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Rationality and the “Religious Mind”*

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ABSTRACT

Scholars have long viewed religion as the irrational product of primitive minds and pre-scientific times. Economic perspectives were deemed irrelevant to the study of religion, and the secularization thesis, positing religious decline in the face of scientific advancement, dominated religious research. But a growing body of evidence challenges these traditional assumptions. The data suggest that religious involvement is associated with normal mental health, is sensitive to perceived costs and benefits, and is compatible with graduate education and scientific training. Professors, scientists, and other highly educated Americans are less religious than the general population, but these differences are comparable to the religious differences associated with gender, race, and other demographic traits. Within academia, religious faculty are far more common in the “hard” sciences than in the humanities or social sciences.

Rationality and the “Religious Mind”

Since the mid-1800's, religion has been a subject of sustained research within every social science except economics.¹ In the past two decades, however, widespread evidence of religion's durability, including numerous instances for religiously motivated political activism and ethnic conflict, has broadened scholarly interest in religion while also shattering the traditional scholarly consensus concerning religion's nature and future. Researchers are moving toward a “new paradigm” for the study of religion, which leans heavily upon the assumptions of rational choice and (religious) market equilibrium (Warner 1993; Young 1997). Though fueled by new, economic models of religious behavior, this shift finds its origins in a growing body of empirical findings that challenge traditional social-scientific views about religion.

For nearly two centuries, political philosophers and social scientists approached religion as a dying vestige of our primitive, pre-scientific past. Religious commitment was seen as independent of, and largely antithetical to, the rational calculus. A cost-benefit approach to religious behavior made little sense, because socialization reduced most religious calculations to tautological “decisions” to choose what one was trained to choose. Indeed, Freud and many other influential scholars argued that intense religious commitment sprang from nothing less than neurosis and psychopathology.

Although contemporary research has shed the overt, antireligious rhetoric that characterized earlier work, it has tended to retain the antirational assumption – not because it has proved fruitful but rather because its origins are forgotten, its status unexamined, and its presence unnoticed. Traditional theories of religious behavior have accorded privileged status to the

assumption of non-rationality. The assumption has, in turn, hobbled research, promoted public misconceptions, and, at times, distorted law and politics.²

The distorting force of the received wisdom is underscored by the body of stylized facts that it has spawned. For example: that religion must inevitably decline as science and technology advance; that individuals become less religious and more skeptical of faith-based claims as they acquire more education, particularly more familiarity with science; and that membership in deviant religious “cults” is usually the consequence of indoctrination (leading to aberrant values) or abnormal psychology (due to trauma, neurosis, or unmet needs). Most people know these statements to be true, even though decades of research have proved them false (Hadden 1987, Stark and Bainbridge 1985, Greeley 1989).

We argue below that the traditional view of religion as nonrational, not to mention irrational, emerged from a 19th century scholarly tradition largely devoid of empirical support and tainted by prejudice, ignorance, and antireligious sentiment. The relevant data suggest that most religious behavior is, in fact, associated with good mental health, is sensitive to perceived costs and benefits, and is compatible with scientific training.

The data on religion and science are particularly striking. Despite continuing talk about the secularizing effects of education and academia, our analysis of data from the 1972 through 1996 General Social Surveys find that most highly educated Americans, including most professors and scientists, are as religious as other Americans. Moreover, the college faculty most acquainted with “hard” scientific knowledge – physicists, chemists, biologists, and mathematicians – are by every measure substantially *more* religious than their counterparts in the social sciences and humanities. It is only among anthropologists and non-clinical psychologists that we observe very high rates of disbelief and anti-religious sentiment.

Before turning to these data, we will review the origins of the traditional view of religion, summarize the research on religion and mental health, and then examine some recent findings concerning the beliefs, values, and behavior of the members of deviant religious groups.

The Primitive Mind Tradition

David Hume and other 18th century European philosophers were among the first to attribute religion to primitive thinking processes and to thereby declare its inevitable decline and ultimate doom in the modern world. By the time this claim was fully-developed in Auguste Comte's ([1830-42] 1896) *The Positive Philosophy* (whereby Comte attempted to found sociology), it represented a virtual consensus among European intellectuals. Tracing the course of cultural evolution, Comte described the most primitive stage as the "theological" or religious stage. During this stage human culture is held in thrall by "hallucinations ... at the mercy of the passions" (1896 II, p. 554). As individuals and societies acquired a more rational understanding of the world, religion would be displaced, first by philosophy, but ultimately by science, particularly the science of sociology.

Most early sociologists and anthropologists shared Comte's dismissive (and racist) view of "primitive" people and their culture. Thus Herbert Spencer's (1882: I.344) *Principles of Sociology* observed that the primitive mind is "unspeculative, uncritical, incapable of generalizing, and with scarcely any notions save those yielded by perceptions." In a subsequent edition, Spencer (1896: I.87) noted that the primitive mind "gives credence to an impossible fiction as readily as to a familiar fact." Both Spencer and his contemporary, the anthropologist Edward B. Tylor ([1871] 1958), traced the origins of religion back to these mental deficiencies, especially the inability to distinguish between dreams and reality. Primitives who dreamt of contact with the

dead erroneously inferred that spirits survive death. Half a century later, Lucien Lévy-Bruhl (1923) continued to claim that there existed two distinctive mentalities, the primitive and the civilized, which differed not merely in degree, but in quality. While the civilized mind is oriented to rigorous, logical thought and wedded to science and experiment, the primitive mind is prelogical and oriented towards the supernatural.

The scholars who repeatedly linked religion to the uninformed and irrational thought processes of “primitive” peoples shared a thinly veiled agenda. They were, in the words of Jeffrey Hadden (1987, p. 590), members of a new “order [that] was at war with the old order” dominated by Europe’s Catholic Church. “The founding generation of sociologists were hardly value-free armchair scholars, sitting back and objectively analyzing these developments. They believed passionately that science was ushering in a new era which would crush the superstitions and oppressive structures which the Church had promoted for so many centuries. Indeed, they were all essentially in agreement that traditional forms of religion would soon be a thing of the past” (Hadden 1987, p. 590).³

Although a study of anticlericalism lies beyond the boundaries of this paper, we must emphasize that the (anti)religious sentiments voiced by many 18th through early 20th century intellectuals sprang directly from their antipathy toward the established religions of their day. The primitive mind proponents were, according to E. E. Evans-Pritchard (1965: 15), “agnostics or atheists ... [who] sought, and found, in primitive religions a weapon which could, they thought, be used with deadly effect against Christianity. If primitive religion could be explained away as an intellectual aberration, as a mirage induced by emotional stress, or by its social function, it was implied that the higher religions could be discredited and disposed of in the same way... Religious belief was to these anthropologists absurd.”

The primitive mind thesis was doomed, however, once scholars actually began doing field work. For it is a fact that none of its prominent social scientific proponents ever had met a member of a primitive culture. *All* of their information came secondhand, from the library accounts published by various travelers. The source material used by Comte, Spencer, Tylor, Lévy-Bruhl, and their contemporaries was incorrect, extremely misleading, and often simply fabricated (Evans-Pritchard, 1965: 6). When trained anthropologists, most notably Bronislaw Malinowski ([1925] 1954), came face-to-face with the objects of their study, the primitive mind tradition collapsed under irresistible contrary evidence – so much so that no subsequent generation of anthropologists has dared ascribe “primitive” thinking to ancient or aboriginal peoples.

Religion as Irrational Choice

The death of the primitive mind thesis did not, however, kill the complementary view of religion as a throwback to pre-scientific times. On the contrary, anthropology has remained a bastion of anti-religious sentiment – a fact that we will demonstrate later in this paper. Even Malinowski ([1925] 1954: 28-29), who convincingly portrayed Trobriand Islander magic as a rational response to risk and uncertainty, refused to view Western religion in a similar light (Evans-Pritchard, 1965). Melford Spiro (1964: 109) was surprisingly forthright about his field’s double-standard. After insisting that “the rationality of belief, regardless of its truth, must be assessed relative to the scientific development of the society in which it is found,” Spiro concludes that “irrationality is peculiarly characteristic of Western religious belief. It is in Western culture that the findings and the world-view of science are salient; it is in Western culture, therefore, that religious beliefs are often antithetical to scientific beliefs.”

Again and again, the presumed incompatibility of religion and science leads to predictions of religious decline. In his popular undergraduate textbook, the distinguished anthropologist Anthony F.C. Wallace (1966, p. 264-265) pronounced the death of the gods as follows: “the evolutionary future of religion is extinction. Belief in supernatural beings and in supernatural forces that affect nature without obeying nature’s laws will erode and become only an interesting historical memory. ... [A]s a cultural trait, belief in supernatural powers is doomed to die out, all over the world, as a result of the increasing adequacy and diffusion of scientific knowledge...the process is inevitable.”

Though less anti-religious than their colleagues in anthropology, 20th century sociologists have also stressed the irrationality of religious faith. Kingsley Davis (1949, p. 509-10), a major figure in the field, described the “rationalistic approach” to religion as a serious fallacy (because “religious behavior is nonrational”). Other sociologists, following Marx, continue to view religion as a tool of exploitation, “the opiate of the masses.”

Many psychologists maintain Freud’s (1927: 88) diagnosis of religion as “neurosis,” “illusion,” “poison,” “intoxicant,” and “childishness to be overcome.”⁴ Thus the psychologist Mortimer Ostow (1990) recently claimed that Evangelical Protestants are unable to accommodate “the realities of modern life” (p. 100). Like Freud, Ostow attributes their behavior to immaturity: “... the fundamentalist is also regressing to the state of mind of the child who resists differentiation from its mother. The messiah and the group itself represent the returning mother” (p. 113). The anthropologist Weston La Barre (1972: 19) has likewise claimed that “A god is only a shaman’s dream about his father.”

Diagnoses of religion as psychopathology have not been limited to Freudians; clinicians of many persuasions express similar views. Ellis (1980: 637) has claimed that religiosity “is in many

respects equivalent to irrational thinking and emotional disturbance... The elegant therapeutic solution to emotional problems is to be quite unreligious ... the less religious they are, the more emotionally healthy they will be.” According to Watters (1993: 140) “Christian doctrine and teachings are incompatible with many components of sound mental health, notably self-esteem, self-actualization, and mastery, good communication skills, related individuation and the establishment of supportive human networks, and the development of healthy sexuality and reproductive responsibility.”

If everyday believers are neurotic, irrational, and emotional disturbed, then how much worse must it be for the *leaders* of religious movements? According to Lawrence Foster (1993: 16-20) and other scholars, many religious founders suffer from full-blown mental illness. Manic-depression is Foster’s explanation for the “religious genius” of Joseph Smith (the founder of Mormonism), Ann Lee (founder of the Shaker movement), John Humphrey Noyes (founder of the Oneida commune), John Fox (founder of the Quakers), Sabbatai Sevi (a 17th century Jewish messianic figure), Emmanuel Swedenborg (a highly influential 18th century scientist, philosopher, and mystic), Martin Luther (leader of the Protestant Reformation), and Jesus of Nazareth.

Beginning with the work of T. W. Adorno, et al. (1950), scholars have often invoked a dysfunctional personality trait known as “authoritarianism” to explain and dismiss religious fundamentalism. According to these scholars, people with authoritarian personalities embrace fundamentalist religious beliefs in order to relieve the psychological pressures stemming from their inability to tolerate life’s contradictions and ambiguities. Indeed, it was claimed that authoritarianism not only made people religious, but that the two factors combined to make them bigots as well. Gordon Allport (1960, 1963) made similar claims about what he called “extrinsic” religion. Like many other social scientists who have studied religion, Allport viewed conservative

religion with disdain. Mature adults could be religious, but only so far as their faith was “intrinsic” – mild, liberal, and subject to continuing and constructive doubts. Allport dismissed stronger, “extrinsic” affirmations of faith as “primitive credulity,” “childish, authoritarian, and irrational.”⁵

Other liberal scholars blame ignorance and poor reasoning for the persistence of conservative religious belief. In one book after another, H. Paul Douglass identified the “emotional sects” as “a backwash of sectarianism” found only “in certain quarters,” especially “the more backward sections of the nation” (see, for example, Douglass and Brunner 1935). Edmund Brunner (1927), Douglass’ colleague at the Institute of Social and Religious Research, described one evangelical congregation as “a poor class of mixed blood and of moronic intelligence.” Warren Wilson (1925:58), another member of the Institute, blamed the growth of evangelical Protestant groups in rural America on the fact that “among country people there are many inferior minds.”

More typically, however, scholars assert the role of ignorance and poor reasoning only implicitly, as when they stress how education overcomes religious orthodoxy. Thus Caplovitz and Sherrow (1977) noted that: “The college experience, particularly at the better colleges, stimulates free inquiry, encourages the questioning of dogma, and undermines the force of tradition and authority, all of which combine to shake fundamentalistic religious belief.”⁶

Popular theories of cult conversion are but vulgar variants of these scholarly traditions. When the Moonies, Krishnas, and other new religious movements surfaced in the 1960s and 70s, attracting a small but visible following among American youth, the press was quick to play up charges of “mind control” and “brainwashing.” The “self-evident” premise that no informed, rational person would *choose* to join a deviant religious group led many to conclude that converts

must have been coerced, hypnotized, or otherwise robbed of reason (Barker 1984, Robbins 1988). For a few years, even the courts accepted this line of argument.

Evidence of Rationality

Despite the immense body of writings and enormous weight of learned opinion that sustained it, the irrationalist position has fallen upon hard times. Beginning in the 1960s and continuing through the present, numerous empirical studies have failed to demonstrate a link between religiosity and deficient or abnormal thinking.

Normal Personalities

Not surprisingly, the most extreme claims of religious psychopathology have been the most thoroughly debunked. Extensive field study research of the Moonies, Krishnas, and numerous other cults have soundly refuted most charges of “brainwashing” – so much so that the American Psychological Association, the American Sociological Association, and the Society for the Scientific Study of Religion (together with numerous individual scholars) filed *amicus curiae* briefs in three appeals court cases overturning cult/brainwashing decisions (Richardson 1991: 58, cf. Anthony 1990). But less extreme claims about religion and mental dysfunction have fared no better.

In a study based on a sample of persons diagnosed as needing immediate psychotherapy and a matched sample of the population, Stark (1971) found that those diagnosed as mentally ill were far less likely to attend church or to score high on an index of orthodox religious belief. He also reported that the published empirical research offered no support for the claim the more religious people are prone to authoritarianism.

Subsequently, in a survey of all published, empirical studies Bergin (1983) found that most reported a positive, rather than a negative, relationship between religiosity and mental health. The few studies that did report a negative association between religion and mental health were tautological, having employed religious items as measures of poor mental health!⁷ Christopher Ellison (1993) has reviewed the large empirical literature on religion and health and finds strong and consistent evidence that religious belief and activity enhance self-esteem and life satisfaction, while mitigating the impact of social stressors and improving physical health.

Normal Preferences

Socialization stories constitute a more mild variant of the religion-as-irrationality thesis. Unusual religious behaviors are attributed to abnormal values, which are in turn traced to a deviant upbringing. Sociologists have argued that religious socialization leaves little room for economic rationality and cost-benefit calculations. According to Steve Bruce (1993: 193, 204), religion is a “sphere of human activity ... not open to economizing behavior because [it is] controlled by a culture of norms.” The economic approach is “fundamentally misguided” because “the dramatic switch at the point of belief ... prevents us from applying rational choice.” N. J. Demerath (1995: 108) describes rationality as “a particularly odious red herring in a spiritual context,” and claims that “the mere allowance of rational calculations in religious affairs would appear to be evidence of secularization.”

It certainly is true that patterns of religious affiliation, participation, intermarriage are strongly influenced by family background, childhood training, and social ties. Yet we need not view these forces as incompatible with maximizing behavior. Iannaccone [1984, 1990] has, in fact, modeled religious experience as a form of consumption capital and socialization as an

instance of rational habit formation. Within such models, past experience influences choice (by altering costs or benefits) but in no way eliminates it.

Socialization loses its explanatory value when viewed as the alternative to choice.

Scholars stop searching for the benefits that offset the high costs of membership in a strict sect and instead merely assert that “patterns of childhood socialization” cause Mormons or Jehovah’s Witnesses to *ignore* costs or (mis)perceive them as benefits.⁸ The implicit assumption is that religious devotees just don’t count as others do. When *they* sacrifice large sums of time and money, it is with little sense of loss, because *their* values are not like ours.

Economists will appreciate the loss of potential explanatory power that accompanies these and other taste-based explanations for religious behavior. But there are additional reasons to discount such explanations. Numerous surveys and numerous psychological studies find that when it comes to their underlying wants and preferences, religious people in general, and sect members in particular, seem no different from other “normal” members of society.

Consider, for example, the results in table 1. The data, collected by the Barna Research Group and the General Social Survey in 1992-1993, show that when asked how much they value standard sources of satisfaction (such as free time, money, a career, community, and a comfortable living), evangelical Protestants are just as likely as other Americans to admit that any particular item is “very important” to them.⁹ Other surveys, comparing attitudes of evangelicals and other Protestants on a series of economic policy issues, yield similar results (Iannaccone 1993). It is difficult if not impossible to assess the accuracy of these results, and it is quite likely that people tend to portray themselves as more noble and less materialistic than they really are. Still, unless one simply rejects people’s replies, they suggest that basic values do not vary much across religious subcultures. Indeed, we have yet to find any data which indicate that when highly

religious people sacrifice time, money, and opportunities for the sake of their faith, they do so with reference to underlying values that differ significantly from those of “normal” people.

Normal Perceptions

A number of years ago, one of the authors (Stark) did field observations among the first American members of the Unification Church, the group popularly known as the Moonies. During what was one of the most instructive moments of the entire experience, a young, male, Moonie offered the following reflections:

“You know, sometimes at night I wonder what if none of this is true. What if Rev. Moon is not inspired by God? Maybe all of this is for nothing. But then I say to myself, if it’s true then I’m in on the ground floor of the greatest event in history. And if it isn’t, so what? I was probably going to spend the rest of my life working in that plywood plant anyway.”

When this Moonie weighed “all of this,” he meant nothing less than his complete dedication of time and property to Moonie missionary activity. In those days, there was no room in the Unification Church for part time, lay members. It was all or nothing. The young man did not minimize these costs, but rather bore them as the price of a high-stakes gamble. The logic of expected utility maximization – a Moonie version of Pascal’s Wager – justified his actions.

In most respects, this man was unexceptional. All the other Moonies interviewed by Stark acknowledged the costs of membership. Like the young man, they discussed it openly and frequently. They often emphasized the benefits that offset the costs – adding such things as the great warmth and family-feeling of the group, and a busy, often exciting, life to the benefit side of the ledger, along with such religious benefits as the possibility of playing key roles in bringing

about the Second Advent. But, they remained candid about the costs: long hours, lack of privacy, disrupted family life, and even the all-too-frequent Korean meals. Contrary to the image of cultists as brainwashed captives of faith, members often reached the conclusion that for them the benefits no longer outweighed the costs and dropped out. Indeed, such a large majority of Moonie converts eventually did quit, especially when it came time to raise a family, that the movement shifted its original position and instituted a form of lay (part-time) membership requiring greatly reduced sacrifice (Barker 1984).

Costs seem to be no less salient for the members of other sects. Recently, Stark interviewed eight Jehovah's Witnesses to see how they viewed membership in their religion, known to outsiders for its distinct beliefs, strict lifestyle demands, and door-to-door evangelism. After a brief conversation to put each respondent at ease, he asked each person the following question: "Let's suppose someone is thinking very seriously about joining your church. What would you say would be the major factors holding them back?"¹⁰

In every case, the respondent immediately mentioned the time and energy required of members. As one woman put it: "A lot of people aren't sure about putting in so much time. Being a Witness isn't a matter of just showing up on Sunday for an hour or two. It's a real commitment." The second barrier mentioned by all eight was the public stigma of membership. "You have to be able to endure a lot of odd looks when people find out your religion," one middle-aged male responded. When asked if they ever found it difficult to witness in public, each seemed to find the question a bit absurd. Wouldn't anyone sometimes find it hard to knock on the doors of strangers?

In short, we found no evidence that Witnesses bear the high costs of membership in silence or ignorance, or under the compulsion of fanatical faith. These were very pleasant,

reasonable, and interesting people. They *knew* the costs were high, and they admitted it to outsiders as openly as to one another. Like the Moonies, they bore these costs only because they received, or planned to receive, still larger benefits. Indeed, the Witnesses and kindred groups often quote the New Testament phrase “count the costs” (Luke 14:28) to emphasize the great sacrifice, and still greater rewards, that faith entails.¹¹

Religion and Science

Ultimately, the alleged deficiencies of the “religious mind” derive from the presumed limitations of religion itself — specifically, its pre-scientific, un-scientific, and anti-scientific character. The scholars cited earlier in this paper are by no means the only ones to take for granted the fundamental incompatibility between scientific and religious “worldviews.” Yet the relevant data provide little support for this widespread view.

The consequences of true incompatibility are not hard to imagine — indeed, they are widely touted. They include: (1) a decline in religion as the fruits of scientific progress grow and spread; (2) lower levels of religious belief and practice among people with higher levels of education, (3) especially low levels among those actually engaged in scientific activities; and (4) within the academic community, lower levels within the “hard” (physical) sciences than within the “soft” (social) sciences and humanities.

Remarkably, all these predictions fail. First, American rates of religious belief and participation have remained stable for more than fifty years (the entire period for which there exist data) despite a tremendous increase in average educational levels, revolutionary growth in technology, and explosive increase in both the stock of scientific knowledge and the fraction of the population engaged in scientific research (Greeley 1989, Gallup 1997). Church membership

rates, the best available long-term measure of participation, have actually increased, from about 17% of the population in 1776 to more than 60% of the population today (Finke and Stark 1992: 16). Second, in one survey after another, the correlation between educational attainment and most measures of religious belief is weak (though sometimes negative) and the correlation with most measures of formal religious involvement, such as church membership and church attendance, is consistently positive (Roof and McKinney 1987). Third, although surveys find lower rates of religious belief and behavior among professors, scientists, and other highly educated people, the magnitude of these religious differences are comparable to those associated with demographic traits such as gender, race, and age. Fourth and finally, faculty in the “hard” sciences tend to be *more* religious, not less, than their “soft” science and humanities counterparts. For more on these last points, we turn to the 1972-1990 General Social Surveys and the 1969 Carnegie Survey of College Faculty.

The General Social Surveys, 1972-1990

Although a number of empirical studies from the 1960s and 70s purport to show low rates of religiosity among scientists, professors, and/or graduate students (Wuthnow 1985: 187-190), nearly all of these studies suffer from small or unrepresentative samples, rudimentary statistical methods, and few or no statistical controls for the demographic factors, such as gender and race, known to correlate with religiosity. To better assess the religiosity of America’s cognitive elite, including its professors and scientists, we will examine data from the National Opinion Research Center’s *General Social Surveys*.

The GSS is unlike most other national surveys in that it includes a variety of religious questions in addition to its more standard demographic, attitudinal, and behavioral questions.

Also, because the GSS has been conducted most years since 1972, interviewing about 1,500 different respondents each year, the cumulative GSS files include information on about 30,000 respondents. Nearly 1,300 of these have had two or more years of graduate school training, and about 300 are college professors, physical scientists, social scientists, or engineers. We will refer henceforth to these two, overlapping subgroups as “graduate-trained respondents” and “professors and scientists”.¹²

The GSS routinely asks all respondents about their religious upbringing, current religious preference, frequency of church attendance, and (self-perceived) strength of religious affiliation. In many years, the GSS has also included questions about frequency of prayer and beliefs concerning God, the afterlife, and the Bible. Table 2 shows how the religious attitudes and behavior of highly educated people and professors and scientists compare to the general population. Table 2 also reports corresponding comparisons for men and women and for black and white respondents.

Consistent with earlier reported findings, professors and scientists do appear less religious than the general public. Most notably, far more professors and scientists reject religion altogether (19% versus 7%) and far more reject the Bible as God’s Word (38% versus 16%). On the other hand, the majority of professors and scientists *are* religious – 81% say they have a religion, 65% believe in an afterlife, 64% feel near to God, and 61% (claim to) attend church at least several times a year. Moreover, most of the religious differences separating professors and scientists from the general public are no greater than the differences separating men and women or blacks and whites. A 19-point gap separates the percentage of professors and scientists who pray daily from the corresponding percentage of the general public, but this is less than the 23-point gap separating men from women and virtually equal to the 18-point gap separating whites from

blacks. Professors and scientists are less likely to feel near God, believe in an afterlife, or describe themselves as “strong” members of their religion, but these differences also parallel those associated with gender and race. Church attendance rates – the best single measure of religious involvement – are similar for professors/scientists and the general public. About 38% of the former and 45% of the latter claim to attend religious services more than monthly. In contrast, a 13-point attendance gap separates men from women, and a 12-point gap separates whites from blacks.

Graduate-schooled respondents are, on average, more religious than professors and scientists, but less religious than the general public. They attend church about as often as the general public, but are less religious by all other measures. Again, however, most of the differences are not large compared to the differences associated with gender and race.

We have emphasized race and gender effects for several reasons. First, when comparing rates of religiosity across population subgroups, one must recognize that these rates vary with all manner of demographic traits. A priori, there is nothing to distinguish the effects associated with education or career from those associated with gender, race, marital status, age, ethnic heritage, and geographic region. Second, the same scholars who asserted the incompatibility of religion and science have also invoked irrationality to explain the religiosity of women and non-whites. Racism was never far from the surface in 19th and early-20th century writings on the religion and the “primitive mind” And scholars have often interpreted women’s religiosity as a dysfunctional response to psychic deprivations, such as a Freudian need for (divine) father figures (Beit-Hallahmi 1997). Third, and most important, the lower religiosity of graduate-schooled respondents and professors and scientists is itself partly a function of gender, race, and other demographic differences.

Compared to the general population, disproportionate numbers of both groups are male, white, and of Jewish or other non-Christian ancestry – all of which correlate with lower rates of religious belief and activity. (For example, 96% of the GSS professors and scientists are white, 75% are male, and 7.5% were raised Jewish, whereas only 86% of other GSS respondents are white, 44% are male, and 2% were raised Jewish.) The probit regressions in table 3 allow us to compare our target groups to the general public while controlling for these and other demographic factors known to predict religiosity.

Table 3 includes results for *two* sets of probit regressions. The first set (above the solid line) compare professors and scientists to the general public while controlling for various demographic traits. The dependent variables, listed at the top of each column, correspond to the religion variables in table 2: regular church attendance, regular prayer, belief in an afterlife, feeling near to God, strong membership, belief in the Bible, and rejection of religion. In addition to the “professor/scientist” dummy variable, the independent variables in each regression also include the respondent’s age, real household income, and dummies for the respondent’s gender, race, marital status, geographic region, and religious upbringing. The estimated coefficients reported in table 3 give the probability changes corresponding to a 0 to 1 change in each dichotomous independent variable. The estimated coefficients for “age” and “real income” are slope probabilities.¹³ Thus, for example, the top left coefficients indicate that, after controlling for demographic traits, the probability of regular church attendance is .01 greater (and statistically insignificant) for professors and scientists (as opposed to other respondents). In contrast, the “male” coefficient in the same column shows that the probability of regular attendance is .14 less (and highly significant) for men (as opposed to women).

At the bottom of table 3, below the solid line, we have reported results from a second set of probit regressions which compare graduate-schooled respondents to the general public. This second set of regressions includes the same demographic control variables as the first. We have suppressed the control variable coefficients, however, because they are identical (within 0.01) to those in the first set of probits. (This is as it should be, since both sets of regressions employ common data in which the vast majority of respondents are neither professor/scientists nor graduate-schooled.) Thus, the table's bottom panel lists only the probability changes associated with a 0 to 1 changes in the "graduate-schooled" variable. Specifically, this coefficient is 0.05 for the church attendance regression, indicating that after controlling for demographic traits, the probability of regular church attendance is about 5% greater for graduate-schooled respondents than other respondents.

The "professor/scientist" and "graduate-schooled" coefficients in table 3, thus, show how much irreligiosity remains attributable to being a professor/scientist or graduate-schooled respondent, and to see how the magnitude of these effects compare to those of other predictors. The results for professors and scientists must be viewed tentatively since their numbers are so small relative to the entire GSS. On the other hand, the number of graduate-schooled respondents is substantially larger, and both sets of results turn out to be fairly similar. With the controls in place, professors and scientists appear no less likely than other people to attend church regularly and only marginally less likely to pray regularly or describe themselves as "strong" members of their religion. Graduate-schooled respondents appear slightly *more* likely to be strong members and regular attenders. Professor/scientists and graduate-schooled respondents are somewhat less likely to pray regularly, believe in an afterlife, and feel near God, though most of these effects are statistically insignificant and the corresponding impact of gender, race, and other demographic

variables tend to be greater. We find only two areas – outright rejection of religion and rejection of the Bible – where the estimated impact of high education or a scientific/college career overshadows the impact of gender.

Although these last two effects provide some support for the incompatibility thesis, they remain subject to an important proviso. Retrospective data collected by Thalheimer (1973: 184) indicate that college faculty tend not become less religious as a consequence of their scientific training, but are instead less religious before entry into college or graduate school. Wuthnow (1985: 191) likewise reports that his panel study of Berkeley students found that “religious nonconventionality ... leads subsequently to higher academic performance and identification with the intellectual role ... but the data show no tendency for high academic performance or intellectualism to result in subsequent shifts toward religious nonconventionalism.” Thus, a selection effect seems to be at work, leading students with low levels of religious belief toward academic careers and higher education. But the actual, professional training and subsequent career work seems to leave initial levels of religiosity in tact.

One way to interpret our data is as follows: Only a small percentage of the general public openly reject religion. (In the GSS, for example, just 7% claim to have no religion and a similar percentage rejects all belief in God.) A substantially larger fraction of faculty, scientists, and other highly-educated people openly reject religion (in part because disproportionate numbers of irreligious people pursue graduate studies and research careers). The “none” regressions in table show that, after controlling for demographics, these *additional* non-believers constitute about 4% of graduate-schooled population and 8% of professors and scientists (see the “professor/scientist” and “graduate-schooled” coefficients for the “has no religion” column). This small minority,

together with exogenous demographic factors, account for virtually all the religious differences separating professors, scientists, and other graduate-schooled people from the general public.

Stated differently, if we re-estimate our religiosity regressions while excluding from the sample all respondents who have no religion, the “professor/scientist” and “graduate-schooled” indicator variables are no longer associated with irreligiosity (except Bible disbelief). The re-estimated probability changes associated with a 0 to 1 change in the “professor/scientist” variable are 0.07 for regular attendance, -0.01 for regular prayer, 0.01 for “strong” membership, -0.06 for feeling close to God, -0.02 for belief in life after death, and -0.05 for belief in the Bible. The corresponding re-estimated probability changes associated with a 0 to 1 change in the “graduate-schooled” variable 0.08, -0.02, 0.08, -0.01, 0.03, -0.09, respectively. Though *not* based on a random sample of the population, these results underscore the fact that the religious beliefs and conduct of most professors, scientists, and graduate-schooled people mirror those of the general public.

The general public and most professors may be wrong, of course. Their faith might be entirely misplaced, their religious activities a complete waste of time. But the truth of religious beliefs in general, much less any beliefs in particular, is not our concern. We approached the GSS looking for evidence of incompatibility between religion and science, or piety and education. We instead found conventional religious belief and active religious participation among a majority of the most educated and scientifically trained members of American society. We may charge these people with error, but it is difficult to accuse them of extraordinary ignorance, irrationality, or mental deficiency.

The 1969 Carnegie Survey

We turn last to an old but underutilized study that offers rare insight into the religiosity of college faculty and, especially, the differences across academic fields. In 1969 Carnegie Commission sponsored a mammoth survey with nearly 60,000 respondents, nearly one-fourth of all the college faculty in America. The survey had several questions on religion, including “What is your present religion?”, “How often do you attend religious services?”, “How religious do you consider yourself?”, and “Do you consider yourself religiously conservative?”

Table 4 summarizes the responses to these questions across faculty fields.¹⁴ Note that by every measure, faculty in the “hard” sciences turn out to be more religious than their “soft” science counterparts: they attend church more regularly, are more likely to describe themselves as “deeply” or “moderately” religious, have retained their religious affiliation in greater numbers, and a far less likely to declare themselves opposed to religion. The differences between the soft and hard sciences are large, significant, and (as noted below) unaffected by controls for age, race, gender, and religious upbringing.¹⁵

Table 4 also summarizes the social sciences by specific fields. Here we see an additional feature, not previously noted in the literature. It is above all faculty in psychology and anthropology who emerge as towers of unbelief. The other social sciences remain relatively irreligious, but these two fields — the two most closely associated with the “primitive” and “religious” mind theses — are true outliers. Compared to faculty in the physical sciences, psychologists and anthropologists are almost *twice* as likely to be irreligious, to never attend church, or to have no religion. One in five actually declare themselves “opposed” to religion. These differences are of such magnitude that one can scarcely imagine their not influencing the tone of conversation, instruction, and research in these two fields. Indeed, these data suggest to us why explicit, rational theories of religion evoke widespread skepticism, if not outright hostility.

The probit regression results in table 5 show that the disciplinary patterns remain strong even after controlling for the faculty members' gender, marital status, race, age, and religious upbringing. (As in table 4, the coefficients show probability changes for a 0 to 1 change in the independent dummy variables and probability slopes for the continuous variable, age.) The estimated probability changes of the top two rows reaffirm that, by every available measure, social scientists in general, and psychologists and anthropologists in particular are substantially less religious than faculty in the physical sciences. The regression data also includes faculty from the arts and humanities, and the results show that these faculty are no more religious, and by most measures slightly less religious, than the physical scientists.

What are we to make of these results? Some reviewers have suggested that anthropologists and psychologists are irreligious because only they give much attention to religion (whereas physical scientists remain ignorant of its contradictions). Perhaps. But biologists and physicists routinely address religiously charged questions about human evolution and the origin of the universe. More importantly, traditional claims concerning the "incompatibility" of science and religion and predictions of science's contribution to religion's inevitable demise have *always* been framed in terms of physical science discoveries that expose the fallacies of religious superstitions and technological progress that reduces the appeal of religious promises. We are inclined therefore to side with the sociologist Robert Wuthnow (1985: 197) who argues that the social sciences lean toward irreligion precisely because they are "the *least scientific* disciplines." Their semi-religious reliance on nontestable claims about the nature of humans and human society puts them in direct competition with traditional religions (something Comte explicitly acknowledged when he coined the term "sociology" more than 150 years ago). Not coincidentally, it is these

same disciplines that have produced nearly all the literature on the presumed incompatibility between religion and science and the inevitability of religious decline.

Conclusion

For most of its history, the social-scientific study of religion employed what might be called the irrational-actor axiom. Religious behavior was explained in terms of primitive thought, neurotic impulses, and social conditioning. Secularization was seen as the inevitable result of scientific enlightenment and technological progress. And rational/economic interpretations were scarcely considered, much less developed and tested. Although these views had little or no empirical foundation (having predated any real research on the origins or character of religion), they underpinned and constrained religious research for more than a century.

A growing body of data suggest that the traditional, anti-rational approach to the study of religion is deeply flawed. As we have shown, these data seriously challenge old, but still popular notions about religious decline, the incompatibility of religion and science, and the pathological roots of extreme religious commitment. The same data raise the possibility that a rational/economic approach might yield new insights and more accurate predictions concerning religious behavior, institutions, and trends.

Economic studies of religion have, in fact, become increasingly common. Sociologists are debating the merits of rational choice theory and market models as a “new paradigm” for the study of religion. Economists are building and testing models of religious clubs, markets, and regulation – from the medieval Catholic church’s uniquely durable monopoly, to contemporary America’s uniquely competitive religious free-for-all (Ekelund, et al. 1996, Iannaccone 1991). The premise of maximizing behavior is being used to explain religious trends, patterns of

conversion and intermarriage, the success of strict churches, the differences between Western and Asian religions, and even the content of religious doctrine (see Iannaccone [in press] for a review of recent publications, which number well over one hundred).

Although we have emphasized the anti-economic character of traditional religious research, we do not advocate that contemporary research become anti-sociological. To acknowledge rationality and choice in the realm of religion is not to deny the presence of social constraints and psychological leanings. Just as standard economic models emphasize the constraints of monetary prices, income, and technology, so models of “nonmarket” behavior must attend to the constraints of experience, values, and culture. One can scarcely discuss religious affiliation, much less commitment, participation, conversion, and intermarriage, without reference to family background, childhood training, and interpersonal ties. Religious actions are embedded within their social contexts, yet they remain the actions of normal individuals possessed of normal tastes, normal perceptions, and a normal dose of rational self-interest.

Notes

¹ Ironically, Adam Smith (1965[1776]: xx-xx) deserves credit for one of the earliest and most incisive social-scientific analyses of religious institutions.

² The now thoroughly discredited “brainwashing” justification for cult kidnappings provides a prime example of a legal distortion (Anthony 1990).

³ Writing from European countries dominated by established churches, they tended to equate the decline of the state church with the decline of religion in general. Tocqueville is the exception that proves the rule, since his more positive view of religion and the vitality of religious institutions derives from his extensive study of America’s “experiment” with democracy and free-market religion.

⁴ Long before Freud, a link between religion and insanity was taken for granted in mental health circles. In the U.S. Census of 1860, inmates of mental hospitals are classified according to the cause of their psychopathology. One of the most common causes was “religious excitement.” (Bainbridge, 1984).

⁵ Over time, scholars have become increasingly uncomfortable with Allport’s typology, recognizing that it works to elevate the stigmatize the conservative forms of religion that most social-scientists reject while elevating the more vague and liberal religious sentiments that many accept. See James Dittes (1971) and Kirkpatrick and Hood (1990).

⁶ In fairness, we must note that, early in his career, one of us argued that education frees the mind of religious fetters (Stark, 1963).

⁷ For example, after including five pro-religious items in on Ego Strength Scale and scoring each against a person's ego strength, Barron (1953) concluded that religious people displayed weak ego strength.

⁸ This, at least, was the claim of a recent reviewer for the American Sociological Review who criticized an analysis of "strict" churches for its "unsubstantiated implicit assumptions about the benefits and costs of religious strictness" and its failure to emphasize "the fact that human beings perceive things as costs and benefits in light of their values" [underscore in the original]. Bruce (1993:204) echoes this criticism, noting that "[t]here is a dramatic switch at the point of belief. What was previously a complete waste of space becomes an extremely rewarding activity. That switch prevents us from applying rational choice expectations."

⁹ They also are as likely to have read part of a book other than the Bible during the past seven days (65% versus 68%) and are even as apt to have watched MTV during the past week (30% versus 29%).

¹⁰ The conversations were informal in style and the question was not always worded precisely this way.

¹¹ It goes without saying that most religions, particularly those known for their sectarianism, make much of the benefits that accompany faith. Less well-know is the statistical association between measured costs and (real or stated) benefits. For example, in the 1989 General Social Survey, respondents were asked to "grade" their church on a standard, A through F, four-point scale. They were also asked how much money they had contributed to their church in the previous year. Our analysis of these data found a strong positive correlation between the latter cost and the

former benefit. Aggregating over types of denominations, only 2 percent of Catholics and 3 percent of Liberal Protestants contributed more than \$2,000 to their church, whereas 14 percent of Conservative Protestants and 48 percent of Mormons gave that much. At the same time, Catholics and Liberal Protestants ranked their churches just over a C (2.3), whereas Conservative Protestants gave their churches a B (3.1) and Mormons gave their church an A (3.8). More generally, in both speech and surveys, regular church attenders are far more likely than others to view their religion as personally beneficial and satisfying. They more often believe in other-worldly benefits (heaven) and costs (hell). They impute higher probability to the existence of God. They express more satisfaction with their denomination, congregation, pastor, church-based friendships, and the like. Similar cost-benefit factors differentiate religious “dropouts” from those who remain active in their faith. Some readers might discount these facts as obvious and uninformative. But they are obvious only to the extent that we adopt (or accept that others adopt) a utilitarian perspective, persisting in behaviors perceived as beneficial and avoiding those perceived as costly.

¹² Our “professors and scientists” include all GSS respondents with at least one year of graduate education and 1970 occupational codes listed under the headings “engineers,” “life and physical scientists,” “social scientists,” or “college and university teachers.” The “graduate-trained respondents” include all GSS respondents with two or more years of graduate education.

¹³ The estimated coefficients for continuous variables, “age” and “real income,” are slope probabilities. All the coefficients in tables 3 and 5 were estimated using the “dprobit” procedure in STATA, release 5.0.

¹⁴ Our tables omit the professional fields, such as medicine, law, engineering, and education.

Within the academic fields we have excluded three areas that contain a high percentage of people directly involved in the “production” of religion -- professors of “religion and theology,” “music” and “counseling psychology”. However, given the relatively small number of faculty in these areas, including them does not significantly change the overall statistics and tabulations.

¹⁵ Similar differences have been observed in other, smaller and less representative samples of college professors (Leuba 1921, 1934; Thalheimer 1973), and even in samples of graduate and undergraduate students (Feldman and Newcomb 1970).

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**TABLE 1:
Self-Reported Values: Evangelicals versus Others**

	Evangelicals	All Others
Time:	81%	78%
Free time:	70%	63%
Living comfortably:	63%	58%
Your career:	53%	52%
Money:	40%	38%
Your community:	62%	55%
Being financially secure:	75%	69%
Having nice things:	25%	26%
Having a fulfilling job:	73%	78%

Notes:

Table lists the percentage of survey respondents who described the item to the left as “very important” to them.

Rows 1 through 6 are calculated from *The Barna Report, 1992-93*, based on a national sample of 279 members of evangelical Protestant denominations and 889 non-evangelicals (Barna 1992). Rows 7 through 9 are calculated from the 1993 *General Social Survey*, based on a sample of 454 evangelicals and 1,122 non-evangelicals.

TABLE 2
Religiosity by Population Subgroup

	Attends regularly	Prays regularly	“Strong” member	Close to God	Believes in afterlife	Believes in Bible	Has no religion
Professors/scientists	38%	37%	27%	64%	66%	62%	19%
Graduate-schooled	43%	42%	34%	75%	73%	66%	13%
All others	45%	57%	34%	85%	78%	85%	7%
Men	37%	43%	27%	77%	75%	80%	10%
Women	51%	66%	39%	89%	80%	87%	5%
White	43%	54%	32%	83%	78%	84%	7%
Black	54%	72%	42%	92%	75%	87%	5%

Notes.

Data source: The General Social Surveys, 1972-1990.

Subgroup percentages defined as follows: “Attends Regularly” = attends religious services more than monthly; “Prays Regularly” = prays at least daily; “‘Strong’ Member” = describe themselves as “strong” or “somewhat strong” members of their religion; “Close to God” = feels “extremely” or “somewhat” close to God most of the time; “Believes in Afterlife” = believes there is a life after death; “Believes in Bible” = believes the Bible is the “actual” or “inspired” Word of God; “Has no religion” = claims to have “no religion.”

Subgroup definitions: Footnote #12 defines selection criteria for professors/scientists, and graduate-schooled respondents. “White” denotes all non-black respondents.

TABLE 3
Probit Regressions: Religiosity as a function of
career/education and demographic traits

	Attends regularly	Prays regularly	“Strong” member	Close to God	Believes in afterlife	Believes in Bible	Has no religion
Professor/scientist	.011 (0.34)	-.050 (1.07)	-.023 (0.74)	-.087 (2.66)	-.069 (2.10)	-.126 (3.22)	.083 (5.43)
Male	-.145 (20.91)	-.217 (19.13)	-.122 (18.50)	-.113 (13.18)	-.058 (8.14)	-.061 (5.99)	.041 (12.83)
Single	-.097 (13.09)	-.058 (4.78)	-.051 (7.30)	-.043 (4.82)	-.034 (4.47)	-.060 (5.67)	.039 (11.58)
White	-.111 (10.40)	-.174 (10.34)	-.102 (9.90)	-.070 (5.66)	.065 (5.75)	-.022 (1.51)	.017 (3.78)
Non-south	-.071 (9.69)	-.064 (5.36)	-.062 (8.85)	-.022 (2.46)	-.068 (9.21)	-.048 (4.67)	.028 (8.80)
Age	.005 (22.82)	.007 (21.87)	.005 (23.87)	.002 (6.72)	.000 (1.37)	.001 (2.46)	-.002 (16.62)
Realinc	.005 (3.50)	-.017 (6.54)	-.002 (1.03)	-.007 (4.19)	.002 (1.33)	-.011 (5.37)	.001 (1.77)
Raised_jewish	-.323 (13.26)	-.317 (7.34)	-.009 (0.41)	-.293 (8.49)	-.500 (16.33)	-.357 (8.23)	.027 (2.44)
Raised_other	-.104 (3.37)	-.015 (0.31)	.041 (1.39)	-.083 (2.21)	-.170 (5.20)	-.185 (4.29)	.022 (1.71)
Raised_none	-.123 (6.32)	-.139 (4.40)	-.110 (5.76)	-.195 (7.54)	-.108 (5.22)	-.219 (7.54)	.292 (24.19)
Pseudo-R ²	0.053	0.106	0.043	0.072	0.038	0.063	0.126
Num. of Obs.	22392	8797	22452	7948	14471	5607	22428
Graduate- schooled	.209 (3.11)	-.163 (1.55)	.235 (3.44)	-.206 (1.66)	-.0876 (0.93)	-.831 (6.48)	.628 (6.11)

Notes.

Data source: The General Social Surveys, 1972-1990.

Probability changes in plain text, absolute t-statistics in parentheses. See table 2 for definition of independent variables. Dummy dependent variables equal 1 if respondent is a professor or scientist (as defined in footnote #12), male, non-black, unmarried, living outside of the South, raised Jewish, raised in another religion (neither Christian nor Jewish), or raised with no religion, respectively. Age = respondent’s age. Income = real income of the respondent’s household (in 10,000’s of 1990 dollars).

**TABLE 4:
Religiosity by Scholarly Field**

	Is religious	Attends regularly	Religiously conservative	Has no religion	Opposes religion
Mathematics/ Statistics	60%	47%	40%	27%	11%
Physical Sciences	55%	43%	34%	27%	11%
Life Sciences	55%	42%	36%	25%	11%
Social Sciences	45%	31%	19%	36%	13%
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Economics	50%	38%	26%	30%	10%
Political Science	51%	32%	18%	30%	10%
Sociology	49%	38%	16%	35%	12%
Psychology	33%	20%	12%	48%	21%
Anthropology	29%	15%	11%	57%	19%

Notes.

Data source: The Carnegie Commission Survey of American Academics, 1969.

TABLE 5:
Probit Regressions: Religiosity as a function of
Scholarly Field and Demographic Traits

	Is religious	Attends regularly	Religiously conservative	Has no religion	Opposes religion
Psyc/Anthro	-.207 (9.97)	-.216 (11.29)	-.190 (11.18)	.243 (12.70)	.079 (6.77)
Other_Social	-.046 (2.88)	-.062 (3.86)	-.121 (8.41)	.059 (4.04)	-.003 (0.31)
Arts	.023 (1.11)	-.056 (2.67)	-.037 (1.96)	.070 (3.58)	-.019 (1.69)
Humanities	.010 (0.71)	-.048 (3.46)	-.084 (6.63)	.083 (6.62)	.001 (0.13)
Life_Sciences	-.012 (0.78)	-.024 (1.48)	.008 (0.56)	.006 (0.42)	.008 (0.90)
Math/Stat	.058 (3.14)	.050 (2.64)	.071 (4.01)	.001 (0.04)	-.001 (0.13)
Male	-.123 (9.12)	-.084 (5.77)	-.067 (4.97)	.120 (10.08)	.045 (6.07)
White	-.047 (1.70)	.008 (0.25)	-.007 (0.25)	.088 (4.08)	.028 (1.78)
Single	-.032 (2.96)	-.094 (8.42)	-.028 (2.68)	.068 (6.74)	.014 (2.34)
Age	.006 (14.60)	.006 (13.17)	.007 (17.89)	-.006 (16.31)	-.003 (10.62)
Raised_Catholic	.129 (10.30)	.229 (17.96)	.035 (3.01)	-.061 (5.41)	-.029 (4.06)
Raised_Jewish	-.255 (17.79)	-.311 (21.62)	-.140 (10.50)	-.010 (0.84)	.081 (10.16)
Raised_Other	.014 (0.52)	-.057 (2.01)	.035 (1.33)	-.038 (1.63)	.014 (0.97)
Raised_None	-.342 (14.66)	-.225 (9.99)	-.185 (8.60)	.459 (19.72)	.191 (13.97)
Pseudo-R2	.072	.094	.064	.068	.054
Observations	27406	27258	27052	26561	27406

Notes.

Probability changes in plain text, absolute t-statistics in parentheses.

Data source: The Carnegie Commission Survey of American Academics, 1969.

Definitions: Field of specialization dummy variables (with Physical Sciences as the omitted category): Psyc/anthro, Other Social [science], Arts, Humanities, Life Sciences, and Math/Stat. Demographic indicator variables = 1 if respondents is male, married, or white. Indicator variables for respondent's religious upbringing (with Protestant as the omitted category): Catholic, Jewish, Other, and None.