Citation: Lackey, Robert T. 2013. Normative science. *Terra Magazine,* Oregon State University, Winter Issue, Volume 8(2): 36. http://oregonstate.edu/terra/2013/01/normative-science/

Normative Science

It is easy — and wrong — for scientists to become stealth policy advocates

by

Robert T. Lackey

Scientific information is important in many policy debates in the Pacific Northwest (*e.g.*, salmon; wild fires on public lands; influence of human activities on climate; risks and benefits of genetically modified organisms; and persistent conflict over scarce water). Science is essential in such policy debates, but I am concerned that policy-*biased* science is increasingly common.

Science should be objective and based on the best information available. Too often, however, scientific information presented to the public and decision-makers is infused with hidden policy preferences. Such science is termed *normative* and it is a corruption of the practice of good science. Normative science is defined as "information that is developed, presented, or interpreted based on an assumed, usually unstated, preference for a particular policy choice."

Using normative science in policy deliberations is *stealth advocacy*. I use *stealth* because the average person reading or listening to such scientific statements is likely unaware of the underlying advocacy. Normative science is a corruption of science and should not be tolerated in the scientific community — without exception.

Let me illustrate with a current policy issue: "Should certain dams be removed to restore salmon runs?"

Scientists can assess with some degree of confidence, the likely effects of removing (or maintaining) a particular dam. Scientific information alone, however, is an insufficient justification for removing (or maintaining) a dam. There are biological consequences of dam removal (or maintenance) and those consequences may be substantial from a salmon perspective, but ecological consequences are but *one* of *many* elements that the public and decision-makers must weigh when making a policy choice.

Policy-makers, not scientists, decide whether preserving salmon runs should trump flood protection, irrigated agriculture, or electricity generation. As the public and decision-makers balance policy alternatives, what they need from scientists are facts and probabilities. What they do not need from scientists are their or their employer's values and policy preferences masked within scientific information disguised as being policy neutral.

There are other common examples. In working with scientists, I often encounter value-laden terms like *degradation*, *improvement*, *good*, *poor, impact*, or *alien invasive*. Scientists should avoid these types of normative words in conveying *scientific* information. Such words imply a *preferred* ecological state, a *desired* condition, an *accepted* benchmark, or a *favored* class of policy options. This is not science, it is a form of policy advocacy; subtle, sometimes unintentional, but it is patently stealth policy advocacy.

Consider the widespread use of concepts such as *ecosystem health*? It is normative science! Ecosystem health is a value-driven policy construct, but it is often passed off as science to unsuspecting policy-makers and the public. Think what the average person actually *hears* when scientific data or assessments are packaged or presented under the rubric of ecosystem health. Healthy is good. Any other state of the ecosystem must be unhealthy, hence, undesirable.

Scientific information must remain a cornerstone of public policy decisions, but I offer cautionary guidance to scientists: get involved in policy deliberations, but play the appropriate role. Provide facts, probabilities, and analysis, but avoid normative science. Scientists have much to offer the public and decision-makers, but also have much to lose when they practice stealth policy advocacy.

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