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# Values Are a Good Thing in Conservation Biology

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One of the most hotly contested issues in ecology and conservation biology is about whether, or to what degree, scientists should be involved as advocates in public policy debates. Although the conventional wisdom has been to maintain a “healthy distance” between science and policy, this view is increasingly challenged by natural scientists, sociologists, and philosophers of science.

Like many scientists, I developed an intense interest in natural history early in childhood. I also witnessed the destruction of my favorite childhood places by developers who seemed completely callous to the beauty of these places and to the lives of the plants and animals, which they ended. This destruction and the attitude behind it filled me with sorrow and rage. I vowed that I would learn as much as I could about these creatures and places that I loved and use that knowledge to help defend them.

I believe it is crucial for each of us to recognize the extent to which we are shaped by our preferences and experiences. Too few scientists openly acknowledge experiential and emotional factors that attracted them to their science in the first place. We are loathe to confess our biases. Personal bias will determine to a great extent what we choose to study, how we interpret the results, and to what extent we advocate particular policies or actions. If we allow our biases to get control of us, to the extent that we seek out data to support preconceived conclusions, selectively cite literature that agrees with our conclusions, ignore conflicting evidence, become dogmatic in our opinions and preferences, or—worst of all—fabricate or alter data to support our case, then we have gone too far, and we deserve every bit of scorn and distrust our scientific colleagues and society at large may heap on us.

Yet, if we can be inspired by our positive values—life, truth, fairness, and the standards and professional norms of science—then we can be honest advocates. The key to honest advocacy is the willingness to question our own assumptions and change our opinions when compelling evidence suggests we should. Robertson and Hull (2001:972) clearly posed the problem: “Post-positivist sci-

entists, including many conservation biologists, are striving to bridge what appears (from the viewpoint of positivism) to be a gulf, but is actually a fine line, between science and policy, facts and values.”

A conservation biologist can be an objective scientist and an advocate for the diversity of life and other normative values at the same time, with no contradiction. We have a responsibility to be both. Shrader-Frechette (1996: 913) wrote: “As Aristotle recognized, equal or objective treatment does not mean treating everyone and every position the same, but treating equals the same. If scientists fail to be advocates and if they treat positions of different merit the same, they practice bias.” There is no merit to the position that the diversity of life is worthless, yet that is the position taken by the pro-growth element of our society. We need to counter that position.

Conservation biology has been described throughout its history as “value-laden,” “mission-oriented,” “normative,” and sometimes in less flattering terms. The entire field rests on the value assumption that biodiversity is good and ought to be conserved. Human actions that protect and restore biodiversity are good; those that destroy or degrade biodiversity are bad. This is what Leopold was talking about in his essay on the land ethic (Leopold 1949). Objectivity and subjectivity in science are inextricably linked. Stern (2005: 977) points out the paradox: “Science, despite its famous emphasis on achieving objectivity by eliminating human error, can make its claims of objectivity only because it relies on the subjective judgments of fallible human beings and social institutions to detect and correct errors made by other fallible humans and institutions.”

Alternative notions of objectivity are gaining acceptance in science. These new notions of objectivity are more expansive than the strict empiricist version and view science as “an interactive, social activity in which multiple forms of reasoning and evidence, together with critical discussion, take place among a diverse scientific community” (Wallington & Moore 2005:873). In fact, we are all very familiar and generally comfortable with the

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collective, social process of science. It includes, for example, the process of defending your thesis to your graduate committee; the peer review process; the critical comments and questions one receives when presenting a paper at a professional meeting; and the less formal process of discussing scientific and philosophical ideas with your colleagues and students in the classroom, the bar room, the lab, or out in the field. To consider the process of science as anything other than a social process seems hopelessly naïve.

Do not get me wrong—empirical evidence and a rigorous process for obtaining it remain an essential standard in science. Nevertheless, the assumptions of empiricists should be modified by a recognition that there are many ways to relate theory to reality and that science is conducted by a social community of scientists that, in turn, interacts within a broader social context (Wallington & Moore 2005). The community of scientists relies on shared values for assessing the merit of scientific work. Objectivity itself is a normative value. Without values science has nothing with which to judge merit.

So, what about advocacy—the “A-Word”? Advocacy is a loaded term, which may evoke images of wild-eyed, shaggy-haired, pot-smoking eco-freaks camping out in the canopies of redwoods or lying down in front of bulldozers. I believe these activities are often legitimate forms of advocacy and civil disobedience—but not usually by scientists. Scientists have a different role to play in the conservation movement. It is important to distinguish the style of advocacy appropriate for scientists from that appropriate for environmental activists or other folks. Nevertheless, precisely what type and style of advocacy scientists feel comfortable with, and competent at, varies among individuals. That is fine.

Probably the style of advocacy that is easiest for scientists to swallow is promotion of the use of the best available science in making policy decisions. Going one step further, a model endorsed by many scientists is to present an analysis of alternative policies or management actions, then let the policy makers decide which option to choose. This approach sounds reasonable, but unfortunately two rather untenable assumptions lie at its heart: (1) that policy makers understand the science well enough to make a rational choice and (2) that policy makers are honest and altruistic and therefore will behave ethically in the best interest of the public. I suggest that it is more useful for scientists to essentially say: “For the record, in order to reach policy goals a and b, we recommend you select option c of the alternatives we analyzed.”

The prescriptive approach of recommending a certain action is cautious because it does not assume that facts speak for themselves; instead, it suggests that people who understand the science that went into generating facts are in the best position to interpret those facts and to recommend how they are applied to policy or management decisions. Whenever we recommend, we advocate.

If credible scientists go on record in support of a particular course of action, then that action may be more assured than if the scientists simply say to policy makers: “here are the facts, you choose the action.” Some recent surveys suggest that the public no longer holds much trust in bureaucracies to make decisions on technical matters; they would prefer that scientists move beyond simply reporting results to being actively involved in interpreting and integrating results of science into policy decisions (Lach et al. 2003).

Being an honest and credible advocate above all requires an ethical commitment to the norms of science, the most fundamental of which is truth. Given a goal, such as saving species from extinction, which may be based on an ethical position, a law or policy, or both, the job of the scientist is to figure out the best way—or perhaps several alternative ways—to meet that goal. The goal itself—the end—is strongly value laden and largely outside the bounds of science. The means toward the end, however, are subject to rational scientific inquiry, including empiricism, logical and theoretical consideration, and critical discourse and peer review within a community of scientists. Given a goal to reach or a problem to solve, the scientist must be as objective as possible in designing experiments, gathering data, analyzing the data, and interpreting the results. Honest scientists will apply these means with open minds and be willing to throw away their cherished assumptions and preconceived notions if they prove untenable. We are more interested than anyone in determining the truth about which policies or practices are likely to be most effective in attaining conservation goals.

We have all known scientists who went off the deep end, behaved like careless environmentalists, and lost the respect of their peers and, presumably, their credibility with policy makers. But is that because they advocated a position, or because they were sloppy or dishonest with their science? An irresponsible scientist, or other advocate, twists facts and logic, distorts data, and cites literature selectively to support a favored notion. When I meet people of that ilk, I distance myself as rapidly as I can.

Some people with demonstrable ignorance about, and antipathy toward, science, such as Alston Chase (1995), believe that conservation biologists and ecologists, in particular, are conspirators with a radical agenda to destroy the livelihoods and property rights of regular people. The right-wing, wise-use Web sites are full of claims that conservation biology is not a science, but a religious crusade. We will never change these people’s minds, no matter how cautious we are. And it would be a mistake to take these fools too seriously.

The way to refute arguments that ecologists and conservation biologists are zealots is not to withdraw into positivism and its barren claim that science is free of values. Rather, the way to win respect and influence for science in society is to boldly proclaim its most compelling

values: commitment to truth, rationality, full consideration of evidence, self-correction, openness, and critical discourse. Lovejoy (1989) suggests that as long as we explain the reasoning that underlies our prescriptions, we do not sacrifice our scientific credibility.

Underlying all these concerns about credibility, there is something more fundamental that should concern us: the intrinsic value of nonhuman beings—the voiceless, non-voting creatures for whom biologists are best equipped to speak. Instead of worrying that people may think we have a “political agenda” in defending the diversity of life, we ought to worry about what will happen if we fail to become engaged in policy. E.O. Wilson (1994:191) commented, “love the organisms for themselves, first. . .” I would add that with love comes the responsibility to protect what you love, as you would protect your children.

We have an ethical obligation to make a powerful case for the conservation of biodiversity to everyone, everywhere. “If scientists never act as advocates, they can inadvertently serve the status quo, especially ethical and environmental errors in the status quo” (Shrader-Frechette 1996:913). We know, as scientists with expertise in bio-

diversity and its conservation, that the status quo is producing the sixth great mass extinction in the history of Earth. This is unacceptable.

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