

Decision-Making in Alternative Analysis

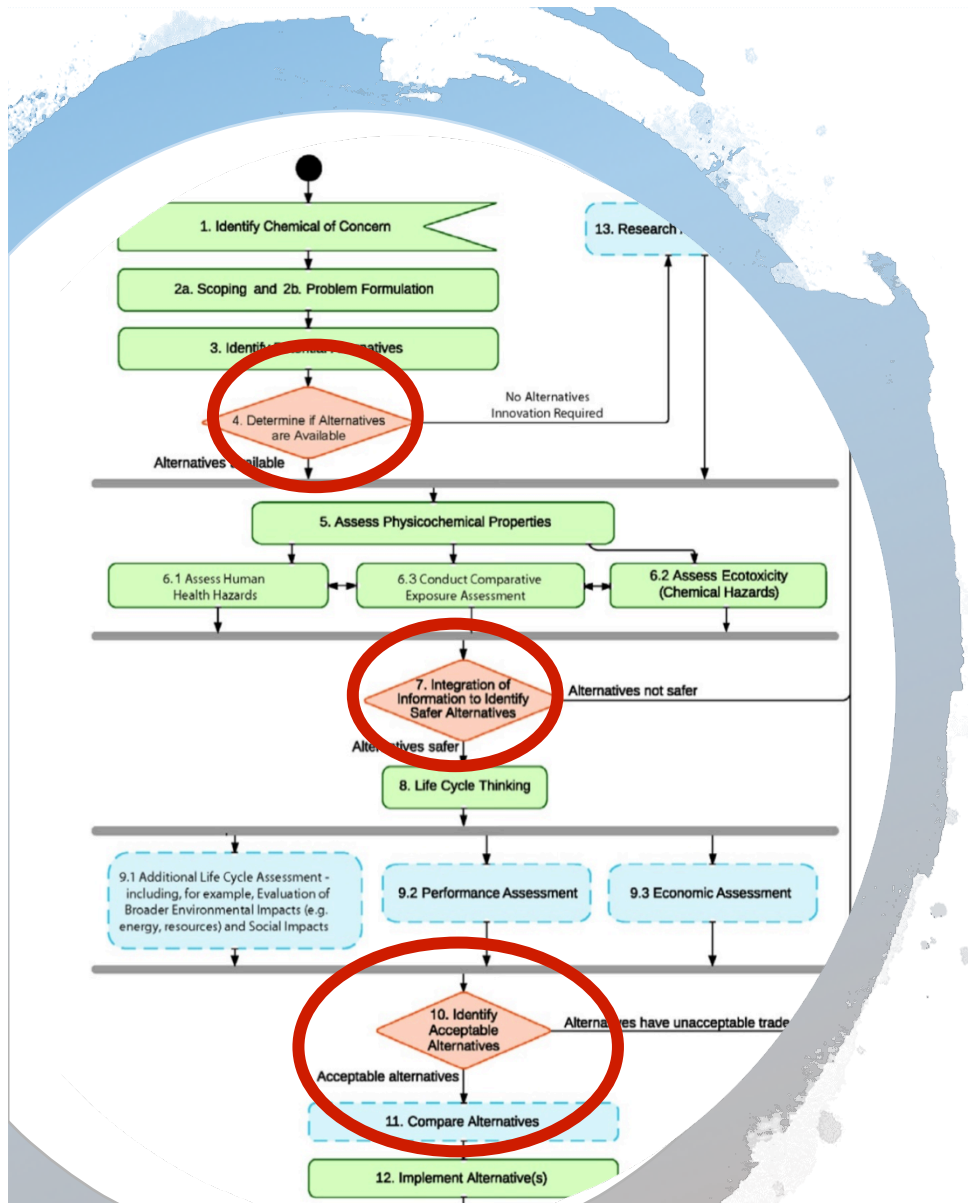
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November 1, 2018



Decision-Making

4 Questions in 12 Minutes

- When does it come up in AA?
- What are the challenges?
- How can decision analysis help (or hurt)?
- What makes for “good” decision-making?



When Does It Come Up In AA?

National Academy of Sciences, 2017



What Are The Challenges in Decision-Making?

- Cognitively Managing Multiple Criteria
- Articulating and Incorporating Weights (Values)
- Dealing with Uncertainty in Data and Values

Malloy, et al., 2017

How Can Decision Analysis Help (or Hurt)?

- Structuring Problems to Enhance Tractability
- Incorporating Uncertainty
- Evaluating Alternatives

“A systematic approach to
evaluating complex
problems and enhancing
the quality of decisions”

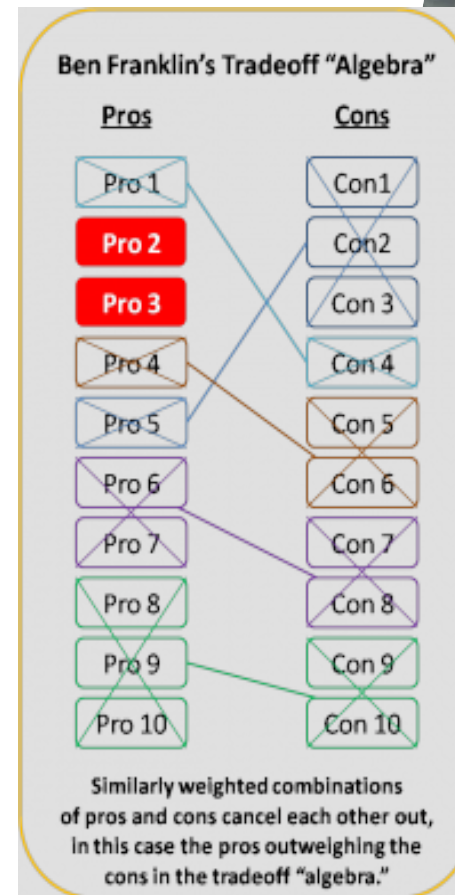
2011

Eason, et al.

Another Franklin Innovation



- “And tho’ the Weight of Reasons cannot be taken with the Precision of Algebraic Quantities, yet when each is thus considered separately and comparatively, and the whole lies before me, I think I can judge better, and am less likely to make a rash Step”





Canis, et al., 2010



How Can Decision Analysis Help (or Hurt)?

- Increase Complexity
- Increase Resource Burdens (Cost, Time, etc.)
- Displace Deliberation
- Provide Cover for Strategic Behavior



What Makes For “Good” Decision- Making?

- **Criteria Derived from Decision Analysis and Engineering**
 - Stability
 - Fitness with User Needs and Values
 - Resource Intensity
 - Tractability
- **Criteria Derived from the Law and Policy Disciplines**
 - Proportionality
 - Transparency
 - Rigor
 - Consistency

Malloy, et al, 2015

Principles for Developing AA Decision-Making Approaches

Different Tools
for Different
Decisions

Keep it Simple

Fit for Context

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Malloy, et al., 2017

