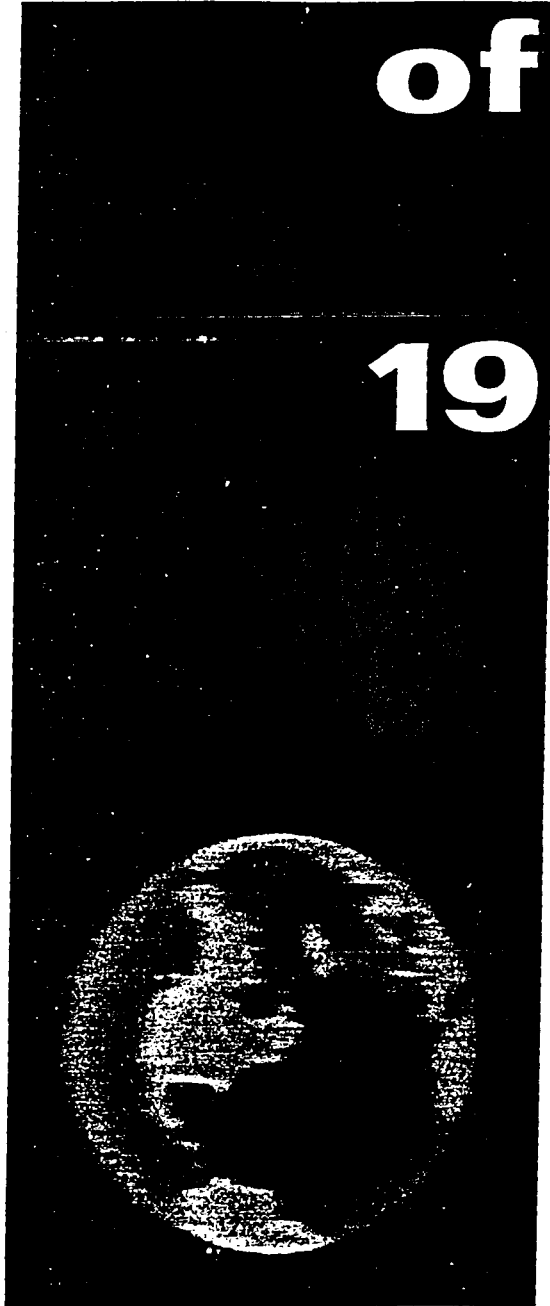


Elements of Change

1996



session one



Natural Hazards and Global Change

session two



Characterizing and Communicating Scientific Uncertainty

editors

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Videotapes and Reports

Videotapes of the presentations documented in this report, as well as additional copies of this report are available from Aspen Global Change Institute. Publications of AGCI are available on-line in cooperation with the Global Change Research Information Office (GCRIO) at <http://www.gcrio.org/agci-home.html>

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The AGCI Mission

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Is the Scientist/Advocate an Oxymoron?

Schneider next turned to a discussion of the role of the scientist in responsible advocacy. Advocacy can be personal interest advocacy for a theory, model, measurement, crony, institution, nation, or epistemology. There is also world view advocacy for such things as entrepreneurial rights transcending commons protection; that the present is worth more than the future; that commons protection justifies global-scale rulemaking; risk aversion; or the idea that other species can be as valuable as human pursuits.

Schneider believes that scientists can practice responsible advocacy. Everyone has value positions (consciously and unconsciously); the keys to being a responsible advocate are:

- a. making your value positions conscious.
- b. making them explicit.
- c. not letting your value positions distort your "subjective priors" (see Berk in this report) on issues of fact (a community is needed to do this well because no one can do this perfectly alone), and
- d. defending your value positions separately from debates over probabilities and consequences.

Some scientists think it is impossible to do these things, and instead say they will be neutral, but no one is, Schneider says. Among the positions one can take is being an advocate of science itself, in which one argues for a rational world view and has faith that science has something constructive to contribute to decision making for the future. Even that is a value position, even if many who adhere to this position don't see it as such.

On the role of scientists in popularization/advocacy of scientific issues, Schneider says the context is that:

- a. Scientists are contentious, but people listen.
- b. The media love a fight and often set up stories as "dueling scientists."
- c. The public, media and politicians misread normal scientific contention as a lack of consensus, which leads to confusion



- and policy gridlock.
- d. Communication requires simplification but audiences deserve respect: therefore, use familiar metaphors (*e. g.*, cards, dice, insurance) that don't do violence to the truth. These metaphors cannot completely define the problem but the alternative is to not be in the game (or think you're not and allow journalists or the opposition to define you).
 - e. Sound bites are selective information transfer and present a double ethical bind. A story will go unreported if there are no sound bites, so scientists should learn to craft good ones that convey both urgency and uncertainty, if that is what the issues represent (*e. g.*, global change).

Some scientists oppose popularization/advocacy no matter how credibly it is done. Skepticism is appropriate but some opposition is pathological and may take the form of:

1. **Elitism** "Simplification is vulgar and we do not play this game. It is not possible to communicate simply what we know to the public so we shouldn't even try."
 2. **Jealousy** "A scientist's reputation comes from toiling in the lab, not from press coverage." A way to minimize this problem is to discuss colleagues' work and attribute it to them (but unfortunately, journalists generally attribute it to you anyway).
 3. **Special Interests** These ideological opposites/hired guns will try to discredit the science (usually proclaiming to be defending sanctity of science), or discredit the scientist (redefine terms of debate from the science to the scientist or the assessment process, find a trivial error and expand, etc.). They count on the public and media not to check up on the credibility of their attacks, *i.e.*, they exploit the media's "balance" doctrine.
- f. Policy analysis (*i. e.*, probability/consequences) is professional science and is amenable to expert judgments.
 - g. Policy choice (advocacy) is about personal values.

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scientists fail to convey probabilities of particular outcomes, they fail to convey the basic information that the public needs (e. g., what is the probability of significant climate change versus the probability of an invasion by aliens from space).

Schneider's Rules for Popularizing

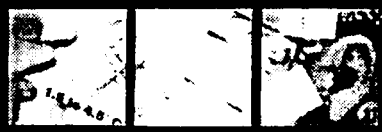
Schneider's reaction to this context is to suggest that scientists popularize their own work or have someone else do it. He suggests these rules:

- a. Use familiar metaphors that convey both the urgency (to get in press) and the essence of the uncertainties surrounding the issue (e. g., "loading dice" conveys urgency and uncertainty).
- b. Back up sound bites with articles and other products (e. g., full length books, so one's full views are on record for those few who want to check up).
- c. Separate expertise (probabilities/consequences) from values.
- d. Enjoy the process but don't be naive about the risks.
- e. Don't counterpunch with *ad hominem* attacks and polemics, despite what the opposing advocates do.
- f. Remember that long term success is built on establishing the credibility of the scientific community over time.

Journalists in the group pointed out the social legitimization function the elite press plays in science. For example, if a paper published in the *New England Journal of Medicine* is reported on in *The New York Times*, it is cited twice as often in the medical community as a *New England Journal* paper which is not reported on in *The Times*.

Schneider believes that it is best to talk to the press often or not at all, as there are risks involved in only one or two stories which by chance could be excellent or terrible. Not all scientists should be popularizers or advocates. We should let those who are good at it do it without disdain from their peers if they tell the story straight. Scientists can serve as a resource to raise reporters' level of knowledge on important scientific issues.

Schneider says that if scientists fail to convey probabilities of particular outcomes, they fail to convey the basic information that the public needs (e. g., what is the probability of significant climate change versus the probability of an invasion by aliens from space) to make any kind of decision (health, safety or economic). On the other hand, when



one gives a subjective assessment with probabilities, there is always the danger that others can grab the tails of the distribution and run with them to suit their own agenda. A community effort is needed to overcome the "dueling scientists" problem, as well as tackle the other issues presented here.



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