NATURALIZED ETHICS? THE SOURCE OF THE TROUBLE

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Let us understand, once and for all, that the ethical process of society depends, not on imitating the cosmic process, still less in running away from it, but in combating it. / Thomas H. Huxley

The choices we make are rational when we have certain grounds for them. Usually, we automatically apply the traditional norms of our respective culture together with a quasi-instinctive disposition toward "social instinct." We can ground them in a *desire,* e.g., thinking that what we do will come out best, or in *belief* that we are rational species. These approaches leave plenty of room for being wrong about the possible outcomes and for doing things badly. Likewise, moral theories offer a diversity of answers, some leaning towards the "others," and some stressing the autonomy of the human being. There are many general rules, though there is little consensus. So when the conflict between several norms arises we have to undertake a rational analysis. In the current approach to environmental policy, science must play a new role in teaching society how to value and protect ecosystems and the biodiversity they sustain. It must not only assess the likelihood that given actions will cause harm, but also must explain what "harm" to ecosystems means and how it is measured. Science becomes responsible for identifying not just the means but the ends of policy; in other words, science does not simply respond to societal concerns but identifies or prescribes environmental values—e.g., biodiversity, ecological complexity, and ecosystem services—and suggests ways to protect them.

A first problem arises from within the science of ecology itself, since the plurality of causal factors combined with probabilities within the dynamics of events often make it very difficult, if not impossible, to determine the cause of a given phenomena. Ecology does not offers a unifying solution, neither produces clear-cut predictions upon which decisions and actions can be based. It reflexes the complexity and diversity of the object studied. For decades ecologists have expressed dismay at the unconstrained production of theory that lacks relevance to empirical puzzles or

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problems. Many agreed with Levin (1981: 865) when he complains that "theoretical ecology is a major growth industry, and the pages of ecological... journals are littered with theory."

Moreover, as George Woodwell (1976) pointed out: "No single model dominates; none is clearly preferred, even by ecologists. And the credentials of paradigm spinners all look pretty much the same." The failure of theoretical models to explain particular losses "shows that, if conservation is a goal, generality is a poor desideratum in ecology"(Sakar 1996).

In fact, public officials and environmental and industry groups has been expressing exasperation at the futility of applying, in management contexts, concepts like "the natural", "the ecosystem" and related normative notions such as "ecosystem health", "integrity", and "stability" (Fitzsimmons 1999). In quite another context, Mark Twain accurately described the existing situation: "The researches of many commentators have already shed considerable darkness on the subject, and it is probable that, if they continue, we shall soon know nothing about it" (Fiedler et al. 1997: 86). Indeed, despite continuous efforts, ecology has not been able to offer universal laws or precise ubiquitous principles (Brecking and Dong 2000: 51). As things stand, a growing numbers of research projects that seek to reveal how ecosystems work has produced more questions—many of them tricky questions—than answers.

The traditional view was that science would solve problems and that we could proceed with, if not a certain at least a trustworthy, quantification of the odds upon which to base decisions. The scale of human induced environmental change and the spatial and temporal complexity of natural systems have destroyed this hope. From the local and discrete to the complex and global we are uncertain of the nature and causes of environmental change, the severity of long-term impacts and the processes that underlie natural systems. The data imply that the uncertainties inherent in the sequence climate-ecosystem-human society increase on, proceeding from physical systems through biological systems to human ones.

Consequently, it is a very difficult task to directly relate theoretical ecology or conservation biology to specific social goals and decision making processes. Within modern decision and policy-making processes, the knowledge about a system is selected accordingly to its ability to device strategies of control and manipulation, which means squeezing physical and biological data into a frame that might not be appropriate. Sources of data and the theoretical inferences can be as diverse as the subjects they study. It is possible to select data and a theory in a certain context to support virtually any conclusion one likes. Undoubtedly, the political judgments or social values that guide environmental policy in the final stage are implicit in the ways scientists define concepts such as "species," "ecosystem integrity," "biodiversity," "sustainability" and so on. Empirical inquiry seems not particularly relevant. Answers to tricky questions depend on the conceptual entailments of scientific albeit normative distinctions and definitions (Sagoff).

Although environmental ethics and the science of ecology share similar fields of research, even some basic concepts or assumptions, there really is no scientific guidance for life. Science can, and often does, serve noble interests. Science can, and often does, become a means of perpetuating injustice, of violating human rights, of making war, of degrading the environment.

Furthermore, the project of inferring normative consequences from life sciences requires privileging one theory over others. However, none of the authors that assume that environmental ethics should have rigorously tested biophysical underpinnings on which to develop the ethical components give compelling arguments—certainly not empirical arguments—that would justify their choice over and against the alternatives.

It would be misleading to suggest that any scientific assumption about the ecosystems structure or function may justify the aesthetic judgment and moral intuition that ecosystems are worth protecting and demand respect. The conservation debates are not really about nature, they are about ourselves and the way we like to live.

As humans we have ethical responsibilities with regard to the environment, responsibilities to sustain the life-support systems of other species that share the biosphere with us. The science of ecology does not offer any guidance to cope with our relations to nature. Science can answer questions, at least sometimes, but it does not make decisions. Humans do, at least sometimes. And our decisions draw upon the perpetual problem of the meaning of life. Any normative approach to scientific inference that seeks to validate one answer over another is, in my opinion, a parody of a would-be rational human decision making process.

Scientific investigation of the physical world and the ethical investigation of our moral experiences, as inquiries each has its own domain of data and its own consequent autonomy, yet each has a close relation to the other as they both seek a rationally motivated understanding of what is going on. It is equally clear that only science can eventually grasp the intricate interactions that take place in the natural environment. But science alone cannot explain the inner logic of our dealing with the natural realm with its flora and fauna. Although it can encourage more sensible attitudes towards nature, we need an ethical theory to account for the idea of people having moral responsibilities toward nature. When the land is in private hands and not regulated by public interest, like natural parks or biosphere reserves, only the personal values can guide the owner's actions.

There is a very thin line between scientific description and an environmental "fairy tale". The few and fragile ties that exist between scientists and humanists result in frequent confusion over the use of notions as "ecological" or "physical science" in the discourse of environmental ethics. There are many different degrees of abuse in extrapolating scientific concepts beyond their domain of validity. Some rigorous analysis have made it clear that mathematical or physical theories (such as chaos or subatomic particles) have no ethical implications (whether one should recycle or be a vegetarian), nor does science have political implications (whether we should protect endangered species).

We must reject any general notion that nature's ways indicate proper procedures for people. Sometimes nature provides a model, in other instances veneration of the natural is just snake oil for our contemporary troubles. We do face unprecedented and possible insuperable problems, and some of these are unintended consequences of human technology, but we cannot indulge in the simplistic confidence, quite attractive, that these problems will be solved by going back (whatever that may mean) to nature, to what's natural, or to natural selection (Vogel, S., *Cats' Paws and Catapults*: 300).

Aristotle and others emphasized that responsible moral judgment must be based on fully understanding the meaning of the facts and not on reciting them "like a drunkard reciting verses of Empedocles." And, most crucially, as biological knowledge can be easily misused, we have to keep a critical eye on its possible societal applications, since countless social lessons from nature make anyone familiar with history uncomfortable.

Criteria for an expansive approach to ethics will incorporate the rigorous methodology of philosophical inquiry and reflection on how life as a whole is to be lived. Such reflection does not separate emotional life from the rational. It includes a requirement of knowing who the players are in any given dilemma and its circumstances. So viewed, ethics has to fly the flag of moral consideration, prudence and responsibility, and hold the fort until the strategies are developed to improve understanding on the environmental change and the complexity of natural systems.

If we want to follow Aristotle's idea that the end of ethics is intelligently *doing*, in order to act we have to use the knowledge environmental sciences are providing and the values environmental ethics promotes. Environmental ethics and environmental science thus may depend on each other as reliable allies in supporting the protection and preservation of the natural world. As Rene Dubois (1972) once wrote: "Conservation is based on human value systems; its deepest significance is in the human situation and human heart. Saving marshlands and redwoods does not need biological justification any more than does opposing callousness and vandalism."