this hypothesis, even when I controlled for ultimately sovereign organizations based on nuclear families or on kinship.[8]

Immanence of the soul. By immanence of the soul, Swanson (1960) meant the belief that the soul resides in the body, rather than being somehow separate or different from the body (pp. 121-122). Swanson used the presence of exuvial magic, cannibalism, the taking of scalps or bones of victims, or human sacrifice as evidence of a belief in the immanence of the soul (pp. 122-123). He developed a complex set of hypotheses for predicting the immanence of the soul (pp. 125-130). He hypothesized that immanence of the soul will not be likely where a society's members belong to a large number of organized groups, or where there are sovereign kinship organizations, but that immanence of the soul will likely be present when a society has unlegitimated contacts with other societies (Swanson defined unlegitimated contacts as situations in which people are forced to interact with one another in the absence of legitimated social controls or arrangements [p. 126]) or small settlement units.

To test this complex hypothesis, Swanson (1960) used an equally complex analytical technique (pp. 130-132). He cross-classified each society on the four hypothesized active variables and assigned a weight to each society based on the expected relationship of these variables to the immanence of the soul. He then cross-tabulated these weights by the presence or absence of the immanence of the soul in that society and found a strong positive relationship (p. 131). I replicated this procedure with my data set and found no relationship.[9] I also ran a series of cross-tabulations using multiple control variables but still found no significant relationships among them.

Prevalence of witchcraft. In contrast to his hypothesis about the immanence of the soul, Swanson's (1960) hypothesis concerning

the prevalence of witchcraft is simple: Witchcraft will be most prevalent in societies where unlegitimated contacts with other societies are common (p. 146). He found strong support for this hypothesis, but I was unable to find similar support in my sample.[10]

The supernatural and morality. Swanson (1960) hypothesized that the supernatural will impose sanctions on morality "whenever it is necessary to reinforce unstable but important moral relations between individuals" (p. 162). These include situations where there are debt relations, social classes, individually owned property, specialists in noncommunal activities, unlegitimated contacts, primogeniture, and the presence of matrilineality. Swanson, however, only found a significant relationship between supernatural sanctions on morality and a cluster of these variables (debt relations, social classes, individually owned property, and primogeniture) related to interpersonal wealth differences (p. 168). I did not find a relationship of this kind in my sample.

DISCUSSION

NEGATIVE RESULTS OF THE REPLICATION

I was unable to replicate most of Swanson's findings. Swanson's hypotheses concerning polytheism, ancestral spirits, reincarnation, the soul, witchcraft, and morality are not supported by my data set. The obvious question that arises is why? Four answers come to mind: (a) misinterpretation of Swanson's variables or their operationalization; (b) unreliable coding; (c) a biased sample; or (d) problems with Swanson's original study.

There is a possibility that I misinterpreted Swanson's variables and operationalization, and hence coded different information than Swanson had. As I explained earlier, I had a difficult time arriving at criteria for determining how to match my interpretation of Swanson's variables with his actual coding of them, and, despite my attempts at reconciling them, I may not have replicated Swanson's methods of operationalization accurately. This could mean that my tests of Swanson's hypotheses do not validly replicate Swanson's tests but actually test different variables and different concepts.

Whereas it is possible that I operationalized variables in a way different from Swanson (1960), it seems unlikely that my coding was itself unreliable. By having two students code each case and reconcile their differences, the coding should be uniform across the 72 cases. It is interesting to note that the areas in which Swanson and his students found the most disagreement in coding (see pp. 222-226) were the same areas my students disagreed about most frequently. They had significant problems coding the sovereign organization variables, columns 12 through 16, as well as the degree of threat from armed attack and amount of bride price (indeed, we ended up not coding the latter two). Because these are some of the same variables Swanson found unreliable, it suggests to me that my coding strategy did parallel Swanson's to a significant degree.

Ember and Ember (1992) found that using coded values based on consensus, as I did, tended to decrease the likelihood of finding significant associations (p. 172). They suggest that conflicts over coding reflect poor documentation, and the process of resolving conflicting codings allows cases that might otherwise be given a missing value (because of unclear documentation) to be included in the data set, and hence tends to increase the amount of random error in the data (also see p. 202). To test whether this could be a problem in my data set, I reevaluated Swanson's primary hypothesis concerning the belief in active ancestral spirits, eliminating all cases in which there were conflicts on either of the variables. Only 30% of the cases survived this culling, which suggests that the documentation for these cases may not be very clear, at least not on these variables. However, as Table 2 demonstrates, the results achieved with the original, resolved data and with the nonresolved data do not differ dramatically.

It is also possible that my sample was biased. However, as I explained above, the sample was designed to provide a broad overview of diversity in native North American societies and should not be inherently biased. To empirically test the sample's representativeness, I compared the proportion of each language family present in the sample with those expected from Murdock's (1967) *Ethnographic Atlas*. I found that, when compared to the sample of *Atlas* societies, I had oversampled Eskaleut and Iroquoian speakers and undersampled Penutian and Mosan speakers. Because the *Atlas* provides the most extensive catalogue of societies currently

TABLE 2
Cross-Tabulation of Sovereign Kinship
Organizations by Active Ancestral Spirits

	Active Ancestral Spirits		
	Absent	*Present*	*Row Total*
Sovereign kinship organizations[a]			
Absent	10	23	33
	(11.0)	(22.0)	47.8%
Present	13	23	36
	(12.0)	(24.0)	52.2%
Column total	23	46	69
	33.3%	66.7%	100.0%

$\chi^2 = .26136, df = 1, p = .60918$

Sovereign kinship organizations[b]			
Absent	2	10	12
	(2.7)	(9.3)	54.5%
Present	3	7	10
	(2.3)	(7.7)	45.5%
Column total	5	17	22
	22.7%	77.3%	100.0%

$\chi^2 = .55216, df = 1, p = .45744$

NOTE: Expected values given in parentheses.
a. Using all data, including reconciled cases.
b. Using only cases where both coders agreed.

available, it would appear that my sample may not accurately represent the range of diversity in native North American societies (unfortunately, the value of chi-square in this case is unreliable due to low expected frequencies, so I cannot be certain that there is indeed a significant difference between my sample and Murdock's), but it is unclear to me what effect the unrepresentativeness of my sample would have on the replication. One can envision this bias as increasing random error in the data, and this could have the effect of lowering the potential of finding significant associations between variables, hence making it difficult to replicate Swanson's findings. However, if the relationships Swanson predicts are indeed applicable holoculturally, then it really should not matter what sample is chosen as long as there is adequate variability among the cases (see Ember & Otterbein, 1991, pp. 222-225). As I

explained earlier, the sample I used was selected to ensure such variation was represented, and I therefore argue that it is unlikely that sample bias would have prevented me from replicating Swanson's results.

A potential problem, however, is the fact that a purely North American sample of societies has been known to produce unique results. For example, Murdock's (1949) hypothesis that the relative contribution of males and females to subsistence predicts post-marital residence has only been supported with samples of native North American societies, while being rejected with worldwide samples (Ember & Levinson, 1991, p. 85). The uniqueness of native North American samples is reasonable, based on the large number of hunting and gathering societies present in North America (Ember, 1975), and because all native North American societies evolved over a relatively short period of time and from a relatively small number of founding societies. In addition, there are few highly centralized societies in native North America, and no states, and there appear to be few of the tightly corporate descent group systems found commonly in Africa and Oceania. This suggests that the range of variation in native North American societies may differ significantly from the range of the variation in a worldwide ethnographic sample.

Finally, it is possible that my failure to replicate Swanson's findings is due to Swanson's results not being replicable. I would not want to accept this conclusion, however, until the potential problems with my replication are resolved. This conclusion would not be entirely warranted, in any case, because there was one area of Swanson's study that I was able to replicate.

POSITIVE RESULTS OF THE REPLICATION

Swanson's hypothesis that the presence of a belief in a high god is related to multiple levels of sovereign organizations was supported by my data set. It is interesting that similar positive results were obtained independently by Davis (1971) and Underhill (1976). Davis used Naroll's (1967) worldwide "probability sample" of 60 societies to replicate and reassess all of Swanson's original results. Davis was only able to replicate two of them: (a) the relationship between high gods and the number of sovereign organizations (Davis, 1971, pp. 95-97) and (b) the relationship be-

tween active ancestral spirits and the number of sovereign organizations (pp. 102-103). Underhill also attempted to replicate and refine Swanson's original conclusions concerning the origins of monotheism, using data from Murdock's (1967) *Ethnographic Atlas*. He found that not only is there a strong positive relationship between levels of jurisdictional hierarchy (which he calls "political complexity") and the presence of a high god, but there is an equally strong one between primary subsistence economy (which he calls "economic complexity") and the presence of a high god (see also Simpson, 1979, 1984). However, Underhill argued that whereas economic complexity and political complexity are intercorrelated, economic complexity has a stronger independent effect on the presence of a high god than political complexity (pp. 853-855; but cf. Swanson, 1976).[11]

As I suggested earlier, there are significant methodological problems in both Underhill's (1976) and Davis's (1971) work. Underhill relied on precoded data from Murdock's (1967) *Ethnographic Atlas* for his research. The focal times for many of the societies in the *Atlas* are long after contact, and it is likely that contact and missionary work had already altered indigenous religious beliefs in some of the coded societies. There is also no attempt to control for subsistence change, and, because Bradley, Moore, Burton, and White (1990) have demonstrated that changes in subsistence patterns are common in contact situations, there is a possibility that the correlation Underhill observes between "complex" subsistence economies and the presence of a high god might be derived from changes following contact.

Davis's (1971) work has similar problems. Because Naroll's (1967) "probability sample" is based on a subset of societies in the *Ethnographic Atlas* (Murdock, 1967), it shares the problem of postcontact religious change. Indeed, Davis tells us that eight of the societies in his sample had adopted Islam, Christianity, or Buddhism (p. 131). In addition, it is clear from Davis's reliability estimates that he was unable to accurately replicate Swanson's (1960) methods of operationalization. More than one third of the variables Davis coded have greater than a 50% disagreement with Swanson for the cases that occur in both samples (Davis, 1971, pp. 237-239), including several key variables such as superior gods (78% disagreement) and number of sovereign groups (56% disagreement). Intercoder reliability was also fairly low for a number

of the variables in Davis's sample, and indeed the coders had only a 56% agreement on the key variable of number of sovereign groups (Davis, 1971, pp. 235).

Despite the problems in Underhill's (1976) and Davis's (1971) replications, both found that there is a strong, worldwide tendency for societies with multiple levels of political hierarchy to have high gods. The replication of this finding in four independent studies (Swanson's, Davis's, Underhill's and my own), each with different and potentially confounding coding and sampling errors, suggests that a strong positive relationship does indeed exist between belief in a high god and multiple levels of sovereignty.

OTHER POSITIVE RESULTS

In the course of preliminary data exploration, a number of correlations between religious beliefs and social relations not hypothesized by Swanson (1960) became apparent. Two variables in particular, unit of settlement and nature of ultimately sovereign organization (kinship), seemed related to many of the coded religious beliefs. By recoding and reanalyzing these two variables and their interrelations, I arrived at a number of synthetic positive conclusions that tend to support Swanson's overall theory for the origins of religious beliefs.

Large communities (towns and cities) are likely to have both high gods (Table 3) and a belief that the soul is immanent in the body (Table 4). Small communities (hamlets and villages) are likely to have some belief in active ancestral spirits, if only as a fear of the recently deceased (Table 5). Similarly, societies where the ultimately sovereign group is larger than the nuclear or extended family are more likely to believe in a high god (Table 6) and to have a fear of witches (Table 7). Tribal societies also appear more likely to believe the soul is immanent in the body than others (Table 8), and may be more likely to believe high gods are active in daily life (although low expected frequencies, some less than one, make this finding questionable).

These two variables (unit of settlement and ultimately sovereign organization (kinship)) are significantly intercorrelated, and I suggest they both express something about the scale of social relations. If social relations are personal and small scale, taking place mostly within a hamlet or village, or within a family or local

TABLE 3
Cross-Tabulation of Unit of Settlement by High God

	High God		
	Absent	Present	Row Total
Unit of settlement			
Hamlet	15	1	16
	(11.4)	(4.6)	35.6%
Village/town/city	17	12	29
	(20.6)	(8.4)	64.4%
Column total	32	13	45
	71.1%	28.9%	100.0%

$\chi^2 = 6.19407$, $df = 1$, $p = .01282$, Fisher's Exact Test (one-tailed) $p = .01230$

NOTE: Expected values given in parentheses.

TABLE 4
Cross-Tabulation of Unit of
Settlement by Immanence of the Soul

	Immanence of the Soul		
	Absent	Present	Row Total
Unit of settlement			
Hamlet	19	2	21
	(13.8)	(7.2)	30.0%
Village/town/city	27	22	49
	(32.2)	(16.8)	70.0%
Column total	46	24	70
	65.7%	34.3%	100.0%

$\chi^2 = 8.16425$, $df = 1$, $p = .00427$

NOTE: Expected values given in parentheses.

descent group, it appears more likely that the supernatural will also be personal and small scale, being composed of ancestral spirits. If social relations are less personal and larger in scale, taking place often within large communities and corporate groups, it appears more likely that the supernatural will also be large and impersonal, containing both high gods and witches, both of which can be envisioned as distant, impersonal supernatural entities. In these societies, individuals may also have a sense that they are

TABLE 5
Cross-Tabulation of Unit of
Settlement by Active Ancestral Spirits

	Active Ancestral Spirits		
	Absent	Present	Row Total
Unit of settlement			
Hamlet/village	14	38	52
	(17.1)	(34.9)	77.6%
Town/city	8	7	15
	(4.9)	(10.1)	22.4%
Column total	22	45	67
	32.8%	67.2%	100.0%

$\chi^2 = 3.68196$, $df = 1$, $p = .05500$, Fisher's Exact Test (one-tailed) $p = .05630$

NOTE: Includes societies where belief in active ancestral spirits is only manifested by a fear of the recently deceased. Expected values given in parentheses.

TABLE 6
Cross-Tabulation of Ultimately
Sovereign Organization (Kinship) by High God

	High God		
	Absent	Present	Row Total
Ultimately sovereign organization (kinship)			
Family	16	2	18
	(13.5)	(4.5)	45.0%
Other	14	8	22
	(16.5)	(5.5)	55.0%
Column total	30	10	40
	75.0%	25.0%	100.0%

$\chi^2 = 3.36700$, $df = 1$, $p = .06651$, Fisher's Exact Test (one-tailed) $p = .06904$

NOTE: Expected values given in parentheses.

distinct from the group, that the group need not necessarily include them, and this individuality, in the form of a belief in the immanence of the soul, also appears to characterize beliefs about the supernatural.

These conclusions directly parallel those arrived at by Davis (1971) in his replication. Davis's basic argument was that Swanson

TABLE 7
Cross-Tabulation of Ultimately
Sovereign Organization (Kinship) by Fear of Witches

| | Fear of Witches | | |
	Absent	Present	Row Total
Ultimately sovereign organization (kinship)			
Family	14	8	22
	(10.1)	(11.9)	36.1%
Other	14	25	39
	(17.9)	(21.1)	63.9%
Column total	28	33	61
	45.9%	54.1%	100.0%

$\chi^2 = 4.35837, df = 1, p = .03683$

NOTE: Expected values given in parentheses.

TABLE 8
Cross-Tabulation of Ultimately Sovereign
Organization (Kinship) by Immanence of the Soul

| | Immanence of the Soul | | |
	Absent	Present	Row Total
Ultimately sovereign organization (kinship)			
Family/descent	21	7	28
	(19.4)	(8.6)	43.1%
Tribal	6	11	17
	(11.8)	(5.2)	26.2%
Other	18	2	20
	(13.8)	(6.2)	30.8%
Column total	45	20	65
	69.2%	30.8%	100.0%

$\chi^2 = 13.67868, df = 2, p = .00107$

(1960) was too specific in defining sovereign groups as the primary factor producing religious beliefs, and he suggested a broader alternative, that religious beliefs more accurately reflect "societal complexity" (Davis, 1971, pp. 22-23). Societal complexity, for Davis, is based in food-getting technology, and is defined (after Lenski,

1970) by one of four categories (in ascending order of complexity): (a) hunting and gathering, (b) simple horticultural, (c) advanced horticultural, and (d) agrarian (pp. 26-31).[12] As Davis explained:

> Certain demographic and organizational tendencies are more probable at certain levels of technological development than at others. As a result, each of Lenski's evolutionary stages are assigned a limited range of social structures. It logically follows that each level is also more likely to sustain an appropriate set of religious beliefs. (p. 30)

Davis was able to empirically support this idea, demonstrating a significant negative relationship between societal complexity and animism (pp. 111-112), and significant positive relationships between societal complexity and immanence of the soul (pp. 120-123) and the belief in a high god (pp. 130-133).[13]

As Davis himself pointed out, at least one of the variables I am using as a proxy for the scale of social relations, unit of settlement, is strongly correlated with his definition of societal complexity (p. 119), and I suggest that the nature of the ultimately sovereign organization (kinship) is also related (particularly because it is strongly correlated with unit of settlement). Davis and I, therefore, focus on the same basic thing. We both examine the scale of social relations, albeit using different terminology, and we both demonstrate that religious beliefs tend to be correlated with the scale of social relations (see Davis, 1971, pp. 64-76). I suggest, then, that the scale of social relations is what Swanson was also attempting to examine through his focus on the number of sovereign groups (see Davis 1971, pp. 173-175). So whereas both Davis and I failed to replicate most of Swanson's results, I suggest that we have replicated the main spirit of his ideas.

CONCLUSIONS

There are obvious problems replicating specific aspects of Swanson's work. However, Swanson's general theory, that religious beliefs are correlated with existing social relations in a given society, appears to be supported by this and other studies. Specifically, it is clear that a belief in a high god is more likely in a society with large communities, multiple levels of political hierarchy, and

social differentiation. Other religious beliefs cannot be so clearly associated with specific societal characteristics, but it is clear that there is a general relationship between the scale of social relations and belief systems. The cross-cultural research conducted by Swanson (1960), Davis (1971), Underhill (1976), and myself strongly confirm that the diversity of religious beliefs is not randomly distributed across societies. Rather, variation in religious beliefs is correlated in a variety of ways with a society's forms of social, political, and economic organization. As Durkheim and Marx suggested (and as Swanson, myself, and others have demonstrated), religious beliefs are not historical accidents or random creations of human fancy but develop out of the world of living humans and their relations with one another.

APPENDIX
Codebook Used in the Replication

SN. Society Number

1 = Abenaki	38 = Miami
2 = Aleut	39 = Micmac
3 = Baffinland Inuit	40 = Mohave
4 = Blackfoot	41 = Montagnais-Naskapi
5 = Catawba	42 = Navajo
6 = Central Yup'ik Eskimos	43 = Nootka
7 = Cherokee	44 = North Alaskan Eskimo
8 = Cheyenne	45 = Northern Paiute
9 = Chipewyan	46 = Northern Shoshone
10 = Choctaw	47 = Ojibwa
11 = Copper Eskimo	48 = Osage
12 = Cree, Western Woods	49 = Pacific Eskimo
13 = Delaware	50 = Pawnee
14 = Dogrib	51 = Pima-Papago
15 = Eastern Shoshone	52 = Pomo
16 = Fox	53 = Quechan
17 = Haida	54 = Seminole
18 = Hare	55 = Slavey
19 = Hidatsa	56 = Southern Paiute
20 = Hopi	57 = Tanaina
21 = Ingalik	58 = Tanana
22 = Inughuit	59 = Taos
23 = Iroquois	60 = Teton
24 = Jicarilla	61 = Tewa
25 = Karok	62 = Tlingit
26 = Keres Pueblo	63 = Ute
27 = Kickapoo	64 = Walapai
28 = Kiowa	65 = Washoe
29 = Klamath	66 = Western Apache
30 = Kumeyaay	67 = Western Shoshone
31 = Kwakiutl	68 = W. Greeland Inuit
32 = Labrador Inuit	69 = Winnebago
33 = Lipan Apache	70 = Wiyot
34 = Maliseet	71 = Yokuts
35 = Mandan	72 = Yuit
36 = Menominee	73 = Yurok
37 = Mescalero Apache	74 = Zuni

LF. Language Family

1 = Eskaleut	8 = Hokan-Coahuiltecan
2 = Na-Dene	9 = Aztec-Tenoan
3 = Siouian-Yuchi	10 = Gulf
4 = Iroquoian	11 = Caddoan
5 = Mosan	12 = Zuni
6 = Algonkin	13 = Keresan
7 = Penutian	99 = Missing data

(appendix continued)

APPENDIX Continued

NOTE: The following codes are adapted from Swanson (1960, pp. 196-213). Refer to his annotations for further explanation. Some have been recoded here in the manner Swanson did for analysis, and in some cases recoding was also done to simplify an otherwise cumbersome or confusing coding scheme.

1. Principal source of food (recoded)
   0 = Hunting/gathering
   1 = Fishing
   2 = Herding
   3 = Agriculture
   4 = Mixed hunting/fishing and agriculture
   5 = Harvesting of tree resources (some tending required)
   9 = Missing data
2. Amount of food produced
   0 = Famine not uncommon
   1 = Low—minimal requirements only
   2 = Adequate
   3 = Plenty—frequent surpluses
   9 = Missing data
3. Degree of threat from armed attacks by alien societies
   Variable not coded for this study
4. Size of population (ultimately sovereign organization)
   0 = 1-49
   1 = 50-399
   2 = 400-9999
   3 = 10,000 or more
   9 = Missing data
5. Unit of settlement
   0 = Households, hamlets, or scattered rural neighborhoods
   1 = Villages or camps of at least 50 people
   2 = One or more towns of at least 300 people
   3 = One or more cities of at least 2000 people
   9 = Missing data
6. Individually owned property
   0 = None or uncommon
   1 = Utensils but not significant wealth/status items (except for specifically designated individuals)
   2 = Utensils and significant wealth/status items
   9 = Missing data
7. Debts
   0 = None or no mention
   1 = Moderate or infrequent
   2 = Considerable or common
   9 = Missing data
8. Amount of bride price
   Variable not coded for this study

APPENDIX Continued

9. Social classes
   0 = Absent
   1 = Present
   9 = Missing data
10. Specialties in noncommunal activities (recoded)
    0 = Absent
    1 = Present
    9 = Missing data
11. Specialties in communal activities (recoded)
    0 = None
    1 = One to four
    2 = Five or more
    9 = Missing data
12. Sovereign organizations (recoded)
    0 = One or two
    1 = Three
    2 = Four or more
    9 = Missing data
13. Nature of third sovereign organization—territorial
    0 = Hamlet, neighborhood, band
    1 = Village
    2 = District (any political organization that unifies 0 or 1 but that is not
        codable as 3, 4, or 5)
    3 = Town or city
    4 = Chiefdom (a chief executive who unifies 0, 1, or 3)
    5 = Kingdom (a chief executive who unifies two or more chiefdoms) or
        intertribal league
    7 = No third level
    8 = Third level not territorial
    9 = Missing data
14. Nature of third sovereign organization—kinship (recoded)
    0 = Nuclear family
    1 = Extended family
    2 = Lineage
    3 = Clan
    4 = Kindred
    5 = Phratry or moiety
    6 = Tribe (a union of exogamous kin groups that are mutually endogamous,
        with a common governing body)
    7 = No third level
    8 = Third level not based on kinship
    9 = Missing data
15. Nature of ultimately sovereign organization—territorial
    0 = Hamlet, neighborhood, band
    1 = Village

(appendix continued)

APPENDIX Continued

2 = District (any political organization that unifies 0 or 1, but not codable as 3, 4, or 5)

3 = Town or city

4 = Chiefdom (a chief executive who unifies 0, 1, or 3)

5 = Kingdom (a chief executive who unifies two or more chiefdoms) or intertribal league

8 = Not territorial

9 = Missing data

16. Nature of ultimately sovereign organization—kinship (recoded)

0 = Nuclear family

1 = Extended family

2 = Lineage

3 = Clan

4 = Kindred

5 = Phratry or moiety

6 = Tribe (a union of exogamous kin groups that are mutually endogamous, with a common governing body)

8 = Not based on kinship

9 = Missing data

17. Nonsovereign organizations (recoded)

0 = None

1 = One

2 = Two or more

9 = Missing data

18. Nonsovereign communal organizations (recoded)

0 = None

1 = One

2 = Two or more

9 = Missing data

19. Sovereign kinship organizations other than the nuclear household or the ultimately sovereign group (recoded)

0 = None

1 = One

2 = Two or more

9 = Missing data

20. Ultimately sovereign group organized on kinship principle

0 = No

1 = Yes

9 = Missing data

21. Unorganized kinship aggregations (recoded)

0 = Absent

1 = Present

9 = Missing data

22. Matri-family (recoded)

0 = Absent

1 = Present

9 = Missing data

APPENDIX Continued

23. Primogeniture
    0 = Absent
    1 = Present
    9 = Missing data
24. Unlegitimated contacts (recoded)
    0 = Absent
    1 = Present
    9 = Missing data
25. High god
    0 = None
    1 = Present, otiose
    2 = Present, active, nonmoralistic
    3 = Present, active, moralistic
    4 = Uncertain whether high god is present
    9 = Missing or conflicting data
26. Superior gods (recoded)
    0 = None
    1 = One or two
    2 = Three or more
    9 = Missing data
27. Superior gods, not including those attached to a particular occupational
    specialty (recoded)
    0 = None
    1 = One or two
    2 = Three or more
    9 = Missing data
28. Superior gods of questionable authenticity (recoded)
    0 = None
    1 = One or two
    2 = Three or more
    9 = Missing data
29. Active ancestral spirits (recoded)
    0 = Absent
    1 = Present, nature of activity unspecified
    2 = Present, aid or punish living humans
    3 = Present, are invoked by the living to assist in earthly affairs
    8 = Present as fear of recently deceased
    9 = Missing data
30. Reincarnation (recoded)
    0 = Absent
    1 = Present
    9 = Missing data
31. Exuvial magic
    0 = Absent
    1 = Present
    9 = Missing data

(appendix continued)

APPENDIX Continued

32. Cannibalism
    0 = Absent
    1 = Present
    9 = Missing data
33. Taking of scalps or bones of victims
    0 = Absent
    1 = Present
    9 = Missing data
34. Head-hunting
    0 = Absent
    1 = Present
    9 = Missing data
35. Human sacrifice
    0 = Absent
    1 = Present
    9 = Missing data
36. Prevalence of witchcraft
    0 = Little or none
    1 = Some, but not the most frequent cause of illness, misfortune, or death
    2 = Prevalent, considered to be the most common cause of illness,
        misfortune, or death
    9 = Missing data
37. Supernatural sanctions for morality—effects on health
    0 = Absent or no data
    1 = Present
    9 = Conflicting data
38. Supernatural sanctions for morality—effects on experiences in the afterlife
    0 = Absent or no data
    1 = Present
    9 = Conflicting data
39. Supernatural sanctions for morality—other effects
    0 = Absent or no data
    1 = Present
    9 = Conflicting data

Notes

1. This does not, however, negate the possibility that real supernatural beings or forces exist, but rather only suggests that humans interpret and represent their relations with those beings and forces in ways that are most comprehensible to them; i.e., in ways that parallel their relations with one another.

2. I first presented this article as a paper at the 1993 meetings of the Society for Cross-Cultural Research. In the discussion that followed,

Robert L. Munroe suggested that my method of replicating Swanson's coding by "successive approximations" was potentially very useful and should be highlighted. I have attempted to do so in this section, and I have added brief comments about the specific coding decision strategies I arrived at for each variable as annotations to the codebook published in volume 9 of the *World Cultures Journal of Cross-Cultural Research* (Gray & Peregrine, 1995). The raw data are published in a computer-readable format in the same volume.

3. All the analyses reported here were performed using SPSS/PC+, except for the log-linear analysis, which was performed with SPSS mainframe version 4.0.

4. Cross-tabulation of High God (Variable 25, codes 2 and 3 combined and codes 4 and 9 combined) by Nonsovereign Communal Organizations (Variable 18, codes 0 and 1 combined): $\chi^2 = 0.37039$; $p = 0.83094$ (low expected frequencies make this result tenuous).

5. Cross-tabulation of Superior Gods (Variable 26) by Specialties in Communal Activities (Variable 11): $\chi^2 = 3.97469$; $p = 0.13706$. Cross-tabulation of Superior Gods (Variable 26) by Specialties in Noncommunal Activities (Variable 10): $\chi^2 = 3.90964$; $p = 0.14159$.

6. Log-linear analysis, where

    A = Ultimately Sovereign Group Organized on Kinship Principle (Variable 20);

    B = Specialties in Communal Activities (Variable 10);

    C = Specialties in Noncommunal Activities (Variable 11);

    D = Superior Gods (Variable 26).

Models:

    1: {A} {B} {C} {D} $\chi^2 = 26.96842$; $df = 18$; $p = 0.080$

    2: {A B D} {A C D} $\chi^2 = 40.54017$; $df = 19$; $p = 0.003$

    3: {D} {A B C} $\chi^2 = 35.11577$; $df = 20$; $p = 0.019$

    4: {D} {A B} {A C} $\chi^2 = 30.93465$; $df = 19$; $p = 0.041$

    5: {A B} {A C} {A D} $\chi^2 = 36.58944$; $df = 19$; $p = 0.009$

7. Cross-tabulation of Sovereign Kinship Organizations Other than the Nuclear Household or the Ultimately Sovereign Group (Variable 19, codes 1 and 2 combined) by Active Ancestral Spirits (Variable 29, codes 1, 2, and 3 combined and codes 8 and 9 combined): $\chi^2 = 0.85421$; $p = 0.35536$ (low expected frequencies make this result tenuous). Cross-tabulation of Ultimately Sovereign Group Organized on Kinship Principle (Variable 20) by Active Ancestral Spirits (Variable 29, codes 1, 2, and 3 combined and codes 8 and 9 combined): $\chi^2 = 0.06793$; $p = 0.79438$ (low expected frequencies make this result tenuous).

8. Cross-tabulation of Unit of Settlement (Variable 5, codes 1, 2, and 3 combined) by Reincarnation (Variable 30): $\chi^2 = 0.59236$; $p = 0.44151$.

9. Cross-tabulation of Immanence of the Soul (present if any of the following are present: Exuvial Magic [Variable 31], Cannibalism [Variable

32], Taking of Scalps or Bones of Victims [Variable 33], Head-Hunting [Variable 34]) by the summed weights of Sovereign Organizations (Variable 12), Unlegitimated Contacts (Variable 24), Unit of Settlement (Variable 5), and Ultimately Sovereign Group Organized on Kinship Principle (Variable 20) (see Swanson, 1960, pp. 130-131, for the specific weighting strategy): $\chi^2 = 5.66187$, $p = 0.22586$.

10. Cross-tabulation of Prevalence of Witchcraft (Variable 36, codes 0 and 1 combined) by Unlegitimated Contacts (Variable 24): $\chi^2 = 0.00318$; $p = 0.95503$.

11. Underhill (1976) claims that because economic complexity has a stronger and more independent effect on the presence of high gods than does political complexity, his results contradict Swanson's (1960) Durkheimian theory, and support a Marxist one. I suggest this is a misguided argument, based on a misunderstanding of both Swanson and Marx (Simpson, 1979, p. 309). First, Marx's explanatory focus was not economic complexity, as Underhill suggests, but the social relations that organize work into labor (i.e., mode of production). Whereas this is indeed economic, I argue it is more fundamentally political and social. So, although I agree that Underhill's results do support a Marxist theory, I disagree with his reasons for saying it does. Second, Swanson is concerned with social and political relations, not simply political complexity, and his variables dealing with sovereign organizations are meant to tap into general social relations (Swanson, 1960, pp. 28-29). Because those social relations are the things that organize work into labor, I argue that Swanson and Marx are actually concerned with different aspects of the same thing, and their theories should not be opposed in a black-and-white manner as Underhill opposes them.

John Simpson (1979, 1984) makes a very similar case. Like Underhill (1976), he considered the relationship between subsistence economy and the presence of a belief in a high god. However, Simpson did not simply look at the type of subsistence but also at whether the primary raw materials of subsistence (plants, animals, fish, etc.) were inert or active. Simpson found a strong, positive relationship between subsistence based on active raw materials and a belief in a high god. The reason for this, he suggests, is because the pursuit of active raw materials promotes the "autonomous pragmatic action of individuals who may be perceived as manifesting extraordinary power and skill" (1984, p. 220), and this ideal individual provides the model of a high god. Because subsistence activities, like social structures, persist over time, Simpson does not thereby reject Swanson's hypothesis but, rather, explains that although his findings differ from Swanson's, "they are consistent with the tenor of his theoretical position" (1984, p. 221), as, I argue, are Underhill's.

12. Lenski (1970) actually defines eight types of societies: (a) hunting and gathering, (b) fishing, (c) simple horticultural, (d) advanced horticul-

tural, (e) simple agricultural, (f) advanced agricultural, (g) maritime, and (h) industrial. Davis (1971) does not examine maritime or industrial societies, because they are not "primitive" (pp. 30-31). He lumps fishing societies into the hunting and gathering category, and simple and advanced agricultural into a single "agrarian" category for his analyses.

13. By retabulating Swanson's sample into his categories of societal complexity, Davis (1971) found that Swanson's data supported his hypotheses concerning the negative association between societal complexity and a belief in active ancestral spirits (p. 126), and the positive associations between societal complexity and a belief in superior gods (p. 130) and a belief in a high god (p. 132).

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