

*The Language of God: A Scientist Presents Evidence for Belief.* Francis S. Collins. 2006. Free Press, A Division of Simon & Schuster, New York, NY 10020

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*The Language of God: A Scientist Presents Evidence for Belief* describes Dr. Collins' path from atheism to Christianity, is well written, and has provided some comfort to me as a scientist who is also a Christian. The book includes four themes as follows:

1. Dr. Collins' path to faith in God
2. His answers to questions of human existence and importance of the human genome project
3. Answers challenges to belief in science or God
4. Bioethics or moral choices in medicine

Dr. Collins does not, as some have claimed, attempt to prove scientifically the existence of God. First, scientists never prove anything; we speak in probabilities. These probabilities in some cases are quite high, c.f. the plausibility of Darwin's theory of evolution being correct. Science is constantly self-correcting. For example, the February 2014 issue of *Scientific American* includes an article on corrections to measurements of the radius of something as fundamental as the proton. Second, the existence of God is not a topic that can be addressed by the scientific method. Third, if science did prove the existence of God, that would be the death of faith. Scientists and believers in Christ should spend more time looking for common ground and less time hurling charges of base ignorance and worse at each other. I agree with his basic thesis, but I feel Dr. Collins has "gone beyond the data" in some areas.

Part one, chapter one describes Dr. Collins' path from atheist to belief in Christ. Faith was not an important part of his childhood on a dirt farm in Virginia, and by his college years he was first an agnostic then an atheist. In medical school, interaction with a particular patient caused him to doubt his atheism and led him to discussions with a Methodist minister who, in turn, introduced Dr. Collins to the writings of C. S. Lewis and the "Moral Law." This Moral Law, which he feels is unique to humans, is the keystone to his belief in God.

The second chapter reviews the war of worldviews and presents his answer to such challenging questions as "Isn't the idea of God just wish fulfillment?", "What about all the harm done in the name of religion?", "Why would a loving God allow suffering in the world?", "How can a rational person believe in miracles?" He relies heavily on writings of C. S. Lewis for his answers to these important questions. Dr. Collins suggests possibilities to explain the origin of the universe before "the big bang" and the Moral Law that guides so much of human behavior. He strongly supports Darwin's theory of evolution and illustrates how acceptance of this theory does not kill belief in God. He defends his position that acceptance of science and faith in God are not mutually exclusive, but complementary. For me, science can better address how the world works or how we arrived at our present condition, but not why. The Church is better at revealing why we are here and our relation to God, but not how life appeared and

evolved on earth. When either science or the Church moves into the others area, both science and faith suffer. This can be illustrated in consideration of whether the earth is the center of the universe or not. And no professional scientist would include faith or hope in an experimental design instead of statistics.

Part two begins with chapter three and provides an excellent overview of scientific information on origins of the universe, earth and life here. There are many gaps in our knowledge, and Dr. Collins is careful to point out the major ones, especially those that touch on theological issues. We do not know, for example, what existed before the “big bang”, how life began on earth, or how we came to be here. All too often in history, gaps in our knowledge have been filled with suggestions of divine intervention: God did it. As the gaps were filled by science, the faith of many people suffered and discord grew between science and faith in God. Faith that uses God to fill gaps in our understanding of the natural world can expect to face crisis after crisis as science advances sufficiently to fill those gaps.

In chapter four Dr. Collins reviews basic concepts on the fossil record, introduces Darwin’s revolutionary theory of evolution, surveys evidence for evolution of microbes and man, and takes us through Gregor Mendel’s important contributions to the study of genetics. He introduces the concept that DNA is the genetic code for all organisms now living on earth and can explain the intricate beauty of any flowering plant. He is in no way disappointed by these discoveries about the nature of life.

The fifth chapter chronicles work involved in deciphering the human genome, or God’s instruction book as Dr. Collins calls it. He takes us through the challenges of managing this project at several laboratories and celebrations at completing the first draft. This is his first reference to reading the language of God. I feel I must be missing his point at referring to the sequence of CATG base pairs in the human genome as the language of God. At the very least it seems presumptuous or pretentious.

Based on the title of this book, Dr. Collins is obviously very impressed with work of the teams that compiled a complete list of genetic codes in the human genome, but that does not make DNA the language of God. He just says it is. Yes, revealing the sequence of base pairs in the human genome is a major achievement. But it falls way short of worthy association with God. As a scientist I have worked on rather large projects at a national laboratory and at a multinational corporation involved in genetic engineering. Results of these projects are also very impressive, but no one suggested their results are a direct link to God. True genius in science is reflected in the quality of the questions being asked. Having teams of scientists in laboratories grinding out procedure after procedure to reveal the sequence of genes on chromosomes has led to an important result, but it is neither genius nor Godly. Interpretation of these data and its applications will require true genius, and perhaps then one might speak about the language of God.

Part three of the book (Faith in Science, Faith in God) includes chapters six through eleven. Chapter six narrates his view of historical struggles between science and faith in

God by reviewing his interpretation of the message in the book of Genesis and historical accounts of struggles faced by Galileo and Darwin with church doctrine.

Chapters seven through nine provide his arguments against atheism, agnosticism, creationism and Intelligent Design. Chapter ten introduces his new term to replace theistic evolution – BioLogos. Theistic evolution expresses the belief that God is the source of all life, that life expresses the will of God, and that science and faith co-exist in harmony. He lists six premises of theistic evolution as follows:

1. The universe came into being out of nothingness, approximately 14 billion years ago.
2. Despite massive improbabilities, the properties of the universe appear have been precisely tuned for life.
3. While the precise mechanism of the origin of life on earth remains unknown, once life arose, the process of evolution and natural selection permitted the development of biological diversity and complexity over very long periods of time.
4. Once evolution got underway, no special supernatural intervention was required.
5. Humans are part of this process, sharing a common ancestor with the great apes.
6. But humans are also unique in ways that defy evolutionary explanation and point to our spiritual nature. This includes the existence of the Moral Law (the knowledge of right and wrong) and the search for God that characterizes all human cultures throughout history.

“This view is entirely compatible with everything that science teaches us about the natural world. It is also compatible with the great monotheistic religions of the world.” Premise four seems to be at odds with number six. If no supernatural intervention is needed, how, then, did we become unique spiritually? Premises five and six suggest that humans evolved from great apes, but something special happened along the way – something that defies explanation by Darwinian evolution. Here, Dr. Collins has broken one of his own rules and gone beyond the data and invoked the “God of the gaps.” He is suggesting a theory that cannot be addressed by the scientific method.

In the final chapter of Part three, “Truth Seekers”, Dr. Collins concludes that science alone is not enough to answer all the important questions and quotes Albert Einstein “Science without religion is lame, religion without science is blind.” It is time for a truce between science and religion. Our future depends on it.

Part four consists of an appendix on bioethics or morality in medicine. Biotechnology has made available a great many new tools to physicians – tools unheard of even twenty years ago. These new tools afford many great options for treating diseases, but they also present ethical dilemmas. Some years ago I ran an Institutional Biosafety Committee for a company and had occasion to attend meetings of the NIH Recombinant DNA Advisory Committee. Public comments during these meetings revealed genuine concerns for some about the safety and ethics of applications of rDNA in general and on humans in particular. We always knew when a certain person was planning to speak, because the television camera crews were in the hearing room to

capture rants and raves against this technology: “We shall not be cloned.” “We must protect the ethos of cows. They have a right to moo.”

The possibility for personalized medicine offers enormous advantage for a patient. Our response to a drug varies with our individual genetic makeup. One drug, dose and delivery system could save one person but have no effect on another. And our individual physiologic state changes with age and other parameters. Those, too, could be considered in a course of treatment. Specific tumors or pathogens have specific genetic signatures that can be targeted if the information is available. Genetic errors or mutations in an individual can be identified and, in some cases, corrected. Identifying errors in our DNA can point to possibility of major diseases or cancer later in life. Knowing that errors common in one family do not exist in a specific individual can provide peace of mind. On the other hand, an insurance company could use information on a client’s potential for a certain problem to refuse coverage. A potential employer could discriminate against anyone for the same reason.

Basic principles of bioethics can be based on the Moral Law and are universal: respect for autonomy, justice, beneficence and non-maleficence – first do no harm. Scientists must be included in the debates on bioethics, but a wide variety of other perspectives must be represented. Ethics grounded in specific principles of faith can provide a fundamental strength that may otherwise be lacking. Dr. Collins suggests that we must face these moral dilemmas head-on and attempt to understand perspectives of all stakeholders. We need both voices of scientific and spiritual worldviews to be resolved – not just shouting at each other.

In short, Dr. Collins’ description of his path to belief in God and his defense of it is inspirational. We agree on the complementarity of science and faith in God, but we differ somewhat on the origin of humans. His work leading the teams that eventually decoded the human genome is very important, but I disagree with his assertion that this genome is the language of God. Both Dr. Collins in his book and this *Theoecology Journal* have emphasized both the reality of compatibility between science and religion and the importance that we talk more to each other about our worldviews to find areas of agreement. We can all benefit from sharing our views and strengthening our faith as we are tested more and more in this modern world.