Geoethics: What Can We Learn from Existing Bio-, Ecological, and Engineering Ethics Codes?

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Introduction

Codes of Ethics for scientists have been formulated primarily by professional organizations. Most of these codes enumerate principles that cover practical issues regarding the professional conduct of individuals, not the conduct of the organizations themselves. They basically call for traditionally honorable behavior (Panel 2). It is striking that, given that the work of these societies and their members is directly relevant to the future of the earth, most existing Codes of Ethics remain far from addressing our obligations to the planet itself. **We challenge professional organizations to consider the ethical obligations to the planet in their Codes of Ethics, and to include the obligations of the organizations as well as of their individual members.**

DATA SET: PROFESSIONAL SOCIETIES CONSIDERED
American Association of Geographers
American Association of Petroleum Geologists
American Geophysical Union
American Geosciences Institute
American Meteorological Society
Australian Institute of Geoscientists
Australian Institute of Mining and Metallurgy
Ecological Society of America
European Federation of Geologists
Geological Society of America
Geological Society of London
Geoscientists Canada
International Association of Volcanology and Chemistry of the Earths Interior
National Association of State Boards of Geology (USA)
National Society of Professional Engineers
Oceanographic Society
Planetary Society
Society for Conservation Biology
South African Council for Natural Scientific Professions

Existing Codes of Ethics, Mission and Vision Statements

Codes of Ethics in these societies focus on the professional behavior of individuals toward each other and to society.

Of the typical points covered in the codes as summarized, for example, by David King^, only one (boldface below) mentions the environment:

- Act with skill and care in all scientific work. Maintain up to date skills and assist their development in others.
- Take steps to prevent corrupt practices and professional misconduct. Declare conflicts of interest.
- Be alert to the ways in which research derives from and affects the work of other people, and respect the rights and reputations of others.
- Ensure that your work is lawful and justified.
- **Minimize and justify any adverse effect your work may have on people, animals and the natural environment.**
- Seek to discuss the issues that science raises for society. Listen to the aspirations and concerns of others.
- Do not knowingly mislead, or allow others to be misled, about scientific matters. Present and review scientific evidence, theory or interpretation honestly and accurately.

^(Nature, 12 September, 2007; http://blogs.nature.com/news/2007/09 Hippocratic_oath_for_scientist.html)

Most professional societies separate their Codes of Ethics from their statements of Mission and Vision. Of the societies that we surveyed, only the **Society for Conservation Biology** specifically sets out "Organizational Values" that relate humans to their environment:

- **There is intrinsic value in the natural diversity of organisms.**
- **Human-caused extinctions and destruction are unacceptable.**
- **Maintaining biological diversity is the individual and collective responsibilities of humans.**
- **Science is critical.**
- **Collaboration among scientists, managers, and policy-makers is vital**.

A Challenge to Professional Societies

We suggest that existing Codes of Ethics in professional societies do not motivate their individual members to think about the broader ethical issues of stewardship and sustainability in spite of the fact that many of the organizations list "stewardship" or "sustainability" in their mission or values statements. We argue here **that ethical obligations to the environment deserve much greater emphasis than they have received from most scientific organizations**, and that professional societies should do more to raise awareness of long term environmental, stewardship, and sustainability issues among their members. According to the Brundtland Commission:

"*Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.*"

Perhaps organizations have shied away from strong statements about ethical behavior toward the environment for fear of appearing to take positions of advocacy. "When does ethical behavior become advocacy?" is a question often posed when controversial issues are discussed, be it around mining, fracking, forest conversion, or water use. It is often tacitly assumed that any stance that counters resource extraction constitutes advocacy and should be avoided by professionals. However, we contend that NOT taking a stance in favor of sustainability—and when necessary, against resource use—is equally an example of advocacy, in this case advocacy by neglect. Just as religious systems have long recognized both sins of commission and sins of omission, so **we scientists should recognize that silence on important issues is an active, deliberately chosen position just as much as a voiced opinion is.**

An example of how a professional society can be guided by ethical considerations is the statement regarding climate change on March 18, 2014, by AAAS: "As scientists it is not our role to tell people what they should do or must believe about the rising threat of climate change. But we consider it to be our responsibility as professionals to ensure, to the best of our ability, that people understand what we know: human-caused climate change is happening, we face risks of abrupt, unpredictable and potentially irreversible changes, and responding now will lower the risk and cost of taking action."

Examples of Strong Statements

Among the geoscience societies that we studied, the American Geosciences Institute has one of the strongest statements relating to geoethics, contained in their Guidelines to Ethical Behavior. It acknowledges the need to think about the environment, stating that "Geoscientists should strive to protect our natural environment," and "They should acknowledge that resource extraction and use are necessary to the existence of our society and that such should be undertaken in an environmentally and economically responsible manner."

But: what is an "environmentally and economically responsible manner"?

We suggest that the concept of sustainable development (Panel 3) provides an important framework for interpreting the AGI statements. We urge other societies to adopt similar formulations, and to identify specific actions that they, as organizations, can undertake to help protect the long-term future of the planet.

What Else Can Organizations do?

What are some specific steps that geoscience societies might take or expand to engage with the ethical implications of their work?*

- Issue policy papers: Some professional societies such as the AGU, GSA, AAAS, AND the American Meteorological Society do this regularly, others not at all.
- Build a data base of case studies that can be used in university classes.
- In annual meetings of professional societies, have regular interdisciplinary panel discussions with ethicists, scientists, and policy makers.
- Advocate for sustainable use of resources; Identify and support relevant research and application to policy
- Increase application of science to management and policy, and routinely evaluate effectiveness from the point of view of sustainability.
- Create room in the professional journals for presentations relating to ethical questions.
- Is a new interdisciplinary journal needed? A new professional society along the lines of the Society for Conservation Biology, a Society for Conservation Geosciences?

*References for suggestions: SCB Goals and Minteer, B.A. and Collins, J.P., "Why we need an "ecological ethics," Frontiers in Ecology and the Environment, 3(6) 332-337, 2005.