

Instances to Populations
(Nisbett and Ross)

- Sample size; e.g. more weight to personal recommend than to mean of many evaluations
- Sample bias – don't appreciate importance of random selection
 - Questioner vs Respondent intelligence
 - Prison guard study – made inference even when told atypical

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Covariation as flawed anchor
(Nisbett and Ross)

- From four-cell tables
People can't do it = use only prep/prep cell or post 2 cells – but need all
- Illusory correlation
 - With no theory, people don't detect much co variation
 - Around $r = .85$ to $.9$ before use upper half of 100pt scale
 - When theory at outset, detect a correlation even when little really exists – shows people use theories, not data

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**II. Research on intrinsic motivation
and flow**

Connections for Interaction Designers

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Brief Description of Utility Theory

- Utility has a diminishing return
- Weber-Fechner law of psychophysics
- Traces to Bernoulli's observation of marginal diminishing returns

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Expected Utility Theory

Expected Utility weighs risk:

- Probability * Outcome = Expected Utility
- 80% chance * \$100 = \$80
- Risk aversion-sure gains preferred
- \$80 for sure > 80% chance * \$100

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Descriptive Choice: Prospect Theory

- Replace u with value function, V defined in gains and losses
 - In EUT, are no gains and losses, only final assets
 - Based on 2 psychophysical principles
 - We adapt to status quo – so we can easily adapt new reference points
 - Explains why defined on gains and losses from reference
 - We are more sensitive to changes near reference – explains the curvature of the function – both sides are steepest near origin
 - E.g., quickly adapt to illumination in dark room and more noticeable if add a little light at first
 - Steeper loss curve = loss aversion

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Descriptive Choice: Prospect Theory

- Very low probability either grossly overweight or neglected
- Explains gambling and insurance
 - overweight of probability means risk aversion for loss (insurance)
 - Risk seeking for gain (gamble)

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Descriptive Choice: Prospect Theory

- framing and editing: defines acts, outcomes, and contingencies
 - coding: determines reference and define above items
 - often status quo, but may be an expectation
 - rounding and simplification: combing nearly identical outcomes
 - cancellation of common components
 - elimination dominated options
- A given change in p means endpoints has bigger impact than in middle
 - Because most sensitive to changes mean reference point – and 0 or 1 are both natural reference points

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Intertemporal Choice

Problems that arise in decisions made over time

- Discount delayed rewards
- Problems of aggregation
- The need to plan
- Predict future taste
- Impatience and self-control

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Mental Accounting

The way individuals and households make trade-offs

- Understanding mental accounting helps understand choice
- Mental accounting rules are not "neutral"
- They influence what people believe they have and can afford.

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Mental Accounting

- Violate economic notion of fungibility (money has no labels: money is one #).
- Instead, money in one account is not a substitute for money in any other account.
- Marginal Propensity to Consume (MPC) sensitive to current income

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Three Broad Categories of Mental Accounts

- **Current Income Account** Routinely spent
– checking account, cash $MPC = -1.0$
- **Asset Account** For Saving
– Savings, stocks, bonds, housing $MPC = \text{less than } 1$
- **Future Income Account** Rarely spent
– Future income, retirement $MPC \text{ nearly } 0$

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Consumption tied to current income

- Spending patterns not smooth
- Changing Social Sec benefits (1965 to 85)
 - Over 15 increases, always announced 6-8 wks in advance
 - Consumer spending rose after benefits arrive, not when announced
- Similar for anticipated payroll taxes (AER)

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Consumption excessively tied to current income

- Save by transferring to less tempting mental account
- Small gains coded into current income (and spent)
- Larger gains enter assets account where MPC is lower

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Mental accounting

- A realized loss is more painful than a paper loss
 - Selling stocks: ought to sell losers (tax), but sell winners (Odean)
- Sunk costs
- Theatre series goers

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Mental accounting of gains, losses, costs, and debts can be tricky:

- Health clubs
 - Dues charged twice a year
 - Attendance highest in the month dues are paid, declines for 5, and jumps back up
- Credit card debts (while in possession of money in savings)

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**Budgeting in Different Accounts
“labeling effects”**

- In organizations - one dept constrained while another tries to spend
- Spent \$50 on basketball game / parking ticket: Buy ticket for a play? (control: basketball free)

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**Budgeting in Different Accounts
“labeling effects”**

- Dutch families that receive child allowance payments:
 - Spending on Children's clothing much more sensitive to changes in designated allowance than to other income sources
- Ocean Spray
 - \$1 coupon. On that Ocean Spray vs. "any item" in the store

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A Gamble

- Imagine that you have the opportunity to play a gamble that offers a 50% chance to win \$2000 and a 50% chance to lose \$500. Would you play the gamble?
- (43%)

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A Gamble

- Now suppose that you have the opportunity to play the gamble five times, not just once. Would you play it five times? (63%)
- Would you prefer to play the gamble five times or six times? (6:70%)

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A Gamble

- Suppose you played the gamble [50% chance to win \$2000 and 50% chance to lose \$500] five times, but you don't yet know your wins and your losses.
- Would you gamble a sixth time? (40%)
- As long as don't have to watch each single trial ...

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Discount over Time
(Lowenstein and Thaler)

- People should discount money at market interest rate of r
- Many don't – e.g. overpay taxes and teachers take 12 month salary
- 3 findings
 - r declines with time to wait
 - r declines as reward increases
 - r for gains much greater than r for losses – unwilling to pay much to delay a fine
- since r changes with time, reference not consistent – utility curves may cross
 - e.g. Christmas clubs and fat farms

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Discount over Time
(Lowenstein and Thaler)

- reference points
 - loss aversion: pay less to speed up annual from 4 to 1 week than demand to delay from 1 to 4
 - past consumption sets reference – so prefer increasing consumption profile because don't trust self to save
- savoring and dread lead to negative discount rate

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Diversification

- Students selecting among 6 snacks
 - Sequential choice: pick one on each of 3 consecutive weekly class meetings
 - Simultaneous choice: on first meeting select 3 snacks to be consumed one per week over 3 class meetings
 - More variety seeking in simultaneous choice condition (64% chose 3 different) than sequential (9%)

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