Behavioral Economics and the Conduct of Benefit-Cost Analysis: Towards Principles and Standards*

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Prepared by:
Lisa A. Robinson, Independent Consultant
Lisa.A.Robinson@comcast.net
www.regulatory-analysis.com
and
James K. Hammitt, Harvard University and Toulouse School of Economics
JKH@Harvard.edu

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General Premise

• Benefit-cost analyses should provide information on the preferences of those affected by the policy.

• Analysts should try to avoid making judgments about whether preferences are “irrational” or “erroneous.”

• Estimates should be derived from studies designed to provide well-informed, thoughtful valuations to the greatest extent possible.

• Where values are uncertain, analysts should use sensitivity, probabilistic, or breakeven analysis to explore the implications.
General Premise

But...

• Many issues raised by behavioral economists have not yet been explored in the context of benefit-cost analysis of social programs.

• In some cases, criteria-driven review of the available research is needed (e.g., discounting).

• In others, more primary research is needed to determine the effects and implications (e.g., social preferences).
Contents

• Valuing psychological attributes of nonmarket outcomes.
  – Willingness to pay vs. willingness to accept compensation.
  – Psychological responses to risk.
• Estimating time preferences.
• Separating private from social preferences.
• Improving valuation studies.
WTP vs. WTA

• Currently, applied analyses often rely on WTP, due to challenges in estimating WTA.
  – WTA may be more appropriate in some cases.

• Behavioral research suggests losses from reference state valued more highly than gains.
  – May lead to large disparities between WTP and WTA.

• Disparities have not been well-studied for nonmarket outcomes of social programs; e.g., health risks.

• In the interim, analysts should test the sensitivity of their results to changes in values.
  – For beneficial changes, WTA is likely to exceed WTP.
Psychological Responses to Risk

• Illustrate with research on the value of small changes in mortality risk in a defined time period – the “Value per Statistical Life” or VSL.

• The VSL may vary depending on:
  – Personal characteristics (e.g., income, age)
  – Physical risk characteristics (e.g., latency, morbidity)
  – Psychological risk perceptions (e.g., controllability, dread)

• The influence of these factors is not necessarily inconsistent with the neoclassical economic model.
Psychological Responses to Risk

• Some findings illustrate the influence of anomalies emphasized by behavioral economists.
  
  – Ambiguity aversion: When faced with uncertain risk information, individuals respond differently than when faced with a point estimate equivalent to the expected value of the range.
  
  – Risk weighting: Individuals tend to overweight small risks, particularly if viewed as fearsome.
  
  – Insensitivity to changes: Individuals may be insensitive to changes in small risks, reporting the same or similar values for risks of differing magnitude.
Psychological Responses to Risk

• These findings do not necessarily create problems for the analyst.
  – The values used in BCA should reflect all attributes of the risk, including these factors.

• Insensitivity to risk changes may be particularly troubling, however.
  – Are individuals indifferent to small changes in risk? Or having difficulty comprehending them?

• Visual aids can improve sensitivity.
  – Suggests sensitivity should be a criteria for evaluating research quality.
Estimating Time Preferences

- Typically, for intra-generational time frames, analysts discount monetary values at a constant (exponential) rate, usually ~ 3% to 7%.
  - Reflects simplifying assumptions more than theory.

- Behavioral research suggests that:
  - Preferences may differ depending on the time frame.
  - Discounting may be hyperbolic rather than exponential.
  - For example, some research suggests near-term rates ~ 40%, and long-term rates ~ 4%.

- Different short vs. long-term rates may lead to inconsistent decisions depending on the time frame.
Estimating Time Preferences

• High near-term rates are useful in predicting behavior.
  – Reflect impulsive behavior and self-control problems.

• Lower, long-term rates seem more appropriate for discounting monetary values in BCA.
  – Planning horizon for social programs is consistent with longer-term decisionmaking.
  – Social programs are focused on providing lasting (rather than temporary) improvements in welfare.

• Aggregate (market) rather than individual rates reflect opportunity costs of investing in new programs.
Separating Private from Social Preferences

• Typically, efficiency and equity are addressed separately.
  – For efficiency, focus on self-regarding values (e.g., WTP for own risk reductions).
  – For equity, describe distribution without valuing it.

• Other-regarding preferences (e.g., altruism) are recognized within the neo-classical framework.
  – Difficult to distinguish paternalistic vs. non-paternalistic altruism.
  – Typically not explicitly included in the analysis.
Separating Private from Social Preferences

Motivations for other-regarding preferences:

- Social welfare (increase total welfare by helping others, particularly those less-well off).
- Difference aversion (reduce differences between self and others).
- Reciprocity (reward or penalize others depending on perceived fairness of their actions).
- Relative position (“keeping up with the Joneses”).
Separating Private from Social Preferences

• Concerns identified in behavioral research are largely based on experiments.
  – More field research is needed to determine effects in complex “real world” settings.

• Analysts need to carefully separate general attitudes from attitudes that differ by outcome.
  – For example, overall “warm glow” vs. paternalistic attitudes towards health gains.

• Analysts should consider whether values (intentionally or inadvertently) include other-regarding preferences.
Improving Valuation Studies

• Continual improvement is needed to ensure that values reflect well-informed, thoughtful preferences to the greatest extent possible.

• Stated-preference researchers have long incorporated behavioral considerations into study design and analysis.

• Less attention has been paid to behavioral concerns in revealed-preference research.
  – Beshears et al. (2008): revealed (or positive) preferences (the choices people actually make) vs. normative preferences (the choices people think they should make).
  – Factors that help distinguish these preferences (e.g., active decisionmaking) may be useful for improving study design and interpretation.