

Transparency of EPA expert elicitation

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Transparency to whom

- Experts participating in the elicitation
- Users of the expert elicitation
 - Policy makers
 - Stakeholders
 - Members of the general public
- Review panel

Transparency to experts in the elicitation

- Good survey questions should
 - be interpreted in the *same way* by question designers and respondents from different backgrounds
 - allow respondents to express their full set of beliefs
- Failing to write good survey questions leads to missing, invalid, and protest responses
 - Including saying “50%” in response to quantitative probability questions (Bruine de Bruin et al., 2000; 2002)

How to develop good survey questions

- Involve experts from all relevant disciplines in pilot tests *before* conducting elicitation
 - Include read-aloud of protocol to ensure (shared) understanding
 - Invite them to add questions to express relevant beliefs
- Provide clear instructions on how to answer questions
- Ask quantitative questions that
 - Can be answered by experts in all relevant disciplines
 - Are specific enough to have an answer (under “clairvoyance”)
 - Avoid mental gymnastics as much as possible
- Write probability questions that avoid 50% responses
 - Present linear probability scale rather than fill-in-the-blank
 - Ask about “the percent of people” rather than “the probability that a person” will experience an event
 - Allow for “don’t know” response, or ask what 50% meant
- Ask for explanations of quantitative responses

Transparency to users of expert elicitation

- Effective risk communications
 - Should help policy makers to make more informed decisions
 - Should be understood by all of its potential users
- Existing communications are often not effective, because they
 - are not written with users in mind
 - do not provide decision-relevant information
 - use expert jargon
- Users may only read summaries or press releases
 - Press releases (of medical studies) often overstate results, failing to mention study limitations and industry funding (Woloshin & Schwartz, 2002)

How to develop effective communications

- Involve users *before* developing communications, even *before* conducting the elicitation
 - Find out what they need to know to make more informed decisions
 - Ensure that they understand and trust every step of the elicitation
- Present communications in simple terms
 - 6th grade reading level is recommended for public health pamphlets, can be used to present complex information, and benefits all readers (*i.e. 18 is too high*)
 - Use simple graphs and explain them in the accompanying text
- Pilot-test communications before releasing them
 - Conduct read-aloud protocols with users to ensure understanding
 - Fact-check with experts to ensure accuracy
- Use systematic presentation format for overall report, executive summaries *and* press releases

Examples of topics

to systematically cover in reports

- Research question
 - What is the main research question and what policy question will it inform?
 - Why was expert elicitation needed to answer the main research question?
- Methods
 - How was the elicitation conducted?
 - Who were the experts, how were they selected, and did they represent all relevant views and disciplines?
- Results
 - What is the degree of consensus?
 - Why did the experts disagree if/when they did?
- Conclusions
 - How do these results inform the policy question?
 - What are the main limitations?

Review panel

- Charge questions for the review panel should cover
 - The expert elicitation
 - The communication of results
- The review panel should include experts from relevant disciplines
 - Substantive experts from relevant disciplines
 - Technical experts
 - Survey design experts
 - Risk communication experts!
 - Intended users?

Relevant references

- Bruine de Bruin, W., Fischbeck, P.S., Stiber, N.A. & Fischhoff, B. (2002). What number is “fifty-fifty”? Redistributing excess 50% responses in risk perception studies. *Risk Analysis*, 22, 725-735.
- Bruine de Bruin, W., Fischhoff, B., Brilliant, L., & Caruso, D. (2006). Expert judgments of pandemic influenza risks. *Global Public Health*, 1, 178-193.
- Bruine de Bruin, W., Fischhoff, B., Millstein, S.G. & Halpern-Felsher, B.L. (2000). Verbal and numerical expressions of probability: “It’s a fifty-fifty chance.” *Organizational Behavior and Human Decision Processes*, 81, 115-131.
- Bruine de Bruin, W., Parker, A.M., & Fischhoff, B. (2007). Individual differences in Adult Decision-Making Competence. *Journal of Personality and Social Psychology*, 92, 938-956.
- Fischhoff, B. & Bruine de Bruin, W. (1999). Fifty-fifty=50%? *Journal of Behavioral Decision Making*, 12, 149-163.
- Fischhoff, B. (1994). What forecasts (seem to) mean. *International Journal of Forecasting*, 10, 387-403.
- Morgan, M.G., Fischhoff, B., Bostrom, A., & Atman, C. (2001). *Risk communication: The mental models approach*. New York: Cambridge University Press.
- Schwarz, N. (1996). *Cognition and communication: Judgmental biases, research methods and the logic of conversation*. Hillsdale, NJ: Erlbaum.
- Woloshin, S., & Schwartz, L.M. (2002). Press releases: Translating research into news. *Journal of the American Medical Association (JAMA)*, 287, 2856-2858.