

EPA Draft White paper
Expert Elicitation Task Force
Comments by John Bailar re charge question 1.
February 26, 2009

There is much good material in this draft on expert elicitation (EE), and the Task Force deserves a lot of credit for it. My comments are meant to help make a good thing even better.

A committee wrote this draft, and its origins show. There is a great deal of redundancy, in places the tone is pompous, or it talks down to the reader, some seems to be an undigested agglomeration of whatever the author has been reading, and the style is highly verbose. Thorough, end-to-end rewriting is needed. This should be by a single person, or perhaps two people working elbow-to-elbow. The target should be a report of half the present length.

There should be a shift in point of view from ordinary frequentist statistics (what happens if some hypothesis is true) to a more Bayesian view (what is the probability that the hypothesis is true). This has profound implications, and would bring the draft fully in line with EE.

The authors could strengthen the draft by adding appendices with case studies (perhaps 2 or 3 of them, each 10-20 pages long) on completed EPA EEs. These should be chosen to illustrate problems rather than to display how well the process can be made to work.

A critical issue that needs more attention is the identification of elicited opinions that are simply not compatible and should not be combined (though the full range of EEs should of course be reported).

Is there any empirical evidence comparing group vs. individual EEs? If so, that evidence should be cited. If not, say so, and discuss whether EPA should support research to develop such evidence. For example, one might carry out a dozen EEs, each with 10 experts divided randomly into five who would work individually and five who would work as a group. One might learn little from each EE, but patterns over the set of EEs might reveal a lot.

Similarly, there is a need to discuss any empirical evidence comparing EEs vs. actual observations or situations. This might have to be limited to measurements rather than other matters studied by EES, but even that much would be helpful. If such evidence is scanty, say so, and consider whether EPA should support research on the matter.

There is no sharp dichotomy between experts and mere mortals (see page 31 and elsewhere), and one can find "experts" with any desired opinion. Problems in choosing experts are discussed, but need more attention.

EE processes seem to be designed to separate the expert opinions from objectified conclusions derived from them. This is wrong—the opinion-based nature of EEs should be preserved through the final results.

Finally, EE is clearly a possible way to learn about unknown matters, but it should also be presented as a good way to organize and understand whatever is already known about the matter and to identify what remains to be studied.