Trust and Action

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Scientists are a cerebral lot, for the most part, and that trait certainly helps in trying to understand the natural world. But their cultivated habit of logical thought can also lead them astray when they unconsciously assume that the broader public is used to thinking in the disinterested style of scientific inference. Psychologists have established that people's beliefs are hugely influenced by the beliefs' emotional valence, by social pressures, and by other irrelevant and generally unconscious factors. The explanations that people offer for their beliefs are, to an upsetting degree, spurious rationalizations of convictions held for other reasons. (Sam Harris discusses some of the evidence in his new book *The Moral Landscape: How Science Can Determine Human Values*; Free Press, 2010.) Scientists' efforts to apply reason to get a purchase on truth can seem unappealing to the broader public because an analytic style doesn't engage listeners emotionally. Critically, people who are not engaged at an emotional level are unlikely to take action in support of what they have heard.

Biologists have less excuse than some other scientists to be uninformed about these facts, uncomfortable though they may be. Many biologists who are concerned about the effects of climate change, in particular, are anguished that there has been little success at persuading governments to act decisively to protect the biosphere. Enemies of science exploit its reliance on perpetual revision, misrepresenting the conditional status of scientific theories as evidence that the whole enterprise is untrustworthy. And many of these critics do effectively appeal to emotion, notably fear of change.

The lay observer may be left cynical or confused, but probably unmotivated to press for big sacrifices, as Caren Cooper explains in the article that begins on p. 230 of this issue of *BioScience*. This is the case even though a large majority of the public accepts the seriousness of climate change. Similar arguments could be made about other important topics in public policy.

Cooper's analysis leads her to support stepped-up efforts in what is being called public engagement in science. The key insight of this growing movement is that healthy engagement will emerge only if scientists learn to stop acting like dispensers of a superior kind of knowledge, and instead enter habitually into genuine dialogue with the broader public about research findings. Dialogue can build trust, and trust can engage pleasurable emotions in a way that can lead to action. Only an arrogant researcher would believe that he or she has nothing to gain from discussion with nonscientists.

An equally vital component of the strategy consists of demonstrating to members of the lay public how they can question the reliability and possible bias of all sources of information. Such "media literacy education" can also help scientists become better at initiating dialogue using a broad range of communication channels, and can teach them how to frame discussions in ways that build trust and reduce confusion.

Neither of these projects is easy, but Cooper provides some worthwhile pointers to what works. Biologists who feel the products of their cerebration are not being taken seriously enough by the broader public have been shown a way to change things.

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