RELIGION AND SCIENCE

Reason and Reverence

Robert J. Richards

THE LANGUAGE OF GOD: A Scientist Presents Evidence for Belief. Francis S. Collins. viii + 295 pp. Free Press, 2006. $26.

In 1914, James Leuba, a psychologist at Bryn Mawr, conducted several surveys of scientists and college students regarding their religious beliefs, publishing his findings in a 1916 book titled *The Belief in God and Immortality.* Among scientists generally, 41.8 percent indicated they were believers in a personal God (defined as a being to whom one could pray, expecting a response), whereas 41.5 percent expressed disbelief in such a God and 16.7 percent declared themselves to be agnostic. Among elite scientists (those with an asterisk by their names in James McKean Cattell's *American Men of Science*), the percentage of believers was lower, at 31.6 percent. Among elite biologists, the subset who believed in God was even smaller—16.9 percent. In 1996 and 1998, Edward Larson and Larry Witham replicated Leuba's study, publishing their findings in the April 23, 1997, and July 23, 1998, issues of *Nature.* Their surveys revealed that of all scientists questioned, 39.3 percent professed belief in a personal God, about the same as in the 1914 study. However, among elite scientists—now defined as members of the National Academy of Sciences—the proportion who were believers had plummeted to 7 percent, with biologists showing the least religious conviction at 5.5 percent. In the general population of the United States, some 86 percent profess belief in the existence of a personal God, according to a 1999 Gallup poll. These figures dramatically indicate the great no-man's land separating the religious convictions of ordinary citizens from those of the scientific community, especially its leading members. This dissensus has fueled many of the bitter battles recently fought over evolution and stem cells and has ignited explosive devices laid along several political byways.

By any measure, Francis Collins is an elite physician and research biologist. He is the director of the National Human Genome Research Institute at the National Institutes of Health; and after James Watson left the U.S. Human Genome Project, Collins led a large, far-flung team of researchers to bring the project to completion six years ago. Before taking on this responsibility, he had helped identify the genes causing cystic fibrosis, Huntington's disease and several other genetic maladies. Currently his lab is searching for the genes that produce progeria (acute premature aging), and his group has already identified the genetic mutation that causes the most severe form of the disease. Collins is also an Evangelical Christian and is thus a member of that very small group of leading scientists who confess belief in a personal God. His latest book, *The Language of God: A Scientist Presents Evidence for Belief,* attempts to show the compatibility of religious faith and the best science, especially that science spelling out the language of life, genomics.

The book is cast as both memoir and argument. The brief sections of autobiography reveal not merely a dedicated scientist, but a caring and morally sensitive human being—a modest man, but one whose modesty cannot hide his accomplishments as a physician with deep humanitarian concerns. In short compass, he traces his trajectory from being a free-thinking atheist during his college years to becoming a committed Christian shortly thereafter, one brought to his faith by the examples of his suffering patients and the persuasive considerations of C. S. Lewis, the Oxford don who wrote such classics as *The Chronicles of Narnia, Mere Christianity* and (an influential book for me) *The Screwtape Letters.* Lewis's several tracts on Christian apologetics provide Collins with the gist of many of his arguments.

The argumentative sections of *The Language of God,* constituting the largest part, speak to two audiences, accomplished scientists and committed believers. Specifically, Collins tries to convince his scientific confreres that, as the subtitle of his book indicates, there are good reasons for belief in a personal God; and he seeks to demonstrate to members of the Christian community that they have nothing to fear from advancing science, even evolutionary biology. Collins's persuasive attempts are so well-intentioned and his tone so congenial that you want to believe, but ultimately his efforts are unlikely to succeed with either group.

A principal reason for his failure is that he employs strategies that pull in opposite directions. First he argues that certain empirical features of the universe and of human life can be explained best by appeal to a divine designer; but he also maintains that belief in God furnishes "the answer to questions science was never intended to address, such as 'How did the universe get here?' 'What is the meaning of life?' 'What happens to us after we die?'" If rationally ordered arguments based on empirical evidence form the pith of science, then Collins does, in fact, offer God as an answer to scientific questions; and if religion has no bearing on rationally ordered empirical observations, then it seems a bloodless set of dispensable concerns. But let me examine the results of each of these strategies.

Two empirical phenomena helped convince Collins of the reality of God's work in the world. First is the ubiquity of moral judgment. All cultures seem to display notions of right and wrong conduct. Especially salient in Collins's estimation is the altruistic impulse, the pang of conscience when confronted by another in need. By *altruism* he means acting for the benefit of another, without thought of advantage to self. Only God, he believes, could have implanted this impulse in the human heart. But of course biologists have tried to explain the near universality of morality through evolutionary processes. Collins quickly dismisses these attempts as unavailing: He rejects Richard Dawkins's view that altruism is really the work of selfish genes, and E. O. Wilson's theory of reciprocal altruism. Collins's quick retreat to divine agency runs counter to his assertion that religious belief does not attempt to answer scientific questions. In addition, his hasty consideration of the problem will do little to expand the small circle of scientists who are religious.

The other empirical consideration that seems probative to Collins is a version of the anthropic principle: Had the physical constants of the universe (for example, the slight asymmetry of matter and antimatter after the Big

Bang; the exact measure of the weak and strong forces; the total mass of the universe during initial expansion) been even a little different, then we would not be here. Collins believes that because "the chance that all of these constants would take on the values necessary to result in a stable universe capable of sustaining complex life forms is almost infinitesimal," the universe must have been designed with us in mind. He examines the possibility that a cosmic lottery yielded an untold number of failed universes, with only ours having the winning combination. However, he concludes that this hypothesis of a multiverse "strains credulity," as does the other possibility that we are just plain lucky. So he thinks the evidence "reflects the action of the one who created the universe in the first place." The weirdness to common sense of a good deal of physics and cosmology seems hardly the criterion on which to base any metaphysical conclusions. Moreover, since the 18th century, wise men, such as Immanuel Kant, have warned about the hazards of reasoning conducted at the limits of human knowledge. I suspect anthropic arguments of this sort will do little to increase the base of scientific believers.

What about the other side, the religious community, whose members may be wary of the conclusions of contemporary science? Collins attempts to win them over by gently pointing out that it would be unreasonable to take the Bible literally. The idea of a six-day creation simply runs against the whole edifice of extremely well-grounded science. He judiciously reminds the believer that there are too many internal contradictions in the Bible (for example, the two creation stories in the first two chapters of Genesis) for its pronouncements to be taken as anything other than metaphorical, designed to teach moral rather than empirical lessons.

After addressing the concerns of the more conservatively inclined, Collins then looks to those who are ready to adopt faux science in the guise of intelligent design. Against this latter group, he rehearses certain facts of developmental genomics that seem to make sense only under the theory of gradual descent with modification—for example, the presence of similar truncated (hence nonfunctioning) genes in the mouse and human genomes. Only a devious God intent on shutting down our reason could provide an alternative explanation.

Despite Collins's irenic efforts, the well-confirmed results of modern evolutionary theory and genetics do endanger the faith of the religiously minded. Or at least these results should make their religious convictions more precarious.

Collins maintains, as did Darwin, that the moral impulse is an essential component of our humanity. Yet if our various other human traits—reason, personality, emotional responses and so on—have arisen over the millennia through natural selection (which Collins believes to be the case), why is it that only our moral traits require divine intervention? Does not the ability to do science, to create art and to appreciate the beauty of nature also constitute what it means to be human? If these abilities have evolved, why not also moral judgment?

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In an appendix on bioethics, Collins reflects on several ethical dilemmas that modern medical knowledge and technology have created, not simply for the religiously minded. Embryonic stem cells hold great promise for therapeutic use, since those initial cells forming the developing fetus have the potential to turn into the cells of any organ of the body—for example, brain, heart or liver. The obvious source of stem cells for research and for use in potential therapies is in the huge number of leftover embryos created through *in vitro* fertilization but now lying useless in tanks of liquid nitrogen, sooner or later to be destroyed. For those convinced that human life begins at the moment of conception, the harvesting of stem cells from these embryos, which would be destroyed in the process, seems equivalent to homicide, even murder. Collins balances this conservative view against the recognition that these hundreds of thousands of embryos will eventually be destroyed in any case. But he does leave the question hanging as to whether we ought to salvage the embryos for good medical purposes. He thinks this ethical dilemma can be avoided through the new technology of somatic-cell nuclear transfer, the procedure that produced Dolly the sheep. In this technique, the DNA from a somatic cell (for example, a skin cell) is extracted and placed into a denucleated egg cell. Collins believes that the initial stem cells of an embryo produced by this method could be used for research and therapeutic purposes. He regards the technology as morally acceptable because, unlike the union of sperm and egg, somatic-cell nuclear transfer "does not occur in nature, and is not part of God's plan to create a human individual." This strikes me as suggesting that God has been a bit shortsighted in his planning. Perhaps He also left out *in vitro* fertilization? If so, it is hard to see, in light of Collins's considerations, why this latter technology would not also be a morally acceptable source of embryos for research. The train of Collins's moral reasoning about stem cells has derailed. Here you have an elite leader in a government agency ready to render an influential judgment based, at least in part, on theological estimates of God's long-term planning ability.

Throughout his book, and especially in his discussion of stem cell techniques, one detects the man of science in Collins struggling with the man of religion. He desperately wants reconciliation between reason and faith but seems not always aware of the price each side would pay. Despite his efforts to marshal rational, scientific arguments for God's existence, he does in the end admit that "belief in God will always require a leap of faith." Collins has made the leap but still grasps after some very slippery scientific handholds. He might have sought better resolution in the interpretation offered by a Jesuit friend of mine of the line often attributed to Tertullian: "credo quia absurdum est"—since it is absurd, the only thing I can do is believe.

Robert J. Richards is Morris Fishbein Professor of the History of Science and Medicine; professor of history, philosophy and psychology; and director of the Fishbein Center for the History of Science and Medicine at the University of Chicago. His book The Tragic Sense of Life: Ernst Haeckel and the Struggle over Evolutionary Thought *will be published in 2007 by University of Chicago Press. He is also the author of* The Romantic Conception of Life: Science and Philosophy in the Age of Goethe *(2002);* The Meaning of Evolution: The Morphological Construction and Ideological Reconstruction of Darwin's Theory *(1992); and* Darwin and the Emergence of Evolutionary Theories of Mind and Behavior *(1987), all from University of Chicago Press.*