Disclaimer

- These slides are posted solely to accompany Matthew's lectures at the 2022 Russell Sage Summer Institute in Behavioral Economics.
- They are not edited carefully as stand-alone notes, and are not intended for general circulation.

July 13

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- Relates to a theory theme I'd like to flag:

$\looparrowright$

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Theory A:	.5	.6	.7	.5	.4	.6	.6	.4	.7	.6
Theory B:	.4	.4	.4	.5	.4	.4	.4	.5	.4	.4
The data:	.1	.4	.2	.4	.1	.3	.3	.4	.1	.4

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    - Do they explain the biases we are talking about?

Decision Neglect & Narrow Bracketing

Life's a bitch _________, and then ________ you die.

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- Gained much more focus recent years.

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  - We'll argue not full story.

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- But they are absolutely central for understanding risk preferences.

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- If merely reminding you of a possibility changes your choice?

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- This is **Decision Neglect**.

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- How many $10 dictator games did person to left play yesterday?

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- How many $10 dictator games did person to left play yesterday?

Note: Unclear these are mistakes, since unclear what true social pref.

Decision Neglect and Narrow Bracketing

Social preferences: Suppose choice between:

- 15 apples for self and 0 for an anonymous other vs. 9 for self and 4 for that same anonymous other.

Would you choose (0,15), or (4,9)?

- Why?

Could take the 15 apples and split them up any way you want.

- Didn't prevent you from own allocation choices afterwards.
- (0,15) isn't your final allocation if you don't want it to be.
- Why not turn (0,15) into (6,9)?

And what's up with the dictator games?

- How many $10 dictator games did person to left play yesterday?

Note: Unclear these are mistakes, since unclear what true social pref.

- But raises challenges to models people have developed.

Decision Neglect and Narrow Bracketing

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Decision Neglect and Narrow Bracketing

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- Experimenters bring into focus relevant pies to pay attention to, and the relevant set of people to split it among.
- But more generally in life such focus happens by accident, by the design of others, and occasionally by our own design.

Narrow Bracketing

Decision Neglect and Narrow Bracketing

Narrow Bracketing

Two general approaches to showing that people "narrowly bracket":

Decision Neglect and Narrow Bracketing

Narrow Bracketing

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- Direct—show people don't combine problems they'd be better off combining.

Decision Neglect and Narrow Bracketing

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- Direct—show people don't combine problems they'd be better off combining.
- Indirect—combine presumptive facts about "background noise" to argue calibrationally that observed choices are "too non-linear" to be consistent with integrating with unobserved other parts of life.

Decision Neglect and Narrow Bracketing

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Two general approaches to showing that people "narrowly bracket":

- Direct—show people don't combine problems they'd be better off combining.
- Indirect—combine presumptive facts about "background noise" to argue calibrationally that observed choices are "too non-linear" to be consistent with integrating with unobserved other parts of life.
  - Note:"Indirect" shows simultaneously that people don't even narrowly bracket in as wise a way as they could.

$\hookleftarrow$

Decision Neglect and Narrow Bracketing

Direct:

- Tversky and Kahneman (1986)

Decision Neglect and Narrow Bracketing

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- Note particularly the instructions' use of "concurrent" and the request to FIRST examine both decisions.
- Following presentation slightly simpler form than TK.
- Also, RW make clearer the "independence" of the two lotteries.

Decision Neglect and Narrow Bracketing

Choose between:

Decision Neglect and Narrow Bracketing

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Decision Neglect and Narrow Bracketing

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  - Indication 1: same % as when choosing only 1 pair!

$\hookleftarrow$

Decision Neglect and Narrow Bracketing

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Decision Neglect and Narrow Bracketing

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Decision Neglect and Narrow Bracketing

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Decision Neglect and Narrow Bracketing

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Decision Neglect and Narrow Bracketing

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- Clearly a mistake.

Decision Neglect and Narrow Bracketing

Reminder:

Decision Neglect and Narrow Bracketing

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Decision Neglect and Narrow Bracketing

Reminder:

- Much/**most** of what has been called NB or cousins (e.g., myopic loss aversion a la Benartzi and Thaler) may be rational news utility.
- But this form of narrow bracketing is (almost) surely an error.

$\hookleftarrow$

Rabin and Weizsacker Replication

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Decision Neglect and Narrow Bracketing

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Slight reformulation (instructions make independence salient), scaled-down real stakes (paid 100% of time)

"You face the following pair of concurrent decisions.

Decision Neglect and Narrow Bracketing

“You face the following pair of concurrent decisions. First examine both decisions, then indicate your choices, by circling the corresponding letter.

Decision Neglect and Narrow Bracketing

"You face the following pair of concurrent decisions. First examine both decisions, then indicate your choices, by circling the corresponding letter. Both choices will be payoff relevant, i.e. the gains and losses will be added to your overall payment."

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Decision (i): Choose between
A. sure gain of £2.40
B. 25% chance gain £10.00, 75% chance gain £0.00.

Decision Neglect and Narrow Bracketing

"You face the following pair of concurrent decisions. First examine both decisions, then indicate your choices, by circling the corresponding letter. Both choices will be payoff relevant, i.e. the gains and losses will be added to your overall payment."

Decision (i): Choose between
A. sure gain of £2.40
B. 25% chance gain £10.00, 75% chance gain £0.00.
Decision (ii): Choose between
C. sure loss of £7.50
D. 75% chance lose £10.00, 25% chance lose £0.00.

$\hookleftarrow$

Decision Neglect and Narrow Bracketing

Results:

A and C	21%
A and D	28%
B and C	11%
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Decision Neglect and Narrow Bracketing

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So 28% choose the joint lottery

$$AD : (-\$7.60, 0.75; +\$2.40, 0.25)$$

over the first-order stochastically dominating lottery

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- All other examples, large-scale hypotheticals match PT better.

$\hookleftarrow$

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Decision Neglect and Narrow Bracketing

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Decision Neglect and Narrow Bracketing

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  - AD: 75% chance lose £7.60, 25% chance gain £2.40.
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  - but complete gibberish as preferences.

Decision Neglect and Narrow Bracketing

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- But:
  - I don't believe we'd see the same violations for large real stakes.

$\hookleftarrow$

Decision Neglect and Narrow Bracketing

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- So we've learned something about how powerful it is.

$\hookleftarrow$

Decision Neglect and Narrow Bracketing

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Decision Neglect and Narrow Bracketing

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Decision Neglect and Narrow Bracketing

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  - Almost surely is exhibited massively in non-campus life.

$\hookleftarrow$

Decision Neglect and Narrow Bracketing

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Intuition is quite simple, and does not depend on risk-lovingness.

- Any change in risk attitudes, in sense of not having constant absolute risk aversion, exposes to dominance.
- If take risk in range where less risk averse, but turn down same risk in range where more risk averse, could do better by flipping.

Decision Neglect and Narrow Bracketing

Suppose

Decision Neglect and Narrow Bracketing

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- CE of 50/50 (\$30,\$70) $\approx$ \$48 $\rightarrow$ pay \$2 to avoid risk

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- CE of 50/50 (\$30,\$70) $\approx$ \$48 $\rightarrow$ pay \$2 to avoid risk
- CE of 50/50 (\$0,\$40) $\approx$ \$14 $\rightarrow$ pay \$6 to avoid risk.

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So for same risk:

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- Sometimes you'll refuse to pay \$3, other times pay \$5 to avoid.

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I offer you 50/50 (\$30,\$70) vs. \$47, and you choose (\$30,\$70).

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I offer you 50/50 (\$30,\$70) vs. \$47, and you choose (\$30,\$70).

- You don't pay \$3 to avoid risk.

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I offer you 50/50 (\$0,\$40) vs. \$15, and you choose \$15.

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I offer you 50/50 ($30,$70) vs. $47, and you choose ($30,$70).

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I offer you 50/50 ($0,$40) vs. $15, and you choose $15.

- You pay $5 to avoid risk.

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So you choose 50/50 (\$45,\$85).

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So you choose 50/50 (\$45,\$85). But you could have had (\$47,\$87).

$\hookleftarrow$

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An underestimate of variability of stock portfolio:

- 2% of time $\Delta \in [-.01\%, +.01\%]$ (uniform), 98% outside
  14% of time $\Delta \in [-.1\%, +.1\%]$ (uniform), 86% outside
  83% of time $\Delta \in [-1\%, +1\%]$ (bellish), 17% outside.

$\hookleftarrow$

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Bracketing calibrations ... If have 2:1 loss aversion over total changes in wealth *today* ... what should be reaction to individual bets?

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- Whatever modest-scale risk aversion appears not consistent with integrating these

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  - 50% chance 7.50 going to poorer guy!

Decision Neglect and Narrow Bracketing

- Given symmetric beliefs by C, $Exp\{\triangle Min[W_A, W_B]$ from $(7.50, 3.75)\} \geq p3.75 + \frac{1-p}{2}3.75 + \frac{1-p}{2}7.50$, where $p \equiv prob(|W_A^{init} - W_B^{init}| \leq 3.75)$.

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Cognitive Biases

So far we've done:

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- "quasi-maximization" models that posit that at each moment in time a person is constrained-maximizing a well-defined utility function—just not the 'right' one.

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What does the 'quasi' mean?

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What does the 'quasi' mean?

- resembling; seeming; virtual; some, but not all, the features of

$\looparrowright$

Cognitive Biases

- Before outlining errors, an aside ...

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An aside on Managed Funds

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- Suppose that you observed the following advertisement, in its entirety from a brokerage firm that will advise you on stocks:

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- Suppose that you observed the following advertisement, in its entirety from a brokerage firm that will advise you on stocks:

"We value you, the client."

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An aside on Managed Funds

- Suppose that you observed the following advertisement, in its entirety from a brokerage firm that will advise you on stocks:

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- What would you infer from this statement?

$\looparrowright$

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Now what do you think "We value you, the customer" means?

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Now what do you think "We value you, the customer" means?

- It probably means that the mutual fund lost to the market last quarter.

Was my question unfair?

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- Maybe, maybe not.

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- Those that have something good to report, report.
- Those who don't, tell you how valuable you are to them.

Cognitive Biases

What signals people "pay attention to" may play a huge role in inference.

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- We'll get at a bit at end.

$\looparrowright$

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Suppose that all 414 of them saying they value you lost to the market average last quarter.

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What obvious inference would you make from the three different ads.

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Suppose that all 414 of them saying they value you lost to the market average last quarter.

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What obvious inference would you make from the three different ads.

- What is the quality of a fund that advertises it has beat the market two quarters in a row vs. the other two categories?

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Probably ... they are of the same quality. They are all probably average.

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- Why?

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Very close to the distribution you'd get if they were all average.

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Very close to the distribution you'd get if they were all average.

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I haven't given much to go on, and probably there is a clever way to infer difference in quality.

- But I'd argue these statistics are suggestive that all funds are average.

↬

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- Logic of financial markets should tell them not to search for patterns

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2. Inattention (notice the missing adjective...)
    1. *Subjectively* rational inattention and **perceived benefits** of attention.
    2. **What are we thinking when we're not paying attention**

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1. (3) Manski Mania!

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- Although now with so much attention to rational inattention, subculture of economists who do the opposite.

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Many combos of circumstances and biases yield over-strong beliefs.

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- How people's probabilistic judgments might be distorted.
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  - Underweighting priors when processing new information

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- We'll come back to inference problems.

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  - Bet 50 cents on day's 3-digit draw, and winners get 52% of total bets (this is typical state cut).
  - If $\frac{1}{10}$% people bet on a number, it pays \$260. More than \$260 means $< \frac{1}{10}$% bet on it; less than \$260 means $> \frac{1}{10}$%.

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Within Week:	*$349*
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E.g., 25% fewer bet on number if won in last 2 weeks. Expected return 34% higher betting on recent winners than recent losers.

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		45-55%	75-85%
$N = 10$	true	25%	4%
	people think	20%	6%
$N = 100$	true	68%	$\approx 0\%$
	people think	22%	5%
$N = 1000$	true	$\approx 100\%$	$\approx 0\%$
	people think	21%	5%

$\looparrowright$

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- But first, aside central to our experiment

↬

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Probabilities {0-909,910,911-1000}?

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- People don't realize that 911-1,000 never happens.

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A tale of two tables **presenting the same data**:

$\hookrightarrow$

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Sample of (h,t)	$h+t$	$h-t$	Median $P(\theta = \frac{3}{5} \| h, t)$	Proper $B(\theta = \frac{3}{5} \|$
5,0	5	5	.92	.88
7,2	9	5	.77	.88
11,6	17	5	.64	.88
19,14	33	5	.60	.88
3,0	3	3	.85	.77
4,1	5	3	.80	.77
6,3	9	3	.67	.77
10,7	17	3	.60	.77
2,1	3	1	.63	.60
3,2	5	1	.60	.60
5,4	9	1	.55	.60
9,8	17	1	.54	.60

Cognitive Biases

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Sample of (h,t)	% heads	Median $P(\theta = \frac{3}{5} \| h, t)$	Proper $B(\theta = \frac{3}{5} \| h, t)$
5,0	100%	.92	.88
3,0	100%	.85	.77
4,1	80%	.80	.77
7,2	78%	.77	.88
6,3	67%	.67	.77
2,1	67%	.63	.60
11,6	65%	.60	.88
3,2	**60%**	**.60**	**.60**
10,7	**59%**	**.60**	**.77**
19,14	**58%**	**.60**	**.88**
5,4	55%	.55	.60
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- **Note:** sometimes underinference, underconfidence

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- More generally: How and when GF$\longrightarrow$ HH.

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↬

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    - Not just about narrow bracketing.

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- NBLLN does **not** explain Samuelson's colleague.
  - Samuelson's theorem *does* extend to Barney! An EU/DMU(W) Barney who rejects one gamble will reject many independent plays. Probably more so than Tommy!

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- Evening MBA students: 64% take single, only 75% take 100 repetitions.

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- Answer: they're not as smart as Samuelson's Colleague

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- We think it is clear that this isn't "narrow bracketing" in way usually thought of. It is all about Barney.

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- You might be left with wrong impression from BRN ...

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    - Subjects' with priors 90% chance heads biased, given sample of $(6h, 4t)$, posteriors $< 90\%$.

$\looparrowright$

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