

What Do Geneticists Say about God?

The Rev. Roger Fritts

Unitarian Universalist Church of Sarasota

February 2, 2014

READING:

ON A WARM SUMMER DAY [in the year 2000] just six months into the new millennium, humankind crossed a bridge into a momentous new era. An announcement beamed around the world, highlighted in virtually all major newspapers, trumpeted that the first draft of the human genome, our own instruction book, had been assembled.

As the leader of the international Human Genome Project, which had labored mightily over more than a decade to reveal this DNA sequence, I stood beside President Bill Clinton in the East Room of the White House, . . . the part of [Clinton's] speech that most attracted public attention jumped from the scientific perspective to the spiritual. "Today," he said, "we are learning the language in which God created life. We are gaining ever more awe for the complexity, the beauty, and the wonder of God's most divine and sacred gift."

When it came time for me to add a few words of my own, I echoed this sentiment: "It's a happy day for the world. It is humbling for me, and awe-inspiring, to realize that we have caught the first glimpse of our own instruction book, previously known only to God."

In my view, there is no conflict in being a rigorous scientist and a person who believes in a God who takes a personal interest in each one of us. Science's domain is to explore nature. God's domain is in the spiritual world, a realm not possible to explore with the tools and language of science. It must be examined with the heart, the mind, and the soul-and the mind must find a way to embrace both realms.

I will argue that these perspectives not only can coexist within one person, but can do so in a fashion that enriches and enlightens the human experience. Science is the only reliable way to understand the natural world, and its tools when properly utilized can generate profound insights into material existence. But science is powerless to answer questions such as "Why did the universe come into being?" "What is the meaning of human existence?" "What happens after we die?" One of the strongest motivations of humankind is to seek answers to profound questions, and we need to bring all the power of both the scientific and spiritual perspectives to bear on understanding what is both seen and unseen.

– Dr. Frances Collins, head of the Human Genome Project

Video: <http://www.colbertnation.com/the-colbert-report-videos/79238/december-07-2006/francis-collins>

SERMON

Back in 1979 news reports appeared in the United States about a pair of identical twins. These thirty-nine-year-old men, (Jim Lewis and Jim Springer) had been separated a few weeks after they were born and adopted by families living in two different towns in the state of Ohio. Seeking to learn about his birth family, one of them discovered to his astonishment that he had a twin brother out there somewhere, and he proceeded to track him down.

Although these identical twins had been raised apart, they had much in common. It turned out that both had dogs as youngsters, and each named his dog Troy. Both men had divorced women named Linda, and then married women named Betty. Both had produced a son, named James Allen in one case, and James Alan in the other. A reporter visited both men at home in their separate towns, and took pictures of each man smoking a Salem cigarette in his basement woodworking shop. The reporter noted that each man had constructed a white lawn seat around the trunk of a tree in his backyard. The wives of both twins discovered that each husband had the endearing habit of leaving little love notes around the house. Both men drove Chevrolets, were chain smokers, chewed their fingernails, drank Miller light beer, had worked as deputy sheriffs in their respective communities, enjoyed stock car racing, but disliked baseball. As they became better acquainted, the two families learned that, well before their meeting, both had taken spring holidays on the Gulf Coast of the state of Florida, driving down in their Chevrolets to the same quarter-mile stretch of beach. People found all this so remarkable that the twins were invited to appear on national television programs and researchers began to look more closely at how our genes might predetermine who we are. As a minister I wondered if our genes determined whether we are theists, agnostics, or atheists.

This 1980s research is called the Minnesota Study of Identical Twins Reared Apart, or simply the Minnesota Twins Project. The researchers found twins who were reared apart, but were both devoted to dogs. They found a pair of identical twins raised by different parents, who both became professional firefighters. They found identical twins raised apart, who both became amateur gunsmiths. The research suggests that many things we think we choose to do because of free will, or because of the influence of a teacher or a friend or a parent, we may be doing because of our genetic makeup.

The relationship is not 100 percent, but instead a matter of increased probability. For example, based on the sample of about 200 identical twins, if you have an identical twin somewhere in the world and you like to go hunting and fishing, you have a 72 percent chance that your identical twin also likes to go hunting and fishing. If you have an identical twin somewhere in the world and you are a performing artist such as an actor or a musician, you have a 74 percent chance that your identical twin also is a performing artist. Evidence like this showed the importance of the genes in determining who we are. One scientist/patent attorney said to me "I used to think that it was 50/50. Fifty percent of who we are was determined by our genes and 50 percent by our

environment. Now I would say 95 percent genes and 5 percent environment. And I am not sure about that 5 percent.”

In 1987 geneticists such as James Watson, the co-discoverer of the structure of DNA, asked President Reagan and congress to fund a project to map the entire human genome. This was biology's equivalent of putting a human on the moon. With this map researchers could compare the genes of people with a history of cancer in their families to a people without that history, and discover ways to treat or even eliminate certain illnesses.

The funding was approved and James Watson was appointed head of the Genome Program located at the National Institute of Health in Bethesda, Maryland. Raised Catholic, Watson described himself as “an escapee from the Catholic religion.” He said, “The luckiest thing that ever happened to me was that my father didn't believe in God.”

In 1992, Watson suddenly left the project and a national search was conducted to replace him. The director of NIH asked a geneticist named Francis Collins to assume the role of Project Head at the National Human Genome Research Institute in Bethesda. Later Collins wrote about the experience of being asked to take charge. He said:

No one was more surprised than I to find the selection process converging on me. Being quite happy at the time leading a genome center at the University of Michigan, and never having imagined myself as a federal employee, I initially indicated no interest. But the decision haunted me. There was only one Human Genome Project. This was going to be done only once in human history. If it succeeded, the consequences for medicine would be unprecedented. As a believer in God, was this one of those moments where I was somehow being called to take on a larger role in a project that would have profound consequences for our understanding of ourselves? Here was a chance to read the language of God, to determine the intimate details of how humans had come to be. Could I walk away? I have always been suspicious of those who claim to perceive God's will in moments such as this, but the awesome significance of this adventure, and the potential consequences for humankind's relationship with the Creator, could hardly be ignored.

Visiting my daughter in North Carolina in November 1992, I spent a long afternoon praying in a little chapel, seeking guidance about this decision. I did not "hear" God speak-in fact, I have never had that experience. But during those hours, ending in an evensong service that I had not expected, a peace settled over me. A few days later, I accepted the offer.

With the leadership of Francis Collins, the Human Genome mapping moved steadily ahead and the basic research was finished by the year 2000.

This work of interpretation of genome data is still in its initial stages, but it is starting to produce results. For example, researchers at the National Cancer Institute discovered a genetic test that can identify breast-cancer patients who are unlikely to suffer recurrences. The test offers a solution to a difficult problem in breast-cancer treatment, deciding which persons can safely skip

expensive, debilitating follow-up treatments. It is one of the first real benefits of the effort to harness genetics to fight cancer.

For many years, until his retirement three years ago, the director the Gene Structure Section at the National Cancer Institute in Bethesda was Dean Hamer. In 2004 Dr. Hamer published a book called *The God Gene, How Faith Is Hardwired into Our Genes*. The title, no doubt picked by the publisher's marketing department, is misleading. In the book Hamer focuses on the words like self-transcendence, not the word God or faith.

The definition of self-transcendence Hamer uses comes from a questionnaire developed by a psychiatrist at Washington University Medical School in St. Louis. The questionnaire has 225 true or false questions. Here are a few examples:

- True or false: I often feel so connected to the people around me, that it is like there is no separation between us.
- True or false: I often do things to help protect animals and plants from extinction.
- True or false: I am fascinated by the many things in life that cannot be scientifically explained.
- True or false: Often I have unexpected flashes of insight or understanding, while relaxing.
- True or false: Sometimes I have felt like I was part of something with no limits or boundaries in time and space.

Hamer judged that the people who answer true on many of these questions can be classified as more self transcendent or more spiritual. He gave these questions to a thousand college students paying them \$40 to take the questionnaire and donate DNA for study.

Hamer looked at genes he suspected might play a role in feelings of self-transcendence in human beings. In the first eight genes he studied he found no association with self-transcendence. Then a colleague suggested Hamer look at a gene called VMAT2. This gene plays a key role in regulating the levels of the brain chemicals serotonin, dopamine and nor epinephrine. Two different versions of this gene exist, differing only at a single position. People with one version of the gene got higher spirituality or self-transcendence scores on the questionnaire.

On page 77 of the book Dr. Hamer says: “. . .our analysis of the VMAT2 Polymorphism showed that it raises self-transcendence scores by only a single point, or 7 percent of the mean—less than 1 percent of total variance. That means that most of the inherited effects on self-transcendence can't be explained by VMAT2.” Hamer believes that there might be another fifty genes of more or similar strength. He writes that “The specific gene I have identified is by no means the entire story behind spirituality.”

Hamer speculates that these genes may have evolved in us to give us a feeling of optimism about life. The self-transcendence gene has developed in humans through natural selection because it gives us an innate sense of optimism, the will to keep on reproducing, even if death is inevitable.

The reaction to Hamer's book has been mixed. The reviewer in Scientific American said:

The field of behavioral genetics is littered with failed links between particular genes and personality traits. These alleged associations at first seemed very strong. But as other researchers tried to replicate them, they faded away into statistical noise.

Reviews from some religious leaders were also negative. One theologian in England said "The idea of a god gene goes against all my personal theological convictions. You can't cut faith down to the lowest common denominator of genetic survival. It shows the poverty of reductionist thinking."

On the other hand, The American news magazine Time did a cover story about the book, free publicity other writers envy. The Time cover story was followed by a full page article in the religion section of the Washington Post.

Like the editors at Time and the Washington Post, I find the topic interesting. Dean Hamer may have only found a gene that has a small influence on our spirituality, but I don't want to be too negative. Hamer is suggesting that just as some of us are born with blue eyes and some with brown, some of us are born more likely to feel spirituality or optimism or self transcendence, and some us are born less likely to have these feelings.

His work is a beginning step in understanding the genes that may influence our interest in religion. I am grateful to his willingness to explore this aspect of human nature.

But what about Francis Collins the Geneticist who believes in God? In the summer of 2009, Francis Collins was nominated by President Obama to become the new Director of the National Institutes of Health in Bethesda. NIH is the primary agency of the United States government responsible for biomedical and health-related research, with a budget of 31 billion dollars.

Sam Harris, a neuroscientist, and author of books such as The End of Faith, and Letter to a Christian Nation, was not pleased. In July 2009, The New York Times published an essay by Sam Harris in which he said that Collins' religious views made him unqualified to be the director of NIH. Harris said:

Most scientists who study the human mind are convinced that minds are the products of brains, and brains are the products of evolution. Collins takes a different approach: he insists that at some moment in the development of our species God inserted crucial components — including an immortal soul, free will, the moral law, [and] spiritual hunger

Collins has written that 'science offers no answers to the most pressing questions of human existence' and that 'the claims of atheistic materialism must be steadfastly resisted.' . . .

Must we really entrust the future of biomedical research in the United States to a man who sincerely believes that a scientific understanding of human nature is impossible?

In spite of Sam Harris' letter congress approved of Francis Collins' appointment and he is currently the Director of the National Institute of Health.

So what Do Geneticists Say about God? As you can see, it depends on whom you ask.

When asked if he believes in God, James Watson said, "Oh, no. Absolutely not. I know one Geneticist who is religious, and I don't understand him at all. We have different brains."

I assume James Watson was speaking of Francis Collins. Collins says, "I have found there is a wonderful harmony in the complementary truths of science and religion. God can be found in the cathedral or in the laboratory. By investigating God's majestic and awesome creation, science can actually be a means of worship."

Dean Hamer argues that our spiritual beliefs are due to our genes and offer an evolutionary advantage by helping us feel optimistic.

Sam Harris says "Faith is the license religious people give one another to keep believing when reason fails." However, Harris also says "This universe is shot through with mystery. The very fact of its being, and of our own, is a mystery absolute, and the only miracle worthy of the name."

As for myself, there are moments when I feel a sense of optimism exchanging a smile with people at a worship service. There are moments when I feel a sense of transcendence walking on a beach or through a forest. There are moments when I feel a sense of spirituality listening to the sounds of beautiful music.

Someday a geneticist may be able to explain that I feel this way because of my genetic code. However this does not make the experience an illusion. In the same way, a geneticist may someday identify the genes that cause me to have ears, but that does not mean the sounds I hear are an illusion.

As Sam Harris says, "This universe is shot through with mystery. The very fact of its being, and of our own, is a mystery absolute, and the only miracle worthy of the name." I am a small part of this mystery.