

Summary Minutes of the  
U.S. Environmental Protection Agency (EPA)  
Science Advisory Board (SAB)  
Environmental Economics Advisory Committee (EEAC)  
Teleconference  
September 20, 2004

Committee Members: Dr. Maureen Cropper, EEAC Chair  
Dr. Arik Levinson  
Dr. Gloria Helfand  
Dr. Kathleen Segerson  
Dr. Jim Opaluch  
Dr. Anna Alberini  
Dr. Michael Hanneman  
Dr. Michael Greenstone

Date and Time: 1:00pm – 2:30pm, September 20, 2004

Location: Teleconference

Purpose: The purpose of this meeting was to discuss follow-on questions pertaining to the valuation of mortality risk reduction.

SAB Staff: Dr. Holly Stallworth, Designated Federal Officer

Other EPA Staff: Will Wheeler  
Chris Dockins  
Nathalie Simon

Other Attendees: Neil Shaw, Inside EPA  
Jim Cox, Earthjustice

Meeting Summary

The discussion followed the issues and general timing as presented in the meeting agenda (Attachment A).

**MONDAY, SEPTEMBER 20, 2004**

Opening of Public Meeting

Dr. Holly Stallworth, Designated Federal Officer (DFO) for EEAC, opened the meeting with a statement that the EEAC is a standing committee of the SAB, a chartered federal advisory committee whose meetings are subject to the requirements of the Federal Advisory Committee Act. Consistent with the requirements of FACA, and with EPA policy, the deliberations of the EEAC are conducted in public at meetings, for which advance public notice is given. The discussions and substantive deliberations of the panel; its interactions with the public, and the Agency, are conducted in sessions where I, as the DFO, am present to ensure that the requirements of FACA are met (this includes the requirements for open meetings, for maintaining records of deliberations of the Panel, making available to the public summaries of meetings, and providing opportunities for public comment).

Teleconference

Following Dr. Stallworth, Dr. Cropper, Chair of EEAC, reviewed the agenda. The Chair reminded the audience that that the May 13, 2004 consultation on the valuation of mortality risk reduction involved looking at various studies and answering a series of question. The Chair reviewed her memo of July 9, 2004 (Attachment B) as a series of more basic questions.

The Chair repeated and described each of the four questions.

1. If everyone has a well defined willingness to pay (WTP), what does EPA want to measure? Mean WTP? Median WTP? Distribution of WTP? WTP as a function?
2. Can our stated preference (SP) and revealed preference (RP) studies capture what we want to measure? Standard dichotomous answers do not lend themselves well to estimating a distribution or function.
3. What criteria should a well-executed stated preference study satisfy? A revealed preference study?
4. If we look across different studies, what are possible sources of variability in estimates from these different studies?

The Chair asked the committee if these were the right questions and whether EEAC might wish to break apart into smaller subgroup to issue recommendations, e.g. on criteria for RP studies and criteria on SP studies.

One committee member raised the issue of data quality, especially data collected by federal agencies and whether EEAC might want to make recommendations on data collection that might improve some of these efforts. This member said this is especially needed for hedonic labor market studies.

Another committee member raised the issue of the role of omitted variables bias and how to proactively communicate this bias. In this member's opinion, omitted variables bias is the central issue in deriving VSL. This member proposed that different studies should get different weights based on their importance.

The suggestion was made that the role of omitted variables bias could be incorporated into the criteria developed for choosing revealed preference studies. The Chair also suggested the issue of different weights would come after the development of appropriate criteria.

Another member said that the issue of missing covariates raises more questions: Can we get better data? Is there some way of analyzing imperfect data? Is there something else that can be done that would increase our confidence in the data?

One member raised the equity issues of whether WTP for higher income versus WTP for lower income groups or older WTP versus younger WTP --- and whether adjustments might be needed to account for this.

Another member suggested that if we're hamstrung by a requirement that we cannot consider age, then we're introducing an omitted variables bias.

The suggestion was made that cost benefit practitioners start out with a broad population, and then see how WTP varies with covariates. The co-variables of WTP are useful information regardless of political constraints.

Another member raised the issue of how WTP for risk reduction can vary with context: seat belts, asbestos, food safety, etc. can all be viewed differently.

Another member suggested the hedonic wage literature implicitly assumes no differences in preferences. Another member suggested that the research linking preferences to sex, education, income levels, etc. could be incorporated into derivation of VSL.

The suggestion was made that a random coefficients model could allow for some heterogeneity in preferences. If you're going to do any extrapolation from small populations to large populations, you have to look at WTP as a function of covariates. In existing hedonic studies, all that people do is evaluate WTP at the margin but just at one value of risk.

Another member raised again the issue of context for risks – a critical issue when extrapolating from WTP for one risk to another. Voluntary and involuntary risks are different.

Another member said that when counting up different forms of heterogeneity in preferences (gender, age, type of risk, level of risk), this heterogeneity is tiny compared to inability of standard regressions to allow for covariates. Dan Black's paper was evidence for this.

Another member interpreted Black's paper as a caution that risk is measured too badly to find the hedonic wage tradeoff.

The Chair suggested that EEAC might want to choose groups to try to choose criteria for RP vs. SP studies. Drs. Greenstone, Alberini, Hanneman, Helfand volunteered for RP. Drs. Opaluch, Segerson, Alberini and Hanneman volunteered for SP.

One member suggested there is a link between question 1 and question 4 to the extent that one source of variability is the level/type of risk and asked would EPA want to classify different types of risk?

Another member expressed reservations about incorporating heterogeneity of risks into WTP. This member believed that the net result would be an unfortunate rule you multiply a certain risk by a certain number, another type of risk by another number.

Another member suggested there are already some agencies that already incorporate this kind of accommodation into VSL. One agency adds 40% to account for dread from a cancer death.

The suggestion was made that EEAC use the term "degree of exogeneous risk" rather than involuntary/voluntary distinction and that EEAC separate this discussion of "exogeneous risk" from its immediate task.

Dr. Nathalie Simon of NCEE said that NCEE is following up with several experts on meta analysis and that NCEE could bring them to town for a discussion of meta analysis with EEAC members.

The Chair turned the floor over to Mr. Jim Cox of Earthjustice who read the comments provided in Attachment C.

The Chair then asked whether EEAC members would be willing to work on the "exogeneity" of risk issue, e.g. the impact of dread, voluntariness, etc. One member suggested that even without a formal EEAC effort on this issue, EEAC still might incorporate a statement of principle (on heterogeneity/exogeneity) into any written comments on RP and SP criteria.

One member raised the issue of averting behavior studies, e.g. consumer purchases. The Chair responded that averting behavior studies that fall into the hedonics realm produce some of the same issues in regard to endogeneity of risk and omitted variables. The Chair expressed a preference to start with the studies that cohere methodologically and put off the averting behavior studies.

The DFO said any "next steps" may need to be formalized and approved by the SAB Director.

The discussion concluded and the Chair thanked Committee members and Agency staff for their participation and the meeting was adjourned.

Respectfully Submitted:

*/Signed/ Holly Stallworth*  
Designated Federal Officer

Certified as True:

*/Signed/ Maureen Cropper*

Chair

NOTE AND DISCLAIMER: The minutes of this public meeting reflect diverse ideas and suggestions offered by Committee member during the course of deliberations within the meeting. Such ideas, suggestions and deliberations do not necessarily reflect consensus advice from the panel members. The reader is cautioned to not rely on the minutes to represent final, approved, consensus advice and recommendations offered to the Agency. Such advice and recommendations may be found in the final advisories, commentaries, letters or reports prepared and transmitted to the EPA Administrator following the public meetings.

**U.S. Environmental Protection Agency  
Science Advisory Board  
Environmental Economics Advisory Committee**

**CHAIR**

**Dr. Maureen L. Cropper**, Lead Economist, The World Bank, Washington, DC

**MEMBERS**

**Dr. Anna Alberini**, Associate Professor, Department of Agricultural and Resource Economics - AREC, University of Maryland, College Park, MD

**Dr. Dallas Burtraw**, Senior Fellow, Resources for the Future, Washington, DC

**Dr. Lawrence Goulder**, Shuzo Nishihara Professor of Environmental and Resource Economics, Department of Economics and Institute for International Studies, Stanford University, Stanford, CA

**Dr. Michael Greenstone**, Assistant Professor, Department of Economics, Massachusetts Institute of Technology, Cambridge, MA

**Dr. James Hammitt**, Professor of Economics and Decision Sciences, School of Public Health, Harvard University, Boston, MA

**Dr. W. Michael Hanemann**, Professor, Department of Agricultural and Resource Economics, University of California, Berkeley, CA

**Dr. Gloria Helfand**, Associate Professor of Environmental Economics, , School of Natural Resources and Environment, University of Michigan, Ann Arbor, MI

**Dr. Arik Levinson**, Associate Professor, Economics Department, Georgetown University, Washington, DC

**Dr. James Opaluch**, Professor, Department of Environmental & Natural Resource Economics, College of the Environment and Life Sciences, University of Rhode Island, Kingston, RI

**Dr. Stephen Polasky**, Fesler-Lampert Professor of Ecological/Environmental Economics, Department of Applied Economics, University of Minnesota, St. Paul, MN

**Dr. Kathleen Segerson**, Professor, Department of Economics, University of Connecticut, Storrs, CT

**Dr. Hilary Sigman**, Associate Professor, Department of Economics, Faculty of Arts and Sciences, Rutgers University, New Brunswick, NJ