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vii

3

9

17

22

31

1

2

3

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religion and spirituality among scientists

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38

scientists aren't as anti-religion as the conventional wisdom leads us to believe—a surprising number of believers teach at the nation's top academic institutions.

Religion and science face off over many of the most important issues our society faces. Authorities debate whether intelligent design should be taught alongside evolution in public schools, for example, and the stem cell research debate features both scientific advocacy and religious opposition.

The assumption is that scientists attack the religious aspects of these issues because they are, above all else, atheists and anti-religion. While highly influential scientists like Richard Dawkins and the Human Genome Project's Francis Collins have been publicly outspoken about their views on religion and science, we really know very little about what elite university scientists as a whole—what some would call the most influential sphere of science—think about matters of faith.

The study of Religion among Academic Scientists (RAAS) closes this gap in understanding. During 2005 and 2006 it examined the religious and spiritual beliefs and practices of academics in the natural and social sciences at 21 of the most influential research universities in the United States. Some 75 percent—1,646 individuals—responded to the survey. From among those participants 271 also took part in in-depth interviews.

These scientists revealed they are not as anti-religion as volumes like Dawkins' *The God Delusion* might lead us to believe. In fact, a

surprising number of believers teach the sciences at the nation's top academic institutions. However, these scientists approach religion and spirituality in diverse ways—ways often different from the religiosity and spirituality of the general public. While scientists are indeed less religious in a traditional sense than the general public, the majority of scientists are interested in matters of spirituality and a significant minority is religious. These findings differ little between natural and social scientists.

Religion and science connect for university scientists in a range of ways. Some scientists see religion or spirituality enhancing their work. Propelled by recent public events, even those who previously had no interest in religion or spirituality are finding it necessary to involve students in discussions about these topics.

god and religion

When this research is presented in public settings, audiences inevitably ask, Do scientists believe in God? And when looking just at the measure of belief in God, it seems a large proportion of scientists confirm the conventional wisdom that scientific understanding and personal religious belief have a hard time coexisting. Nearly 34 percent of academic scientists identified themselves as atheists and almost 30 percent as agnostic in the RAAS study. In com-

who are Jewish would see themselves as Reform rather than Conservative or Orthodox. In the midst of reports appearing in the *Chronicle of Higher Education* and the *New York Times* describing liberal political and anti-religious bias among many university professors, this lack of religiosity among top scientists begs the question, Are professors in the sciences less religious because they know more about science? The general tenor of previous research supports the perception that those who pursue science tend to abandon religion, either because of inherent conflict between the two or because scientific education exerts a secularizing force.

But just as what the general public grew up believing influences decisions to believe, the same follows for scientists. Rather than transitioning from faith to no faith upon learning more about science, a good proportion of non-believing scientists had very little experience with religion as children. Sometimes, for those scientists whose families were part of a religious tradition, membership was only significant as a label rather than a matter of regular practice. Consequently, these scientists didn't learn much about their tradition nor were they taught to see religion as an integral part of everyday life. Scientists who said religion wasn't important in their families while growing up are now less likely to believe in God or attend religious services.

A larger proportion of scientists compared to other Americans come from backgrounds without faith or where faith traditions were seldom practiced, making some of the differences between elite scientists and other Americans more clear. For example, only 8 percent of the general population were raised with no religion, compared to 13 percent of scientists. While 54 percent of the general population were raised Protestant, only 39 percent, a large difference in statistical terms, of scientists at elite universities

the broader RAAS data, it's clear many of those academic scientists identify as Jewish. Based on comparison approximately 16 percent of the slightly less than 2 percent identify as Jewish, in are affiliated with is Judaism. While in the GSS more faculty in the natural and social sciences according to the 2000 GSS. The only religion, less than 2 percent of the scientists do, tify with evangelical Protestant religious tradi- nearly 24 percent of the U.S. population iden- surveyed in the general population. While tion, compared to only 16 percent of those cent of the scientists have no religious affilia- from the general population. Roughly 53 per- religions, academic scientists differ significantly

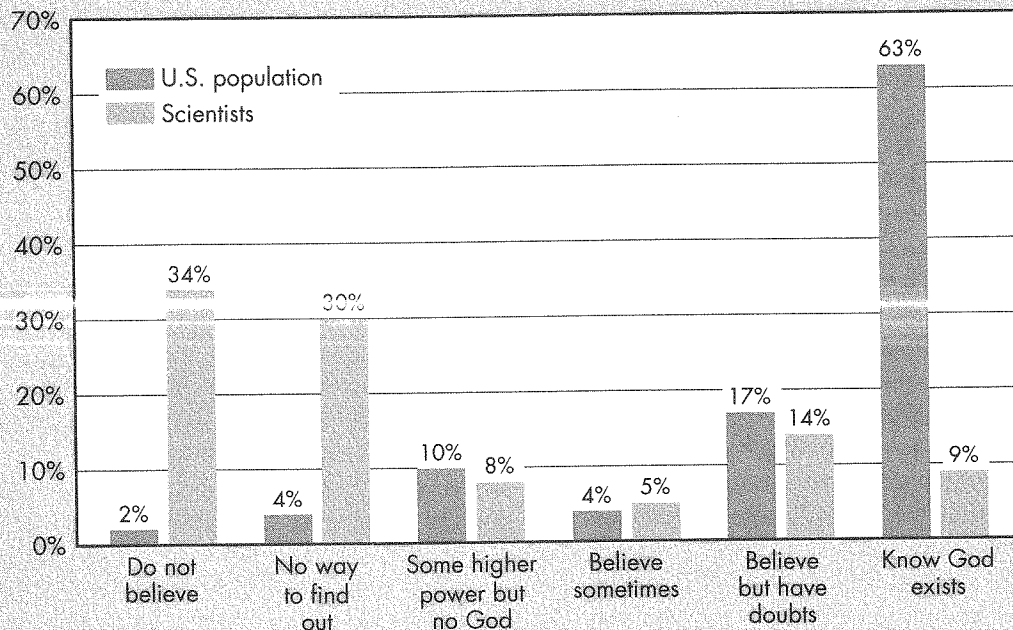
When examining affiliation with particular hostile to religion are two very different things. being a religious relativist and being outright between scientists and the general public, as there may be much untapped common ground in the general population agree. This suggests Nearly the same proportion of those surveyed scientists think many religions hold basic truths. even more nuanced. More than 70 percent of in many religions—our understanding becomes position—those who think there are truths found

But when we look at the "religious relativist" count religion altogether.

results indicate many scientists appear to dis- only one religion holds the most truth. Such times as many in the general population think the same way. When compared to scientists, four In the general population, only 4 percent answer tists think most religions hold very little truth. Some 26 percent of elite natural and social scien- the picture becomes considerably less simple. Consider beliefs about religion, however, and ference, for sure.

2006 General Social Survey (GSS). A huge dif- percent claimed to be agnostic, according to the percent claimed to be atheist and roughly 4 parison, in the general U.S. population a mere 2

belief in god of u.s. population and scientists



were raised in a Protestant tradition. Even those scientists raised in a religious tradition were often from homes where religion was practiced only occasionally, while nearly 40 percent of Americans attend religious services once a week.

Consider two sociologists who are similar in other respects. If one was raised in a Protestant tradition and religion was very important while growing up, and the other was raised without a religious tradition, the sociologist raised without a tradition is four times more likely to be an atheist. A striking difference. These findings point toward some reasons why university scientists may be less religious than the broader population. The idea that scientists simply drop their religious identities upon professional train-

ing isn't strongly supported by these data. If this were the case, then religious upbringing wouldn't be related to present religious identities for scientists. In other words, if religious upbringing didn't matter we would see even those scientists raised in religious homes losing religion once they enter the academy or receive scientific training.

the village spiritualist

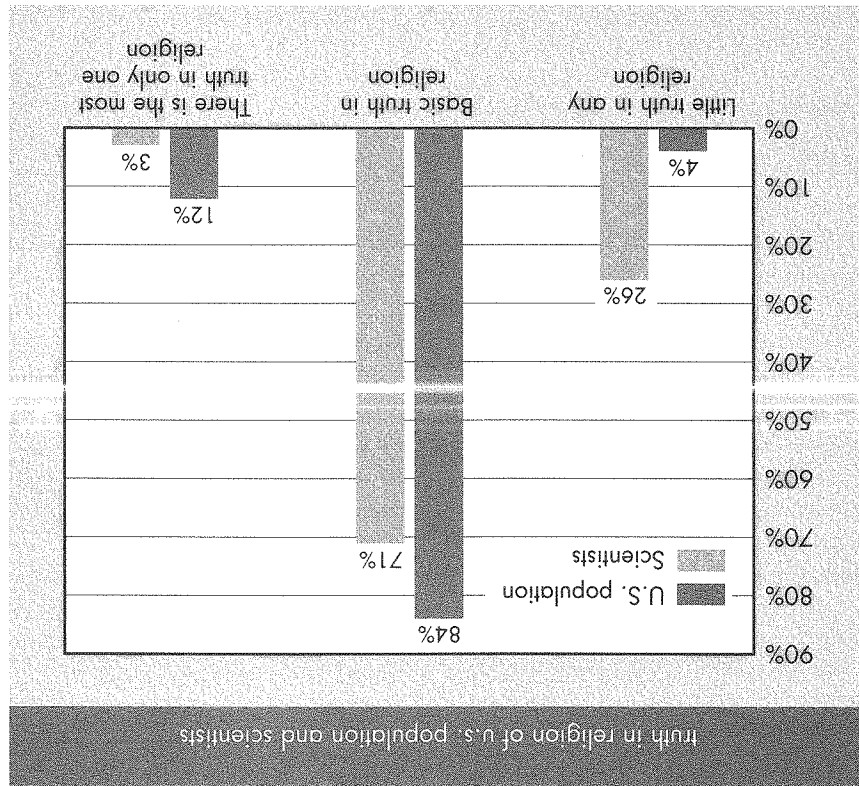
These findings also cast doubt on the village atheist stereotype of the profession. As the scientists who work at the most elite universities in the United States, we might expect that, of any group, this population would have the most pervasive scientific worldview. As part of this world-

view, scientists might reject most attempts at creating purpose that seem contradictory to science and scientific understanding. Given the large proportion of atheist or agnostic elite scientists and the proportion who have no religious affiliation, elite university scientists are surprisingly interested in spirituality.

Approximately 66 percent of natural scientists and nearly 69 percent of social scientists identified as spiritual. In fact, significant proportions of scientists who are atheist, agnostic, or without any religious tradition still see themselves as spiritual—more than 22 percent of the atheists and more than 27 percent of the agnostics. Some 39 percent of those who have no current religious affiliation identify as spiritual.

Findings from in-depth interviews with a systematically sampled portion of these scientists revealed their definitions of spirituality varied a great deal, from being a vague feeling of something outside themselves to a deep and compelling, other-centered worldview that directs how they conduct research and interactions with students. For the scientists who considered spirituality a daily part of their lives—more than 40 percent of those interviewed—their deepest sense of identity comes from being scientists and their spirituality flows from the same characteristics they value in their identities as scientists. This is a spirituality characterized by consistency.

These scientists don't want spirituality to be intellectually compartmentalized from the rest



of their lives, but are seeking a core sense of truth through spirituality in much the same way they seek truth through their science. A small but important minority of this population perceive spirituality as consistent in so far as it suffuses their everyday lives and is instantiated in their practices as teachers, as citizens of the university, and as researchers.

Definitions of "religion" and "spirituality" weren't benign constructs. Among university scientists such distinctions often carried a moral weight. One chemistry professor described religion that doesn't work as "being a mechanism by which people's thoughts and lives are controlled or meant to be controlled." This same professor, when asked to compare religion and spirituality, said spirituality was "more flexible and personal and a lot less judgmental." In fact, the professor went on to explain, "when I think of a spiritual person, the word 'judgment' doesn't even pop into my mind."

Beyond personal practices and beliefs, it's vital to know what these scientists think about the place of religion in their specific fields and departments. Asked to respond to the following statement, "In general I feel that the scholars in my field have a positive attitude towards religion," roughly 23 percent agreed compared to 45 percent who disagreed (nearly 32 percent of the sample had no opinion). The in-depth interviews revealed that while natural and social scientists rarely think their colleagues are hostile toward religion, strong cultural barriers exist against discussing religion (especially traditional forms of religion, such as Catholicism) in academic settings. University scientists simply don't think it acceptable to discuss religion in their departments and many think it unacceptable to have such discussions even in informal university settings.

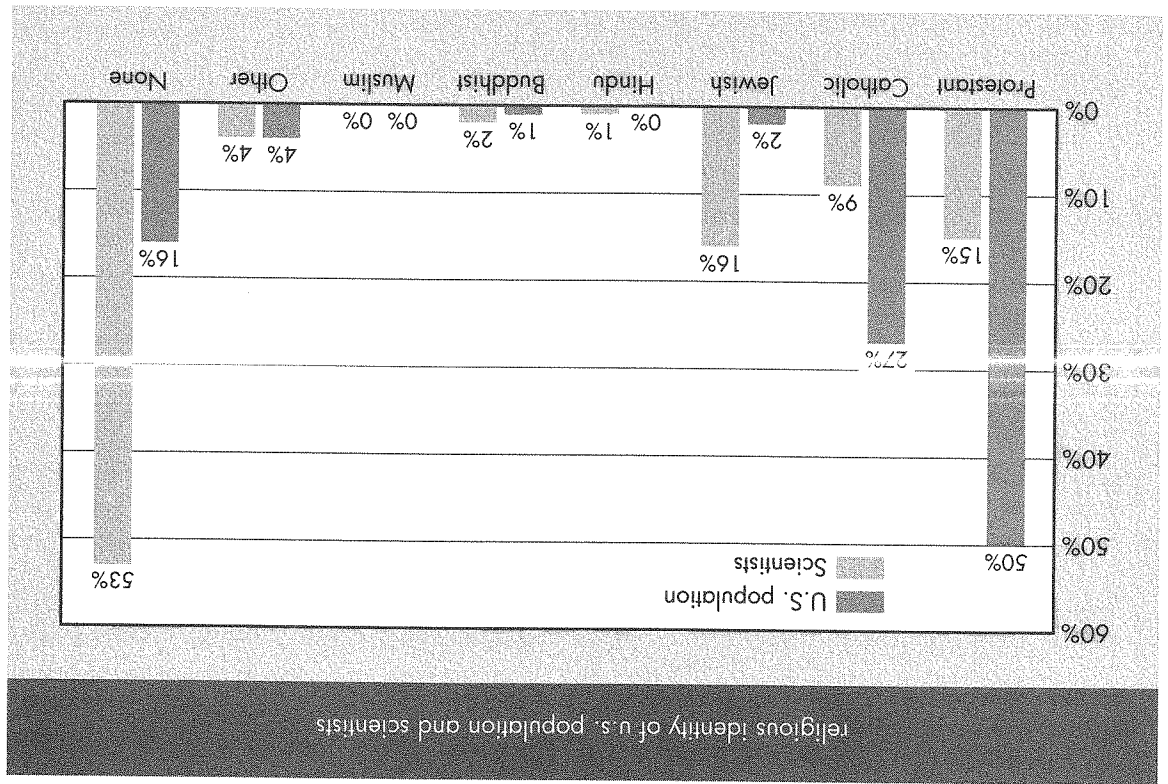
Sociologists are roughly split (45 percent) on the question of whether their spiritual or reli-

gious beliefs influence how they interact with colleagues or students (approximately 9 percent of the sociologists had no opinion). Among the broader sample, 39 percent said their religious or spiritual beliefs to some extent influence interactions with students or colleagues while 54 percent had some variation of disagreement with the statement (approximately 7 percent had no opinion).

Especially in light of recent public events surrounding intelligent design, as well as the religious involvements of students, there are faculty, even those who aren't personally religious, who think they need to interact with religion. The discussion about religion and science in the broader public is obviously of particular relevance for those in the natural sciences.

During the summer of 2005 the *New York Times* published a series of articles on religion and science, largely in response to the disputes over teaching intelligent design in Kansas and Pennsylvania. Although these cases were intentionally never mentioned by our interviewers, respondents consistently brought them up. We could imagine such events might have made scientists—especially natural scientists in the sample—respond negatively to religion. Rather, in many instances such events outside the university actually pushed scientists into the realm of religion, even those who otherwise seemed to have no previous interest in matters of faith.

For example, one respondent explained she hadn't thought much about religion. But the intelligent design debates meant students wanted to talk about religion in the science courses she taught at her university. To remain an effective teacher, she was actively searching religiously based Web sites to find any resources that dealt with the connection between religion and science in what she viewed as thoughtful ways. This respondent said that although she hasn't thought



godless scientists?

much about religion, "what is going on now is forcing [her] to think about religion and its relationship to science."

Results from the RAAS study show some truth to the perception that scientists and the academy are "godless." Yet to see the academy only from this monolithic view would overlook the 48 percent of academic scientists who do identify with some form of religion and the nearly 68 percent interested in spirituality. When we look at the religious backgrounds of scientists, the picture becomes more complicated. Scientists come disproportionately from liberal religious and irreligious backgrounds.

The question of why scientists come from these backgrounds will need further exploration beyond the findings presented here. One possible explanation is that there may indeed be tension between the religious tenets of some groups (such as those advocating young-earth creationism) and the theories and methods of particular sciences, making members of such religions less likely to pursue scientific careers. That few scientists subscribe to the more conservative or traditional strands of religion would seem to support this idea. Scientists raised in religious homes often remain religious. Whatever the reason, these results show a more complex story than the simple "religion is contradictory to science and hence religious individuals don't go into science" argument.

If the goal is to increase dialogue between academics in science fields and different sectors of the American public, then we need to consider what these findings say about how academic scientists might contribute to that dialogue. There's no getting around the fact that many scientists at elite universities are less religious than individuals in the general population. These results point to a mismatch between the high religiosity of the American public and the comparatively low religiosity of scientists, a mismatch that may be a barrier to communication and understanding. This is a potentially serious problem in an era when, based on international comparisons, U.S. schoolchildren have poorer education in science than the other most industrialized nations, according to a report by the National Center for Education Statistics.

Scientists are right to lament scientific illiteracy among the U.S. population. But these findings also reveal that a portion of academic scientists may be religiously illiterate.

Regardless of what scientists personally believe about matters of faith, religion and science are often connected in a surrounding social environment—such as in public debates about intelligent design, stem cell research, human cloning, and public funding for science, to name just a few. Increasing communication between academics in various scientific fields and the general public (some of whom are the very students in their classes) may become an important goal indeed. More thought ought to be given to how those in the academy outside the fields that study religion could learn about and engage productively with religion.

It should also be emphasized that, whether or not academic scientists openly discuss religion, a large minority are religious and the majority are interested in matters of spirituality. This leaves a sizeable population of scientists who are potentially crucial commentators in the midst of an American public searching for a way to mean-

ingfully understand the connections between religion and science. These are the prospective bridge-builders between scientists and the broader public. That these scientists are from elite universities makes them all the more poised to contribute to such a dialogue.

RECOMMENDED RESOURCES

Michael J. Behe. "Design for Living," *New York Times*, February 7, 2005.

A professor of biological sciences at Lehigh University argues intelligent design has often been misconstrued in the media, and he attempts to correct some of the misconceptions about it.

Francis Collins. *The Language of God: A Scientist Presents Evidence for Belief* (Free Press, 2006).

A personal overview of how the head of the Human Genome Project reconciles his evangelical Christianity with his work as one of the world's leading scientists.

Richard Dawkins. *The God Delusion* (Houghton Mifflin, 2006).

A noted author, Oxford professor, and evolutionary biologist argues collective belief in God is responsible for many of the problems the world currently faces.

"Okay, We Give Up." *Scientific American*, April 1, 2005.

In a sarcastic April Fool's Day editorial, the editors of *Scientific American*—a leading scientific journal—defend their exclusion of articles on creationism or intelligent design.

REVIEW QUESTIONS

1. Are you surprised that scientists often hold religious views? Have you ever thought about the religious beliefs of your professors? Based

- on the article, would you assume that they are religious or not? How do you think it varies by discipline?
2. Why do you think a greater proportion of scientists than the general public are atheists?
3. Considering that 69 percent of social scientists surveyed identified themselves as spiritual,
4. Activity: Interview one of your professors about her or his religious beliefs and how these relate (or not) to their academic work.
- how might you explain a reluctance to discuss religion in an academic setting?