

Reviews

Darwinian Natural Right: The Biological Roots of Human Nature. By Larry Arnhart. Albany: State Univ. of New York Press, 1998. 332 pages. \$24.95 (paper).

Ethical systems based on human nature have a long history. In philosophy, they begin with Aristotle. Since that time, they have had a checkered history, especially in the modern period. At the same time, the development of evolutionary biology has shifted the ground upon which such arguments are based. The rise of sociobiology and its claims to provide a biological account of ethics created an intense controversy that still simmers today.

Into this fray steps Larry Arnhart with this lucidly written book. Arnhart, a professor of political science at Northern Illinois University, builds on a more than decade-long research program. His goal is to establish from a philosophically informed perspective what sociobiologists have argued for years: that there is a biological basis for morality, and this biological basis can and should provide the framework for human morality. The result is a mature synthesis of philosophical reflection and scientific research that unites the biology of Darwin with the philosophy of Aristotle. In the process, he provides an account that attempts to steer a course between the conflicting modern claims regarding human nature, the role of science in philosophical understandings of the person, and the relation between ethics and religion.

Arnhart's thesis is fairly straightforward. There is a biological basis for human nature that is common (by and large) for all members of our species. Because of this, there are natural desires that all human beings share, and these natural desires provide the basis for morality. Aristotle's moral philosophy provides the framework within which these desires should be understood and related to one another. As such, ethical systems that rely on a fact/value split are false, and attempts to distance culture from nature are misguided.

The first half of the book lays out Arnhart's basic argument, the primary thrust of which is to establish the biological basis for human morality. After clearly articulating the ten points he wishes to defend along with the seven primary objections, Arnhart conducts a survey of the related research literature. At base, two points are argued. First, Arnhart asserts that there are natural desires rooted in our biology. Animals as varied as bees and hermit crabs exhibit goal-directed behavior. For every species, there is a set of goods that it naturally seeks to obtain. For human beings, Arnhart lists twenty basic desires, from desire for children and familial bonding to justice as reciprocity and religious understanding. Controversially, Arnhart lists war as a natural desire predominantly associated with males, noting its widespread occurrence and its link with group identity.

Second, Darwinian biology establishes that we are, as Aristotle said, political animals. Citing the biological literature on kin and reciprocal altruism, Arnhart argues that we are naturally disposed toward sociability and therefore not predisposed to a Hobbesian war of all against all. This point is crucial for Arnhart, for he wishes to argue that we are *naturally* moral. In acting morally, we are going not against the grain of human nature but with it. Therefore, moral behavior is the best path toward happiness, and Arnhart cites with approval the work of Frans de Waal and his claim that primates and human beings are naturally good-natured.

At the same time, Arnhart is concerned to show that Darwin's biological framework can be made compatible with Aristotle's philosophical ethics. Here, the pattern of argumentation is curiously different. Although Arnhart is concerned to demonstrate through empirical research that there is a biological basis for human desires and morality, the authority and significance of Aristotle's philosophy are largely assumed. Rather, the goal is to show that there are no real conflicts between Aristotelian morality and Darwinian evolution and to defend Aristotle from his critics. Arnhart therefore takes pains to counter the views of Thomas Hobbes and, especially, Immanuel Kant. According to Arnhart, there can be no complete separation of culture and nature. Rather, we must speak of the nature of culture and realize that culture is restrained by our biological makeup. As such, we do not have freedom in any metaphysical sense, only in the practical sense that our decisions determine our actions. Likewise, our aims are guided not by a metaphysical teleology but rather by the local telos formed by our biological makeup.

In the second half, Arnhart moves on to specific issues, from parent-child bonding to the problem of psychopathic personalities. In each case, Arnhart is concerned to show that the Darwinian-Aristotelian ethic he has developed is up to the challenge of explanation and superior to competitors who claim a separation between biology and cultural norms.

The persuasiveness of these arguments varies and also depends on the reader's own position. Many will take Arnhart's arguments regarding the immorality of slavery as uncontroversial. More problematic is the chapter on male-female differences. On one hand, Arnhart presents a clearly argued case, citing scholarship on sex differences, mating patterns, and the near-universal pattern of male dominance in human societies, past and present. On the other hand, there does not seem to be a fully critical awareness of the impact and the possible bias lurking behind these claims. An ethic that simply accepts male dominance as natural can never be palatable to women, and the very attempt to claim that such behavior is natural in a moral sense calls into question the idea of an ethic based primarily on biological conceptions of human nature.

In the final chapter, Arnhart turns to the subject of religion, arguing that ethics is independent of religion, although religious belief may serve to reinforce ethical behavior. Here, Arnhart again uses Aristotle, Hume, and Darwin in his defense. Citing the Mosaic covenant and the theology of Thomas Aquinas, Arnhart also argues that this perspective is even alive within the religious traditions themselves.

In many ways, Arnhart's work presents the naturalist's best case for a complete ethical and metaethical system. If there is no God, no transcendent, no extra

quality to life, ethics must look like something fairly close to this. Yet, the rejection of religion's relevance also indicates one of the weaknesses of moral systems based on conceptions of human nature, which is the apparent inability to recognize a transformative, future-directed quality to ethical thinking. While one must take the evolutionary past into account, it is a mistake to let it fully determine our ethical future. Even if it is the case that both men and women are predisposed to accept, on average, male dominance, it is certainly a mistake to make this part of our ethic or, worse yet, to institutionalize it. It would be even stranger to label male dominance as good simply because it seems natural.

Other questions arise in the course of the argument. Like many sociobiologists, Arnhart asserts a strong biological basis for human behavior. While our biological constitution plays an important role in our determination of what is good, it does not seem fully determinative in any simple sense. Arnhart's list of twenty human desires is comprehensive enough to include virtually every desire, but it is unclear to what extent "practical arts" and "religious understanding" are biological drives, as he claims. Similarly, the extent of our good-naturedness is murky at best. Certainly, something is amiss when we recognize war as a natural desire!

Be this as it may, Arnhart presents a fine, thoughtful volume that nicely integrates an Aristotelian ethic with a Darwinian biology. In doing so, he brings to this discussion a philosophical sophistication that is often lacking. Too frequently, philosophers are not full parties to discussions among scientists regarding the biological roots of ethical behavior. In this sense, Arnhart brings a needed voice to this research, one that should be listened to carefully.

GREGORY R. PETERSON
 Assistant Professor of Philosophy and Religion
 South Dakota State University
 Scobey 336, Box 504
 Brookings, SD 57007

The Fifth Miracle. By Paul Davies. New York: Simon and Schuster, 1999.
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At the very end of Paul Davies' *The Fifth Miracle* we find a statement of what is likely the central aim of his book:

The search for life elsewhere in the universe is therefore the testing ground for two diametrically opposed world-views. On one side is orthodox science, with its nihilistic philosophy of the pointless universe, of impersonal laws oblivious of ends, a cosmos in which life and mind, science and art, hope and fear are but fluky incidental embellishments on a tapestry of irreversible cosmic corruption. On the other, there is the alternative view, undeniably romantic but perhaps true nevertheless, the vision of a self-organizing and self-complexifying universe, governed by ingenious laws that encourage matter to evolve toward life and consciousness. A universe in which the emergence of thinking beings is a fundamental and integral part of the overall scheme of things. A universe in which we are not alone. (pp. 272-73)

In the preceding 270 pages Davies wanders through a complex set of intriguing questions about the beginning and development of life in the universe, which he names the fifth miracle based on his reading of the story in Genesis 1. All of this material explores interesting questions for any of us involved in the science-and-religion dialogue, but nowhere does he really engage in an open interaction with religious ideas (occasionally he indicates the possible answers that religion might give, only to dismiss those answers as unacceptable to science and scientists). Nor does he actually attempt to resolve the question of which of the two views described above is more likely given the scientific evidence. He tantalizes us with the questions and then leaves them as open and unanswered as they were when he began his journey. This, however, is the state of the evidence from the sciences, in his judgment, which finally leaves us with the potential of two diametrically opposed worldviews.

Even so, the journey itself is worth our reading. It travels through so many of the interesting questions confronting many of the sciences today that the book can function quite nicely as a text for our courses, especially as an introduction to the sciences and the scientific research projects that impinge on all aspects of the issue of the meaning and origins of life. In addition, Davies writes with such skill that even the newcomer to these various sciences can gain much insight and appreciation for them by reading just this book. Davies sets the discussion into the larger context of the question of whether there is a design and maybe a purpose that we can discern in the universe or whether all is random and without meaning or point, and this makes the reading a fascinating exploration.

Many qualities of the book, however, will frustrate the informed scholar, and Davies's steadfast adherence to a reductionistic and neo-Darwinian perspective opens his argument to many criticisms from others who explore these questions from other perspectives (non-Darwinian or philosophical, for example). Davies creates a series of dichotomies that in his logic make sense but seem to be too sharply drawn at points, with overly sharp distinctions between different possible solutions. For example, the neo-Darwinian claim that evolution proceeds on the basis of a survival mechanism (most often now presented in the form of "the selfish gene" as with Richard Dawkins) leads Davies to tend to reject solutions that are more complex and involve strategies of both competition and cooperation and not either one or the other. One of these questions involves his discussion of spontaneous generation of life, a thesis that draws upon systems theories that suggest that the whole system produces conditions that make certain possibilities more likely than others. It surely seems that in the origin of the first life forms (a question that is still to be solved) both random forces of environment and the structures of environmental systems are at work rather than one or the other. Davies appears to be ready to accept this idea but backs away from asserting it because he does not see biological processes functioning on the basis of universal laws as with nonliving systems. Thus, he opts for solutions that emphasize random development. Even as he leads to his conclusion, which I have already stated above, he tips his hand toward those who, like Stephen J. Gould, see the whole process of biogenesis as "a gigantic lottery."

It is not surprising, then, that Davies sees the enterprise of searching for life in the universe as leading us toward the clash of two diametrically opposed worldviews, and he is more inclined toward a universe that has no point. Why, then,

does he continue to write books that strongly suggest a greater principle at work that leaves the issue open? Certain basic inclinations in Davies's point of view lead him, almost in spite of himself, toward a universe with a hint of design in which intelligent life is fundamental and integral. Let me list three of these inclinations that I can develop more fully in an open interaction with Davies's presentation. First, Davies as a reductionist is fully aware that there are consistent laws that seem to function uniformly throughout the universe, and his sense is that these laws must function in some integral way in the genesis of life. He may not be prepared to present an anthropic principle, but he is close to offering us a "biopic principle." Second, his sense of the universe leads him to believe strongly that there is life elsewhere, and if so, life is more integral than a purely random process might suggest. Third, Davies has long held the belief that the universe is understandable by the application of mathematical equations. The question of biogenesis is a profound test of this belief, but for him the belief is extraordinarily difficult to shake. Even his efforts to use mathematics as a source for dismissing certain premature claims about the possibility of life forms elsewhere in the universe (for example, arguments based on the mere size of the universe and the number of possible planetary systems that might be configured in such a way to produce conditions like those on either Earth or Mars) trust that mathematics is a way to understand the universe. Such a belief does incline us to a sense of structural design in the universe almost in spite of the evidence.

A biopic principle. This description of Paul Davies's vision is admittedly strange, but I believe it is accurate. He would be more likely to agree that "life" in the form probably of microbes is a logical development in the universe than to suggest that intelligent life is a logical conclusion of universal processes. Davies continues to separate the living and nonliving realms, believing that there is good reason to assume that the material, physical universe operates by consistent principles that make the emergence of star systems and the basic elements a logical result of the both the beginning and the limit conditions of the universe. Many other scientists would argue with him that, given another shot at a "big bang," a universe with superclusters and clusters and galaxies and stars would likely form again in much the same way through a similar expansion. Given this assumption, we would conclude that somewhere in the universe conditions would arise that would produce the basic chemicals for life.

All we would need, then, is an appropriate context for the emergence of simple life forms from the mix of chemicals, a planet such as Earth. The factors governing the development and aging of stars and the expansion of the universe make such a scenario quite likely, even if the number of such contexts is microscopic compared with the vast number of stars and star systems in the universe. If we find evidence of life forms elsewhere in the universe, we can conclude that the processes that produce life are highly likely and the argument that the conditions present in the universe are conducive to the development of life incontrovertible—thus, a biopic principle. Of course, once life forms develop, especially given what we know about DNA and evolutionary processes, any conclusion about the necessary development of life toward some intelligent species—an anthropic principle—is far less probable.

Davies's point, wrapped into the discussion of his last chapter, "A Biofriendly Universe?," leads this reader to the conclusion that Davies intends to argue that

we do live in a biofriendly universe, even if the precise nature of life has developed since its inception in a mostly random way. I have suggested that this inclination is one reason why Davies continues to suggest that some form of an argument for design in the universe makes scientific sense even if he is often led to dismiss most forms of such an argument and in the end argue, as he did in *The Mind of God*, that such a conclusion is not science but philosophy.

Davies's argument is no more or less persuasive than other forms of the anthropic argument, despite his efforts to fill every gap by pursuing every question and challenge. More significantly, I am not sure that the process he follows is necessary or helpful in this regard. He seems, like many other scientists, unduly fearful that any suggestion that science supports a notion of design will open the floodgates of religious solutions for scientific questions or will encourage the religionist to see purposes that support a religion on scientific grounds. I suspect that his struggle toward the conclusion he draws (two diametrically opposed world-views) is rooted finally in this fear and an unshakable belief that religion and science must be kept separate.

Even his way of setting the options at the end is careful to avoid the assumption that science could lead us toward religion. The two views he proposes are indeed very general philosophical positions. The fact is that the two views do not have to be diametrically opposed at all, and only this assumption has led him to the sort of minimal argument that he makes (a biopic principle). From a purely scientific standpoint the journey he makes is fascinating, because it shows clearly how the mind of the scientist works in attempting to solve such confounding scientific questions. The notion of design does not, however, have to conflict with a view that holds that evolutionary development requires randomness. This is necessary only if design means "fixed structure" rather than "process."

Life elsewhere. Davies represents a point of view characteristic of many, especially scientists, but his search itself finally suggests his inclination toward a view that life is part of the integral nature of the universe. If there is life elsewhere in the universe, we are not alone, and life is probably more central to the way things are. His commitment to the search for extraterrestrial life is at least a decade long, and he seems convinced that science will someday find evidence that there is life elsewhere in the universe.

If he is convinced of the eventual success of this search, he must also assume that there is a pattern of development that repeats itself given the appropriate conditions for the emergence of life. Now, assuming the presence of a pattern is not the same as most efforts to show design. But there is no reason to believe that the two notions are incompatible, especially if design implies process and not static structure. Once again, I believe that Davies is setting up a dichotomy that does not need to exist.

Mathematics as explanation. Davies has often indicated his tendency to see mathematics as not only a way of explaining the structures of the cosmos. He has argued that mathematics is so consistent with the patterns of reality that math must *be* that structure. In fact, even as he argues for the randomness of the development of the varieties of life forms required to sustain this development, he also shows his inclination to search for a formula for this pattern of growth. Of course, the abstract regularity of mathematics holds within its definitions such patterns

that assume a comparable regularity in nature, but Davies is reluctant to follow this sense of the regularity of the development of the diversity of life.

Again, he is too easily drawn, it seems to me, to see alternatives as polarities. Even his discussion of complexity and chaos theories in math is presented only to be set aside too quickly. Especially what we see in chaos theory and what we find in fractals allow for a middle ground that can allow for randomness and order at the same time. Thus, the belief that mathematics is the language of reality and not merely a form of explanation of reality may not only hold for the physical cosmos as Davies is inclined to assert but may also be a road that can resolve the duality of randomness and order in the development of the diversity of life forms.

Even so, it is precisely the work of Paul Davies that has played such an important role in setting up this discussion leading us more and more toward the revolution in scientific thinking that Roger Sperry, among others, has frequently argued is occurring. Even if I find Davies too reluctant to follow his inclinations, this latest effort is surely another important step along the way toward this revolution. Above all, Davies is a relentless reductionist and scientist who expects any solution to problems to meet every challenge. Because of that, his treatment of the origin and meaning of life deserves our attention and should find its way into our teaching in science and religion.

JAMES F. MOORE
Valparaiso University
Department of Theology
Valparaiso, IN 46383