A Theory of Narrow Thinking

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A New Approach to Narrow Bracketing

Economic decisions are made disjointly ("**narrow bracketing**")

- "We tend to make decisions as problems arise, even when we are specifically instructed to consider them jointly."

— *Kahneman (2011)*

Existing model of **narrow bracketing**

- **Directly imposing each decision is made in isolation**

This paper: **narrow thinking** approach to narrow bracketing

- Application: a "smooth" model of **mental accounting**
- Connect **mental accounting** with **narrow bracketing**

Narrow Thinking

Definition: Diff. decisions based on **diff. & non-nested** information

- When buying food, know food price, but not gasoline price & v.v.
- Psy foundation: bounded recall & "what you see is all there is"

Rep.: **Incomplete info**, common interest, game among multiple selves

- Each decision is made with imperfect perception of other decisions

Essence: Capture **difficulty in coordinating multiple decisions**

- As if each decision is made caring less about other decisions
- A smooth model of **narrow bracketing**

Narrow Thinking $\Longrightarrow$ Narrow Bracketing

A simple consumer theory example:

$$u(x_1, x_2, \vec{p}) = v(x_1, x_2) + w - p_1 x_1 - p_2 x_2$$

Narrow thinker: self i knows p_i & receives a noisy signal about other p_{-i}

A smooth model of **narrow bracketing**

$$\frac{\partial \hat{x}_i^{\text{Narrow}}}{\partial \hat{p}_i} = \omega_i \frac{\partial \hat{x}_i^{\text{Neglect}}}{\partial \hat{p}_i} + (1 - \omega_i) \frac{\partial \hat{x}_i^{\text{Standard}}}{\partial \hat{p}_i}$$

- $x_i^{\text{Neglect}}(\vec{p})$: complete neglecting the other decision

Intuition.

- x_{-i} not as responsive to p_i.
- Indirect effect through x_{-i} dampened.
- Effectively cares less about the other decision

Application: a Smooth Model of Mental Accounting

Application: mental accounting

- Separable, non quasi-linear utility. Interaction from the budget.

$$\sum_{i=1}^{N} v_i(x_i) + h\left(w - \sum p_i x_i\right)$$

- A smooth model of **mental accounting**

$$\frac{\partial \hat{x}_i^{\text{Narrow}}}{\partial \hat{p}_i} = \omega_i \frac{\partial \hat{x}_i^{\text{Explicit}}}{\partial \hat{p}_i} + (1-\omega_i)\frac{\partial \hat{x}_i^{\text{Standard}}}{\partial \hat{p}_i} \qquad \forall i,$$

- $x_i^{\text{Explicit}}(\vec{p})$: **explicit budget**, e.g. allocates \$100 to food
- **Intuition:** for $x_i^{\text{Explicit}}(\vec{p})$, each decision can be made in isolation

Narrow bracketing/**mental accounting**, by the same underlying friction

New predictions about what drives **the degree of mental accounting**

- Spending shares
- Cognitive limitations