

Psychology and Economics¹

14.13 Lecture 20: Malleability and inaccessibility of preferences

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Plan for today: Malleability and inaccessibility of preferences

- (1) Telling more than we can know (Nisbett and Wilson, 1977)
- (2) Some background on eliciting willingness to pay (Becker et al., 1964)
- (3) Coherent arbitrariness (Ariely et al., 2003)

Do we understand our higher-order cognitive processes?

- Many questions about the cognitive processes underlying our choices, evaluations, judgments, and behavior
 - Why do you like him/her?
 - How did you solve this problem?
 - Why did you take this job?
- Nisbett and Wilson (1977) tell us that we have no idea!

Example 1: Classic “Two-String Problem” experiment by Maier (1931)

- Two cords hung from the ceiling of a lab with many objects such as poles, ring stands, clamps, pliers, and extension cords.
 - Subjects told that task is to tie the two ends of the cords together.
 - Problem: cords placed far apart from each other such that subject can't, while holding onto one cord, reach the other.
- Subjects usually come up with one or two solutions (e.g. use extension cord) easily. They are then told to “do it a different way”.
- Subjects struggle until Maier “accidentally” put some cords in motion. They then figure out the solution within next 45 seconds.

Maier's (1931) "Two-String Problem"

Due to copyright restrictions, we aren't able to include the video "Functional Fixedness." You can watch the video on [YouTube](#).

Note: Focus on the first 2.5 minutes of the video.

How did you come up with this idea?

- How did subjects come up with the idea of using a pendulum?
 - “It just dawned on me.”
 - “It was the only thing left.”
 - “I just realized the cord would swing if I fastened a weight on it.”
- Particularly peculiar answer by Harvard psychology faculty subject:
 - “Having exhausted everything else, the next thing was to swing it. I thought of the situation of swinging across a river. I had imagery of monkeys swinging from trees. This imagery appeared simultaneously with the solution. The idea appeared complete.”
- But we *know* that people came up with the idea because Maier made them notice it!

Example 2: Presence of others on helping behavior

- Latane and Darley (1968) experiments on impact of bystanders and witnesses on helping behavior
 - The more people who overhear someone in another room having what sounds like an epileptic seizure, the lower the probability that any given individual will rush to help.
 - Similar results for individuals' reaction to dangerous-looking smoke coming out of the ceiling of a room.
- Yet subjects consistently claim that their behavior had not been influenced by the other people present.
 - “We asked this question every way we knew how: subtly directly, tactfully, bluntly. Always we got the same answer.”
- But these are randomized experiments. We *know* that some subjects were influenced by the presence of other people!

Example 3: Erroneous reports about position effects

- Studies on the effect of positioning of items on consumer evaluation
 - Passerby asked to evaluate clothing: quality and preferences
 - Pronounced left-to-right position effect: right-most object heavily over-chosen
 - Randomize positioning of items
- Why did people choose what they chose?
 - No subject ever mentioned the position of the article in the array.
 - Virtually all subjects denied it when asked directly about a possible effect of the position of the article.
 - Subjects came up with all sorts of other reasons that explain their choices.

Summary of Nisbett and Wilson (1977)

- Many instances in which subjects have no idea why they choose what they choose.
- People appear to make up stories that are based on their a priori, implicit causal theories.

Two common experimental design tools

- (1) Strategy method
- (2) Becker-DeGroot-Marschak (BDM) procedure for eliciting valuations

Behavior in (rare) contingencies

- Common interest in experiments: how would people behave in many different (rare) contingencies?
- Why do we care about behavior in rare contingencies?
 - Often such contingencies are inherently important.
 - Examples: disasters, earthquakes, droughts, etc.
 - Events in rare contingencies can affect events in likely contingencies.
 - Example: if your roommates think that you'll punch them in the face if they borrow your stuff without asking, they won't do so.
 - So the punching is rare but important—that's exactly because they don't borrow your stuff!

Strategy method

- The method of eliciting behavior in many, potentially rare, circumstances by asking subjects what they would do, with the choice implemented if the circumstance arises.
- Since the decision does count if the contingency occurs, subjects have an incentive to choose correctly for each contingency.
- Also useful for multiplying the amount of data generated from an experiment.
 - Give a subject many decisions.
 - Ask the subject to make a choice in each.
 - Then, one choice is randomly selected to “count”.
- Evidence suggests that strategy methods elicit individuals’ “true preferences”.

Becker, DeGroot and Marschak (1964) procedure

- Commonly used for eliciting valuations so there is an incentive for truth-telling.
- Elicit willingness to pay (WTP) for a good:
 - Subjects are told that a price for the good will be randomly selected.
 - Then they are given a sheet with several prices and decide whether to 'buy' the good for each price.
 - Revealing one's true valuation is incentive-compatible.

\$0.50	buy ✓	not buy
\$1	buy ✓	not buy
\$1.50	buy ✓	not buy
\$2	buy ✓	not buy
\$2.50	buy	not buy ✓
\$3	buy	not buy ✓
\$3.50	buy	not buy ✓
\$4	buy	not buy ✓
....		
\$10	buy	not buy ✓

Other variants of BDM

- There are different BDM variants.
- A different, more direct version: The subject formulates a bid.
 - Bid is compared to a price determined by random number generator.
 - If the subject's bid is greater than the price, he or she pays the price (*not* the announced WTP!) and receives the item being auctioned.
 - If the subject's bid is lower than the price, he or she pays nothing and receives nothing.
- Key element: Final price a person must pay is *independent* of what the person indicated as her WTP.

Tom Sawyer and the Fence

Due to copyright restrictions, we aren't able to include the video "Tom Sawyer Fence." You can view it on [YouTube](#).

Making it up as we go along

- Two key components of individual decision-making:
 - (1) *Utility functions* (preferences)—what people want or care about.
 - (2) *Beliefs*—how people perceive themselves and patterns in the world.
- Understanding these is important because people (presumably) try to act in a way they perceive leads to what they want.
- Our approach: study preferences and beliefs pretending people are always sharply aware of what they want and believe, and costlessly make plans based on this.
 - A homeowner may have reference-dependent preferences, but she always knows what she prefers and can act on it.
 - A person may have the wrong theory of the world, but she always has some beliefs in mind that she uses to make choices.
 - A smoker may act sub-optimally, but he always has a fully specified strategy in mind for all his current and future decisions.

Reality check

- In reality, we don't have preferences, beliefs, and all possible decisions made up and readily available to us at all times.
- Rather, we construct, reconstruct, and recall these things only at times when they're necessary.
- The short summary is that people “make things up as they go along.”
 - Choices are made one by one based on preferences and beliefs evoked at the moment.
 - These choices are often sensitive to the features of the momentary environment and set of options considered.

Humans' search for meaning... and preferences

- Almost all economic models assume that when making choices, people draw on some well-defined preferences (utility).
 - Assumption so ingrained that we almost never notice or mention it.
- But often people don't really know how much they (dis)like things.
 - How much is the utility of a 30-inch rather than a 24-inch monitor worth to me?
Not sure.
- When asked to make a decision, people try to “construct” (make up) their preferences on the spot.
- Because they're fundamentally unsure about their preferences, this construction process can often be manipulated by even irrelevant cues.

Ariely et al. (2003): Anchoring

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TABLE I
AVERAGE STATED WILLINGNESS-TO-PAY SORTED BY QUINTILE OF THE SAMPLE'S
SOCIAL SECURITY NUMBER DISTRIBUTION

Quintile of SS# distribution	Cordless trackball	Cordless keyboard	Average wine	Rare wine	Design book	Belgian chocolates
1	\$ 8.64	\$16.09	\$ 8.64	\$11.73	\$12.82	\$ 9.55
2	\$11.82	\$26.82	\$14.45	\$22.45	\$16.18	\$10.64
3	\$13.45	\$29.27	\$12.55	\$18.09	\$15.82	\$12.45
4	\$21.18	\$34.55	\$15.45	\$24.55	\$19.27	\$13.27
5	\$26.18	\$55.64	\$27.91	\$37.55	\$30.00	\$20.64
Correlations	.415	.516	0.328	.328	0.319	.419
	$p = .0015$	$p < .0001$	$p = .014$	$p = .0153$	$p = .0172$	$p = .0013$

The last row indicates the correlations between Social Security numbers and WTP (and their significance levels).

Figure: Average stated WTP sorted by quintile of

- (Sloan!) MBA students shown several products
- Asked whether they would be willing to buy each good for a price equal to the last two digits of their social security number.
- Then implemented BDM procedure to elicit WTP for the items.
- Students with high last two digits of their SSN are willing to pay significantly more for the items!

Coherent arbitrariness

- Next, Ariely et al. (2003) conducted an influential experiment on people's incomplete access to preferences.
- Elicited “willingness to accept” (WTA), i.e. how much they'd have to be paid, to endure unpleasant sound for different lengths of time.
- Why did they use an unpleasant sound?
 - They could provide subjects with a sample.
 - There is no market price for annoying sounds, so subjects had to rely on their own preferences to determine their WTAs.
 - It is easy to change the quantity of the experience.

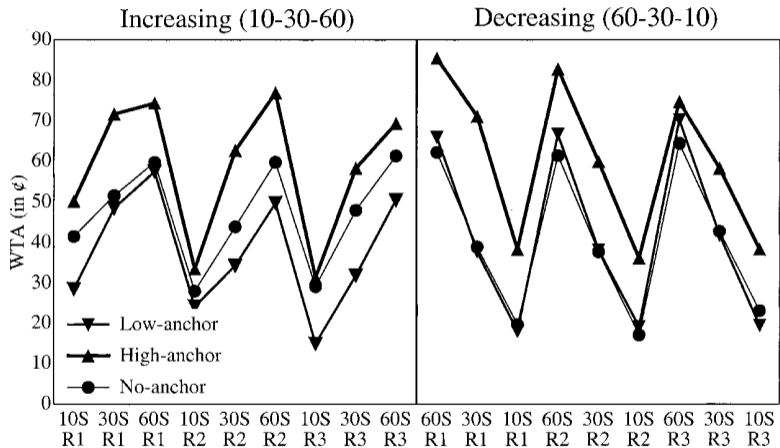
Eliciting WTA to listen to noise

- Procedure
 - (1) Subjects listened to a 30-second sample of the noise.
 - (2) They answered whether, *hypothetically*, they'd be willing to listen to the noise for another 30 seconds for X cents.
 - (3) Their WTAs for 10, 30, and 60 seconds were elicited (using a BDM procedure).
- Experimental manipulation: vary X across subjects
- If people knew their (fixed) preferences, X should not matter. Why?
 - People have all the info they need from (1). They listened to the sound themselves!
 - (2) is only a *hypothetical* choice that is *not* implemented and thus irrelevant for (3)
- Why might X matter anyway?

Coherent arbitrariness

"COHERENT ARBITRARINESS"

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Two patterns

- **Arbitrariness:** WTAs depended strongly on X .
 - For $X = 50$, mean WTA: 59.6 cents
 - For $X = 10$, mean WTA: 39.8 cents.
- **Coherence:** WTAs also highly sensitive to duration in the expected direction.
 - Mean WTA for 10, 30, and 60-second sounds were 28, 49, and 66 cents, respectively.
- How do we interpret these results?
 - (1) Preferences can be influenced by irrelevant cues (e.g. an arbitrary initial question).
 - (2) But once people state a preference, related preferences are consistent.

Potential concerns

- (1) Subjects might take X as a “hint” from the experimenter as to how bad the sound is.
 - Variant in which X was generated by the last two digits of the subject's social security number.
 - Still, they found a correlation between X and subjects' WTA's.

- (2) Are stakes too low?
 - The authors also repeated the experiment with ten-fold stakes, and got the same results.

Coherent arbitrariness

- Evidence consistent with idea that subjects are searching for their preferences.
 - (1) They don't quite know their 'true' WTA for the sound (arbitrariness).
 - (2) But they know how the WTAs should relate to each other (coherence).

Ain't that work?

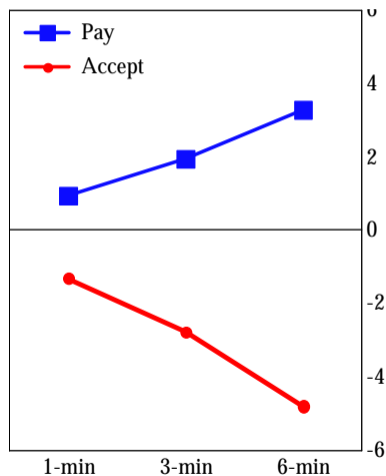


Image is in the public domain.

Related: The Tom Sawyer experiment

- Subjects told that in a week's time their professor (Ariely) would be conducting poetry reading from Walt Whitman's "Leaves of Grass."
 - Half were asked whether hypothetically they'd be **willing to pay** \$10 to listen to Ariely recite poetry for 10 minutes.
 - The other half were asked whether hypothetically they'd be **willing to accept** \$10 to listen to Ariely recite poetry for 10 minutes.
- All then indicated their monetary valuations for 1, 3, and 6 minutes of poetry reading.

What is students' true WTP/WTA?



- Subjects don't know whether the reading is good or bad.
- But they know that either way more of it requires more money.

Summary

- Do individuals have stable preferences?
 - People don't seem to have clear preferences for goods and experiences, and construct their preferences on the spot.
 - They are influenced by environmental cues in a way that doesn't necessarily reflect the true utility from the good or experience.
 - Introspect: what things in the world make you genuinely happy?
- Series of experiments demonstrate coherent arbitrariness.
 - Clean manipulation of desired choice context, rich variation of quantities and anchors
 - Can deal with confounds one by one.
- Do these effects matter in the real world?
 - Likely less important in settings where people have experience
 - But in many settings, two features of the economic environment can influence the formation of preferences: prices and choice sets
 - Additional field evidence from a high-stakes setting would be nice

What's next?

- Monday (May 4): Poverty
 - Please read Mani et al. (2013)
- Wednesday (May 6): Happiness and mental health

Guest lecture on happiness and mental health (May 6)



References used in this lecture I

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