

# **The Role of Formal Decision Making Tools in the Governance of Emerging Technologies**

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# What Do We Mean When We Talk about Weighing the Costs and Benefits of an Emerging Technology?

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*“We’ve killed the planet, the life support system. And, and it’s so damaged that there’s no recovery from that. And we’re very soon going to run out of petroleum which powered everything that’s modern.... And, and it was very shallow people who imagined that we could keep this up indefinitely.” –Kurt Vonnegut*

Pres. Comm. for the Study of Bioethical Issues: policy on synthetic biology should be “forward-looking” and should be characterized first by public beneficence and responsible stewardship of resources

WHO: the risks of releasing genetically modified mosquitoes should be set against the benefits, and CBA or CEA “can provide the framework under which the appropriate (economic, health, social) returns” can be compared

IUCN: “Evaluation of the costs and benefits of proxy species creation as compared to alternative management strategies to achieve similar conservation goals should be made as part of the early assessment of candidate and project feasibility.”

# Arguments for CBA

“Objectivity”: the inputs are the public’s values, represented without bias

Transparency: claims about the public’s values are supported by evidence and policy recommendations supported by math

Feasibility: the process of determining the public’s values and delivering recommendations can be articulated as a series of steps

# Objections to CBA

“Objectivity”: reliance on market mechanisms gives those with more money more influence; if some values are excluded, recommendations may be skewed; mere reliance on quantification may produce a bias

Transparency: the collection of evidence and computation of values can be opaque; values are hidden; in practice, CBA is the domain of experts

Feasibility: lack of information, uncertainty at multiple levels

# Can CBA be retooled?

Changes to the context in which CBA is used?

Alterations to the method itself?

# Formality and informality in CBA

(Amy Sinden, “Formality and Informality in Cost-Benefit Analysis,”  
*Utah Law Review*, 2015.)

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# Informality and formality in CBA





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Qualitative descriptions		Monetization of major outcomes	Monetization of all potential outcomes
Rough comparisons	Ensuring costs not wholly disproportionate to benefits	Ensuring benefits exceed costs	Determining where marginal costs = marginal benefits

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(pluralism of values)			(utilitarian)
(narrative argument for conclusions)			(mathematical formula)