CHOOSING A PATH IN THE ANTHROPOCENE

An Ecological Economics Assessment of Public Sector Decision Analysis Frameworks

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Economics for the Anthropocene

REGROUNDING THE HUMAN-EARTH RELATIONSHIP

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“I often say that when you can measure what you are speaking about, and express it in numbers, you know something about it; but when you cannot express it in numbers, your knowledge is of a meagre (*sic*) and unsatisfactory kind; it may be the beginning of knowledge, but you have scarcely, in your thoughts, advanced to the stage of science, whatever the matter may be.”

Sir William Thomson (Lord Kelvin)

“Electrical Units of Measurement” in *Popular Lectures* (1891) Vol. 1, page 80-82

Research Question

- How do the two dominant frameworks for public-sector decision analysis compare with regard to core issues in the field of ecological economics?
  - Cost-Benefit Analysis (CBA)
  - Multi-Criteria Decision Analysis (MCDA)

Research Motivation

- Rise of CBA as dominant economic assessment approach for public-sector decision analysis
- Extensive critique of CBA as a method based on technical and normative grounds
- Much work to correct deficiencies and respond to criticism of CBA
- Response of CBA proponents to most vociferous critics “if you don’t like it, what do you propose?”
- Response has been haphazard, with many in EE and other disciplines pointing to MCDA

CBA and MCDA: A Primer

- Quick Comparison
  - CBA – simulation of the economy; maximize welfare as measured in $NPV
  - MCDA – compare multiple attributes of given alternatives *in their own native units* with or without commensurability/weighting and optimization
    - *Variants include AHP, MAUT, PROMETHEE, etc.*

Ecological Economics – Core Issues

- Strong versus weak sustainability
- Managing for sustainable scale (directly managed or indirectly via price mechanism)
- Uncertainty and complexity
- Efficiency
- The nature of the economic actor
- The role of stakeholders and the public
- Justice and distribution as economic concerns
- Time preferences and intergenerational justice
- Considerations of the non-human world

Strong vs. Weak Sustainability

- CBA – weak sustainability
  - $ as common unit, implicit substitutability
  - Valuation at the margin
  - “More is better”
- MCDA – weaker to strong sustainability
  - Analysis done in “native units” but can be aggregated using weighting factors to allow rank ordering
  - Weighting implies substitutability, but w/o “market context” and Potential Pareto Improvement as theoretical backdrop for susbsitution

Sustainable Scale

- CBA
  - Market determines price, which reflects both demand and supply (scarcity)
  - A larger $NPV is better than a smaller $NPV; more welfare!
- MCDA
  - Scale constraints can theoretically be built into analysis, with “threshold values” in native units that cannot be exceeded

Uncertainty and Complexity

- CBA
  - Uncertainty and complexity can be accommodated provided a monetary value can be estimated (i.e. “hold your nose” and keep going)
- MCDA
  - Can accommodate relative ordering, non-quantitative metrics

Efficiency

- CBA
  - Economic efficiency the ultimate decision criterion
- MCDA
  - Can include multiple dimensions of efficiency

The Economic Actor

- CBA
  - Rational economic actor, perfect information, utility maximizing
  - Fixed fully-formed preferences, unless DMV used
- MCDA
  - More flexible, but all optimization processes based on some form of preference elicitation

Stakeholders and the Public

- Neither method (CBA or MCDA) explicitly demands stakeholder or public engagement

Justice and Distribution

- CBA
  - Justice and distribution not a factor in CBA; handled via “Potential” Pareto Improvement and the political process
- MCDA
  - Can be explicitly factored into the analysis, although legitimacy will hinge on how criteria are developed, defined, and weighted

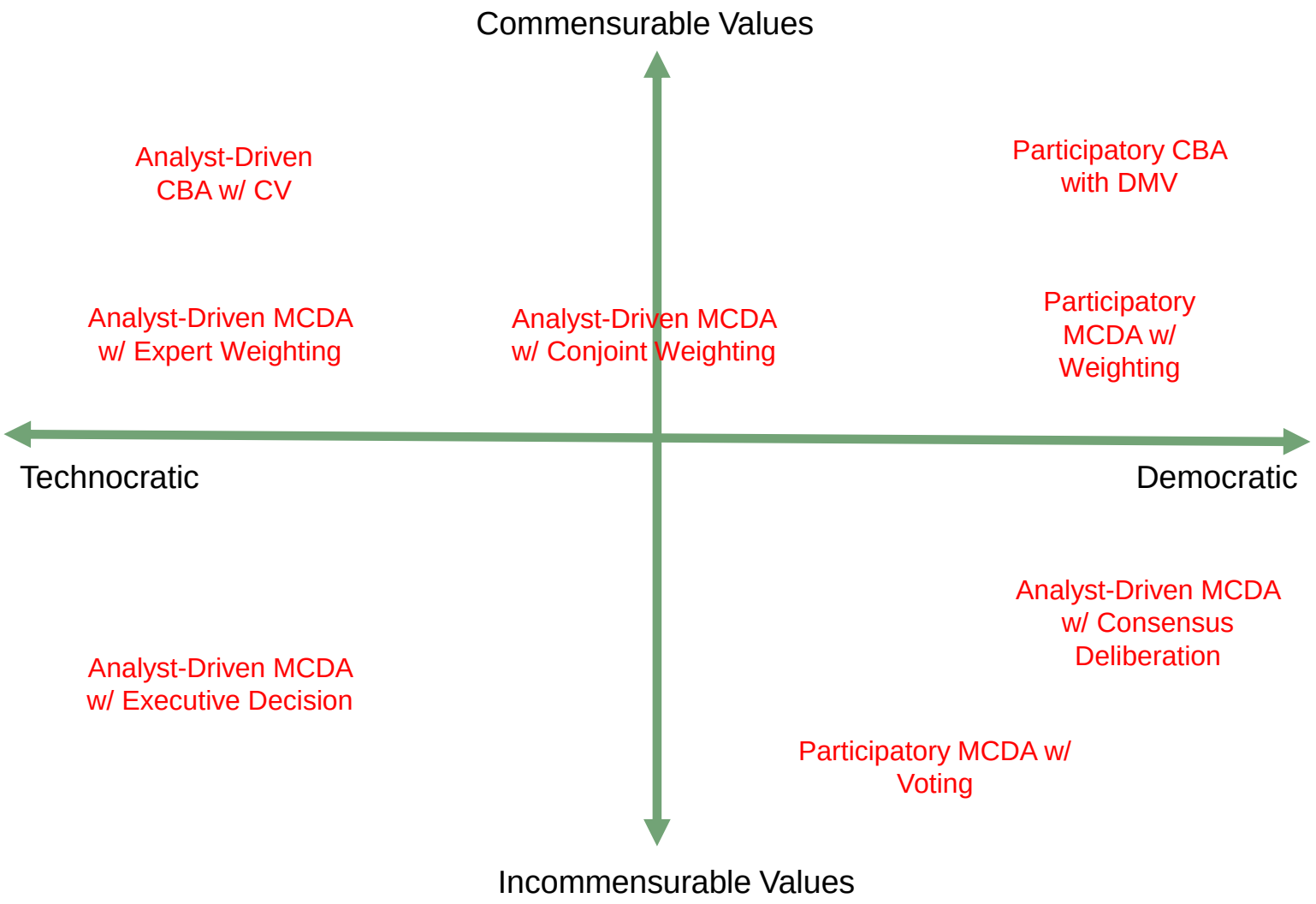
Time Preferences

- CBA
  - Requires some form of discounting to render cash flows comparable and commensurable
  - Could be constant (negative to positive) or varying (e.g. hyperbolic)
- MCDA
  - Discounting difficult as it is not a “market simulation”
  - Time preferences revealed implicitly through expert weighting, conjoint analysis, voting, deliberation, etc.

The Non-Human World

- CBA
  - Fundamentally views non-human world in utilitarian, instrumental terms, even when things like ”bequest” value are priced
- MCDA
  - Can accommodate lexicographic preferences, but only as part of larger decision process

Synthesis


Commensurable Values
Analyst-Driven
CBA w/ CV
Participatory CBA
with DMV
Analyst-Driven MCDA
w/ Expert Weighting
Analyst-Driven MCDA
w/ Conjoint Weighting
Participatory
MCDA w/
Weighting
Technocratic
Democratic
Analyst-Driven MCDA
w/ Consensus
Deliberation
Analyst-Driven MCDA
w/ Executive Decision
Participatory MCDA w/
Voting
Incommensurable Values

Conclusions

- Theory and practice are not the same thing…
- Applications of CBA and MCDA range along multiple spectra:
  - Democratic/technocratic
  - One versus multiple units of analysis w/ and w/o rank ordering
- Neither approach is inherently less prone to abuse
  - Shines a light on the legitimacy of the decision-making process more broadly
  - Optimization not always necessary

More Conclusions

- In a functioning democracy, “technical decision analysis” is one factor of many that lead to a decision (e.g. elected representatives, rule of law, public hearings, environmental review, etc.)

- Need to distinguish sociological critique of neoliberalism, monetization, instrumental rationality from the tools themselves in theory *and* practice
  - The “discursive” effects of CBA should not be underappreciated, e.g. “most efficient alternative”
  - Social learning and other deliberative outcomes important

Thanks!

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