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Atheism

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Abstract

Data from a large, four-language web-based questionnaire, supplemented with data from the General Social Survey, allow us to explore possible sources of Atheism, notably the hypothesis that lack of social obligations encourages disbelief in God. The analysis is rooted in the compensator theory of religion, first proposed twenty-five years ago, but it incorporates a recent addition: the distinction between primary and secondary compensation. Social obligations make secondary compensation important, because it substitutes a compensator for a reward that a person is obligated to provide to another person. The data show that Atheism is indeed more common among people whose social obligations are weak. The analysis also traces connections between Atheism and the demographic fertility collapse that has been occurring in most advanced industrial nations, suggesting that secularization might best be understood in the context of declining social obligations.

We know surprisingly little about Atheism from a social-scientific perspective. One would think that it would have been studied extensively in comparison with religiosity, but this is not the case. Historical studies exist (Campbell 1972; Turner 1985), chiefly written within the history of ideas, and there is a fairly large and disputatious literature in which Atheists and their opponents argue matters of belief. But systematic attempts to understand Atheism as a social or psychological phenomenon, employing rigorous theory and quantitative research methods, have been rare. This essay will attempt to advance our theoretical understanding of Atheism, assisted by previously unreported data from an international survey and by the General Social Survey.

The relative dearth of survey research about Atheism has three very practical causes, quite apart from any dereliction of duty on the part of scholars who have simply failed to survey it. First, Atheists are rare in the populations that typically have been surveyed, so unless one has a very large number of respondents, the data will simply not support statistical analysis. Second, perhaps partly in response to the first problem, there has been a tendency to lump Atheists along with Agnostics and people who are simply indifferent to religion in an undifferentiated "No Religion" category, the infamous *nones* named long ago by Vernon (1968). Third, surveys with large numbers of respondents are quite expensive, every additional item is costly, and one cannot identify Atheists without including at least one specialized item, quite apart from the other items one needs to explore the correlates of Atheism.

However, two recent studies have offered interesting findings about Atheism, based on international surveys, and thus provide a good starting point for the present study. With data from the 1994 Eurobarometer survey and the 1994 American General Social Survey, Bernadette Hayes (2000) identified correlates of being a "religious independent," and part of her analysis distinguishes Atheists from Agnostics and the nondescript nonreligious. Her essay includes a good literature review, grounding the topic in past research, but is resolutely atheoretical. Hayes reports that religious independents (including Atheists) tend to be young, male, unmarried, and well-educated, and she comments that the gender difference is especially consistent across nations.

Wolfgang Jagodzinski and Andrew Greeley (n.d.), in a study published on Professor Greeley's website, have employed data from the International Social Survey Programme (ISSP), to test the "supply-side" theory that the demand for religion is relatively constant over time and space, in contrast with a simple secularization theory that predicted a decline over time. Jagodzinski and Greeley chiefly used Atheism as an inverse indicator of the demand for religion in a national market, but they also suggested data-based hypotheses about Atheism itself. For example, on the basis of a retrospective self-report item, they suggested that Atheism seemed to be a choice a person makes early in life, apparently

unrelated to parents' religiousness. Of course, there is good reason to be suspicious of items that ask the respondent to report what he or she privately believed many years earlier, especially when strongly held ideologies are the topic of study, but this is an interesting finding that deserves further examination.

In the ISSP dataset, education and age do not reveal linear correlations with Atheism, contradicting simple versions of secularization theory. On closer inspection, however, age shows a curvilinear relationship, with the very young and very old less likely to be Atheists. Men are significantly more likely than women to be Atheists, except in nations where Atheism is especially rare. When good international datasets give inconsistent findings across countries, one might suspect that the variables that are measured are actually rather causally distant from the fundamental variables at work and that one needs a good theory to help identify what variables should be studied that might give more consistent results.

Probably, Atheism has many causes, although one might guess, as with many other social phenomena, that a relatively small number of them are really significant for substantial numbers of people. Logically, some people could have been raised Atheists; others might have had early traumatic experiences with religion; a few might have resolutely unmystical personalities; a few might have by chance made religion the focus of adolescent rebellion; and many might have been socialized in adulthood to antireligious professional ideologies (as sociology, anthropology, and psychology can be). Jagodzinski and Greeley make the interesting assumption that Atheists experience no need for religion, but they do not in their essay say how this might come to be. Here we will explore this further, beginning with a consideration of how religion meets human needs.

THE THEORY OF RELIGIOUS COMPENSATORS

Among the influential theories of religion, the compensator theory is especially fruitful in generating hypotheses (Bainbridge 1995; Bainbridge and Stark 1979; Stark and Bainbridge 1979, 1980, 1985, 1987). The theory begins by describing the human condition. Humans exist in time, remembering experiences of the past and taking action that influences the future. As animals living in a hazardous but resource-rich world, we must seek rewards and attempt to avoid costs. But more than any other animal, we possess powerful brains that are capable of language, analysis, and planning. As the fourth axiom states, "Human action is directed by a complex but finite information-processing system that functions to identify problems and attempt solutions to them" (Stark and Bainbridge 1987: 29). This is the *mind*. It directs action by developing *explanations*—statements about how and why rewards may be obtained and costs are incurred.

Through language and example, humans communicate explanations to each other. Originally, this was probably a byproduct of the fact that humans must cooperate to survive (Homans 1950, 1974), and early in our prehistory, we learned to exchange explanations as well as other rewards. Some explanations spring naturally from our individual experience of trial and error; therefore, our confidence in them is based on prior learning. But explanations that we learn from communication with other human beings must be taken on trust until we have the opportunity to evaluate them in our own subsequent experience. Some explanations, especially those that tell us how to obtain very general, valued, and relatively unobtainable rewards, can be very difficult to evaluate. Thus, the argument arrived at this set of Propositions and associated Definitions (Stark and Bainbridge 1987: 35–37):

> *Proposition 14:* In the absence of a desired reward, explanations often will be accepted which posit attainment of the reward in the distant future or in some other non-verifiable context.
>
> > *Definition 18:* Compensators are postulations of reward according to explanations that are not readily susceptible to unambiguous evaluation.
>
> *Proposition 17:* Compensators vary according to the generality, value, and kind of the rewards for which they substitute.
>
> > *Definition 19:* Compensators which substitute for single, specific rewards are called *specific compensators*.
> >
> > *Definition 20:* Compensators which substitute for a cluster of many rewards and for rewards of great scope and value are called *general compensators.*
>
> *Proposition 18:* Humans prefer rewards to compensators and attempt to exchange compensators for rewards.

A few more steps in the analysis were able to introduce religion itself (Stark and Bainbridge 1987: 39):

> *Proposition 22:* The most general compensators can be supported only by supernatural explanations.
>
> > *Definition 21: Supernatural* refers to forces beyond or outside nature which can suspend, alter, or ignore physical forces.
> >
> > *Definition 22: Religion* refers to systems of general compensators based on supernatural assumptions.

Now we have enough concepts on the table to begin to talk about Atheism. A person who had all the rewards he or she could ever want would have no need for compensators and therefore could be an Atheist. As Proposition 18 suggests, religion is at least somewhat costly, so by the calculus of rewards and costs, a person would not be religious unless the person perceived it as rewarding to be so.

People who are especially healthy, prosperous, and untroubled in their personal relations might have little or no need for specific compensators, and both kinds of compensators play important roles in most religious traditions. This is an explanation for the intensity of religiosity in sects: Their members are relatively deprived, so they have greater need for specific compensators. But all people face death, so at some level, all people are objectively deprived and are therefore open to general compensators.

This observation may provide an explanation for the common but not entirely consistent finding that Atheists (or the larger category of nonreligious people) tend to be young. Old people know that their own, personal deaths loom in the very near future, and throughout their long lives, they have suffered the deaths of valued friends and family members. Thus, general compensators based on supernatural assumptions should be especially salient for them. The suggestion by Jagodzinski and Greeley that Atheists tend to adopt their belief system in youth would seem logical in this light, because young people might not sense the reality of death as vividly as old people do. Once psychologically committed to their Atheism, these people might be reluctant to abandon it even as they learn some of the harsh lessons of life with the passage of years.

But the compensator theory of religion is not merely psychological; it is social. In examining the ways in which religion gains strength through intimate interactions between people, it can be valuable to distinguish two kinds of compensations (Bainbridge 2002a: 69):

- *Primary compensation* substitutes a compensator for a reward that people desire for themselves.
- *Secondary compensation* substitutes a compensator for a reward that a person is obligated to provide to another person.

Primary compensation reminds us of the aphorism "There are no Atheists in foxholes." When a person is in mortal danger, religious compensators might assuage that individual's own personal fear. Primary compensation is psychological, satisfying the emotional need of the believer.

Secondary compensation is social, sustaining a relationship when one party to it is empirically unable to provide a reward to the other that the other either expects or desperately wants. For the obligated person, the compensator assuages guilt for failing to deliver the reward, especially if the person who is expecting it endorses the religious system of which the compensator is a part. For the person to whom the obligation exists, the compensator sustains trust that the exchange partner is benevolent, committed to the relationship, and willing to provide other rewards in the future.

In an earlier publication (Bainbridge 2002a), I described how my great-grandmother sang hymns to her brother over the painful weeks when he was

dying from typhoid. It would require a very dogmatic Atheist in such a situation to say, "Well, I'm sorry there's no God or afterlife, but we'll really remember you fondly after you've died." This example perhaps suggests why studies tend to find that women are less likely to be Atheists (or nonreligious) than men are. Traditionally, and perhaps rooted in humans' biological natures, females are more nurturant and more concerned with intimate social relations than men are. Females have a more direct obligation for caregiving within the family. Thus, they might have more occasion to resort to secondary compensation when they cannot materially provide the help or other rewards they are obligated to give.

Secondary compensation may be a major factor in the creation and maintenance of religious organizations, even though the literature on the subject has concentrated on primary compensation. If religious compensators actually do not satisfy sufferers' needs very well, these compensators might still satisfy the sufferers' exchange partners' obligations to provide assistance. I am not here asserting that religious primary compensation is ineffective; I am merely raising the theoretical point that it might be and suggesting that we should examine scientifically how much of the success of religious organizations is due to secondary compensation.

This line of argument suggests that Atheism might be most common among people who lack intimate, personal obligations of the kind that might benefit from secondary compensation. Someone on whom no one else is dependent, someone who lacks strong social bonds of a kind to incur such obligations, is more free to espouse Atheism. The same might be true, but perhaps with less strength, for people who call themselves Agnostics, who say they are nonreligious, or who evidence no interest in religion. However, these people have not committed themselves, in the manner of someone who publicly professes Atheism, so they are more able to draw on religion as needed over the course of time. This article will examine survey data about religious and nonreligious people, Agnostics, and Atheists to determine whether they differ in the quality of their social obligations and thus their susceptibility to secondary compensation.

SECULARIZATION

A familiar but debatable explanation for Atheism is that it represents the spearhead of secularization, as science supposedly sweeps away the superstitions of the past. I suggest that the secularization explanation does not really compete with the secondary compensation explanation, because secularization itself is a frequently misunderstood process.

The compensator theory of religion and the rational choice extension of that theory absolutely do not assert that secularization is unreal or unimportant. Rather, they merely reject the simplistic notion that the grand sweep of history

runs inexorably from a religious to a nonreligious era and that scientific and social progress are destined to eliminate the need for faith. Indeed, secularization does take place, within particular organizations, denominations, and religious traditions. Within a well-established tradition, such as Protestantism, some churches become highly secular and lose membership, but sects arise, expand, and fill the gap (Finke and Stark 1992; Stark and Bainbridge 1985, 1987; Stark and Finke 2000). Thus, as long as a religious tradition remains vigorous, secularization is a circular process that leads to no net loss in faith, because the falling denominations are balanced by rising ones. Revival sustains the tradition.

However, at certain points in history, an entire religious tradition loses faith. Over the long run, the theory argues, secularization is self-limiting because it creates conditions suitable for religious innovation, cult formation, and the establishment of a new religious tradition. It is difficult to specify where in such a course of development Western civilization currently finds itself (Stark and Bainbridge 1985). Will Christendom be sustained for generations to come by revival? Or is secularization eroding the basis of Christianity, gradually opening up substantial opportunities for new cults? Perhaps both are happening in different parts of Western civilization (more secularization being seen in Europe than in the Americas). Furthermore, religious innovation is a very difficult business. Really new successful religious traditions are rare, and they require a substantial level of social disorganization to get a foothold in society (Sorokin 1937). Innovation can establish a new tradition but only with difficulty and the passage of considerable time.

An interesting debate has raged over the apparent secularization of Europe (e.g., Bruce 1992). The article by Jagodzinski and Greeley contributes to that debate from the side that argues the religious situation in Europe is the result of lazy denominations, historically supported by the state, that are not acting vigorously enough to serve or mobilize the extensive market that exists for religious compensators. That may be, but whatever the cause and whatever the fraction of Europeans who are prepared to tell a survey researcher they have private religious beliefs, something very dramatic has been happening in Europe and some other advanced industrial areas, with direct relevance for the secularization debate.

In the past twenty years, a new factor has been introduced that has great significance for any analysis involving secondary compensation, namely, the fertility collapse in most (possibly all) advanced industrialized societies (CIA 2001, 2004; Davis et al. 1987; Wattenberg 1987). Almost every advanced nation today has a fertility rate below the replacement level, and analysis of the few exceptions (notably the United States) is inconclusive because of the difficulty of factoring in such things as the second-generation impact of immigrants and the differential fertility in culturally and religiously diverse segments of the

population. Evidence at both the individual and societal levels indicates that strong religion supports fertility, so the widespread fertility collapse might at least in part be a symptom of secularization.

It is worth remembering that the Roman Empire did not become Christian merely through refined intellectual debates in the Forum. Rome was in the slow but dramatic process of falling. The edicts of Diocletian imply population declines in critical areas; the liberty and frankly the innovativeness of Roman citizens had declined; and for a host of reasons, individuals were ready for a new faith. St. Augustine's influential book *On the City of God* is partly a rebuttal of the charge that the sacking of Rome by the Visigoths in 410 was punishment for abandoning its pagan gods (Boak 1955: 515), but it famously recognized that the Roman civilization might be past saving so the priorities should be shifted toward saving souls.

One of the key virtues that Christianity brought was increased fertility and increased emphasis on nurturance obligations between people (Stark 1996), thereby setting a good basis for both revival of civilization and a faith strengthened by secondary compensation. But Christianity did not prevent the fall of Rome, and the rebuilding took hundreds of years. Modern secular society might not be demographically viable in the long run, and the early symptoms of its fall might have ambiguous implications for Atheism.

The relevance of the fertility collapse to secondary compensation is that a failure to reproduce means fewer social relationships carrying family obligations. This tendency could be magnified in societies with a welfare state or where at least many of the former nurturance obligations people have had with each other are taken over by the state or by such things as health maintenance organizations, extensive public education, and the mass entertainment industry. To reduce secondary compensation, the state does not need to fulfill the obligations it takes on; it merely needs to take those obligations away from its citizens. I am suggesting the possibility of a pernicious feedback loop, in which a decline of religion leads to reduced fertility, which in turn reduces the secondary compensation that is at least partly responsible for religion's strength.

There is one argument that secularization might not increase Atheism, however. Stark and Finke (2000) have distinguished the level of Atheism in society, which they think might be roughly constant, from the visibility of Atheism in public life. The latter, they suggest, might be especially obvious at a time when previous restraints on the expression of Atheistic views have recently been lifted and Atheists are taking advantage of their new liberty, perhaps with an emotional score to settle from the past. At some times, political change in a society in which the established church supported traditional elites will lead to anticlericalism in the opposition parties, which also may translate into public expressions of Atheism. But when liberty has long thrived and secularization is

far advanced, the result might be a large number of people in society who simply do not care about religion. They are not Atheists, because a conviction that God does not exist would require them to care about the question in the first place. Some of the more thoughtful among the nonreligious might call themselves Agnostics.

Thus, as we examine the new data available to us, we will focus primarily on measures that are logically connected to secondary compensation, but we will from time to time comment on variables that might be connected to secularization as well, in full awareness that some of the causal connections might be complex.

INTRODUCING THE DATASET

The primary source of data for this article is *Survey2001*, the second of two Web-based surveys organized by James Witte of Clemson University and sponsored by the National Geographic Society (Witte 2003; Witte et al. 2000). As a member of Witte's team, I was able to include a number of items, and other participants contributed items about respondents' social lives that will be useful here. The respondents were recruited through the National Geographic Society, similar organizations, and the research team's universities and therefore are by no means a random sample.

There are probably three reasons why social scientists traditionally have preferred random samples in survey research:

1. Random samples best approximate the parameters in the population.
2. Use of random samples can help to guard against spuriousness or similar forms of incorrect interpretation of findings.
3. Some statistical measures, notably tests of significance, were developed on the assumption that respondents are a random sample.

The first is of less importance for this project, which does not intend to estimate the strength of Atheism in modern society, than it is in the Jagodzinski and Greeley study, which focuses on the low and apparently unchanging Atheism rate. Spuriousness can be defined as the distorting effect of an unmeasured third variable on the correlation between two other variables. The classic example of spuriousness was the so-called ecological fallacy identified by Robinson over half a century ago (Bainbridge 1992: 385; Hannan 1971; Robinson 1950). Data from the 1930 census of the United States revealed that immigrants were more likely than native-born residents to be illiterate, but surprisingly, there was a strong *negative* correlation between rates of immigration and illiteracy across the (then) forty-eight states. However, multivariate analysis can often identify variables responsible for spuriousness and correct for them.

Here, the aim is to use the data to illustrate and refine a specific theory, and future studies with a wider scope can explore the interactions among a host of

variables. We will be looking for substantial differences, using a large number of respondents, so statistical significance will not be a concern. Online surveys do a rather better job of estimating the strength of a correlation than they do the population parameters for the individual variables (Bainbridge 2002c). The most important and apparently robust findings can be verified by including selected items in subsequent surveys, whether Web-based or conventionally administered (cf. Glock and Stark 1966). In this article, we will replicate a small part of the findings from the Web-based questionnaire with existing data from the General Social Survey, but one point of exploratory research such as this is to identify issues that need to be studied more methodically in later studies.

Survey2001 offered an unusual opportunity to pioneer religious research in a worldwide, online questionnaire study with more than 2,000 questions that was carried out in four languages: English, Spanish, German, and Italian. Of importance, it was designed to develop new technology for Web-based surveys while exploring a very wide range of topics of interest to social scientists. To develop efficient methods for incorporating items in computer-administered questionnaires, those who contributed items were instructed to enter them and their response formats into Excel spreadsheets. One result is a new software questionnaire administration and database system called OnQ (Hochrine 2002) to facilitate such work in the future. *Survey2001* is notable for successfully managing very complex question administration, involving elaborate skip patterns from one item to another and giving alternative subsets of items to random subsamples of the respondents.

Although the respondents to this Web-based survey are not a random sample of the population, this may be an advantage in some ways, rather than a disadvantage, for an exploratory study of Atheism. Many respondents were recruited from people with access to Internet who were attracted by the National Geographic Society sponsorship or were connected in some way to the university community. This suggests that they are more affluent, better educated, and possibly more heavily influenced by secularizing factors in postindustrial culture than the average person. Therefore, we should look for findings associated with Atheism that might not be evident in conventional sample surveys that lack many secularized respondents.

One *Survey2001* question asked, "What is your religious preference?" The available responses were Protestant, Catholic, Jewish, Muslim, None, Other, and Don't know. The web pages of the questionnaire were generated dynamically, and the program was set to ask follow-up questions for some items. If the respondent had selected Protestant, he or she was asked, "More specifically, which Protestant denomination best describes your religious preference?" Six responses were offered: Lutheran, Episcopal, Methodist, Presbyterian, Baptist, and Other. Lutherans, Methodists, Presbyterians, and Baptists were then asked to select a

particular denomination from a list of the most popular U.S. denominations in that tradition. Similarly, Jews were asked whether they were Orthodox, Conservative, Reform, or None of these. Someone who responded "Other" to the initial question about religious preference was asked, "Do any of the following adequately describe your religious preference?" The most common responses were Buddhist, Hindu, and Eastern Orthodox Christian.

Any respondent who said his or her religion was "None" or "Don't know" was given another question: "Individuals who do not have a religious preference, or who do not know how to describe it, often categorize themselves in other ways. How would you describe yourself?" The respondent was asked to choose one of four responses: Non-religious, Agnostic, Atheist, and None of these.

Table 1 acquaints us with the major religious preference categories by tabulating the percentages in each language category. In later comparable tables, we will focus only on the percentages for nonreligious, Agnostic, and Atheist. *National Geographic* publishes foreign-language editions, and social scientists who are active in nations where Spanish, German, and Italian are spoken were responsible for promoting the versions of the questionnaire in those languages, so the non-English speakers are not merely odd minorities who happened to stumble onto the survey's website. However, because the respondents are far from a random sample, it is important to focus on differences across the categories of whatever independent variable we are looking at rather than the absolute level of the dependent variable, which for most of this essay is the proportion who are Atheists.

Table 1: Language

Religious Preference	English	Spanish	German	Italian
Protestant	26.5%	6.5%	28.9%	0.2%
Catholic	18.2%	63.8%	27.2%	62.7%
Jewish	3.2%	0.9%	0.7%	0.6%
Nonreligious	11.0%	7.9%	10.7%	8.2%
Agnostic	6.7%	5.2%	4.3%	6.5%
Atheist	5.1%	5.2%	11.7%	8.8%
Other, no answer	29.3%	10.3%	16.5%	12.9%
TOTAL	100.0%	100.0%	100.0%	100.0%
	(9,043)	(744)	(768)	(510)

Jagodzinski and Greeley made much of the unusually high level of Atheism in East Germany, and here, for German speakers in general, we see double the percentage of Atheism seen among English speakers and Spanish speakers and

somewhat more than that among Italian speakers. Some of that German Atheism seems to come at the expense of Agnosticism. There is a fine line between the two, and it is possible that public pro-Atheism rhetoric in German-speaking Europe could relatively easily have shifted some respondents from the Agnostic to the Atheist response. Conversely, the proverbial religiousness of the United States and perhaps the lesser public visibility of Atheism in English-speaking nations (compared with Germany, anyway) could account for the larger fraction who are Agnostics rather than Atheists among the respondents who answered the questionnaire in English.

This table illustrates the logic of much of the quantitative analysis that will follow. This essay aims primarily to develop theory, using a dataset that is better suited for exploration than for definitive theory testing. Thus, the analysis will emphasize tables of percentages, comparing across their columns the various values of the independent variable. The data will be available for other researchers to employ more complex techniques of statistical analysis.

For the sake of concision, I will seldom comment on the Agnostics and nonreligious respondents but will offer their data as well for the reader's inspection. In many of the tables, these two groups show a pattern that is indeed similar to that for Atheists. At times, their patterns are more complex, and I suspect that might result partly from the fact that for some respondents, Agnosticism is simply a "don't know" response that will associate with moderate responses to the other variable, and the nonreligious are a heterogeneous group.

No single survey dataset, no matter how good the respondent sample might be, can really provide definitive tests of theory. Rather, we need a number of studies, with different measures and methodologies, to develop real confidence that any given theory is true or false. The present dataset can contribute to theory testing, as one of several sources of information, each with its own biases. I have published extensively out of this dataset, including an article on New Age beliefs in the *Journal for the Scientific Study of Religion* (Bainbridge 2004a; cf. Bainbridge 2002b, 2003, 2004b, 2004c). For the present purposes, we will exploit the large number of variables and respondents that this dataset affords, to advance the social-scientific theory of Atheism.

MARITAL OBLIGATIONS

As was reported by Hayes (2000) and noted above, studies tend to find that men are more likely to be nonreligious or Atheists than women are, and the same is true in the *Survey2001* data. Table 2 shows the gender differences for the three nonreligious categories. We see that males are more likely to admit being Atheists or Agnostics, as well as slightly more likely to self-identify simply as nonreligious. The difference on Atheism, 1.4 percentage points, might seem

small, but keep in mind that Atheism is rare. The ratio of these numbers is not so small, men being nearly 1.3 times as likely to be Atheists as women are, which could be expressed as a rather more impressive 130 percent. Again, this can be interpreted as reflecting women's greater need for secondary compensation within family obligations, but of course, that is an inference rather than a fact.

Table 2: Gender

Preference	Males	Females
Nonreligious	11.0%	10.4%
Agnostic	6.7%	6.1%
Atheist	6.4%	5.0%
	(5,744)	(5,272)

The next obvious step in evaluating the impact of family obligations is to look at marital status. Table 3 shows the four marital categories that had at least 100 males and 100 females. Our theory of secondary compensation predicts that Atheists are more common among single people than among the married, and the table shows that this is the case, for both men and women. Divorced people might possibly have fewer family obligations—not the case if children are involved—and thus might have less need of secondary compensation. However, the divorced people in the table, as is typical in survey research, are the divorced people who neither have remarried nor are cohabiting. Thus, it seems likely that they suffer deprived social lives. However difficult marriage was for them—and many will not have wanted to get divorced—they have experienced the rewards of married life and now are deprived of those rewards. Thus, arguably, they will have unusually great need of primary compensation. It is hard to guess the balance between reduced secondary compensation and increased primary compensation, but in the table, we see that divorced people actually are less likely to be Atheists than are the three other groups.

The *Survey2001* dataset includes a relatively large number of cohabiting couples. The theory of secondary compensation is about using religion to fulfill obligations, and it suggests that Atheists will have fewer serious family obligations to other people. The theory does not say that Atheists are antisocial hermits. Cohabiters are certainly social—they share intimate domestic life with another person—but they have explicitly failed to take on the obligations of marriage. Thus, the fact that Atheism is most common among cohabiters strongly supports the theory of secondary compensation.

Arguably, for many of the correlations we are looking at, Atheism could be the independent rather than the dependent variable. Traditional religion probably

discourages men and women from cohabiting rather than entering into "holy matrimony"; therefore, Atheists might be more likely to cohabit. Because we are trying to understand Atheism, however, it is best to keep it in the nominal role of dependent variable, recognizing that each of these correlations concerns an important and complex aspect of human life that deserves far greater analytic scrutiny at an appropriate time and place.

Table 3: Marital Status

Preference	Single	Married	Cohabiting	Divorced
ALL RESPONDENTS:				
Nonreligious	11.3%	9.3%	15.3%	10.5%
Agnostic	6.5%	5.9%	9.6%	5.7%
Atheist	6.1%	5.0%	9.1%	3.8%
	(4,863)	(4,396)	(806)	(684)
MALES:				
Nonreligious	11.8%	9.6%	15.1%	12.2%
Agnostic	7.1%	5.9%	8.4%	6.2%
Atheist	7.2%	5.3%	9.7%	4.2%
	(2,431)	(2,526)	(391)	(260)
FEMALES:				
Nonreligious	10.9%	8.9%	15.6%	9.0%
Agnostic	5.9%	5.7%	10.5%	5.7%
Atheist	5.1%	4.5%	8.5%	3.3%
	(2,423)	(1,849)	(411)	(420)

OBLIGATIONS TO CHILDREN

After looking at marital status, the next logical variable is the presence or absence of children in the household, as reported in Table 4. One item asked, "How many people in your household are children under 18?" Naturally, the prediction is that the presence of children, and of more children, increases family obligations and reduces Atheism. For both men and women, the presence of one child is associated with a slightly lower Atheism rate, and the presence of two or more children is associated with a markedly lower rate. The effect is obviously greater for women. Among men, the proportion who are Atheist among those living with no children is about 1.3 times that of men living with two or more children. But the ratio is almost 2.7 among women, more than twice as great.

Table 4: Children in Household

Preference	No Children	1 Child	2+ Children
ALL RESPONDENTS:			
Nonreligious	11.5%	9.7%	8.4%
Agnostic	7.0%	5.6%	4.6%
Atheist	6.2%	5.8%	3.9%
	(7,499)	(1,678)	(1,570)
MALES:			
Nonreligious	11.8%	10.8%	8.2%
Agnostic	7.0%	7.0%	5.1%
Atheist	6.8%	6.6%	5.2%
	(3,788)	(858)	(924)
FEMALES:			
Nonreligious	11.2%	8.6%	8.8%
Agnostic	7.0%	4.0%	3.8%
Atheist	5.6%	4.9%	2.1%
	(3,690)	(815)	(634)

Without entering into an elaborate multivariate analysis, Table 4 lets us see the joint contribution to Atheism of two variables: gender and the presence of children. Males without children are fully 3.2 times as likely as women with children to be Atheists—6.8 percent versus 2.1 percent. This is a really big difference and further strengthens our confidence that a lack of need for secondary compensation is at least an important part of the explanation for Atheism.

Atheists' attitudes about having children can be measured roughly with a traditional "alienation" item in the form of a Likert statement: "With how things look for the future, it's not fair to bring children into the world." Of those who strongly disagreed, thus being relatively favorable toward having children, 5.2 percent were Atheists. This compares with 5.9 percent among those who merely disagreed, 6.7 percent among those who responded "Don't know," 10.9 percent among those who agreed, and fully 14.3 percent among those who strongly agreed. I should note that Atheism has some connection with other so-called alienation items but not as strong as the association with this item. I leave to another opportunity the question of how Atheism relates to politics, and *Survey2001* has quite a number of political ideology items that could be used in such a study.

Earlier, we referred to the fertility collapse in advanced industrial nations, suggesting that it might be connected to secularization. Thus, it is worth comparing the questionnaire's estimates of Atheism with national fertility, for the

nations with a significant number of respondents. Nine nations contributed at least 100 respondents who answered the religion questions, and Table 5 includes two others (Argentina and China) that fell just below this threshold. There were neither Hindi nor Mandarin versions of the questionnaire, so respondents from India and China answered in English. China remains officially a Marxist-Leninist-Maoist nation and continues to do much to suppress religion of all kinds. At the same time, China is unusual among developing countries in having had a successful program to reduce the birth rate.

Table 5: Atheism and Fertility in 11 Nations

Nation	*Survey2001* Respondents	Percent Atheist	Attend Religious Services Monthly	Fertility Rate
China	93	14.0%	—	1.69
Spain	101	12.9%	38%	1.27
Germany	717	12.6%	22%	1.38
United Kingdom	288	11.8%	—	1.66
Australia	206	10.2%	25%	1.76
Italy	516	8.5%	47%	1.27
Argentina	94	6.4%	41%	2.24
Canada	675	5.0%	40%	1.61
United States	6,586	4.3%	55%	2.07
Mexico	247	2.8%	65%	2.49
India	151	2.6%	54%	2.85

The third column of figures shows the percentage who attended religious services at least monthly in the 1995–1998 period (except for Canada and Italy, which were surveyed in 1990–1991), as determined by the World Values Surveys (Inglehart and Baker 2000). This variable was included to validate the *Survey2001* data, and across the nine nations for which we have both religion variables, there is a strong negative correlation ($r = –0.82$) between attendance at religious services and the fraction of respondents who are Atheists. The fertility rates come from the latest edition of the *World Factbook* published by the Central Intelligence Agency (CIA 2004), which offers estimates of the average total number of children born to woman who have completed the childbearing years.

A glance at the table suggests that Atheists are relatively more numerous in nations with low fertility rates, and indeed there is a substantial negative correlation between the two variables ($r = –0.76$). There are, of course, at least three ways to interpret this association, and it is possible that all three are correct. First, low fertility could cause Atheism, which is in line with the argument of this

article. Second, Atheism could cause low fertility, although it seems unlikely that such a small minority of the population could alone be responsible for such a large demographic phenomenon. Third, both Atheism and low fertility could be the results of a third factor, such as secularization.

Table 5 illustrates the fact, raised earlier, that many advanced industrial nations are indeed experiencing fertility collapse and facing demographic catastrophe. In modern societies with low rates of infant mortality, a fertility rate of about 2.1 children per woman is sufficient to sustain the population, and the United States is nearly at that level. To see Germany below 1.4 and both Spain and Italy below 1.3 is really quite worrisome.

SOCIABILITY

One set of fully forty items asks the respondents, "How much would you like to do the following activities?" Four of the stimuli are especially relevant here: A large family reunion, A family history field trip, Preparing a festive meal, Getting together with friends. Clearly, the first two of these concern family relations, and a festive meal might often mean Thanksgiving or some other family gathering. Getting together with friends implies nothing about family. Table 6 examines Atheism across the response categories for the four items: Not at all, Not really, Mixed feelings, Would like, Like very much.

The item about a family reunion gives really striking results. Among people who would not at all like a family reunion, fully 15.9 percent are Atheists, compared with only 3.4 percent among those who would like a reunion very much. This difference is a ratio of nearly 4.7! The pattern for a family history trip is also quite strong and would have been remarkable in itself were it not overshadowed by the somewhat stronger pattern for family reunion. There is a minor inconsistency in the row for a festive meal, but it also suggests that people who are uninterested in this kind of social occasion are more apt to be Atheists.

Responses about getting together with friends are highly skewed and do not show a clear Atheism pattern across the three categories with enough cases to analyze. Indeed, the very fact that the distribution is skewed in this way indicates that Atheists do not lack friends. The question then becomes: What is the quality of these friendships?

Table 6: Likes Social Activities

Preference	Not at All	Not Really	Mixed Feelings	Would Like	Like Very Much
FAMILY REUNION:					
Nonreligious	12.3%	18.1%	11.7%	11.2%	7.2%
Agnostic	9.4%	8.7%	9.0%	6.9%	6.1%
Atheist	15.9%	9.8%	9.1%	5.7%	3.4%
	(277)	(529)	(1,077)	(1,613)	(1,247)
FAMILY TRIP:					
Nonreligious	17.9%	14.8%	11.6%	11.3%	7.4%
Agnostic	6.6%	7.2%	9.4%	7.1%	7.4%
Atheist	14.4%	9.8%	7.3%	6.3%	4.9%
	(257)	(580)	(784)	(1,802)	(1,319)
FESTIVE MEAL:					
Nonreligious	14.4%	12.0%	11.9%	11.1%	10.3%
Agnostic	7.0%	4.6%	7.7%	8.0%	7.9%
Atheist	10.0%	9.5%	6.0%	7.2%	5.9%
	(201)	(482)	(700)	(1,816)	(1,537)
WITH FRIENDS:					
Nonreligious	—	—	9.1%	12.2%	10.5%
Agnostic	—	—	6.1%	7.7%	7.6%
Atheist	—	—	6.1%	8.4%	6.3%
	(11)	(29)	(198)	(1,448)	(3,056)

It would be very useful to have some items that measured the extent to which respondents developed relationships of mutual obligation with their friends, and we have two that might serve this purpose. A questionnaire module intended to compare relationships in person with relationships online over the Internet included a dozen items about the respondent's experience with friends. The module involves a complex interweaving of items that are or are not Internet-related, and it is hard to guess whether this seriously affected how people would respond to the individual items. However, two of them appear to be related to social obligations between friends and therefore are reported in Table 7.

Table 7: Relations with Friends

Preference	Never	Rarely	Sometimes	Often	Always
TALK OVER MY PROBLEMS:					
Nonreligious	13.4%	11.6%	9.9%	10.4%	9.6%
Agnostic	5.4%	6.4%	7.6%	8.2%	7.6%
Atheist	8.9%	6.4%	7.2%	7.0%	6.3%
	(112)	(404)	(1,338)	(1,668)	(1,215)
FRIENDS ARE THERE FOR ME:					
Nonreligious	—	11.6%	10.4%	11.1%	9.5%
Agnostic	—	3.6%	6.8%	7.5%	8.2%
Atheist	—	11.6%	6.7%	7.8%	6.1%
	(46)	(112)	(616)	(1,394)	(2,574)

One item was part of a batch headed "When I am with my friends" and stated as "They always take the time to talk over my problems." Another item said, "No matter what happens I know that my friends will be there for me." The available responses were Never, Rarely, Sometimes, Often, Always. Despite a little inconsistency in the middle of the table row for "be there for me," both measures of friendship obligations show that Atheism is more common at the low obligation end of the scale.

GEOGRAPHIC MOBILITY

A substantial body of research exists that infers geographic differences in the stability of friendships from rates of migration. Instability of social relationships, as measured by migration, tends to reduce membership in religious congregations and has complex interrelationships with religion in affecting a variety of kinds of deviant behavior (Bainbridge 1989, 1990). This can be illustrated for Atheism with data from a remarkable set of tables of the 1911 Australian census, giving religious affiliation by birthplace for each state (and the Capital Territory) for each sex (Knibbs 1914), including Atheists, Agnostics, Freethinkers, and those with "no religion." These data can be reorganized to compare the religious affiliations of migrants with those of people who still live in their state of birth.

The number of self-professed Atheists is quite small, only 238 men and 47 women out of 1,814,897 male and 1,800,782 female native-born Australians—only 0.013 percent and 0.003 percent, respectively. We would guess that significantly larger minorities privately held Atheistic sentiments but were

discouraged by the cultural context from expressing their views. Keeping in mind that our respondents are not a random sample, it is still worth noting that Table 6 of that study reported that fully 10.2 percent of Australian respondents professed Atheism 90 years after the 1911 census.

Of importance, Atheism and similar forms of religious deviance were more common among migrants. Among males counted by the 1911 census in the same state in which they were born, 9 per 100,000 were Atheists, compared with 43 per 100,000 for males born in a state other than the one in which the census found them. This is a ratio of 4.8 in favor of migrants. This ratio is higher for Atheists than for the other forms of deviant belief: Agnostics (3.8), Freethinkers (3.8), and "no religion" (2.8). Similar ratios obtain for the small number of women as well: Atheists (3.0), Agnostics (2.9), Freethinkers (2.4), and "no religion" (1.5).

Several *Survey2001* items measured migration. One asked, "How long have you lived at your current address?" and offered a range of responses from "less than one year" to "10 years or more." Although we are generally avoiding elaborate statistical controls in this article, it is necessary to note that migration is a variable that is strongly connected to age, and we might need to take that factor into account. Abstractly, perhaps each person has a certain probability of moving in any given year, so whether the person has moved will partly be a result of how many years he or she has lived. More concretely, there are points in life, such as graduating from college, getting married, or retiring that may increase the probability of moving, and these points accumulate over the years.

Respondents to *Survey2001* tend to be young adults. About 14.3 percent are under 20, 32.1 percent are in their twenties, 22.4 percent are aged 30–39, 15.1 percent are aged 40–49, 11.1 percent are aged 50–59, and just 5.1 percent are aged 60 or older. This is, after all, an Internet survey. As in the Jagodzinski and Greeley study, the relationship of age to Atheism is curvilinear, with both the very young and the old being less likely to be Atheists. However, the curve is more pronounced in the older years. Here are the percentages of Atheists in the age groups: younger than age 20 = 5.6 percent; age 20–29 = 6.1 percent; age 30–39 = 5.9 percent; age 40–49 = 5.8 percent; age 50–59 = 5.1 percent; age 60+ = 4.2 percent. Again, the lower rate of Atheism among the old can be explained in terms of primary compensation for people facing their own mortality, although some writers would try to explain it in terms of a secularization theory that considers old people to be atavisms from a more superstitious past. At this point in our analysis, however, age is more important as a control variable, and the table will show results separately for respondents aged 30–49.

The item about how long the respondent has lived at his or her current address had fully eleven response categories; for intelligibility and to preserve high numbers of respondents in each column, I have collapsed them into six in Table 8. Both with and without an age control, the pattern is uneven across the rows, but

clearly, Atheists are more common among very recent migrants who have lived in their current homes for less than one year.

Table 8: How Long at Current Home

Preference	Less Than 1 Year	1 Year but Less Than 2	2 Years but Less Than 3	3 Years but Less Than 6	6 Years but Less Than 10	10 Years or More
ALL RESPONDENTS:						
Nonreligious	11.4%	11.2%	13.3%	11.2%	10.7%	9.4%
Agnostic	6.8%	10.1%	6.4%	6.7%	6.3%	5.0%
Atheist	6.9%	5.6%	6.0%	6.0%	4.6%	5.3%
	(1,730)	(1,252)	(952)	(1,907)	(1,212)	(3,777)
AGED 30–49:						
Nonreligious	8.3%	10.3%	13.9%	11.2%	11.5%	9.1%
Agnostic	6.4%	12.1%	5.7%	6.4%	6.4%	4.8%
Atheist	7.4%	5.2%	6.1%	6.6%	4.4%	5.5%
	(530)	(522)	(476)	(1,024)	(608)	(1,276)

Within the United States, a good proxy for migration is whether the respondent lives in the five states that the U.S. Census Bureau places in its Pacific division of the country: Alaska, California, Hawaii, Oregon, and Washington. Church membership rates are unusually low in this region, and perhaps in consequence, rates of cults are high (Stark and Bainbridge 1985). It will be interesting now to see whether rates of Atheism, Agnosticism, and nondescript nonreligiousness are high, as we might predict. They indeed are. Whereas 6.2 percent of the 1,129 respondents from the Pacific region are Atheists, only 3.9 percent of the 5,279 respondents from the rest of the United States are. For Agnostics, the proportions are 9.0 percent versus 6.6 percent, and for the nonreligious, the proportions are 13.0 percent versus 7.9 percent. Adding these three categories together, we find that the difference is 28.2 percent versus 18.4, or a ratio of more than 1.5.

A PARTIAL REPLICATION

The General Social Survey (GSS) has sometimes included a question about belief in God that can identify Atheists and Agnostics. The interviewer would hand the respondent a printed card and say, "Please look at this card and tell me which statement comes closest to expressing what you believe about God." One response is Atheistic: "I don't believe in God." Another is Agnostic: "I don't

know whether there is a God and I don't believe there is any way to find out." Other meaningful responses all involved various intensities of belief in God or "a Higher Power of some kind." Because it was administered in several versions of the GSS, responses to this item can be correlated with responses to standard demographic items and to others that were frequently asked. However, Atheists were sufficiently rare in this U.S. study that often there are too few to analyze in connection with theoretically relevant items that were included in just one GSS. For example, unfortunately, only 18 Atheists responded to these two GSS attitudinal items: "Children are more trouble than they are worth" and "Watching children grow up is life's greatest joy."

Table 9 reprises the topics of Tables 2 through 5, using the GSS data, combining the various responses indicating some degree of belief in God to get three religion categories: Atheist, Agnostic, and Believer. Depending on the other variable, the table reports responses from 202 or 203 Atheists. We see that Atheism is more common among males, the never-married, and those who have no children, again supporting the hypothesis that Atheists are low in social obligations. For the latter two variables, it is worth controlling for age. We can assume that most people who ever marry will have done so by age 30, and most parents will have had their first child by 40. Among respondents aged 30 or older (including 153 Atheists), Atheists are 4.0 percent of the never married and 2.2 percent of the married. Among respondents aged 40 or older (including only 107 Atheists), Atheists are 3.1 percent of the childless compared with 2.2 percent of those with at least one child. Thus, controlling for age reduces but does not eradicate the differences.

Table 9: Belief in God and Demographics, in the General Social Survey

	Gender		**Marital Status**		**Has Children**	
	Male	***Female***	***Never Married***	***Married***	***No***	***Yes***
Atheist	3.7%	1.7%	3.9%	2.2%	3.3%	2.2%
Agnostic	6.0%	2.5%	6.5%	3.5%	5.9%	3.3%
Believer	90.3%	95.8%	89.6%	94.3%	90.7%	94.5%
	(3,467)	(4,551)	(1,740)	(4,102)	(2,241)	(5,769)

Because all GSS respondents are coded in terms of the region of the United States they live in, we can compare Atheism in the Pacific region between the GSS and *Survey2001*. In the GSS data, 3.7 percent of Pacific respondents were Atheists, versus 2.1 percent in the rest of the nation. As was reported above, the figures from *Survey2001* are 6.2 percent and 3.9 percent, respectively. As we expected, respondents to this Web-based questionnaire include more Atheists, but

for the present purposes, the important thing to note is that the regional difference is essentially the same. Both datasets show that Atheists are more common in the Pacific region, by ratios of about 1.8 and 1.6, respectively.

This very brief replication using the GSS supports the value of the methodologically far less pure Web-based questionnaire in two ways. First, when comparable variables exist, comparable findings result. Second, in many cases, the Web-based survey makes possible analysis of variables that do not exist in the GSS or for which too few cases exist in the GSS for statistical analysis. Ideally, Web-based questionnaire studies like *Survey2001* could function as partners with repeated traditional surveys like the GSS, both prototyping items and expanding batteries of items beyond the size that is affordable in conventional surveys.

CONCLUSION

The evidence considered in this article generally supports the hypothesis that an important source of Atheism is lack or weakness of social obligations and thus reduced need for secondary compensation. A subtheme of the article is the concern that social obligations might be too weak in many societies to sustain them demographically. This suggests a fresh way of looking at secularization. A decline in interpersonal social obligations, associated with a collapse of fertility but perhaps also with the rise of modern institutions that have taken obligations away from individual citizens, is a very different but possibly more accurate statement of the secular trend.

The goals of this article have been to develop aspects of the compensator theory of religion, and to offer theoretical explanations for Atheism, illustrating the ideas and providing some empirical grounding for them with a Web-based questionnaire supplemented with other, more conventional sources of data. Any wide-ranging theory of religion needs to be tested with evidence not only about religion itself, but also about its absence. A vast literature exists about religious cults, justified perhaps by the theoretical importance of religious innovation, yet the number of Atheists in society is probably greater than the number of committed members of cults, and the empirical literature on Atheism is sparse. With some methodological ingenuity, social scientists of religion will be able to redress this imbalance. By learning more about the lack of faith, we can understand better the role of faith in modern society.

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