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Stewardship for the Earth: A Review of Some Recent Books on Biology and Values

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It is not easy being the heir to a throne. All of that status and attention is but a heartbeat away, and yet until the time comes, you must dribble your life away in the shadow of your parent. Prince Hal in Shakespeare's *Henry IV, Part 1,* spends his time boozing and wenching with Sir John Falstaff. Edward the Seventh, as he became, spent 60 years being oppressed, first by his father, Albert the Prince Consort, and then by his mother, Queen Victoria. Needless to say, he too was deeply into the boozing and wenching business. Now the English have Prince Charles, over 50, hanging around while his vigorous mother looks set to smash all records for regal longevity.

To pass away those long, purposeless days, the prince has become an enthusiast of what the philosopher William James would have called "tender-minded" causes—mystical Eastern religions in the spiritual world and organic gardening in the practical world. This has led him into violent opposition to so-called genetically modified foods, those products of domestically useful plants that have been altered by the methods and discoveries of modern molecular biology. In a talk given in a prestigious series of lectures (the Reith lectures) aired by the British Broadcasting Company, the prince warned:

> Above all, we should show greater respect for the genius of nature's designs, rigorously tested and refined over millions of years. This means being careful to use science to understand how nature works, not to change what nature is, as we do when genetic manipulation seeks to transform a process of biological evolution into something altogether different. The idea that the different parts of the natural world are connected through an intricate system of checks and balances which we disturb at our peril is all too easily dismissed as no longer relevant. (Charles 2002, p. 13)

This was backed by a lot of talk about a "sacred trust between mankind and our Creator" that leads to our accepting a "duty of stewardship for the earth."

Naturally enough, given the speaker and the series' prominence, the talk attracted much attention, including that of the atheist's answer to Savonarola, Oxford biologist Richard Dawkins. Covering himself against charges of treason by expressing gratitude to the prince for concerning himself with such important issues, Dawkins let rip in a fashion that would do credit to an old-time preacher decrying the evils of alcohol: "Your embracing of an ill-sorted jumble of mutually contradictory alternatives will lose you the respect that I think you deserve. I forget who it was who remarked, 'Of course we must be open-minded, but not so open-minded that our brains drop out'" (Dawkins 2002, p. 16).

There is an important issue here, one that is at the root of much of the recent discussion about biology and moral or value issues—a discussion about biotechnology, about conservation, about particular issues like global warming, and more. The issue is that of the inherent worth of the world of life. Do organisms, living things, have some kind of intrinsic value, something that makes their support and existence worth cherishing in their own right, or not? Leaving aside psychopaths, all would agree that humans have some kind of inherent value. You may not be related to the sick child or the disabled adult, you may not be motivated to help the child or adult, but generally you would agree that you should help such people if you can, simply because they are entities that are worthy of help. But what about other organisms, trees for instance, or gorillas—or weeds and warthogs and the smallpox virus, to take less immediately attractive examples?

The obvious response is that such organisms have worth if and only if they have value for us humans. We value oak trees

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and gorillas. Some of us rather like weeds, especially if they are wildflowers in the hedgerow. And warthogs are fun to look at in the zoo and to laugh at in Gary Larson cartoons. No one values the smallpox virus. This human-focused stance—generally known as "anthropocentrism"—does, however, rather miss the point. Do organisms have value in their own right, irrespective of our interests? We might not much care for the lesser mottled-colored stickleback—we may not even know of its existence—but does the stickleback have worth, even to the extent that we should block the damming of the river that will bring needed power to thousands of poor, third-world farmers and their families?

The standard philosophical position, one that goes back to the 18th-century Scottish philosopher David Hume (1978), is that there is no way of getting value without human interests. There are matters of fact and matters of value, and the latter is separate from the former and essentially human-interest based. We may have an obligation not to hurt animals wantonly, but even this is really less a matter of the animals' interests and more a matter of the psychic damage that it does to us humans when we are unnecessarily cruel. In recent years, a number of sensitive thinkers have been trying to overcome this barrier between human interests and everything else. One of the most persistent and vocal is the important evolutionist Edward O. Wilson. At least since his groundbreaking book on behavior, *Sociobiology: The New Synthesis* (1975), right down to his recent and passionate *The Future of Life* (2002), Wilson has been arguing that life itself has value, and that this is something that comes from the progressive nature of the evolutionary process. In a seminal discussion in *The Diversity of Life* (1992), Wilson writes, "The overall average across the history of life has moved from the simple and few to the more complex and numerous. During the past billion years, animals as a whole evolved upward in body size, feeding and defensive techniques, brain and behavioral complexity, social organization, and precision of environmental control—in each case farther from the nonliving state than their simpler antecedents did" (Wilson 1992, p. 187). He adds, "Progress, then, is a property of the evolution of life as a whole by almost any conceivable intuitive standard, including the acquisition of goals and intentions in the behavior of animals."

On the basis of this progress, Wilson argues that humans have an innate "biophilia"—a need of and love of nature—that justifies an urge to promote biodiversity. In *The Future of Life,* he is explicit: "A sense of genetic unity, kinship, and deep history are among the values that bond us to the living environment. They are survival mechanisms for ourselves and our species. To conserve biological diversity is an investment in immortality" (Wilson 2002, p. 133). To this end, Wilson himself has been much involved in the protection of the Amazonian rain forests. He speaks of our species as the "planetary killer," for our shortsighted ways are destroying the very things essential to our needs. In a way, Wilson does want to relate biodiversity to human ends—without it we will die—but for him a more fundamental issue is that life itself as it goes up the chain of being attains more worth. He would rate a gorilla over a warthog, but a warthog over a virus.

Wilson is openly atheistic. He thinks that the myth of evolution will overtake and absorb the myth of Christianity. Nevertheless, there is an interesting parallel between Wilson's thinking and that of the most prominent Christian writing today on ecological and conservation issues. Holmes Rolston III is a philosopher and recent winner of the Templeton Prize for advances in religion. In *The Future of Life,* Wilson quotes an anecdote by Rolston: "For years trailside signs at a subalpine campground in the Rocky Mountains he occasionally visited read, 'Please leave the flowers for others to enjoy.' When the wooden signs began to erode and flake, they were replaced by new ones that read, 'Let the flowers live!'" (Wilson 2002, p. 134).

Rolston has long argued that we ought to respect nature, for itself, and Rolston, like Wilson, appeals to a progressive life history to this end:

> What theologians once termed an established order of creation is rather a natural order that dynamically creates an order for creating. The older and newer accounts both concur that living creatures now exist where once they did not. But the manner of their coming into being has to be reassessed. The notion of a Newtonian Architect who from the outside designs his machines, borrowed by Paley for his Watchmaker God, has to be replaced (at least in biology, if not also in physics) by a continuous creation, a developmental struggle in self-education, where the creatures through "experience" becomes increasingly "expert" at life. (Rolston 1988, pp. 111–112)

Rolston depends heavily on this progressivist vision in his Gifford lectures, printed as *Genes, Genesis and God: Values and Their Origins in Natural and Human History* (1999). As we move up the chain of being, he argues, life accrues value, and this does in fact mean that flowers have intrinsic value. They do not exist just for human pleasure.

> Morality is not intrinsic to natural systems. In fact, there are no moral agents in wild nature. Nature is amoral, but that is not to disparage it. That is to set aside irrelevant categories for its interpretation. Amoral nature is fundamentally and radically the ground, the root out of which arise all of the particular values manifest in organisms and ecosystems. This includes all human values, even though, when they come, human values rise higher than their precedents in spontaneous nature. (Rolston 1999, p. 286)

As it is with Wilson, for Rolston it is nature and its care that is the highest value of them all. "Environmental ethics...is the most altruistic, global, generous, comprehensive ethic of all, demanding the most expansive capacity to see others, and this now especially distinguishes humans. This is not naturalized ethics in the reductionist sense; it is naturalized ethics in the comprehensive sense, humans acting out of moral conviction for the benefit of nonhuman others. There is a

widening sense of shared values, including values produced in the evolutionary genesis" (Rolston 2003, p. 288).

Of course, similarities notwithstanding, there is an essential difference between Wilson and Rolston, the same difference that I suspect separates Richard Dawkins and Prince Charles. For the former members of the pairings, Wilson and Dawkins, nature is all you have. For the latter, God stands behind the creation and guarantees that it is good. We may indeed have our role to play, but ultimately animals and plants have value because they are the product of a benevolent deity. Not that appeal to religion always settles issues easily. Some interpret the early chapters of Genesis to mean that all nonhuman organisms were created for our use. It is our choice what we will do with them. Others argue that we are stewards for God. We can use living things, but we have a responsibility to them, as a shepherd has for his sheep.

Both Wilson and Rolston rely on the supposed progressiveness of evolution. As is well known, the late Stephen Jay Gould argued strongly against this idea, speaking of it as "a noxious, culturally embedded, untestable, nonoperational, intractable idea that must be replaced if we wish to understand the patterns of history" (Gould 1988). Gould's last major scientific work, *The Structure of Evolutionary Theory* (2002) continued to reinforce this theme. As with Wilson and Rolston, there was for Gould a moral element at work here also, although it was certainly not to deny the worth of biodiversity. Rather, Gould saw biological thoughts of progress as leading to notions of human racial progress and to blacks and Jews being judged inferior to Anglo-Saxons.

Even if one thinks this a somewhat tenuous connection—Wilson and Rolston would be horrified at the implication—one may still have doubts about biological progress. Does this then mean that there is no escape from anthropocentrism? In one of the most important collections of recent years, *Searching for Sustainability: Interdisciplinary Essays in the Philosophy of Conservation Biology* (2003), the ecologist and philosopher Bryan Norton advocates a more pragmatic approach. He points out that in real life we have to take our scientific understanding into account whenever we make decisions about conservation, and when we do we tend to find that the human and the animal and plant tend to collapse into one. In a highly illuminating discussion of the thinking of the ecologist Aldo Leopold, Norton shows that Leopold's shift in thinking from something based only on human concerns to something taking all of nature into account—the need to think like a mountain (to use Leopold's brilliant metaphor)—was not some metaphysical shift from anthropocentrism to a kind of forerunner of the Gaia hypothesis, where the world itself is seen as an organism. Rather, the shift was pragmatic. Leopold had initially wanted to remove large predators like wolves to make space for more game animals like deer, but the effect of wiping out the predators was to make for overuse of territory by much increased game animal numbers, with consequent ill health and crash of population numbers.

> He learned through practice that "violent" methods of management and control are inappropriate because they also cause unforeseen effects and damage the biotic community. This is an insight that was implicit in his belief in the importance of ecology; but it was obscured by his initial faith that ecology would teach us enough about ecological interactions among species to allow manipulation of populations for utilitarian purposes. He underestimated the complexity of systems and overestimated our ability to control them; he consequently failed to see that predator protection was one of the principles implied by the holistic approach that he advocated in opposition to the economic determinism he rejected. In the face of practical evidence, the pest problems of monocultural forestry, and deer starving on overgrazed reserves, Leopold eventually adopted a less violent and disruptive approach toward management. (Norton 2003, p. 26)

There are parallels here with the debate on genetically modified foods. The Indian ecofeminist Vandana Shiva makes much of the pragmatic argument. She argues that virtually all modern improvements in agriculture at the genetic level have deleterious ripple effects, where losses outweigh benefits:

> It is often said that the so-called miracle varieties of the Green Revolution in modern industrial agriculture prevented famine because they had higher yields. However, these higher yields disappear in the context of total yields of crops on farms. Green Revolution varieties produce more grain by diverting production away from straw. This "partitioning" was achieved through dwarfing the plants, which also enabled them to withstand high doses of chemical fertilizer.
>
> However, less straw means less fodder for cattle and less organic matter for the soil to feed the millions of soil organisms that make and rejuvenate soil. The higher yields of wheat or maize were thus achieved by stealing food from farm animals and soil organisms. Since cattle and earthworms are our partners in food production, stealing food from them makes it impossible to maintain food production over time, and means that the partial yield increases were not sustainable. (Shiva 2000, p. 12)

The rhetoric and emotional level in these sorts of discussions tends to be high. The logic and rational level tends to be low. The problems and questions proliferate. The answers lag behind. Let me draw your attention to some recent works that will direct you to the issues and may help you forward in ways that you find satisfactory. A work at the more theoretical level, trying to make the case that all of life has value in its own right, is Nicholas Agar's *Life's Intrinsic Value: Science, Ethics, and Nature* (2001). I am not sure that the author successfully jumps over Hume's distinction between fact and value—I am not sure that anyone can do this—but it is a lively work, jargon-free, and sound on theory and science. If you want to build up understanding of the background to debates about ecology—including appreciating the ways in which different senses of ecology (from straight science to hands-on activity) have evolved—then I recommend Greg Cooper's

The Science of the Struggle for Existence: On the Foundations of Ecology (1999). At times it is rather heavy on the fine-grain analysis, but it rewards a careful reading.

In the field of conservation and sustainability, reference has already been made to Bryan Norton's (massive) new collection, which deals with empirical and scientific questions (such as those that influenced Leopold) as well as some of the more theoretical issues discussed in this review. Supplement this with some of Norton's earlier writings, particularly his now-classic *Why Preserve Natural Variety?* (1987) and his *Toward Unity among Environmentalists* (1991). Like Norton, Holmes Rolston has been a prolific author, and interested readers should look at his earlier work, particularly his *Environmental Ethics* (1988) and his *Conserving Natural Value* (1994). You may not accept Rolston's Christian-infused perspective, but you can see that he worked hard for his Templeton Prize.

Finally, let me draw your attention to a recent collection published by Blackwell's, *A Companion to Environmental Philosophy* (Jamieson 2001). Frankly, these ever-proliferating companions and encyclopedias tend to be of uneven value, but this one is an excellent introduction to the field and can be read with profit also by the more expert. In the more general second edition of Blackwell's *Companion to Philosophy* (Bunnin and Tsui-James 2002), there is a good overview article by Rolston, "Environmental Ethics" (2002). It is perhaps a sign of the times that the first edition of the *Companion* had no such entry.

As for issues of food and its technology and the molecular revolution, new books and pieces appear almost on a monthly basis. Nor does it seem that the flow will soon diminish. In the past 5 years, if anything, Europe has become even more adamantly opposed to genetically modified foods than it was before. This is amazing to North Americans, even liberal ones, for such foods are taken for granted on this side of the Atlantic. (A purely personal aside: I realized what emotional opposition there was when some very staid, elderly relatives of mine took off their clothes and lay down in a field with others, spelling out "NO GM." Their publicity was very effective. Within hours I caught their antics on the Internet.) I will pick out two solid introductions to the subject that I like particularly because the authors show a certain modesty about their conclusions. First there is Paul B. Thompson's *Food Biotechnology in Ethical Perspective* (1997). The title is a bit boring and the book is too, at times, but it is very good on the facts and unemotional in its argumentation.

Second, and more lively in title and contents, is Alan McHughen's *Pandora's Picnic Basket: The Potential and Hazards of Genetically Modified Foods* (2000). The author, a specialist in linseed, brings a great deal of practical experience and knowledge to his topic. He also has a sense of humor, which is a welcome addition to writings on this topic. He does not tell you what you should or should not do, what you should or should not eat, but he does point out the silliness of some of the major scare stories and certainly makes one wonder if fanatics like Vandana Shiva—not to mention the Prince of Wales—really know what they are talking about. If you want any more, let me somewhat immodestly mention *Genetically Modified Foods: Debating Biotechnology* (2002), a little reader I put together with a former student. Even if every purchaser buys a thousand copies, I doubt we shall make enough in royalties to pay for the permissions, but I would like to think that the collection might stir others to think about issues in biology and its values, and to carry forward the discussion in fruitful ways.

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