

Lecture 11 Higher Order Cognition

- Choice blindness experiment — give survey, give same survey but flip questions → half of ppl don't realise → they explain the opposite choice
- Choice illusion!

#1 Concepts and Categories

— How to categorise

* 2 principles of **cognitive economy**

1. **Reduce discrimination** — reduce number of labels

→ MacBook ThinkBook Surface ... → laptop (when type doesn't matter)

2. **Informativeness** — allow inference about members of that category.

→ Product? → laptops!

— Balancing the two — use base category → zoom in or out if necessary.

#2 Hypothesis testing

→ Guess the set of numbers: 2, 4, 6. You are allowed to test hypothesis by giving other three numbers → ppl: 8, 10, 12 aka even numbers — but actual set is just 2.

* **Confirmation bias** — tendency to look for positive results and confirming evidence rather than disconfirming ones.

* **Evolution theory** — adaptive brain → better for natural selection? Is cheater detection evolved?

#3 Decision Making

Prospect Theory by Kahneman & Tversky (Nobel Prize!)

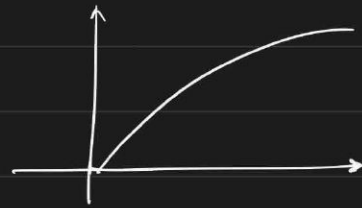
↳ Value function, risk function, reference points

* Value function

* Diminishing sensitivity -
higher base value, less
attention to change

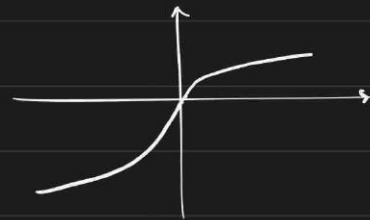
→ \$10 + \$10 - good

→ \$1,000,000 + \$10 - meh



* Loss aversion - feel worse
upon loss than gain of the
same amount

→ +\$1000 - \$1000 - ☹️



* Framing effect - describe in terms of gain ☺️ /
describe in terms of loss ☹️

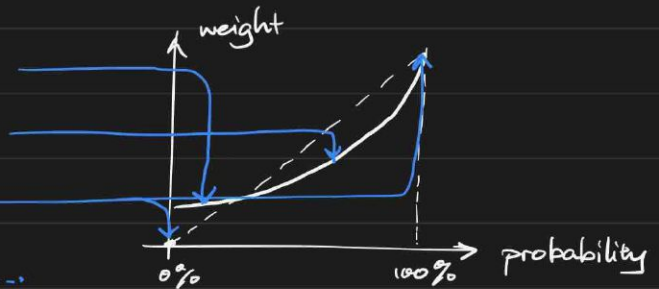
* Risk Function - ppl tend to:

- overestimate small percentage

- underestimate larger percentage

- (certainty is exception)

→ Applicable: lotteries, medical warning...



* Reference point

- Influences how loss and gain are defined

→ Tricking ppl - put worse toaster for higher \$\$, then ppl
more likely to buy better toaster for less \$.

#4 Bounded Rationality

Limited cognitive resources → we make mental shortcuts

- * **Availability of info** — based frequency estimation on exposure to info
 - Do more ppl die from shark attack or hit by falling airplane parts? — ppl say shark attack (lots of news report), which is the opposite of what's true.
- * **Fluency**
 - Hard to read stock names predicted to be of bad performing stock
- * **Representativeness**
- * **Anchoring** — random number affect irrelevant guesses
- * **Affective heuristics** — emotion affect judgement
 - How much you would donate to save 10 baby seals? } ppl give same amount
 - 100 . . . ? }