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Book Review: Nature's Experts: Science, Politics and the Environment

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Book reviews

Stephen Bocking, *Nature's Experts: Science, Politics and the Environment* (New Brunswick, NJ: Rutgers University Press, 2004). 304 pp. ISBN 0813533988 US\$24.95 (paperback).

Anyone involved in the public understanding of science in the last 50 years has to be disheartened by the results. Despite vigorous efforts by funding agencies, universities, and even to some extent the media, the results are extremely disappointing (National Science Board, 2004). We are exhorted to do more and, indeed, do it differently (Lakoff, 2005).

More of what? Do we really know enough to say? Bigger and better – and more expensive – exhibits in science museums, say the advocates of such spaces. Let's criticize the media, say the media bashers. And what about the universities? And the high schools? Neither teaches science to non-science majors adequately. Can't they do better?

Of course we can do more, and do it better. I, along with my many colleagues, have advocated all of the above. And still do. However, there certainly is enough out there for the public to see, read and hear, if they want to. Science museums are getting bigger – and many would argue, as do I, better – more science books are selling better, even getting on the best-seller lists, and magazines with science on their covers sell better than others. Perhaps the question is why are some, even many, people rejecting science, when it is available all around them.

We know some of the answers: the reason students don't get exposed to or taught evolution is due to the anti-evolution crusade by the fundamentalist religious Right. A large section of the population, therefore, is denied learning the key paradigm of biology, without which it is impossible to understand such crucial debates such as stem cells, biotechnology, pharmacogenomics, issues of race and ethnicity, to name but a few.

That cannot be the only answer. Lots of people not in that camp still don't understand, or fail to absorb, some of the basic tenets of the scientific enterprise. Why? We all realize that we should try to understand why our efforts have, well . . . not been as successful as we have wanted them to be, or even expected them to be, to say the least.

Insights may well come from this interesting, compelling and well written book, *Nature's Experts: Science, Politics and the Environment*. Its author, Stephen Bocking, is an Associate Professor in the Environmental and Resources Program at Trent University in Canada – sometimes one can obtain a clearer view from across a border, whether it be national or disciplinary – and the book focuses on the role of experts in resolving, or sometimes creating, environmental disputes. Drawing on extensive social science research – including, among others, the Social Learning Project at Harvard University's JFK School – Bocking comes to a number of interesting conclusions, or suggestions, to which perhaps we ought to pay attention.

Bocking constantly reminds us that however much we want to ignore the issue, the relationships and distinctions between science and politics are important, though messy, at best. He asks: “. . . where, in the continuum between hard data and messy questions of responsibility, does science end and politics begin?” (p. 20). This is definitely not a post-modernist critique of science, where politics and science end up being the same, but rather a reminder that the statements coming out of the scientific community do not always amount to the total knowledge of a given situation. He points out that colonial scientists often used local knowledge that indigenous people obtained from centuries of living on the land to augment their (colonial scientists) knowledge.

Bocking further makes the point that 'science-based regulation', which corporations insist on, standing on the high ground of objective science, often gives the corporations an advantage. They own much of the science involved, and can afford to present much more of a scientific presentation than the 'local knowledge' presented by local or regional groups. As he points out, this is hardly democracy in action.

An example of this, although not cited by Bocking, is the discovery of the widespread pollution by vermiculite mines in and around Libby, Montana, documented by the two reporters who unearthed the story (Schneider and McCumber, 2004). Here, local knowledge of people dying from the asbestos coming from the mines, augmented by the reporters' own data when they

discovered the situation, went to war against the established scientific community. The Environmental Protection Agency, the National Academies of Science, and others, all insisted that the poisoning that local people knew about was impossible. It took a long protracted struggle for the 'local knowledge' to win the day. No wonder many people reject science. (However we do have to remember that scientists, as a profession, are the most highly regarded of all [National Science Board, 2004].)

As Bocking points out, it is this kind of struggle, and the attitude of the scientific establishment that local people know nothing and that science knows all that causes many to question the authority of the scientific community. Although many of us would deny that we feel that way, it is nonetheless the way scientists often come across.

Bocking is committed to the notion of democracy, small 'd', in environmental decision-making as well as in the involvement. He invokes practicality, as well, pointing out that decisions are 'better', and certainly longer lasting, if they are democratic.

Recent experience has corroborated the notion that democratic approaches can produce better solutions to complex problems. Across a range of issues, people have shown that they are capable of grappling with complex problems, including those with considerable scientific content. This has been demonstrated by AIDS activists, who have accumulated a great deal of scientific expertise and have used it to influence the direction of research. (p. 204).

He further goes on to say:

Given these capabilities, the challenge is to ensure that people have opportunities to exercise them, overcoming the widely noted signs of apathy (low voter turnouts, a decline in civic society). (p. 204)

He therefore places the question of expert authority in the larger context of civil, democratic society, and makes an important point about science as the connective tissue among our many concerns and struggles for a better society.

Finally, he raises the fundamental question of science and democracy. 'Is Science Democratic?' is one of the sections of his next to last chapter. As he points out, science flourishes best when in an atmosphere of freedom and support of risk taking. It is good to remember Albert Einstein's statement: 'Everything that is really great and inspiring is created by the individual who can labor in freedom' (Einstein, 1950). Bocking closes with closes with ". . . across the wide realm of environmental politics still persist the essential challenges and opportunities of democratic knowledge" (p. 228).

Although the book focuses on the relationships between science and politics in environmental decision-making, there is much here to be learned by practitioners of public understanding of science. Where scientists decry local knowledge, and insist that science knows all, we risk turning off large segments of the population. While sticking to our guns about our traditional verities – peer-reviewed science, evidence-based decisions, and the value of knowledge from decades of scientific experimentation – we must still be flexible in our relationships with non-scientists, and acknowledge that there may well be truth in what they say. At least this is the opinion of Stephen Bocking, and I rather think that it is, or will become, the opinion of many of us.

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Hugh Aldersey-Williams, *Findings: Hidden Stories in First-Hand Accounts of Scientific Discovery* (Norwich: Lulox Book, 2005). 280pp. ISBN 0954890801 £19.99 (paperback).

Hugh Aldersey-Williams' new book *Findings* is an important text for students studying the rhetoric of science and technology. For each decade of the 20th century, Aldersey-Williams has selected an article or a set of articles which he examines in great detail (it is not clear how the selection was made). For two decades – the 1940s and the 1970s – rather than examining a single article or, at most two related articles, the book provides a themed assessment of a movement, one patterned around World War II and the second associated with environmental concerns, especially global warming. While the books and articles (Seaborg on plutonium, Woodward and Doering on quinine, Rowland and Molina on CFCs and Lovelock on Gaia) are not poorly