Biology meets theology: Divergent views on evolution

by Philip Clayton in the January 19, 2000 issue

Genes, Genesis and God: Values and Their Origins in Natural and Human History, by Holmes Rolston
Taking Darwin Seriously: A Naturalistic Approach to Philosophy, by Michael Ruse
Evolutionary and Molecular Biology: Scientific Perspectives on Divine Action Series (Vol. 3), edited by Robert J. Russell, William Stoeger and Francisco Ayala

When conservative Christians take a stand against evolutionary theory, everyone notices. When biologists such as Richard Dawkins or E.O. Wilson claim that evolutionary biology excludes faith, disproves God or shows how much human beings are like other primates, the religious community becomes irate and newspapers spread the story across their front pages.

But the real work on evolution and faith is being done by two sets of scholars whom the popular press would rather ignore. One group consists of Christians who are attempting to combine the idea of God's providential design with evolution. The other is made up of nonbelieving or agnostic biologists who eschew radical antireligious claims in favor of sober assessments of genetic influence. The books by Holmes Rolston and Michael Ruse and the collection of essays edited by Robert Russell, William Stoeger and Francisco Ayala represent the best recent thought of both camps.

Rolston, whose mediating position is signaled by his book's subtitle, is one of the sober and intelligent Christian voices in the discussion. He cares deeply about preserving the nonbiological aspects of culture, ethics and religion. He searches for the "brooding Spirit of God" in the world, and believes that religion is about "the finding, creating, saving, redeeming of . . . persisting sacred value in the world."

Yet Rolston is willing to embrace the results of the scientific study of the biological world: "This has been Darwin's century, and we have more understanding than any people before us of the evolutionary natural history by which we arrived," he states.

Our genetic makeup results from an evolutionary process; we share most of our genetic structure with other animals, particularly with the higher primates; and this genetic code influences vast areas of human behavior. The strength of the influence results in the strong pull to “naturalize” and “socialize” the domains of culture, ethics and religion. Yet Ralston finds good reasons for rejecting a reduction of these domains to natural causes. Biological evolution, he proclaims, leaves room for religious truth.

Is Rolston’s apologetic successful? Consider his central arguments. One is that cultural history rises above genetic influences: “With the coming of humans there appears the genesis of ideas; encultured thereafter, ideas are perennially generated and regenerated.” For him biology and culture are ultimately separate, parallel aspects of the human person: “The self is not simply biological and somatic but cultural and ideological,” he argues. “The self is expansive and finds an entwined destiny with many other persons.” Cultural evolution renders genetic evolution relatively powerless. “One does not have to have . . . Darwin’s genes to be a Darwinian, or Jesus’s to be a Christian.”

The notion that our biological equipment is “like a computer hardware, as a given to work with,” is crucial for Rolston’s case against genetic determinism. An extremely large number of software programs can be run on a given piece of hardware. You can use your home computer to write about shagging or Shakespeare, to play games or search the heavens, to buy stocks or solve differential equations. The same degree of freedom, Ralston contends, characterizes the whole realm of human culture and thought.

Though some have argued that ethics and values have their roots in evolution, Ralston thinks that only religion puts them in an adequate context. Ethics involves altruism, the placing of the interests of others above one’s own. Many biologists have found that animals sometimes behave altruistically. Indiscriminate altruism—acting for the good of all and not merely for those who carry our genes—contributes to a healthy society, and thus, indirectly, to biological fitness. But Ralston maintains that altruism and other forms of ethical behavior must be measured not only for their biological survival value but also for their contribution to the flourishing of culture. Morality is emergent: our species has risen from “is” to “ought.” In the end, Rolston insists, the “ought” that is basic to ethics cannot be derived from the descriptive “is” of biological research. To be a person is to be “moral, valuable, and evaluating.” Only the language of transcendence can grasp

the human mind, which is able “to reach truths about realms that it does not inhabit, extrapolating and reasoning from the realms it does.”

In making his case for Christianity, Ralston’s starting point is our ability to transcend ourselves, our social or historical context and even our biology. This, he states, is strong evidence in support of religion and of a personal, transcendent God. Ralston argues not only that theism has a positive biological function for human culture and survival, but also that there is good reason to regard it as true. Tribal religions are “nonexportable” (and therefore false?); “only the universalist synoptic creeds have proven exportable, globally functional, because they speak to the common condition of humankind.”

The fertility of the idea of God and the fact that a biological species could produce such an idea need to be explained; for Rolston, the only adequate explanation is the actual existence of God. The evolution of biology and culture demonstrate that “there is a Ground of Information or an Ambiance of Information otherwise known as God.” God is a “countercurrent to entropy, a sort of biogravity that lures life upward. . . . God introduces new possibility spaces” into human existence. Rolston is cautious about presenting God as a miracle worker or regular causal force in the world, but he is optimistic about demonstrating a God who gives meaning to the world.

Christians will of course want Rolston’s project to succeed. A natural theology that makes God the best explanation of biological evolution would eliminate both atheistic naturalism and the antiscientism of creationism. But is Rolston’s picture too easy, too good to be true?

Consider how Ralston’s arguments look from the standpoint of Ruse, a leading moderate theorist of evolution. According to Ruse’s view, Rolston has failed to take Darwin seriously. Ruse argues convincingly that culture is not parallel to biology. It is not a relatively independent sphere built on top of its biological basis, like software running on hardware. Instead, research has shown that the biological constraints on culture are much more pervasive and influential than Rolston’s allows. The type of language we produce is determined by our mouth and throat structure; the mental categories we use are either responses to our environment or reflections of our own physiological structure (as in the case of color categories); and our interaction with our physical environment is our only means for establishing which of our beliefs are true. Truth and biological survival are, Ruse insists, the closest of allies.

The strict “bottom up” model of determination by our genes—a model passionately advocated by Dawkins—may have been replaced by the more complex model, according to which nongenetic factors influence gene expression and thus behavior. But, Ruse insists, though the circle may be broader than the “gene reductionists” believe, it still starts and ends with gene expression. Brains do not evolve and then function as a sort of tabula rasa, molded and formed by culture. Rather, humans are born with highly structured brains, hormonal and behavioral dispositions, and strong tendencies to think and behave in particular ways—all of which bear the mark of our evolutionary history.

The same holds true for ethics. Though the specific ways we formulate our ethical principles are not totally determined by their genetic basis, we cannot load just any ethical software onto our biological hardware. To take an obvious example, if a given population accepted a moral injunction against sexual intercourse (and its substitutes), it would have no more than a one-generation life span. Ruse’s string of examples fall into two categories: those that underscore biological constraints on ethical positions, and those that trace biological influences on ethical beliefs. Thus Ruse connects the universal taboos against sexual relations between siblings with the biologically based tendency for people raised in the same house to lose sexual interest in each other.

In general, “epigenetic rules giving us a sense of obligation have been put in place by selection, because of their adaptive value.” In the end, “morality is a function of (subjective) feelings”; we just think that morality must be something more because “we have (and must have) the illusion of objectivity.” Our brains and bodies—and the genetic coding that transmits these patterns to our offspring—are able to increase our chances of survival “by filling us full of thoughts about obligations and duties”; that is, we survive better “because we think morality is something laid upon us.” But any sense that obligations are something more, something transcendent or “real,” is an illusion.

What is true of ethics applies with a vengeance to religion. First, the same constraints hold sway: when religious beliefs and practices conflict with biological survival, they and their holders will soon find themselves decisively selected against. Strong lines of influence run from our survival needs as a species to the sorts of religious beliefs we form. Religious belief is not like the content we type into our word processors, which is presumably unaffected by whether we are using a Mac or a PC.

Biological factors may not determine our doctrine of the Trinity or our particular theory of the Eucharist, but they do affect the sort of beliefs and practices that tend to be developed and preserved within successful religious communities. Think, for example, of the links between the physiological characteristics of bread and wine, the social role that these two foodstuffs have played, and the religious use to which Christianity has put them.

In many ways Ruse remains a moderate. His most recent book, *Mystery of Mysteries* : *Is Evolution a Social Construction*?, challenges the claim made by radical evolutionists like Dawkins and Daniel Dennett that Darwinism counts against theism and makes religious practice absurd. Ruse believes that biological evolution leaves open the question of the ultimate meaning or purpose of the universe. Religious beliefs just might be true. Still, his argument is the antipode to Rolston's theistic evolution. For Ruse, Darwinian evolution is sufficient unto itself; it doesn't need any support from God, and it certainly doesn't by itself provide the direct evidence for God's existence that Rolston hopes to find.

How can one mediate this dispute? *Evolutionary and Molecular Biology*: *Scientific Perspectives on Divine Action* provides a sober assessment of what can and cannot be discovered at the interface of biology and theology. These essays are part of a ten-year project cosponsored by the Vatican Observatory and the Center for Theology and the Natural Sciences in Berkeley, seeking to rediscover a place for divine action in a scientific age. The book exhibits neither Rolston's optimistic exuberance nor Ruse's dogged insistence on the explanatory power of Darwinism. Its moderate stance, technical (occasionally highly technical) argument and cautious inferences are an effective response to Ralston and Ruse's sometimes overstated conclusions.

Most of the essayists don't think that the emergence of order, design, culture or religion in the natural world can be the basis for an argument that there is a divine purpose to the universe. In "Evaluating the Teleological Argument for Divine Action," Wesley Wildman challenges all attempts to use evolutionary biology either to prove or to disprove theism. Wildman's analysis of the limitations of teleological (purpose-based) arguments, when combined with the careful summaries of the scientific data by Ayala, Cela-Conde and Chela-Flores, sound a powerful cautionary note to Rolston's apologetic project. Though biology and theology don't occupy separate worlds, neither are they bosom buddies. Evil, as in the massive deaths of individuals and species within biological evolution, is a weighty negative counterbalance to

Rolston's positive interpretation (see the essay by Thomas Tracy, "Evolution, Divine Action, and the Problem of Evil").

The most helpful positive argument in this volume may be Paul Davies's "Teleology Without Teleology: Purpose through Emergent Complexity." Davies notes that the laws of physics are responsible for the emergence of ever higher orders of organized complexity within the natural world. Each of these orders represents the emergence of a genuinely new type of reality. Ruse is right that complexity appears gradually, and only through the evolutionary process. Still, what results is something new in the natural order: cells; organisms that strive to exist and to reproduce; ecosystems in which living things exist in complex interdependence; and, in the higher primates, complex modes of thought leading, eventually, to consciousness. With consciousness come moral beliefs, rational arguments and self-awareness. Perhaps most surprising of all, consciousness is accompanied by the preoccupation with transcendence—with God, freedom and immortality—that characterizes our species.

Had he done justice to this pattern of emergence, Ruse would have been more hesitant about basing ethics and knowledge on Darwinian principles alone. Influence "from below" is undeniable; but emergence forces us also to acknowledge that rationality and ethics—and perhaps religion—depend on metabiological factors as well. It's not a big step from this insight to the recognition of a basic "directionality" to the evolutionary process, as William Stoeger describes it. If there is "purposiveness without purpose" in natural history, then the Christian language of divine guidance and care may find at least a handhold within the biological sciences.

The essays in this volume represent the real cutting edge in discussions between Christianity and biology. They provide a careful, sober assessment of the biological story in all its complexity. Their story is more ambiguous than Rolston would have it—though it doesn't justify conclusions as strong as Ruse's. Certainly the essays provide an effective answer to antireligious biologists like Dawkins and Dennett, who argue that biological evolution rules out religious belief.

Missing from all three volumes are the acerbic and extremist views that the press loves to trumpet from the street corners. Rolston does not claim that evolution shouldn't be taught in schools or that it stands opposed to the belief in a revealing and providential God. He considers it an ally—even if he sails ambitiously beyond the evidence at certain points. Ruse does not claim that Christian beliefs have been falsified by evolution. Instead, he understands that the question of theism is left open by the evidence for evolution—even if he does go too far in reducing the

explanations for religion to biological terms. One can only hope that churchpeople will enter into the debate with the care and reasonableness these authors have shown.