

ARE WE BORN^{to Be} RELIGIOUS?

Genes and personality influence our attitudes toward religion

By Vassilis Saroglou

A deep question pervades the debates surrounding religion—whether God exists, sure, but that one is mighty difficult to answer. Instead we can ask a related, more approachable query: Why does God exist for some of us but not for others? Theologians and ministers preach that faith is preeminently a matter of personal choice. Is it, really?

Not everyone is a believer, of course, nor do we all maintain allegiance to a single belief system throughout the course of our life. Almost half of American adults, for example, have changed religious affiliation at least once during their lifetime, and most do so before age 24, according to the Pew Forum on Religion and Public Life. Although religious affiliation may be fluid, once people enter adulthood they tend to stick with one category, retaining either faith in God or the absence thereof.

For the most part, people are either religious or atheists because they were raised that way. Parents, classmates and other trusted figures impress their views on children and introduce them to a set of rituals and practices. Later in life those influences hold less power. Several forces can diminish a person's religiosity—frequently cited reasons include the absence of social pressures to be religious or a desire to distance oneself from one's family. Personal crises can also spur a change, prompting some people to convert and others to abandon religion.

Recent research suggests, however, that this is not the whole story. By studying the correlations among thousands of individuals' religious beliefs and measures of their thoughts and behaviors, scientists have discovered that certain personality types are predisposed to land on different spots of the religiosity spectrum. Genetic factors account for more than half of the variability among people on the core dimensions of their character, which implies that a person's feelings regarding religion also contain a genetic component. By analyzing twins, some of whom share the same DNA, psychologists have begun to collect evidence for the genetic roots of religiosity. These studies are starting to explain what makes some of us believers, whereas others end up rejecting supernatural notions.

Bringing Up Believers

The search for a biological basis for religion has gained wide appeal as the tools to probe our internal makeup have improved. Numerous brain-scanning experiments have sought to pinpoint



If you were the man in the suit, would you stop to help the woman who fell? Your response may reveal not only facets of your personality but also your religious inclinations.

one or another brain region as being important to the religious experience, prompting occasional claims that humans are equipped with a “God module,” a part of the brain that causes us to have religious beliefs. In 2004 a much hyped book called *The God Gene* proposed that a particular gene, VMAT2, was linked with religiosity. The data supporting that claim, however, were never published in a peer-reviewed journal, and other scientists never replicated the purported results.

Discerning how genes lead to behavior is one of biology’s toughest tasks. Genes make proteins, and figuring out how those proteins give rise to behaviors, let alone beliefs, pushes at the edges of our scientific knowledge. What is clear is that genes are not a blueprint; instead they interact with environmental influences in many complex ways, twisting fate

at every turn. One way to examine the question is to look at personality characteristics: genes predispose a person to particular traits, which can manifest as certain behaviors.

The study of personality began almost a century ago, when pioneering psychologists working in the 1920s and 1930s became inspired by biology’s orderly classification systems and set out to codify personality. They started by scanning the dictionary for all the terms that captured some aspect of a person’s character, producing a list several thousand items long. Factions of psychologists debated over which descriptors, and how many of them, were needed to capture the essential dimensions of personality.

More recently, psychologists have rallied around “the big five,” as psychologist Lewis Goldberg of the University of Oregon called them in 1981. These five traits—extroversion, neuroticism, agreeableness, conscientiousness and openness—have been shown to be independent of one another and to remain stable throughout most of life. In work published in 1987 Robert R. McCrae and Paul T. Costa of the National Institutes of Health verified the five factors by administering questionnaires and collecting self-reports and peer ratings from thousands of people. Subsequent surveys in many languages and countries have contributed to the dominance of the five-factor model in personality psychology today.

According to this model, the ways in which individuals’ personalities differ from one another can be organized along five main dimensions. People differ in extroversion: extroverts are dynamic, gregarious and socially warm, whereas introverts are timid and reserved. Neuroticism refers to a person’s tendency to be anxious, depressed and generally emotionally vulnerable, as opposed to emotionally stable and positive. A third facet is agreeableness, which captures whether a person is empathetic, helpful and trusting of others, as opposed to mean, individualistic and arrogant. Conscientious individuals are methodical, self-controlled, and willing to establish goals and work toward achieving them, whereas those low in conscientiousness tend to be impulsive and disorganized. Finally, we can differ in openness: whether we like novel, challenging and complex ideas, experiences and feelings. Less open individuals prefer to stay within their comfort zone.

Linking Personality and Religion

To find links between a person’s religious beliefs and any other facet of life, scientists must sift through enormous quantities of data. In 2010 I published an in-depth analysis of 70 previous studies seeking to link religion and personality with a total of more than

FAST FACTS

Roots of Religiosity

1>> Many people change their religious affiliation during the course of a lifetime. Overall attitudes toward belief, however, are generally stable in adulthood.

2>> Specific clusters of personality traits correlate highly with particular kinds of religious belief.

3>> Although environmental influences play a large role in determining a person’s religious beliefs during adolescence, genetic factors emerge as more important in adulthood.

You Look Religious

The choices you make, both big and small, can broadcast hints about your religious beliefs. In a 2009 study Laura Naumann, then at the University of California, Berkeley, and her collaborators asked study participants and their acquaintances to describe the participants' personality and religiosity. They also took full-body photographs of the subjects. A second group of students then looked at the pictures and guessed at the individual's personality and religiosity. They got it right more than 60 percent of the time. Further analyses showed that the observers made their judgments of religiosity partially based on how neat or messy participants looked.

Other unexpected connections between religiosity and behavior have also been discovered. In our lab at the Université Catholique of Louvain in Belgium, we looked into how religious people use humor. We found, first, that they reported a lack of appreciation for hostile, sexual and dirty humor—no surprise there. We also presented our subjects with frustrating situations and asked them how they would respond. To hide the key objective, we told them we were investigating the ways in which we cope with life's everyday difficulties. Amazingly enough, the



more religious the students were, the less likely they were to spontaneously use humor in their answers.

A similar trend exists in professional interests. I analyzed data from the European Social Survey, which included 25 countries and more than 40,000 participants, and discovered that religious people have a greater chance of ending up in education, health, medical services and humanities than in other fields. Nonbelievers are more likely to go into engineering, sciences and mathematics.

—V.S.

21,000 participants. These papers covered several decades, ages and religions, although Christianity was most heavily represented. Several of these reports corroborated self-assessments, with ratings provided by family members, friends and colleagues.

What those studies revealed is that religious people consistently differ from low-religious or non-religious individuals on two personality dimensions: agreeableness and conscientiousness. The effects were modest in size: 60 percent of religious versus 40 percent of nonreligious people are agreeable or conscientious. Yet this correlation showed up in study after study. It was present in both men and women, from teenagers to adulthood, and among several cohorts ranging from the 1970s to the present, as well as in a study from the 1940s. We saw this trend in people of all major religions, not only in Protestant and Catholic but also in Jewish and Muslim faiths. Several behavioral experiments bolster the idea that religious individuals tend to display agreeable and conscientious behaviors. For example, religious people are inclined to show cooperation in laboratory experiments and to volunteer in real life. They also endorse healthy lifestyles that reflect self-

Rather than religion making people agreeable and conscientious, it is personality that determines religiosity.

control such as low alcohol, drug and tobacco use. Again, these effects are modest, but the fact that they are pretty consistent across studies makes them notable.

One could argue that rather than certain types of people being more likely to become religious, religion might instead instill agreeableness and conscientiousness in believers. To answer this question, researchers examined data from the Terman Longitudinal Study, a project that followed people with high IQs throughout their life. In the early 1920s, when these participants were between the ages of

12 and 18, their parents and teachers evaluated various aspects of their personalities. In 2003 Michael McCullough of the University of Miami and his collaborators found that of the 492 subjects they analyzed, the children and adolescents rated as more agreeable and conscientious turned out to be more

(The Author)

VASSILIS SAROGLU is professor of psychology in the division of social psychology at the Université Catholique of Louvain in Belgium, where he chairs the Center for Psychology of Religion (www.uclouvain.be/psyreli).

religious 19 years later than the individuals who were rated lower on these measures as children. Another analysis published two years later examined changes in religiosity of Terman study participants over the course of 50 years. The people who were high in agreeableness in their early adulthood were more likely to remain believers or even to become more religious later than those who were less agreeable as young adults.

These results are in line with personality theory. Personality traits are already present in early childhood. Later in life they heavily shape social attitudes, values and identities. It thus becomes clear that rather than religion making people agreeable and conscientious, it is personality that determines religiousness.

If further research, especially in Eastern cultures and religions, confirms this pattern, we may have psychological evidence in favor of some of the universal functions of religion. Scholars have long suggested that because religion fosters social cohesion, it may have played an important evolutionary role by enabling larger groups of people to band together. These findings on personality traits support that idea. Agreeableness and conscientiousness together denote a preference for social harmony and personal order—in other words, stability.

A Profile of Belief

We can add even more nuance to our personal profiles of believers. In my 2010 meta-analysis I

also reviewed studies that had focused on either spirituality, which encompasses more modern forms of faith not necessarily connected to religious institutions, or fundamentalist types of religion. About 62

percent of those who are high in openness to experience—and are agreeable and conscientious—are interested in and involved with spirituality. About the same percentage of people who are agreeable and conscientious but low on openness tend to become involved with fundamentalist religious groups. Openness appears to tune believers to the kind of faith they end up holding.

An important question is how these clustered traits might relate to choices in real life or at least to real life as it is modeled in the lab. In a study I conducted in 2005 at the Université Catholique of Lou-

vain in Belgium with Isabelle Pichon, we asked Belgian participants how they would react in several situations in which they could choose to either offer help or not. Here is one scenario: you are trying to catch a train when you see a person whose suitcase flies open and from which the contents scatter. Do you stop to help? We assigned our subjects randomly to one of two conditions. In one, the person needing help was a friend, family member or colleague. In the other, the person requiring assistance was unknown. Our findings were intriguing: the more religious the participants, the more they expressed willingness to help the familiar individual but not the stranger. Spiritual subjects, however, did not distinguish between known and unknown people. They were equally willing to help in both cases.

We can make further distinctions among types of religiosity. In collaboration with my graduate student Joanna Blogowska, we replicated the suitcase scenario with Polish participants in a study published in 2011. We added a second study, in which we examined the willingness to help either a student in need or a feminist student in the same situation. It turned out that participants who were high on religious fundamentalism were not very will-

The more distance we get from our early influences, the more idiosyncratic factors hold sway over our beliefs.

By studying twins, researchers are beginning to find evidence of a genetic contribution to our religious beliefs.



GETTY IMAGES

Boiling Down Beliefs

Agreeable and conscientious people also tend to be religious. Whether they incline toward fundamentalist or spiritual belief systems often depends on how they rate in openness. The top three and bottom three rows reveal the similarities—and differences—between authoritarian and fundamentalist dispositions, as well as between spiritual persons and those who experience paranormal phenomena. A creative-rebellious type is much less likely to be religious.

	Extroversion	Agreeableness	Conscientiousness	Neuroticism	Openness to Experience
Religiosity		High	High		
Fundamentalism		High	High		Low
Spirituality	High	High	High		High
Creativity-rebelliousness		Low	Low		High
Authoritarianism			High		Low
Paranormal beliefs	High				High

ing to help unknown people or a feminist; an individual whom they perceived as threatening to their values. They did, however, frequently offer to help either a close acquaintance or a student in need. The participants who were high in fundamentalism assisted individuals in those latter two categories 66 percent of the time versus exactly half of the time for feminists and strangers. In other words, those viewed as outsiders were least likely to receive a helping hand from more conservative believers.

Genes and Environment

These clustered personality traits—and their corresponding behavior—suggest an underlying genetic component. To investigate this idea, researchers have contacted hundreds of pairs of twins to assess their religious beliefs at different points in time. These twin studies aimed to identify how each of the following variables helped to determine religiosity—the unique experiences of each twin, the shared environmental factors of family and environment, and finally, heritability.

What these studies conclude is that shared environment—namely a family's approach to religion—plays a great role, especially during childhood and adolescence. After that, the picture shifts, the early environment becomes less potent, and a genetic influence emerges between the ages of 18 and 25 years.

Let us look a little more deeply at one of these twin surveys. In a 2005 study by Laura Koenig, then at the University of Minnesota, and her colleagues, for example, the researchers analyzed reports on the religiosity of twins in adolescence compared with adulthood. The intent was to calculate the relative importance of genetic factors versus environmental influence at those two stages of life. The scientists used a statistical model to determine which factor is

most important in adolescence versus adulthood. For adolescents, they learned that genetics—in other words, dispositions for certain personality traits—accounted for only 12 percent of their religious identity, and a shared upbringing contributed 56 percent to the outcome. (If you include a third category, which captures all the unique events that shape a twin's life, these three numbers add up to 100.) Conversely, 44 percent of adults' religiosity could be attributed to genetics, and 18 percent had to do with their environment.

All these data suggest that genetic influences help to explain why adults sometimes stray from the beliefs of their childhood. The more distance they get from the influences of their early years, the more idiosyncratic factors can hold sway over a person's attitudes. In a way, we are born to be inclined toward religion or atheism. Does God call us? For some of us, the answer is yes; through our genes, parents, acquaintances and life events. **M**

(Further Reading)

- ◆ **Genetic and Environmental Influences on Religiousness: Findings for Retrospective and Current Religiousness Ratings.** L. B. Koenig, M. McGue, R. F. Krueger and T. J. Bouchard, Jr., in *Journal of Personality*, Vol. 73, No. 2, pages 471–488; April 2005.
- ◆ **Religiousness, Spiritual Seeking, and Personality: Findings from a Longitudinal Study.** P. Wink, L. Ciciolla, M. Dillon and A. Tracy in *Journal of Personality*, Vol. 75, No. 5, pages 1051–1070; October 2007.
- ◆ **Religiousness as a Cultural Adaptation of Basic Traits: A Five-Factor Model Perspective.** V. Saroglou in *Personality and Social Psychology Review*, Vol. 14, No. 1, pages 108–125; February 2010.
- ◆ **The Etiology of Stability and Change in Religious Values and Religious Attendance.** T. M. Button, M. C. Stallings, S. H. Rhee, R. P. Corley and J. K. Hewitt in *Behavioral Genetics*, Vol. 41, No. 2, pages 201–210; March 2011.
- ◆ **Religious Fundamentalism and Limited Prosociality as a Function of the Target.** J. Blogowska and V. Saroglou in *Journal for the Scientific Study of Religion*, Vol. 50, No. 1, pages 44–60; March 2011.