



Measuring Constructed Preferences

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Why Measure Preferences?

- ◆ Prediction, e.g., consumer response to new products, used in product design and brand management.
- ◆ Guide decisions (Design), e.g.,
 - Input into cost-benefit analysis for environmental protection.
 - Aiding decisions such as selecting a college to attend.

The Standard View of Preferences

- ◆ It is assumed that “people have well-defined preferences among alternative bundles of goods...that people know their preferences, and that these preferences have the property of substitutability” (Freeman, 1993, p. 7).
- ◆ Most consumer survey research assumes that the answers given “reflect what was already on consumers’ minds” (Simmons, Bickart, & Lynch, 1993, p. 316).
- ◆ The “philosophy of articulated values” (Fischhoff, 1991)

The Constructive Nature of Preferences

- ◆ Preferences for objects of any complexity and novelty are often constructed - not merely revealed - in the generation of a response to a judgment or choice task.
- ◆ A variety of methods (heuristics) are used to construct preferences.
- ◆ Which method will be used is contingent upon problem (task and context), person (knowledge, ability, goals), and social context (accountability, group membership) factors that impact both the cognitive and emotional difficulty of decisions.

An example of constructed preferences: Protocol excerpts - CV responses (Schkade & Payne, 1994)

- ◆ "I uh was just thinking about how I make a donation to like maybe the Fraternal Order of Police or to uh MADD or different types of, of things that are for the good of our society..." (\$15)
- ◆ "Well, I usually give a small percentage of my income to charities... To charities I usually give no more than \$20, so that's how I arrived at my \$20 figure."
- ◆ "You'd have to consider how many millions of people in this country would also be contributing to this...and what is the cost of putting this netting over the different ponds."
- ◆ "I think \$500 is not very much to spend each year in taking care of our world"

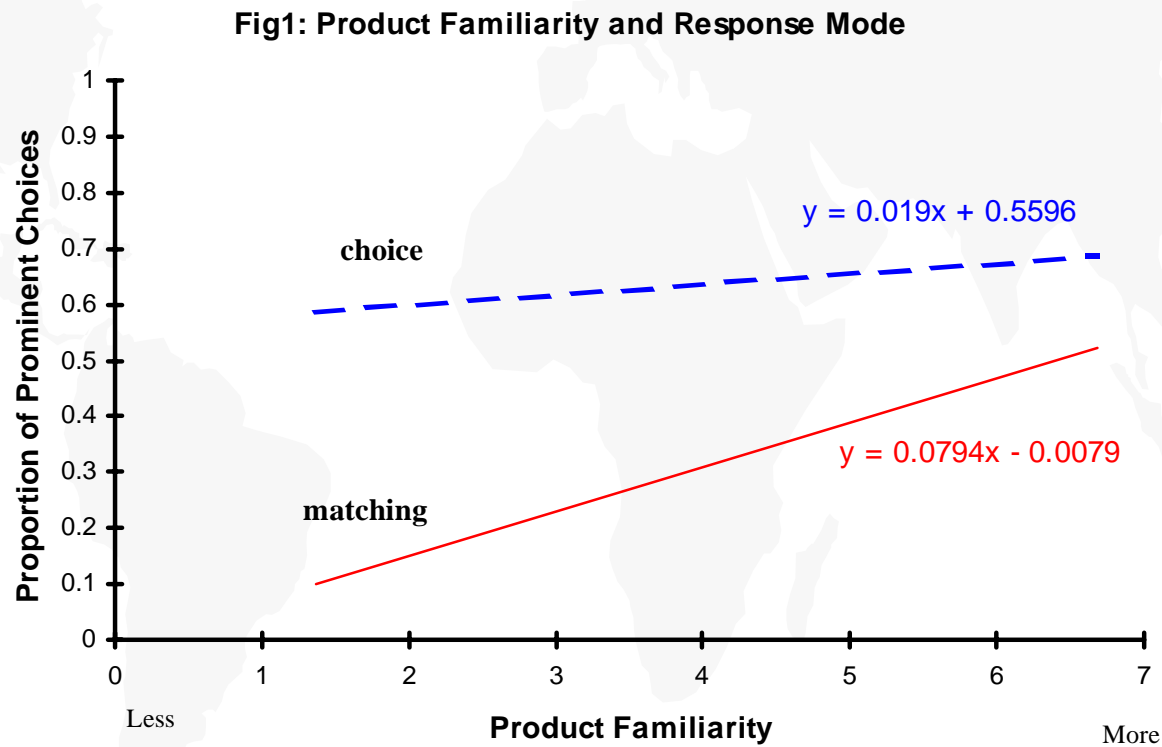
When asked how many other important issues they would be willing to support, the average was 2.9, with many indicating that their response should go for all similar issues.

Contingent Decision Behavior

The constructive nature of preferences implies, and is implied by, the fact that expressed judgments and choices are highly contingent upon seemingly minor changes in decision task and context.

- ◆ Response Mode Effects
- ◆ Information Display and Framing Effects
- ◆ Asymmetric Dominance and Context Effects
- ◆ Cruel Choices - The Effects of Emotion on Decisions

Product Familiarity and Response Mode Effects



Coupey, Irwin, & Payne, JCR, In press

Packing, Unpacking, Descriptions of Goods & Events

- ◆ $WTP(\text{Good A}) + WTP(\text{Good B; given A}) > WTP(\text{Good A+Good B})$ - “Adding-up Effect” (Baron & Greene, 1996).
- ◆ $P(H_{\text{acq}}) + P(H_s) > P(H_{\text{acq}} + H_s) > P(H)$ - “subadditivity” (superadditivity) - Rottenstreich & Tversky, 1997; Fox, Rogers, & Tversky, 1996.
- ◆ *Alternative descriptions lead to different (systematic) judgments of value and probability.*
- ◆ *Explanations - availability, anchoring & adjustment.*
- ◆ *What is being valued (assessed) is the description of the good (event) rather than the good or event itself.*
- ◆ *Measures of value are contingent upon (arbitrary) often subtle variations in the descriptions of goods.*
- ◆ **Optimal unpacking? - Rosch and the idea of basic levels of categorization of objects, e.g., the costs involved in purchasing a consumer product.**

Asymmetric Dominance or the Attraction Effect

Attribute 1

(e.g.,
ride
quality)

A

$$P(B:A,B,C) > P(B:A,B)$$

Violation of ‘regularity’

Holds for real as well as

hypothetical choices

*Increases with an “accountability
manipulation.*

- Choice as the search for reasons.

B

C

Attribute 2

(e.g.,
miles per
gallon)

See, Huber, Payne, & Puto, 1982; Simonson, 1989; Simonson & Tversky, 1992)

“violations of context dependence indicate that people do not maximize a precomputed preference order, but construct their choice, in light of available options” (Tversky, 1996, p. 17).

Cruel Choices

- ◆ People find some tradeoffs more difficult than others. There are “cruel choices” (Russell, 1990), and “protected values” (Baron & Spranca, 1997).
- ◆ When forced to make a cruel choice, people experience negative emotions.
- ◆ **Coping with cruel choices involves -**
 - **Protest responses**
 - **Avoidant choices**
 - **Increased use of noncompensatory processes. As a consequence, there are increased preference (response mode) reversals with more difficult tradeoffs.**

A Model of Preference Construction

- ◆ Problem Representation (Encoding)
 - Mental Models
 - Analogy
 - Decision Frame
- ◆ Information Search and Interpretation
 - Use of both internal (memory-based) and external information
 - Human processing limitations require selectivity. The decision is only how to be selective.
 - Information is often encoded in relation to a reference value.
- ◆ Information Combination (Tradeoffs)
 - Use of noncompensatory strategies for both cognitive and emotional reasons.
- ◆ Expression of Preference (mapping from value to response)
 - The mapping of even established values onto response scales that do not correspond to the way values are represented in memory may result in error (Gregory, et al., 1993)

Types of Construction Faults

- ◆ Problem Representation
 - Inappropriate Analogies
 - Unpacking (Embedding)
 - Fallacy of One
 - Frame Highlights & Shadows*
- ◆ Information Search & Interpretation
 - Concreteness, focusing illusion
 - acceptance principle
 - arbitrary reference points
 - context effects
- ◆ Evaluation
 - Avoidance of tradeoffs
 - Range insensitivity
 - Quantity insensitivity
- ◆ Expression of Preference
 - Compatibility
 - Scale use errors, including anchors and midpoint bias.

**Thinking harder often will not solve a problem representation (framing) fault. One must shift frames.*

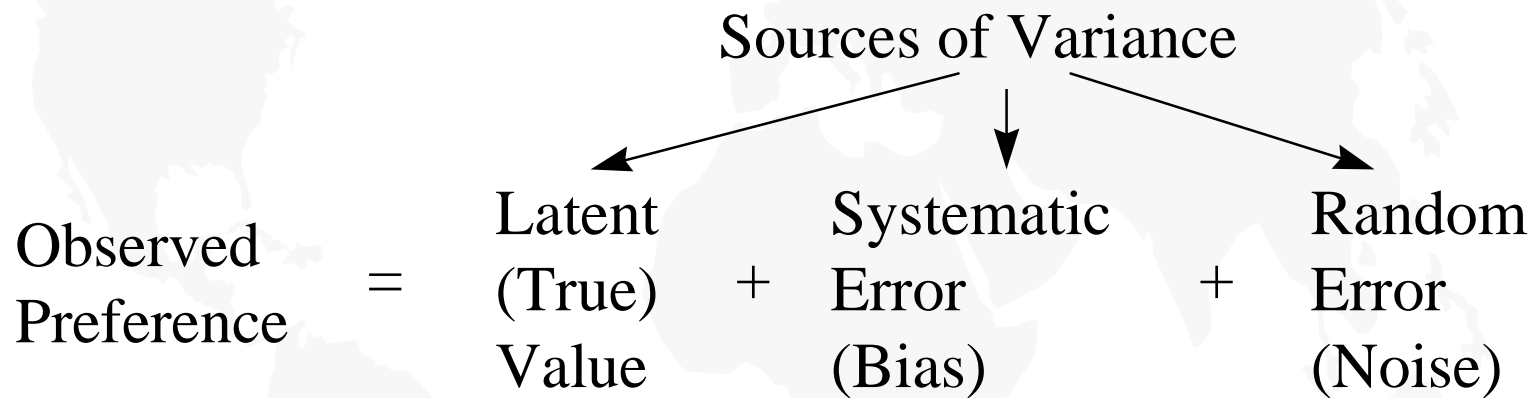
Conditions Leading to Constructed Preferences

- ◆ People are more likely to have “crystallized” values when issues are familiar, simple, directly experienced, and people have the opportunity to think.
- ◆ A prior preference will be retrieved from memory, perhaps used as an anchor value, when it is a) more accessible, b) more diagnostic, and (c) other values are less accessible and diagnostic.
- ◆ Relative use of information in stimulus versus memory depends on goals like the minimization of cognitive effort , task factors like stress levels, and individual difference factors like familiarity.

Implications of A Constructed (Contingent) Preferences Perspective

- ◆ The process of preference measurement may be more like that of an architectural project, building a defensible expression of values, rather than an archaeological project, carefully uncovering well-defined values that are there. (Gregory, Lichtenstein, & Slovic, 1993).
- ◆ The measurement of preferences is inherently reactive, and therefore the results are somewhat arbitrary.
- ◆ The goal of the measurement process matters a lot. With prediction we want a good match. With design we want “defensible” expressions of preference.
- ◆ A “building” code is needed for the measurement of constructed preferences.

A Measurement Perspective



True (Signal) > *Bias (Noise)*
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Building Codes

- ◆ History - 1700 BC - on.
- ◆ Often developed to meet specific problems, e.g., fires. Also developed to ensure uniformity of construction.
- ◆ Issues addressed include 1) design (goals and plans), 2) materials, and 3) procedures.
- ◆ Different codes for different uses, e.g., residential vs educational, and different locations.
- ◆ Building codes tend to be either performance (minimum performance) or specification (materials and procedures).

Examples from judgment and decision areas - NOAA panel report, the criminal justice system.

Nature of a Well-Constructed Preference

- ◆ Correspondence (Predictive Validity)
 - Focus of market research
- ◆ Coherence (Construct Validity of Outcomes)
 - e.g. NOAA panel ‘requirement’ that CV results show adequate responsiveness to the scope of the environmental insult (the scope test).
 - Sensitivity to relevant manipulations of the objects and insensitive to irrelevant manipulations.
 - Multitrait- Multimethod Approach
- ◆ Process Validity
 - e.g., NOAA panel requirement that the task be understood properly and that the reasons for the response indicate “economic” type choices.
 - e.g., Slovic (1995) “truth ultimately resides in the process”, one that is transparent, logical, and free of arbitrariness. Frisch and Clemen argument for thorough processing and the making of tradeoffs. Sunstein’s argument that more weight in a democracy should be given to preferences that are reached “with a full and vivid awareness of available opportunities, with reference to all relevant information, and without illegitimate or excessive constraints on the process of preference formation”.

Overcoming Construction Faults: Principles for Good Preference Construction

- ◆ Focus on process design. That is, ensure that either a “good” process or a “matching” process is used.
- ◆ Provide tools and time for thinking, as well as the materials for thinking, i.e., information.
- ◆ For design tasks, do more with fewer respondents.
- ◆ Design a system that only requires of people those things that they can do well.
- ◆ Explicit anchors (effects, biases) are better than implicit ones.
- ◆ Method and context pluralism (frame shifting)
- ◆ Manipulation Checks.

Some Specific Techniques for Construction - 1

- ◆ Explicitly encourage people to think of multiple alternatives, events, and objectives.
 - Breadth is often better than depth, particularly under time constraints.
 - Expand option set, use of value ladders.
 - Look for robust problem frames
 - Make clear the difference between means (proxy) attributes and ends (fundamental) values.
- ◆ Aid and check understanding of information.
 - Use of common, anchored scales, e.g., behavioral anchored scales in performance appraisal.
 - Provide experts
 - Provide forums for asking questions and discussing issues. Consult others.
 - Manipulation checks

See Fischhoff & Furby (1988) for more on the elements of a “good” description of a transaction to be valued.

Robust Frames

Tversky, 1996

- ◆ Prob 1: Choose
 - A (10% unemployment + 12% inflation)
 - B (5% unemployment + 17% inflation)
 - ◆ Prob 2: Choose
 - C (90% employment + 12% inflation)
 - D (95% employment + 17% inflation)
 - ◆ Although $B > A$ and $C > D$, when both frames were presented the responses were closer to unemployment frame.
- ◆ Prob 1: Buy a ticket
 - Lost ticket (\$20)
 - Lost \$20
 - ◆ Prob 2:
 - Lost \$20
 - Lost ticket (\$20)
 - ◆ $P(\text{Ticket}|\text{lost } \$20_1) = P(\text{Ticket}|\text{lost } \$20_2)$ vs.
 - ◆ $P(\text{Ticket}|\text{lost ticket}_1) < P(\text{Ticket}|\text{lost ticket}_2)$
 - ◆ Juxtaposition of two frames favors “lost \$20 frame”.

Robust frames for design, matching frame for prediction.

Some Specific Techniques for Construction - 2

- ◆ Require explicit tradeoffs
 - Require consideration and judgments of more than one option - “never fall in love with just one house, fall in love with three”
 - Provide time for thinking
 - Provide tools for thinking
 - ◆ multi-attribute utility analysis
 - ◆ social judgment analysis.
 - Ask for a series of questions relating changes in X to preference, e.g., WTP amounts.
- ◆ Ask questions in multiple ways (triangulation).
- ◆ Ask follow-up questions such as confidence and reasons. (Asking for verbal reports is a skill).
- ◆ Ask for reconciliation of inconsistencies.
 - Liability as an asset in that it can provide an opportunity for the decision maker, with the help of an analyst, to think hard about the inconsistencies and gain insight in to the decision (creative stress) (von Winterfelt & Edwards, 1986)

Multiple Response Modes

- ◆ Under financial incentive, when asked to respond to pairs of gambles using two of three (AR, StP, & Sell Price) response modes simultaneously
 - ◆ Merge preferences, reduction in preference reversals
 - ◆ Shift in preference greatest for selling price mode.
- Ordonez, Mellers, Chang, & Roberts (1995)*
- ◆ Tversky, Sattath, & Slovic (1988) report that when asked to reconsider their choice and matching inconsistencies, all respondents modified the matching in the direction of choice, and a few reversed the original choice in the direction of matching. They caution, however, that this may just be a compromise response, not a re-thinking of values.

Matching Information Environments

- ◆ Good task analysis, that is, substantive knowledge of the context in which the “real world” decision is made
- ◆ Understanding of how specific task and context variables, e.g., time horizons, impact preference construction.

For prediction, the important issue is the extent to which the preference construction process during the measurement task parallels that which occurs in the real world, see Simmons, Bickart, & Lynch, 1993. Wright and Kriewall (1980) refer to this as equivalent “states-of-mind”.

Directions for Research

- ◆ Understand processes of preference construction. Focus at least as much on the cognitive biases of preferences as on motivational biases (Green, Jacowitz, Kahneman, & McFadden, 1995).
- ◆ Test robustness of alternative frames, response modes, etc.
- ◆ Test alternative tools for constructing better built preferences, e.g., use of value ladders and multiattribute utility analysis.

Conclusions

- ◆ **Preferences are often constructed, and are highly contingent. The sources of bias are often cognitive, not just motivational. In general, psychology “is still grappling with how to handle situations in which people might not know what they want” (Fischhoff, 1995, p. 21).**
- ◆ **We will need to work harder and smarter in the assessment of preferences. We do have some “tricks-of-the-trade” that can, and should be, used. Often, explicit thinking aids and tools will need to be provided.**
- ◆ **We need to be sensitive to the purpose of the valuation task. For instance, do more with fewer respondents in design tasks.**
- ◆ **We should be modest about our ability to measure preferences as inputs into techniques like cost-benefit analyses.**