

Article



Special Issue: Atheism, Secularity, and Science

Explaining the Secularity of Academics: Historical Questions and Psychological Findings

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Abstract | Religious beliefs are the products of natural, intuitive human thinking, and are shared by most humans. Academic research, or science, is the product of counter-intuitive, unnatural psychological processes, and the resulting concepts are beyond the reach of most. It is not surprising that religion has been around for possibly more than 100,000 years, while academic research is a recent historical development. Over the past century, individuals who make academic research their life's work have been themselves the subject of academic studies which looked at their social origins, conscious ideals, beliefs, and psychological traits. The findings regarding religiosity have been striking. Academics, especially eminent ones, turn out to be quite irreligious. This is especially striking for academics in the United States, where a culture which is manifestly the most devout among First World nations has produced a sub-culture, which is a mirror image of itself. How can we explain the secularity of academics? Research indicates that it has to do with a process of selection and self-selection, which starts in childhood and channels individuals who are highly intelligent, critical, independent, and confident towards the academic world. Contrary to what some might think, it is not getting a Ph.D., which contributes to individual secularity; it is young secular individuals who are highly likely to commit themselves to an academic life.

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The religiosity, or irreligiosity, of academics has been studied for one hundred years (Beit-Hallahmi and Argyle 1997; Beit-Hallahmi 2015; Leuba 1916). In this article, I would like to present it in a broader context, and discuss some explanatory factors.

First, let me deal with vocabulary. The term “science” has acquired enormous power, and is used and abused too often. In the media, “science” is synonymous with established facts and certainty. A *New York Times* editorial on July 31, 2014 is titled “What science says about marijuana”. “Science” in this case is an impersonal source of reliable knowledge. We know that in

fact “science” doesn’t say anything. Researchers may say many things, and will often disagree on substance and method. Personally, I try to use the term “science” (or “scientific”) as little as possible. We can use the term “academic research” as interchangeable with “science” and “academic researchers” as interchangeable with “scientists”. I do not use terms such as “pseudo-science” or “bad science”. As we will see below, some religious movements want to be called “science”, and there is nothing wrong with that. But even followers of these movements know that such acts are rhetorical (or magical) in nature, and their scriptures are not textbooks in chemistry.

Phylogenesis: Religion and Science

Religion, a belief system premised on the notion of an invisible world of spirits, has been around for probably longer than 100,000 years, and has changed relatively little. Its appearance had nothing to do with contemporary arguments about design and creation, and much to do with the human condition and the human brain (Beit-Hallahmi 2015). Religion is based on imagination and causal thinking, just like science, except that in religion, which is anthropocentric and anthropomorphic, humans are always at the center of causal chains. All religions share the common denominator of institutionalized animism, while all academic research fields share the common denominator of an attempt to look at events around us non-animistically. Academic research is an amazingly recent historical development and its evolution is tied to the historical process of secularization and the rise of naturalism. Naturalism can be defined simply as looking at the world non-animistically, something which humanity has developed in the search for an effective control of nature. What we call science, or academic research, is made up of the institutionalization of unnatural and counter-intuitive modes of thinking. In everyday life, most humans use a combination of animistic and non-animistic thinking, depending on our momentary level of egocentrism and anxiety, and on the task at hand. Most humans still hang on to animism and notions of design and intentionality as their intuitive way of explaining events around them, but they (passively) accept the independence from animism of academic research and its derivative technologies.

Because it is innate and intuitive, animism does not have to be taught. What we have to teach are non-animistic ways of looking at the world. Naturalistic reasoning is counter-intuitive, unnatural, and hard to develop, as it requires overcoming innate cognitive strategies (cf. Cromer 1993; Wolpert 2000). Just a few centuries ago, theology was the queen of the academic world, ruling the university. In the 21st century it has disappeared from most universities, and its absence is rarely felt or mourned. Theology today has little impact on either academic research or the real world of religion.

Academics do not assume purpose or design whether in nature or in history, beyond the intentions and designs of humans. We will be delighted to assume design and purpose if it will only get us any closer to an AIDS vaccine or to understanding the causes of the

Second Crusade. So far it hasn't. There are religious academics, of course, but they separate their religion from their research. A researcher may privately believe in divine purpose explanations, but trying to incorporate them in any academic publication will lead to ridicule.

Unlike academic research, the religious message is accessible to all, and does not require intellectual effort or formal training. That is why it can be learned at such an early age. To become a Moslem there are few qualifying tests and initiation rituals, and hundreds of millions do qualify. To become an organic chemist there are many different tests and initiation rites. While the learning of religion is 99% family-based and 1% conversion (which most often means rejecting one's family and its traditions), both kinds of learning are unheard of in science.

Academic research in practice

The world of science today is identical with the academic world, in which membership is obtained via a PhD and specialized publications (this is true for both "harder" natural sciences and "softer" human sciences). Academic research advances (if it does) through a slow, systematic, process which involves much work and conscious intentions. Chemistry (or medieval history) is learned through a persistent and conscious effort. There are no dramatic conversions to organic chemistry. Neither is it learned very often around the family dinner table.

The two behavioral complexes of religion and science create individual sub-identities; the nature of these sub-identities is tied to differences in the activities involved. This becomes clear when we observe verbal statements expressing them. Saying "I am a nuclear physicist" is different than "I am a Rastafarian". Chemists do not say: "I believe in organic chemistry", but Christians say "I believe in Jesus Christ".

Science is in principle democratic and open; it is a matter of publicly accessible texts. In practice, however, it is quite esoteric. This is easily demonstrated when any accomplished academic tries to read a published article outside his/her field. To get the fine points of an article published in organic chemistry or in linguistics takes much training, rarely acquired by self-teaching. Almost one hundred percent of humanity cannot really understand relativity theory or Maxwell's Equations, but even when it comes to "softer" fields such as

historical research on the popes in Avignon or laboratory manipulation in experimental social psychology, a real understanding of academic publications is simply beyond the reach of the untrained. In a very real sense, the majority of humanity is excluded from science.

Every religion offers us a comprehensive, coherent, convincing, simple, accessible, and pleasing theory of the universe and our place in it. The narratives of molecular biology can never compete with those of world religions. To most humans, science is cold, distant, strong, and offers no emotional gratification, while religion is warm and consoling (Monod 1970). Religious cosmology is accessible and attractive to all humans, including children, and can be taught informally by any illiterate mother anywhere in the world. The cosmology of modern physics will remain impenetrable to 99.999% of humanity forever (e.g. Guiderdoni et al., 1995). What generic science offers us is a series of complicated, disputed, and tentative claims that are inaccessible to most of humanity. Even when we can follow some science narratives, they offer us no moral dramas or moral victories.

The secularization of education, at all levels, is one of the most important aspects of secularization in general. Historically, higher education (like all education) was dominated by religious content. Universities in both medieval Europe and the Islamic world started in the middle ages as religious institutions. Higher education in the United States used to be primarily religious, producing mostly clergy. Such leading institutions as Harvard, Yale, Princeton, and Columbia were founded as religious colleges.

The battle over secularization in the academic world has been fought and won (Hollinger 1996; Jencks and Riesman 1968; Marsden 1996; Smith 2003, White 1896/1993). The victory over animism has been decisive and has led to the complete secularization of elite academic institutions, a process then imitated by lesser ones. The extent of secularization in higher education is something that we often fail to appreciate (Mixon, Lyon, and Beaty 2004). It meant not only that public colleges and universities eliminated any residue of religious content in the curriculum, but that over the past century, and more so during the past half-century, hundreds of denominational colleges and universities, affiliated with various Christian denominations, have become either completely secular, or minimally religious (Does anybody know that the American Baptist

Convention considered The University of Chicago an affiliated institution until 1960?). Keeping a religious affiliation and identity may mean that an institution “must accept academic mediocrity and dwell in the backwaters of academic culture” (Mixon, Lyon, and Beaty 2004 p. 401).

Universal education for the masses is a modern, secular, ideal. What is significant about the long-range historical change is what can rightly be called a trickle-down effect. There is always a gap between the academic elite and the rest of society, but the real change follows elite leadership. Alan Leshner, chief executive officer of the American Association for the Advancement of Science identified the gap between the U.S. public and science as “an uncertain understanding—at best—of what science is and is not” (Moran 2007, p. 24). To illustrate that, he noted that 60% of Americans believe in “extrasensory perception”, 40% believe astrology is a science, and 47% do not believe that humans evolved from lower species.

Belief in special creation is tied not only to the idea that humans are morally superior, but also to salvation. For Christians creation and redemption are inextricably tied (Hauerwas 2001), and so evolution becomes a direct assault on the foundation to the moral drama of sin and salvation. The idea that human fortune and misfortune are the result of random and impersonal events is totally counter-intuitive, as humans naturally find meaning in imaginary sequences of design, intention, purpose, reward, and punishment. The subversive idea of creation and metamorphosis without any consciousness being involved has been correctly judged as tolling the bell for all animism.

Evolution has become the most potent symbol of de-animated naturalism, as the ruling paradigm in biology. The evolution paradigm is directly connected to the significant achievements of biology, the technological progress of biomedicine, and the idea of biological continuity. If humans arrived on earth through special creation, how is it possible that basic research in human biomedicine is carried out on mice, rats, hamsters, or dogs?

The image of science and scientists

Ma-Kellams and Blascovich (2013) found that using “science” terms, such as “laboratory,” “hypothesis,” or “theory” had the effect of inducing generosity. Appar-

ently, science is imagined by many people as a positive authority, enjoying a pro-social halo. The complete picture is more complex.

In 2006, a representative sample of the United States adult population was asked to rank the prestige of various occupations, and the results are fairly encouraging for those who are concerned about the public image of science ([The Harris Poll 2006](#)). Six occupations are perceived to have “very great” prestige by at least half of all adults - firefighters (63%), doctors (58%), nurses (55%), scientists (54%), teachers (52%) and military officers (51%). They are followed by police officers (43%) and clergy (40%). The respondents rated occupations on a selflessness scale, with those viewed as heroic and altruistic at the top and those viewed as selfish and materialistic at the bottom, held in some contempt.

This survey proves that popular fantasies about scientists are quite positive, portraying them as serving others at the expense of their own welfare. “Scientist” is rated close to those occupations that regularly strive to save lives, regardless of risk and effort. Firefighters, the military, and the police regularly put their lives on the line. Medical workers are expected to tend to the sick even when it puts them at risk. Scientists are apparently imagined as tied to the success of biomedicine, because most of us have been aware of how much we owe to life-saving technology developed thanks to scientific research (cf. [Snow 1965](#)). Teachers are held in higher esteem than clergy, and this is a clear reflection of secularization. Education is tied to science, and the teacher is the local representative of the secular science-knowledge complex.

Scientists are perceived as altruistic when saving lives through research, but malevolent when their work is judged to threaten Christianity and morality. Public ambivalence about “science” is tied to those added features that seem to be attached to scientific expertise, in the form of generalized skepticism and universalism. For many believers worldwide, there is an analogy between an order of nature, designed by a deity, and the moral order, which social chaos at bay. A rejection of the idea of design in nature implies a rejection not only of social traditions, but of morality itself. A direct challenge to Genesis is seen as destroying a moral community ([Durkheim 1912/1965](#)).

The abstract term “science” brings to mind power over

nature and over human life and death. “Science” always brings to mind the powerful, inaccessible, natural sciences ([Hollinger 1996](#)). We cannot really fathom what happens in a real lab, but we can read about the powerful people there in *The New Men* by C.P. Snow and in *Kantor’s Dilemma*, by Carl Djerassi. The human sciences, seemingly more accessible and much less powerful, inspire little respect. Those laboring in them are often imagined as being weak, deviant, pathetic, or even tragic, to judge by their portraits in such novels as *Pnin*, by Vladimir Nabokov, *Herzog*, by Saul Bellow, *On Beauty*, by Zadie Smith, or *Point of No Return*, by J.P. Marquand.

The rise of science has always been regarded with real ambivalence, which was part of the early critiques of modernity. Science and its promoters have been perceived as powerful, but forbidding, and they inspired both admiration and fear. Balzac’s *La Peau de Chagrin*, published in 1831, describes the nascent world of academic research. Reading that novel, we realize that the conceptual structure of academic research was well in place already then. Balzac satirizes natural scientists of that period, and we can observe not only naturalism well in place, but the popular image of the scientist as odd and out of touch with everyday reality, while at the same time in total mastery of a field of research. Scientists are described as eccentric, ascetic, aloof, and strange, but awe-inspiring, because of their intelligence and their total commitment to studying a particular segment of nature. *La Peau de Chagrin* describes not only the “hard” sciences of physics and chemistry, but also the beginnings of the behavioral sciences, as its characters discuss collecting statistics on the personality of gamblers or the effects of body chemistry on behavior. These ideas, current then as well as today, are treated with ambivalent skepticism. In *Madame Bovary* (1857), Gustave Flaubert describes “Science” as heartless and vain, through the image of the pharmacist Homais, the spokesman for Enlightenment and Progress.

Appropriating science

Over the past two centuries, there have been numerous examples of believers feeling a strong need to obtain legitimacy from the power of the new social institution which rose in prestige above revelation. The rising authority of science has led believers to claim it in the most direct and magical way. Since the nineteenth century, we have seen the founding of hundreds of religious

movements which used 'science' in their official names.

The best known is the "healing" movement of Christian Science, founded in 1879 by Mary Baker Eddy (1821-1910), as the First Church of Christ, Scientist (immortalized by Nathanael West as the First Church of Christ, Dentist; [West 1933](#)). Eddy's ideas were totally animistic, of course, and the science label reflected her magical thinking about the power of words, and her desire to appear powerful. Christian Science was followed by Divine Science, Religious Science, and Jewish Science. A little-known early version of African-American pseudo-Islam was started in Newark, New Jersey in 1913, as the Moorish Science Temple of America ([Fauset 1944](#)). The magical gesture of using the term 'science' had little effect on the fortunes of these movements. The Hindu group Brahma Kumaris wants to be known as Brahma Kumaris International University, and this again reflects the prestige of the academic world.

The cultural standing of science has led believers to claim that their cosmology should be labeled science, demonstrating again the loss of power that revelation once had. It is the victory of "science" and secularization that leads believers to offer us first "Creation science", or an "Institute for Creation Research", and then "Intelligent Design". All of these acts merely serve to remind us that religion has been losing its authority.

There have been several movements which expressed the desire to use "science" in the defense of generic animism. The modern movement to establish "scientifically" the existence of the human soul is a case in point. This started in the heyday of spiritualism, and led to the founding of the Society for Psychical Research in London in 1882. The Society, led by such luminaries as Henri Bergson, William James, and Arthur James Balfour, was energized by those seeking physical evidence for the soul through the investigation of "psychics" and "mediums". This elite version of spiritualism in turn brought about the creation of "parapsychology" in the United States ([Mauskopf and McVaugh 1980](#); [Moore 1977](#)). More recently we have seen SETI, the search for extraterrestrial intelligence, which after a million man-years and computer-years of work can boast as much success as psychical research and "parapsychology".

The enormous prestige of modern physics has created a minor industry of authors who attempt to use its

arcane theories in defense of religion. For more than a century, religious apologists have been using the concepts of modern physics such as relativity, the uncertainty principle, and quantum mechanics in hundreds of books and articles. These are concepts very few of us, except for those with a Ph.D. in physics, could begin to decipher. Using them is designed to impress non-experts, and proves how physics has become a source of authority, and how the prestige of (imagined) science has surpassed that of (experienced and lived) religion.

Dialoguing

The frequent discussions around the possibility of "dialogue", "reconciliation", "cooperation", "convergence", or "collaboration" between the two behavioral complexes of religion and science ([Watts and Dutton 2006](#)) should be examined. To test the idea of religion-science dialogue, let us now put specific identities into the general formula of "religion" and "science". How about a meeting between experts in analytic spectroscopy and The Church of Jesus Christ of Latter Day Saints? Experts in molecular genetics and the Father Divine Peace Mission? Non-linear optics and the Rastafarians? Retrovirology and Wahhabi Islam? Solid state physics and Jews for Jesus? Chemical physics and Theosophy? Zoroastrians and computational linguistics?

Or how about a delegation representing religion, with one delegate each for Orthodox Judaism, the Roman Catholic Church, Shinto, The Coptic Church, The Church of Jesus Christ of Latter Day Saints, the Unification Church, the Rastafarians, Wahhabi Islam, and Jews for Jesus? This delegation will get together with a delegation representing science, with one member each for analytic spectroscopy, molecular genetics, non-linear optics, retrovirology, solid state physics, etc. (or with a delegation of the AAAS)?

The vacuity of the dialogue proposition is made clear once we try to imagine these concrete examples. It is not just that no dialogue based on any common language is possible, but that some experts on analytic spectroscopy may also be members of The Church of Jesus Christ of Latter Day Saints, or Roman Catholic, Jehovah's Witnesses, or Jews for Jesus, just as they could be members of the Democratic Party. These sub-identities are not mutually exclusive.

We can be sure that Mormons working in analytic

spectroscopy get along very well with colleagues in the same field who are Southern Baptists, Roman Catholics, Shiite Moslems, or atheists, as long as they don't engage in religious discussions and just do science. Scientists can communicate across national and religious borders quite easily because there is neither an overlap, nor a conflict between their sub-identities as chemists and their national, political, religious, or sexual sub-identities. Thus, there should not be, in principle, a conflict in ideological commitments for both Shiite Islam and organic chemistry. The "reconciliation" strategy is rather rare among individual academic researchers. Religion is similar to political ideologies, which are rarely "reconciled" with academic research in an explicit way. The last major historical attempt at such a public reconciliation took place in the Soviet Union, where every branch of science was viewed as supporting the overarching methodology of dialectical materialism (Krementsov 1997). But even there, the division between bourgeois science and Marxist science was soon left by the wayside. More recently, in the Islamic Republic of Iran and in Malaysia, there has been an Islamization movement, subordinating academic research to religion, but this has not produced an Islamic immunology or an Islamic computer science.

This religion-and-science industry will not affect either science or religion, because those taking the slogan seriously are unrepresentative of either side. The efforts to create a dialogue between science and religion are totally irrelevant to the billions of religious believers around the world, and to religion as a living human institution. The masses of poor women in India, Africa, or Brazil, who form the backbone of global religion have no doubts to be overcome through such dialogues. There will be little impact on academic research. The John Templeton Foundation has been giving grants to theologians, historians, philosophers, and some in the natural sciences. Within academic psychology, it supported the rise of a "Positive Psychology" movement (not to worry, psychology is not going to become any more "positive"). These grants have made life easier for some scholars, and the Foundation deserves our gratitude for that, but they will not change the direction of any academic field (Wulff 2003).

If we search for overlapping ideas, a common language, and possible dialogue, we find that the Roman Catholic Church is much closer to Orthodox Judaism than to organic chemistry. Will this lead to rapprochement or reconciliation? Much sooner than any

science-religion rapprochement. There is simply no overlap in the activities involved. Religion and science are two unrelated fields of discourse, using different vocabularies to achieve different goals, through totally different institutions.

If there is such a total lack of substantive connections, what is going to be the relationship between a personal commitment to one field of discourse and a possible commitment to the other? Here we move to looking at individuals and their beliefs.

Academics and their beliefs

When religiosity among academics is examined, the basic question is simple: How different is it from the religiosity of the general population? Three leading researchers, Stark, Iannaccone, and Finke (1996, p. 435) claimed that while "scientists, professors, and graduate students are less religious than the overall population, the estimated differences are small, on the order of a few percentage points." In reality, surveys of religiosity among academics in the United States and elsewhere have consistently showed a huge gap separating them from the general population (Beit-Hallahmi 2015; Ecklund and Park 2009; Gross and Simmons 2009).

This was clear already in surveys carried out in the United States early in the twentieth century, which found a clear majority of nonbelievers among academics (Ament 1927; Lehman and Witty 1931; Leuba 1916). Vaughan, Smith, and Sjoberg (1963) polled 850 physicists, zoologists, chemical engineers, and geologists listed in *American Men of Science* (1955) on church membership, attendance, and belief in the afterlife. Of the 642 replies, 38.5 percent did not believe in an afterlife, whereas 31.8 percent did. Belief in immortality was less common among major university staff than among those employed by business, government, or minor universities. They found that 54% of their group had religious affiliations different from those of their parents.

In a random sample taken from *American Men and Women of Science* in 1996, Larson and Witham (1997) found 60 percent non-theists. A Pew survey of 2,533 members of the American Association for the Advancement of Science in 2009 found 41% atheists. The respondents represented only the disciplines life sciences and physical sciences (Pew 2009).

Ecklund and Scheitle (2007) surveyed 1646 academ-

ics in physics, chemistry, biology, sociology, economics, political science, and psychology at twenty-one elite research universities in the United States. They were significantly less religious than the general population. Almost 52 percent identified themselves as having no current religious affiliation, compared with only 14 percent of the general population. Among them 33.5 percent were atheists, and 30.2 percent agnostics (making a total of 63.7 percent non-theists), while in the general population of the United States, atheists made up less than 1 percent, as did agnostics (Kosmin and Keysar 2009). While 14 percent of the general population called themselves “evangelical” or “fundamentalist,” less than 2 percent of the academics did. Fifteen percent identified as Jewish, compared to 2 percent in the general population (Ecklund and Scheitle 2007).

A sample of 1100 Indian scientists from 130 universities and research institutes were asked about their religiosity in 2007–2008 (Keysar and Kosmin 2008). To the question “What do you believe about God?,” 12 percent were atheists and 13 percent agnostic, 26 percent believed in a personal God without doubts, 15 percent believed with doubts, and 30 percent did not believe in a personal God, but did believe in a higher power.

The results showed a higher level of religiosity compared to academics in the United States, but a degree of secularity significantly higher than that of the Indian general population. According to Norris and Inglehart (2004) there may be no more than 5 percent atheists in the Indian population. These results must reflect India’s unique cultural history, together with the negative correlation between intellectualism and religiosity. Bourget and Chalmers (2013) carried out a global survey of 1,972 philosophers at 99 of the world’s “leading departments of philosophy.” Almost 73 percent of the respondents defined themselves as atheists.

The eminence effect

Quite early on, an “eminence effect” was noted, with more eminent scientists being more secular. Starting in 1914, James L. Leuba mailed a questionnaire to leading scientists asking about their belief in “a God in intellectual and affective communication with humankind” and in “personal immortality.” His conclusion: “I do not see any way to avoid the conclusion that disbelief in a personal God and in personal immortality is directly proportional to abilities making for success in the sciences in question” (Leuba 1916, p.

279). Later on, Leuba (1934) found that only 32 percent of “greater” scientists believed in God, compared with 48 percent of “lesser” ones; the figures for belief in immortality were 37 percent and 59 percent.

Roe (1952) interviewed sixty-four eminent scientists. While nearly all of them had religious parents, only three were seriously active in church. All others had long since dismissed religion, and it played no part in their lives. A few were militantly atheistic, but most were just not interested. Bello (1954) studied research scientists, under age forty, judged by senior colleagues to be outstanding. Of the eighty-seven respondents, forty claimed to be “agnostic or atheistic” and an additional nineteen claimed no religious affiliation. There was a massive over-representation of unaffiliated and secularized Jews, and an under-representation of Roman Catholics.

Larson and Witham (1997, 1998) performed an exact replication of the 1914 and 1933 surveys by Leuba with 517 members of the United States National Academy of Sciences in biological and physical sciences, many of them Nobel Laureates (The return rate was slightly over 50 percent). The results showed that the percentage of believers in a personal God among eminent scientists in the United States was 27.7 percent in 1914, 15 percent in 1933, and 7 percent in 1998. Belief in personal immortality was slightly higher (35.2 percent in 1914, 18 percent in 1933, and 7.9 percent in 1998). The highest rate of belief was found among mathematicians (14.3 percent in God, 15.0 percent in immortality). Biological scientists had the lowest rate (5.5 percent in God, 7.1 percent in immortality), with physicists and astronomers slightly higher (7.5 percent in God, 7.5 percent in immortality).

The findings demonstrate, first, that the process of turning away from religion among the most eminent scientists in the United States had been continuing over the twentieth century (as reported also by Ecklund, Park, and Veliz 2008 for academics in elite institutions), and, second, that eminent scientists, with only 7 percent believing in a personal God, present a mirror image of the general population of the United States, where the corresponding percentage hovers around 95 percent.

The most eminent scientists

The Nobel Memorial Prize is awarded each year in

physics, chemistry, physiology or medicine, peace, and literature. Since 1968, the Bank of Sweden Award in Economic Science has provided an entree for the social sciences.

The Nobel Prize recipients are a unique population of remarkable individuals, and represent a modern cultural ideal of personal creativity. [Beit-Hallahmi \(2015\)](#) used the biographical directory by [Sherby and Odelberg \(2001\)](#) to determine the religious affiliation and religiosity of 696 Nobel laureates between 1901 and 2000. [Sherby and Odelberg \(2001\)](#) noted in the introduction to their directory that obtaining information about religion was particularly difficult with this population. This is surprising for individuals who are celebrities. Only 49 percent of laureates could be clearly classified (as Roman Catholic, Protestant, Jewish, Unitarian, or Other). Of the remaining 51 percent, 20.26 percent were Classified as None, apostates (e.g. “from Christian background”) or No Record (!!). Five of the recent economics laureates are listed as No Record. For almost 35 percent of laureates, the classification was speculative, ambiguous, and generic, such as “Protestant” (no denomination), “Christian,” or “Most probably Christian.” This was an indication of how reluctant many laureates were to align themselves with any denominations.

There is a severe under-representation of Catholics in the science fields (they are well-represented in literature). Those 18 percent of the Nobel laureates listed as Jewish do not represent a religious group, but an ethnic label. We know that the vast majority are thoroughly secular. The Nones are the largest group among the Literature laureates (31 out of 97). Nones were found among the laureates as early as the first decade of the twentieth century.

With the Nobel data, the “eminence effect” ([Leuba 1916](#)) has been clearly demonstrated. What the findings regarding the Nobel laureates and the US National Academy of Sciences show is that since the nineteenth century, an international intellectual elite, committed to the life of the mind, and made up of mostly secular individuals, has been in existence. Those studied by Leuba in 1914 and Nobel laureates the years before 1950, had had their formative years in the nineteenth century (among those awarded the Nobel Prize before 1920, most were born before 1850).

Academic disciplines

Differences by academic disciplines have been not-

ed. A finding which goes against the common-sense view is the greater degree of religiosity among physical scientists, as compared with social scientists, especially psychologists. This was reported already by [Leuba \(1916\)](#). The differences among academic field vanished with growing eminence. Social scientists are among the least religious, most often with an over-representation of “nones” or Jews (who are highly secularized), together with some liberal Protestants, and a paucity of Catholics ([Thalheimer 1973](#)).

A 1989 large scale survey in the United States ([Politics of the professoriate, 1991](#)) found that the percentage of faculty members endorsing “none” in response to “What is your present religion?” was 65% in anthropology, 50% in psychology, 50% in education, 49% in sociology, 55% in philosophy, 47% in French, 44% in art, 41% in English, 53% in zoology, 52% in physiology/ anatomy, 47% in molecular biology, 49% in electrical engineering, 26% in medicine, 35% in mathematics/ statistics, and 33% in physics. The lowest percentages were in Home Economics (4), social work (9), possibly because of the majority of females, 11% in civil engineering, 12% in nursing, 13% in library science (females), and 16% in dentistry.

[Lehman and Shriver \(1968; Lehman 1974\)](#) proposed the “scholarly distance” hypothesis: those in subjects remote from the study of religion, like physics, were more religious than those whose academic fields studied religion, such as psychology and sociology. Those at a greater distance were more religious. Natural sciences apply critical thinking to nature; the human sciences ask critical questions about culture, traditions, and beliefs. The mere fact of choosing human society or behavior as the object of study reflects a curiosity about basic social beliefs and conventions and a readiness to reject them. Physical scientists, who are at a greater scholarly distance, may be able to compartmentalize their science and religion more easily.

Among academic psychologists, 50 percent were atheists and another 11 percent were agnostic ([Gross and Simmons 2009](#)). Among famous atheists, we find leading psychologists and psychoanalysts. We could provide a long list, including G. Stanley Hall, John B. Watson, Carl R. Rogers, Albert Ellis, Abraham Maslow, B. F. Skinner, Hans Eysenck, Raymond B. Cattell, and among psychoanalysts William Alan-son White, Ernest Jones, Jaques Lacan, and Melanie Klein ([Beit-Hallahmi 1989; Beit-Hallahmi 2010](#)).

Maslow was a second-generation atheist, as his father was a militant freethinker (Wulff 1997).

Explanations

The basic findings presented above have been summarized by Feist and Gorman (1998, p. 13): “Scientists in general, and eminent scientists in particular, are conspicuous in ... an almost complete absence of current religious faith.” This has been noted whenever the subject has been studied (Eiduson and Beckman 1973; Feist 2006a). The case of the United States, where most of the research has been done, presents us with a real puzzle: a highly religious population by all measures, produces a group of individuals who display a high degree of secularity. It is clear that academics could not be a representative sample of the population, but this is a unique phenomenon historically and psychologically. What could be the psychological processes involved?

The nonconformity of academics

Academics are very different from the general population in terms of interests, beliefs, and ideals. The correlation between rejection of religious beliefs and radical political views has been clearly demonstrated in many studies (Beit-Hallahmi 2015). The stereotype describing academics as liberal and irreligious is correct, like many others (Jussim 2012). Data on the political leanings of academics in the United States show that a liberal majority dominates almost all disciplines, including economics, physics, engineering, business, and law (Cardiff and Klein 2005; Klein and Stern 2009; Klein and Western 2005).

Lipset (1982) argued that academic eminence was tied to nonconformity in both religion and politics, and that the most eminent academics were more likely to demonstrate left-wing radicalism. The report by Bello (1954), who interviewed 87 promising research scientists under age forty, showed that the majority were irreligious and almost no one voted for Eisenhower in 1952. More recently, the correlation between eminence and liberalism was demonstrated by data on the Democrat/ Republican ratio at California universities. At UC Berkeley it was 8.7, at UCLA 7.2, at Stanford 6.7, UCSD 6.6, and at even at Caltech (supposedly dominated by conservative, but brilliant, engineers), 4.2. Less prestigious California institutions had many more Republicans (Cardiff and Klein 2005). If academics in all fields deviate from majority norms in

politics and religion, this deviance may be essential to the academic mind and to academic norms.

Personality

In the popular imagination and in psychological research, academics are viewed as nerds, uncool, lacking in social skills, and better at manipulating ideas or understanding complex machinery. Psychological research on vocational choice suggests that individuals can be divided into six major work orientations, known as RIASEC: Realistic, Investigative, Artistic, Social, Enterprising and Conventional (Holland 1997). The Investigative or Intellectual types (Thinkers) have strong analytical and intellectual tendencies, often in the form of strong mathematical skills, and enjoy collecting and analyzing data. They are curious, original and independent, prefer working alone rather than with others, and are committed to ideas and theories.

Research shows that academics are more independent, introverted, and less sociable, than other humans, and that more creative scientists are dominant, arrogant, self-confident, or hostile and describe themselves as argumentative and assertive (Feist 2006b; Rushton, Murray, and Paunonen 1987). More eminent academics are also anti-authoritarian, and often contemptuous of what they consider unfounded claims.

Research on the most eminent individuals in both natural and human sciences has shown that they had all been recognized as unusually gifted as children. In addition, being anti-authoritarian and counter-dependent, they had been characterized as rebels, and showing no respect for convention and tradition (Eiduson 1962; Eiduson and Beckman 1973; Feist 2006a; Roe 1952).

Intelligence

To reach the intellectual elite, you have to start with a very high IQ. For the general population, the correlation between IQ and religiosity has been found to be negative, but small. Sherkat (2010) examined the impact of religious affiliation, religious participation, and beliefs in the inerrancy of the Bible on verbal ability, and found that both inerrantist beliefs and sectarian affiliation have substantial negative effects on verbal ability. Zuckerman, Silberman, and Hall (2013) performed the most comprehensive meta-analysis of 63 studies, which showed a significant negative associa-

tion between intelligence and religiosity with mean r of $-.24$. Three possible explanations were proposed: higher intelligence may be negatively correlated with conformity; higher intelligence may be tied to an analytic thinking style; higher intelligence helps in coping and may make religious compensators unnecessary.

Students with ability and commitment to the academic life should reach elite colleges and universities. In 1950–1951, [Goldsen et al. \(1960\)](#) carried out a survey ($n=2975$) of male students at eleven campuses across the United States. Religiosity was negatively correlated with the quality of the institution. The percentage of students who believed in God was at Harvard 30; at UCLA 32; at Dartmouth 35; at Yale 36; at Cornell 42; at Wayne State University 43; at Wesleyan 43; at Michigan 45; at Fisk 60; at Texas 62; and at North Carolina 68. [Caplovitz and Sherrow \(1977\)](#) found that apostasy rates rose continuously from 5 percent in low ranked universities to 17 percent in high ranked universities. [Niemi, Ross, and Alexander \(1978\)](#) reported that at elite colleges, organized religion was judged important by only 26 percent of their students, compared with 44 percent of all students.

Highly gifted groups

Several studies followed up children with outstanding (top 1 percent) IQ scores or with exceptional mathematical abilities. These longitudinal studies help uncover the precursors to later worldviews, because many of the gifted children did become part of the science–technology elite. Starting in 1922, Terman and his colleagues studied 1528 gifted youth with IQs higher than 135, and a mean IQ of 151, who had been followed as long as they lived. Almost one-tenth of the 856 males became academic researchers (77), more than one-tenth (85) earned law degrees, and 48 earned medical degrees. Their religiosity was investigated repeatedly and the findings were consistent. At midlife, in 1941, 45 percent of the group were unaffiliated with any religion (as compared to 6 percent in the general population at the time). Sixty-two percent of the men and 57 percent of the women claimed “little religious inclination”, while 28 percent of the men and 23 percent of the women claimed it was “not at all important” ([Terman and Oden 1959](#)). This notable level of secularity was consistent throughout life ([Holahan and Sears 1995](#)). Politically, the group was judged to be more liberal than the general population, and those with an IQ over 170 were the most liberal ([Holahan and Sears 1995](#)).

Intellectualism

Beyond intelligence, leading academics and scientists display intellectualism, i.e. a commitment to scholarship, built on high levels of analytical, non-intuitive thinking. In a study of 2,842 graduate students in the USA, [Stark \(1963\)](#) found that church attendance was negatively associated with self-identification as an intellectual, and positive attitudes towards creativity, occupational freedom, and professional ambition. Thus, those who were more conforming religiously appeared to place less value on intellectual achievement. Other studies have shown rather consistent patterns of decreased involvement in institutional religion among those who move on through graduate school, particularly among those who identify with intellectualism as a value ([Caplovitz and Sherrow 1977](#)). [Zelan \(1968\)](#) analyzed data from U.S. arts and science graduate students in 1958. There were 25% “nones,” 80% of whom had been raised in some religion, and this pattern was accentuated in elite universities. [Lehman \(1972\)](#) found an inverse relationship between scholarly perspective and religiosity among professors in the United States.

That a commitment to an academic career, and not just high intelligence, is the causal factor which affects religiosity among academics was shown by [Ecklund and Park \(2009\)](#). They compared 1386 academics to a group of 375 Americans with advanced degrees. The percentage of Catholics in the graduate degree group was 27.9, while among academics it was 9.0. The percentage of atheists in this group was only 3.8 percent, compared to 33.5 percent among academics.

Physicians, like engineers, are much more religious than those committed to basic research. This illustrates the practical and psychological gap between basic research and technology. Those applying technology, like engineers and physicians, are charged with finding concrete solutions, rather than theoretical innovations, in their daily work, and live with more stress and insecurity.

Socialization in academia

It has often been assumed that higher education does have a secularizing effect on students, but this claim has been challenged ([Lee 2002](#); [Uecker, Regnerus, and Vaaler 2007](#)). When discussing academics, the relevant experience is post-graduate training, which socializes into the culture of basic research. Does

something happen during this initiation ritual? It seems that low religiosity does not appear in individual academics during the years of academic training, but results from the tendency of those already lower in religiosity to select an academic career (Beit-Hallahmi 2015; Beit-Hallahmi and Argyle 1997; Ecklund and Scheitle 2007; Wuthnow 1985).

There is a long process of selection and self-selection that produces an academic (Finkelstein 1984). One factor may be that of self-selection in terms of unconventionality. Self-selection by critical minds has to do with family background, as the values and ideals dominant in the family are crucial. Gross and Fosse (2012) argued that the political liberalism of the academics is causally tied to an overrepresentation among them of Jewish (i.e. secular), liberal Protestant, or non-religious individuals.

Thalheimer (1965) found that the relative secularization of faculty members in the US took place earlier than their college years. Bereiter and Freedman (1962) found that social science majors take a more liberal and less conventional stand on most issues, while students in the applied fields are more conservative in their attitudes. Jones (1970) also found that among university freshmen those majoring in natural science were the most favorable to religion, those in psychology the least. Hoge (1974) found natural sciences university students to be higher on orthodoxy.

Intellectualism means independence, which is not promoted in highly religious families. Granger and Price (2007) found that individuals holding fundamentalist beliefs and having been raised in a fundamentalist family are much less likely to pursue academic training. Hardy (1974) stated that the underrepresentation of Catholics and conservative Protestants in academia resulted from family values and ideals.

Gross and Simmons (2006) found that conservative politics, Republican Party affiliation, and evangelical identity were tied to lower confidence in higher education and ascribing lower occupational prestige to professors. Sherkat (2011) found that Catholics and Conservative Protestants had lower levels of science literacy, compared with other Americans. This is likely to affect their aspirations and career choices. The association between academic aspirations and politics was evident in a 2004 survey of 15,569 undergraduates. Before starting college, 19% of liberal undergraduates

were interested in getting a Ph.D., compared to under 10% of conservatives. While in college, 33% of conservatives chose professional fields, compared to only 18% of liberals (Woessner and Kelly-Woessner 2009).

Political views, career interests, and religious identities stabilize in late adolescence, when religious and political non-conformists start moving towards academic careers (Beit-Hallahmi and Argyle 1997; Ecklund 2010; Ecklund and Scheitle 2007; Elchardus and Spruyt 2009; Highton 2009; Wuthnow 1985). Those choosing (or being chosen for) an academic career are marked by intellectualism, critical or skeptical thought, and/or personal dedication to a branch of knowledge, which could be recognized by age eighteen in many adolescents (Hardy 1974; Hoge and Keeter 1976; Roe 1952). Some of these qualities emerge much earlier. Ecklund, Park, and Veliz (2008) noted that age sixteen was a turning point, with future academics switching to a nonaffiliated status at that age.

Eiduson (1962) described the individuals in her group of highly eminent scientists as intellectually gifted children, whose fathers were often absent, had limited intimacy with their families, found nurturance in intellectual life, turning to reading, puzzles, and fantasies. They valued logic and emotional control, built a set of “intellectual fences” to defend themselves against problems or disturbances at home, came to value innovation and difference, while tolerating the ambiguity and uncertainty which this might create, and developed into intellectual rebels, channeling their aggressions into their academic work. The early experiences of a gifted child in an environment that values academic achievement and independence would lead to the choice of an academic or professional career, which appears to be connected to a particular pattern of beliefs and values.

The academic ethos

An occupational culture represents a match between institutional norms and individual personalities, and the academic ethos is maintained by committed individuals. Merton (1942) described the norms of academic culture as made up of universalism (claims to truth are evaluated in terms of impersonal criteria, not on the basis of personal characteristics), communism (the common ownership of scientific discoveries, rewarded by recognition and esteem), disinterestedness (acting in ways that outwardly appear to be selfless)

and organized skepticism (ideas must be tested and are subject to rigorous, structured, community scrutiny). This unique and common culture of academia is shared by all fields of research, regardless of specific research questions and methods. Both history and chemistry do have the same ethos. What Merton has described is an anti-authoritarian *weltanschauung*, which is clearly tied to Enlightenment ideals (or even an Enlightenment political program), and Hollinger (1996) showed that Merton's portrayal of the academic ethos was developed in the context of the fight for democracy in the 1930s and 1940s. The academy is a bastion of the Enlightenment vision, and that includes secularity.

Jewish and Catholic ancestry

Jewish over-representation has been noted in the literature on the social origins of scientists and academics. "In fact, among the most creative and elite groups of scientists most estimates suggest that 20 to 30% come from Jewish families" (Feist and Gorman 1998, p. 13). This is while Jewish ancestry can be claimed by only 0.2% of the world population, and only 2% of the United States population. Jewish over-representation among eminent academics parallels the Jewish presence in modern elites of all kinds: political, financial, and creative (Slezkine 2004). What does it mean in terms of religiosity or religion?

Jewish secularization has been vigorous and thorough ever since it started in the eighteenth century. It has meant that Jewish identity was maintained by individuals who almost completely stopped the practice of Judaism. Modern Jews are highly secularized, scoring low on every measure of religious belief and religious participation in every known study.

Jewish self-identification has been consistently reported as having similar or identical consequences to secularity or irreligiosity. In many cases the reader of research articles can conclude that "Jewish" and "No religion" are almost interchangeable. Here is how one sociologist in the 1960s interpreted the "no affiliation" and "Jewish" labels in research: "No religious affiliation" was assumed to indicate a low value on conformity and an individualistic approach. "Jewish" was considered a liberal designation because of the high level of education of this group, its low degree of organized religion, and its political liberality" (Reiss 1967, p. 122).

Jewish over-representation among academics is relat-

ed to secularity and modernity, rather than to Judaic traditions, but Jewish history may have contributed to the radical secularization Jewry has undergone. If modernization means urbanization, literacy, and mobility, Jews were clearly ahead of other groups, which must have prepared them for modernity and its challenges (Slezkine 2004).

Catholic ancestry could serve as a mirror-image of the Jewish case. Catholic under-representation among eminent academics has been noted, and debate over Catholic anti-intellectualism has been evident in the United States since the 1950s (Lenski 1963; Rigney and Hoffman 1993; Wuthnow 1977). Greeley (1963, 1973, 1977, 1990) challenged the received wisdom and presented data showing that since the 1960s Catholics had the same rates of graduate degrees as others, and were just as likely to enter the academic world. Fifty years after Greeley started making these claims, Catholics, who make up more than 25% of the United States population, are indeed well-represented among holders of advanced degrees (27.9%), but significantly underrepresented among elite faculty (9.0%) (Ecklund and Park 2009). Internationally, data on Nobel Laureates show a severe under-representation of Catholics in the science fields (Beit-Hallahmi 2015).

Conclusion

Religion and academic research are two unrelated realms of discourse. Some may see the two realms as constantly at war, and researchers as foot-soldiers on one side of the battle, but most of the time, academics demonstrate real indifference to religious ideas. Contrary to what is written above, Jehovah's Witnesses, Jews for Jesus, or Mormons are not likely to become eminent researchers. There is a huge gap between the openness of science in principle, and the reality which deprives individuals from highly religious families of the opportunity to study it. This is a form of deprivation, but those families follow other ideals, and things are not likely to change. The religious composition of academics worldwide is a significant bit of data, and tells us something about the modern age, when anti-authoritarianism and skepticism are handsomely (or less than that) rewarded.

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