

A Legal Beagle's Voyage

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Nicholas A. Robinson, [Evolved Norms: A Canon for the Anthropocene](#), in **Rule of Law for Nature** 46-71 (Christina Voigt ed. 2014).

Environmental law strives to improve the relation of *Homo sapiens* to the ecosystems that support human life and all other life on earth. Ever since Darwin we have known that just as each species affects its environment, the environment pushes back, exerting selective pressure in favor of adaptive variations. Evolution is the long-run product of ecology. At its best, environmental law puts this understanding to work in the service of people and nature. And yet, Professor Nicholas Robinson observes, the study of how human law shapes the planet's evolutionary future barely acknowledges the role of biological evolution in shaping human law.

In *Evolved Norms*, Robinson sets out to correct this by connecting the contemporary emergence of consensus environmental law to the evolutionary emergence of widespread behavior patterns favored by natural selection. Drawing on sources in both the biological and social sciences, Robinson argues that humans have evolved instinctive, "hard-wired" normative preferences for cooperation, biophilia, and resilience. These norms are reflected in design principles that have shaped existing environmental laws – and that should be relied on to structure the global environmental law we will need to confront future ecosystem disruptions both imminent and distant.

An impressive range of positive law at every level supports Robinson's thesis that these principles undergird the architecture of much existing environmental law. *Evolved Norms* finds them in New York State statutes, in constitutions of nations around the world, and in international agreements, as well as in high court decisions of many countries. They emerge in diverse settings, not all of which have been categorized, traditionally, as environmental law. The cooperation principle generates agreements for mutual aid in times of disaster and for collective management of common resources. The biophilia principle leads to legal protection of natural habitats and of biodiversity. The resilience principle promotes laws facilitating insurance against disaster.

A moment's consideration that human beings are organisms, as subject to natural selection as any other species, suffices for the conclusion that these evolved norms must have some biological basis. Yet Robinson's claim that cooperation, biophilia, and resilience have become built-in principles of environmentally sensible behavior seems based more in dogged optimism than in observed reality. After all, if these supposedly instinctive norms truly dominated human behavior (and the legal systems humans build to channel their behavior), the world would not be facing the "existential challenges" Robinson rehearses at the outset of *Evolved Norms*.

Robinson acknowledges this tension. He allows that "[t]he transcendence of 'ecological instincts' will occur incrementally and haphazardly" because the evolved norms favoring stewardship are often in tension with "maladapted 'economic instincts.'"

The unpleasant question, though, is whether humans' "economic instincts" really are "maladapted" in a

Darwinian sense. The genetic traits that made *Homo sapiens* capable of such profound ecosystem modification, after all, are the same traits that conferred on our species such astounding evolutionary fitness. These phenomena cannot be separated, from the harnessing of fire to the use of tools to the domestication of other species and on down through human history to today's extraction of previously inaccessible fossil fuels. Yes, there are examples of human settlements or societies that have failed because of long-term consequences of behaviors that seemed adaptive in the short term. But globally, our species has been – to invoke one of Robinson's preferred evolved norms – resilient enough to succeed in spite of the apparent havoc it has wrought on other parts of the ecosystem. "Economic instincts," then, seem to be a manifestation of Darwinian "fitness."

On this question Robinson would have done better to distinguish more sharply between genetic evolution and cultural evolution. Robinson quotes Aldo Leopold's observation that human instincts foster ecological competition while human ethics foster cooperation, yet Leopold understood that ethics directly restrain fitness-maximizing behavior: "An ethic, ecologically, is a limitation on freedom of action in the struggle for existence," he wrote.¹ Biological evolution has provided humans with the capacity to develop and apply such ethics: to conclude, for example, that it is possible to attain, as Robinson puts it, "sufficiency" in resource consumption. Cultural evolution, a product of genetics *and* environment, leads us, at least at some times and in some ways, to put that capacity into practice. This is remarkable in the biotic world. After all, the lynx preserves the hare population not because of ethical concern or self-interested foresight, but because when hares become scarce the lynx population crashes before the hares are all gone.

Sociobiology too has something to say about this, of course. Since the field's founding, one of its central occupations has been to explain how natural selection could favor the spread of genes that produce altruism, cooperation, and other behaviors that seem contrary to maximizing individual fitness. Often the answer lies in genetic relationship: natural selection can favor behaviors that benefit siblings, offspring or other relatives even at some personal cost. As Robinson notes, evolved cooperation on this basis can extend too narrowly, if collective action is needed in response to problems of intertribal, international, or global scope.

In other situations, when the pursuit of individual self-interest in nature's economy produces dysfunctional results (as it sometimes does in human economies), natural selection provides a needed if painful corrective. When humans introduced the myxomavirus to Australia in an effort to control the rabbits humans had previously introduced to the continent, the most virulent strain quickly was replaced by less virulent strains. The virus is spread by mosquitos, and mosquitos will not bite a dead rabbit. The rapid reproductive success of virulent viruses was too quickly fatal to their host organism and thus proved counterproductive to the virulent strain's long-term survival. Mutation and natural selection promptly evolved viruses that killed less efficiently but spread more effectively. The rabbits in turn evolved resistance to the virus.²

The long-term success of myxoma virus in Australia depended on a balancing act – a type of stewardship of the virus's host. Humanity's long-term success depends on a balancing act that includes proper stewardship of our species' host, Earth. Robinson's insight that environmental law is based on, and should amplify, genetic traits that produce norms favoring such stewardship is an important contribution to environmental law scholarship. Robinson calls for "[s]tudies in law and sociobiology [to] begin in their own right." It is a call environmental law scholars should heed.

Darwin understood that an organism's inherited traits could be shaped by selection. After Watson and Crick elucidated the structure of DNA, evolutionary biology began a "grand synthesis" joining observational and theoretical population dynamics to genetics. Today, the power to decode whole genomes, coupled with increasing understanding of the environmental and epigenetic influences on

gene expression, is rewriting large swaths of taxonomy and evolutionary theory once again.

It should be but a short, although difficult, leap to incorporate this biological learning into the study of law. Already neurobiology is undermining some premises of criminal law and the law of evidence, psychology is disrupting the claims of rational-choice legal theories, genomics is influencing the law of toxic torts. It makes perfect sense for evolutionary insight to inform the law of ecological stewardship. Nicholas Robinson's *Evolved Norms* may not be to environmental law what *The Origin of Species* is to evolutionary biology. But Robinson deserves praise for having had the courage to step aboard the legal *H.M.S. Beagle* and begin the exploration.

1. **Aldo Leopold, A Sand County Almanac** 202 (1949).
2. Peter J. Kerr, et al., [Evolutionary History and Attenuation of Myxoma Virus on Two Continents](#), 8:10 **PLOS Pathogens** 1 (Oct. 2012).

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