Selling the $1 Billion Car: Behavioral Economics and Public Value
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But Instead We Communicate Like This...

How Should We Make Decisions?
• Simple...
  – Figure out the time path of benefits to us
  – Calculate the present value of the future benefits (at the appropriate discount rate, of course)
  – Then compare that value to the costs of the project

How Should We Assess Risk?
• Simple...
  – Use expected value to calculate the best decision
  – The expected value of a random variable is the weighted average of all possible values, where the weights on each possible value correspond to the probability of that value occurring

\[ EV_D = p_1 O_1 + p_2 O_2 \]
Classical Decision Making and Expected Utility Theories

• As normative models, expected utility theory and classical decision making principles work fairly well
• As a positive model, it fails pretty miserably
  – Paradoxes
  – Bubbles
  – Preference Reversals

Decision Making Processes

• Deliberative
  – Rational planning, taking a long time and involving much analysis
• Automatic
  – Immediate, quick decision and involving emotion more than rational processes

Automatic Thinking Quiz

• If it takes 5 machines 5 minutes to make 5 parts, how long would it take 100 machines to make 100 parts?
  – A: 5 minutes
  – Most people answer 100 minutes

Behavioral Economics & Prospect Theory

• In the classical theories, individuals make decisions by weighing all alternatives equally by their final effects on wealth
• In prospect theory, decisions are a product of two stages
  – Editing
  – Evaluation
Editing

- Editing (sometimes called framing) seeks to simplify through organizing and reformulating options
  - Coding
    - Outcomes recoded as gains and losses defined relative to some reference point
    - Reference point can be affected by problem framing
  - Combination
    - Probabilities for identical (and similar) outcomes are combined

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Operations for organizing and reformulating decisions, continued

- Segregation
  - Riskless component separated from risky component
- Cancellation
  - Components shared by risky prospects are discarded
- Simplification
  - Probabilities are broadly estimated (a probability of 0.19 may be seen as a 1 in 4 chance)
  - Discarding of extremely unlikely outcomes (St. Petersburg Paradox)
- Detection of dominance

Implications of Prospect Theory: Decision Framing

- In a choice between alternatives, people often disregard components that the alternatives share and focus on components that distinguish the alternatives

Political “Decision Framing”?

- In the late 1990s/early 2000s, the political right in the US campaigned on a platform of “giving people their money back” through tax cuts
  - Establishes ownership of resources
  - Frames decision as “how much do I let somebody take from me?” versus “how do I invest in various public and private goods?”

Anchoring and Adjustment Bias

- People tend to bias their decisions based on a single piece of information
  - Example: When people are asked to guess the population of a city, they often compare it (usually erroneously) to the population of another city they know
- People tend to not “do the math” well in their heads when confronted with an emotionally based question

Example of Anchoring Bias

- The current national debt is $17.7 trillion. How much would each person in the nation have to pay extra in taxes each month in order to pay off the debt in 30 years?
  - A: $265.37 at 4% interest
  - How do you think your answer would change if I broke down the number to $55,666.38 per capita in the question?
My Current Research: Anchoring Bias and Referenda Language

- Think about it, this is exactly the way we solicit the willingness of citizens to pay for public services
  - Should the Beezlebub School District be allowed to issue $200 million in bonds to build a new school?

Availability Heuristic

- People predict the frequency of an event based on how easily an example can be brought to mind
  - Implication: Events that are more “vivid” tend to be overforecast versus those that are less vivid

Corollary of Availability Bias: Choice Architecture

- Notion of “choice architecture” forwarded by Thaler and Sunstein is based on the notion that the information available to people when they make a decision helps to frame it
  - Example: “Don’t Mess with Texas!”
  - Example: Opt-outs for 401(c) versus opt-ins

Loss Aversion

- People tend to be risk averse with respect to gains, and risk seeking with respect to losses

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Corollary of Loss Aversion: Status Quo Bias

- People tend to overweight their current allocation of resources
  - Current allocation becomes the reference point
- This produces highly inflected indifference curves (people have to be compensated a lot to shift from their current allocation of resources)
  - Application: It's very difficult to make large changes in resource allocation

Endowment Effect

- People who become “endowed” with an allocation of resources tend to demand more in compensation in order to part with the resources than they themselves would pay to acquire the resource in the first place
- Makes the concept of exchange less workable
  - Destroys the “Law of One Price”
  - Application: Be careful in giving people the impression that they “own” something.