

Positive and Normative Justifications for BCA: Implications for Conduct & Interpretation

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Description (Positive) v. Prescription (Normative)

Conventional BCA includes mix of individual/public and expert/scientific inputs

- Values of benefits & costs based on individual preferences
- "Objective" assessment of risks and other consequences

Individual behavior and perceptions sometimes inconsistent with economic model

- Cognitive errors?
- Oversimplified model?

How should BCA incorporate departures from model?

- Populism v. paternalism?

Trouble in Happyville

(Portney, 1992)

You are Director of Environmental Protection

All 1,000 residents of Happyville

- Believe (natural) contaminant in drinking water is carcinogenic
- Are willing to pay \$1,000 per capita cost of treatment

10 leading risk analysts all agree

- While one can never prove contaminant is harmless
- All would stake their reputations on it

You have communicated skillfully, but residents distrust government & still want treatment

What do you do?

Common Justifications for BCA

Kaldor-Hicks compensation test

- If value of benefits exceeds value of harms, winners could compensate losers leaving everyone better off
- Compensation not necessary; better accomplished through tax & welfare system
- Design regulations to expand "social pie," allocate shares using other means (separate efficiency and distribution)

Utilitarian

- Monetary values approximate equivalent changes in utility
- Improve approximation by weighting (e.g., less weight on effects to more advantaged people)
- CEA is attractive because QALYs may better approximate utility

Consistency

- If BCA or CEA routinely used, winners and losers average out and all are better off in long run
- Compared with what alternative decision rule?

Fundamental Questions for Social Policy

Individual

- What is "Good" for an individual?
 - By individual, do we mean family, household, community?

Distributional

- When does more good for one justify less good (or forgoing more good) for others?

Good for Individual

Consumer sovereignty, populism

- Neoclassical economics

Well-being, capabilities, moral life

- Utilitarian and other philosophies
 - QALYs
- Well-being may not equal preference satisfaction

Interpersonal Tradeoffs & Distribution

Economics assumes there is no objective method to compare effects on individual utility

- Who suffers more from the "same" level of pain?

Utilitarianism

- Assumes one can define utility units that are interpersonally comparable
- Practical methods (that are widely used)
 - Money → Benefit-cost analysis (BCA)
 - QALYs → Cost-effectiveness analysis (CEA)

Positive v. Normative Justifications for BCA

Positive:

- If policy is adopted, could transfer payments be arranged such that policy with compensation yields Pareto improvement?
- Kaldor-Hicks compensation test
- Individual: Consumer sovereignty
- Distributional: Money metric

Normative:

- Is affected population better off
 - Even if they do not perceive themselves to be?
- Utilitarian or capabilities based
- Individual: Well-being may differ from preference satisfaction
- Distributional: Utility metric
 - Social welfare function may incorporate distributional effects

Areas of Divergence between Positive & Normative Models

Individual

- Framing effects
- Omission v. commission
- WTP – WTA disparity
- Discounting – hyperbolic v. exponential
- Valuing mortality risks – qualitative attributes
- Non-proportionality of WTP to risk reduction
- Ambiguity aversion
- Disclosure and value of information

Distributional

- Income, age & other adjustments (e.g., to VSL)

Qualitative Risk Attributes

Perception and tolerance of risk depends on

- Dread
 - Uncontrollable, involuntary, catastrophic, inequitable distribution of benefits, affects future generations
- Uncertain
 - Unobservable, not understood scientifically, delayed consequences, newly recognized

Limited evidence that these affect WTP to reduce risk

- Best studies suggest modest effect on WTP (less than 1.5 – 2 fold)

Other qualitative attributes

- Natural v. artificial/synthetic chemicals
- Genetic modification v. conventionally breeding

Non-proportionality of WTP to Risk Reduction

Most stated-preference studies find WTP is larger for larger risk reduction, but not proportional

- Initial risk reduction is valuable, additional risk reduction is worth much less?
- Two actions that each reduce risk by Δr are valued more than one action that reduces risk by $2\Delta r + \varepsilon$
 - Value action or consequence?

Ambiguity Aversion

Humans dislike ambiguous (uncertain) probabilities

- Risk of bad outcome
- Risk of bad probability

Should we take greater precaution when probabilities are uncertain?

- Policy of doing so is virtually certain to increase probability of bad outcomes
 - "Perils of Prudence" (Nichols & Zeckhauser, 1986)
- Value of information – try uncertain option, it may prove better than expected

Information Disclosure

Provision of accurate information generally viewed as

- Not harmful
- Possibly beneficial

Individuals may be misled

- Over-emphasize salient attributes (e.g., possibility of carcinogenesis, neglect probability)
- Aversion to irrelevant(?) attributes (e.g., synthetic v. natural chemicals, GMOs)

Prohibiting (accurate) information disclosure may be appropriate

- Probative v. prejudicial value of evidence

Distributional - Income, Age & Other Adjustments (e.g., to VSL)

Intuitively and empirically, VSL varies across people and over time

- Wealth and income (increases)
- Age and life expectancy (theory and empirical evidence less clear)

Applied BCA ignores differences

- Violates positive justification

Implications for Benefit-Cost Analysis

Positive

- Predict whether everyone in affected population would perceive self to be better off with policy (and appropriate compensation)
- Measure individual preferences and perceptions as accurately as possible
 - Recognize differences by age, income, etc.
- Scientific enterprise, subject to empirical testing

Normative

- Evaluate whether (everyone in?) affected population would be better off, even if they do not perceive themselves to be
- How are individual good & social welfare determined?
- Advocate policies knowing that affected population would reject
- Analysts are just another interest group?