**Lecture 16: Expected Utility**

- **Problems with the EU theory:**
- Often doesn't fit to empirical data.
- Leads to various paradoxes
- "Sunk cost" fallacy → When a significant investment has been made, people feel compelled to continue with the task/idea regardless of how successful it appears to be, e.g. Concorde airplane.
- Probabilities and utilities used to calculate the expected utility may be subjective and based on our own experience → could represent individual beliefs.
- Savage (1954) developed **subjective expected utility theory** → Can think of expected utility theory as a normative theory – what people should do, given certain assumptions.
- Post et al (2008) studied 151 German, Dutch and US episodes of Deal or No Deal.
- Bank offers usually below expected value, but improve over rounds.
- Average accepted offers: 76% (Dutch), 91% (German, or US) of Expected value
- "Losers" and "winners" take more risks.
- **Did Tyson (bloke who took $23,500 deal when he had $100,000 in his case) make a bad decision?**
- Outcome would have been better if he made a different choice → Therefore could call his a bad decision
- But his decision making could be considered just fine → Reached his goal, took an offer of 90% of expected value at the time and had to do the best he could with the information he had
- We engage in **Satisficing** (Simon, 1955):
- Decision-making operates under information and cognitive constraints.
- Research focuses on **how** people make choices between options, especially under uncertainty.
- **What do people really do?**
- Tversky & Kahneman (1974) suggested we had various heuristics and biases.
- We have various biases in judgments:
- Tend to be over-confident
- Tend to be loss aversive.
- The framing of a problem is critical.
- Influenced by information that may be dubious
- We have these heuristics and biases because they are adaptive.
- **A bias: Overconfidence**
- For a number of years CFOs of large corporations were asked to predict the S&P index over the next year (11,600 estimates).
- **No correlation** between estimate and actual S&P (Kahneman, 2011).
- Also asked to estimate a value they were 90% sure S&P would not be higher than, and 90% sure it would not be lower.
- Should only be 20% "surprises" – actually 67%
- **A need for some overconfidence?**
- Confidence in decisions climbs as more information is obtained, even if information is dubious.
- However, an under-confidence bias may be even more problematic → May never make any decisions.
- This overconfidence bias is greater in more difficult tasks.
- Estimating our potential productivity (e.g., "I can do the assigned paper in 3 hours, no problem") can get us into trouble, but maybe encourages us to start.
- **Heuristic decision making:**
- Tversky & Kahneman (1974) emphasized use of heuristics to make up for lack of information
- Strategies that can be applied easily to a wide variety of situations and often lead to reasonable decisions
- Substitute answerable for unanswerable questions → e.g. 'Is it going to rain today?' (potentially unanswerable) can be substituted for 'Is the sky dark?', which can be answered.
- Not guaranteed to work → they provide plausible conjectures, but not irrefutable conclusions.
- **Availability heuristic:**
- Judgments based on ease with which relevant instances can be retrieved from memory.
- E.g., Estimate in 7 seconds how many flowers, or Russian novelists you could name in two minutes.

- Whatever comes to mind first you assume to be greater → e.g. is the letter 'r' more commonly the first or the third letter in words?
- **Can lead to systematic errors:**
- You are considering buying a car and place a high value on reliability.
- Reliability surveys show that car X is the most reliable.
- But then you run into someone who had an X, and it was a total lemon → what do you do now?
- **Ease or amount retrieved?**
- Schwarz, et al (1991) → First asked participants "list 6 or 12 instances in which you behaved assertively"
- Then "Evaluate how assertive you are"
- Those asked to retrieve 12 retrieved more than those asked for 6 but found it harder.
- Participants in 6 condition rated themselves as more assertive.
- Schwarz et al removed effect when participants told that background music would reduce fluency.
- **Slovic, Fischhoff, & Lichtenstein (1979):**
- Participants rated which of a pair of causes of death was more likely.
- Consistent errors: – drowning is as likely as death in fires, but death by fire is perceived as considerably more frequent.
- Airplane crashes, cancer, botulism, earthquakes rated more likely than causes that kill many more people → probably due to media coverage.
- Has real consequences:
- Driving is more dangerous than flying, but people may drive because they perceive flying as more of a risk.
- **Representativeness heuristic:**
- People use a representativeness heuristic → If something or someone appears to fit a category, you will use what you know about that that category to make judgments.
- Like availability, representativeness relies on basic cognitive process (similarity assessment).
- We seem to follow a law of small numbers

Lecture 17: Bias

- We tend to ignore **base-rate** information (e.g. there are 100 sales people for every librarian) but if a person is described in a way that people think fits a librarian (**representativeness**) then people will say it is more likely that the person is a librarian.
- People tend to ignore base-rate information, even if it is explicit.
- Tversky & Kahneman (1974): you are at a party, – 70% of the people lawyers, 30% engineers.
- Then "Bob" described, who sounded like an engineer.
- Most said Bob was an engineer with high probability, regardless of base-rate.
- Neutral description, then 50-50
- Tversky & Kahneman (1981) found many people reject a 50-50 bet in which they can win $200 but lose $100.
- Choose between:
- - A sure gain of $240 (84% choose this)
- - 25% chance to gain $1000, and a 75% chance to gain nothing (16% choose this)
- We weigh prospect of losses more heavily.
- Investors to sell gains and hold losses.
- **Prospect Theory:**
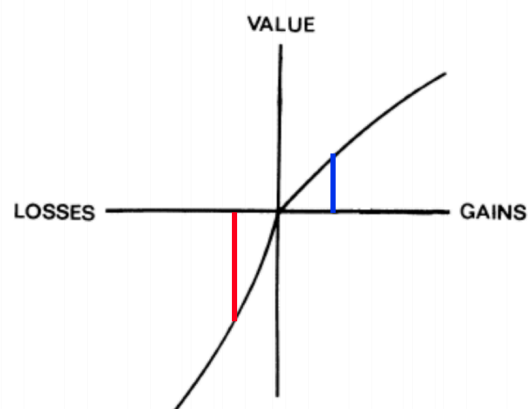
- The line is steeper for losses than gains, i.e. the subjective value of a loss for an equivalent gain is more significant.
- However what is classified as a gain or a loss varies between individuals.
- **Sellers vs. Choosers:**
- Sellers are given decorated mug to keep and asked how much they are willing to sell it for.
- Choosers are asked how much money they would find as attractive as the mug.
- I.e. both groups are being asked to evaluate the value of the mug.
- However the perspectives of people in the two groups differs:
- Sellers "lose" their mug and placed a higher price on it, chooser "gain" a mug and set the price lower.
- **Endowment effect:**
- Place higher value on what's mine → Bias may be adaptive because losses could threaten survival.
- **Framing effects:**
- People are less willing to choose an option framed as a loss.
- For example, organ donation rates are far higher in countries where you have to opt out of the decision compared to countries where you have to opt in.
- People who have to opt in feel like they are giving up something, i.e. taking a loss.
- **Why marketers might create a product nobody wants**
- It makes options worth more money look better in comparison.

$59 Economist.Com sub: 16	$59 Economist.Com sub: 68
$125 Print-only: 0	$125 Print & web sub: 32
$125 Print & web sub: 84	
Total subs: $11,444	Total subs: $8,012

- Humans are good at comparisons but not good at absolute evaluations.
- **Anchoring and adjustment:**
- When we find ourselves in a certain position we set our 'anchor' there and judge subsequent choices relative to this established position.
- We tend to choose things that are small but tangible improvements from this anchor.
- **Adaptivity:**
- We have limited memory, cognitive capacity, and time, so make the best decisions we can rather best that are possible.
- Use fast & frugal heuristics → E.g., recognition heuristic
- If I recognize one city but not other, say "bigger".
- One cue decision making, so spend no time looking for more information.
- Works because recognition is an ecologically valid cue: we encounter the names of large cities more than small ones.

Lecture 18: Social Cognition

- Social cognition is the study of how people make sense of social situations.
- 27% of people believe that Obama was 'definitely not' or 'probably not' born in the U.S.
- 41% were Republicans.
- **Models of the Social Thinker: Naïve Scientist**
- Gather evidence to test hypothesis
- What does the birth certificate say?
- Is the birth certificate authentic?
- Are there other sources of evidence? (Birth announcements in newspapers, etc.)
- **Models of the Social Thinker: Cognitive Miser**

- Use heuristics (cognitive shortcuts)
- The experts say that the birth certificate is authentic
- My friends all think Obama was born in the US
- **Models of the Social Thinker: Motivated Tactician**
- Be strategic
- Choose among strategies based on goals, motives
- Motivated scepticism:
- I like Barack Obama, he should remain as President… the birth certificate is authentic
- I don't like Barack Obama, he shouldn't be President… the birth certificate is a forgery
- **Some Take-Home Messages from Social Cognition Research:**
- People create their own reality
- Our understanding of the social world is influenced by our beliefs, goals, and feelings.
- Situational cues can have powerful effects on our thoughts, feelings, and behaviour
- **Automatic vs. controlled processes:**
- Intentionality: Is an act of will necessary to set the process in motion?
- Unconscious tasks are unintentional.
- Awareness: Is one consciously aware of the process?
- You are not consciously aware of an unconscious task.
- Controllability: Is one able to stop the process once it is operating?
- You don't have control over an unconscious task.
- Efficiency: how many attentional resources does the process take?
- Unconscious processes are very efficient.
- Driving is **not an automatic process** as it fails the awareness and controllability criteria.
- **Priming:**
- Priming effect → The unintended influence of prior experience on judgment, thought, or behaviour
- Priming technique:
- The presentation of a stimulus that activates a concept in memory.
- **Priming Effects on Social Judgment (Higgins, Rholes, & Jones, 1977):**

Primed with:

"reckless" or "adventurous" ⟹ Read passage about Donald ⟹ Rated Donald
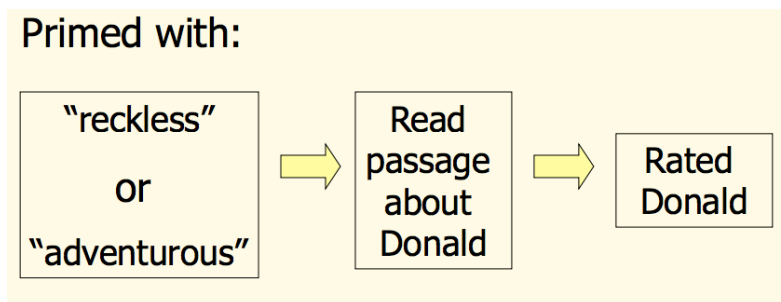
- Results:
- Participants primed with "reckless" rated Donald more negatively than participants primed with "adventurous"
- Thus, the trait categories that had been previously primed were used to interpret the ambiguous information.
- **Probing for suspicion and awareness:**
- Involves asking participants about their suspicions about the experiment → whether they had guessed hypotheses and were trying to give 'ideal' answers etc.
- **Probing for subliminal awareness:**
- Stimuli can be displayed for short durations below conscious threshold.
- Participants can then be asked if they say the stimuli, what the stimuli was etc.

Lecture 19:

- Whether or not a prime has an effect depends on how applicable the prime is to the target.

- **Banaji et al., 1993:**
- If the target is a woman the prime should only have an effect if that prime is stereotypically associated with women.
- Primed subjects with aggressive or neutral behaviours.
- Participants either read an aggressive or neutral prime and then read about 'Donald' and rated Donald's aggression or read about 'Donna' and rated Donna's aggression, i.e. man vs. woman.
- For a female target (Donna) there was no effect of the prime on the rating on Donna's aggression (i.e. neutral or aggressive prime didn't matter).
- For a male target (Donald), the target was rated as more aggressive following an aggressive prime than a neutral prime → because men are stereotypically associated with aggression.
- Primed information was only used when it was relevant to the target.
- **Effects of pornography:**
- 30 macho and 30 androgynous men (classified on the basis of Bem Sex Role Inventory – examines correlations with gender norms)
- Androgynous is a mix of masculine and feminine traits.
- Masculine traits: self-reliant, assertive, etc.
- Feminine traits: sympathetic, gentle, etc.
- Participants were shown either a pornographic film or a control film.
- They then had an interview with an attractive woman.
- **Results - Rating of Sexual Motivation:**
- For androgynous men, there was no effect on sexual motivation based on what film they watched.
- For macho men, there was significantly higher sexual motivation for those who watched the porn film.
- **Rating of interpersonal distance:**
- For androgynous men, there was no effect of the prime.
- For macho men, there was significantly more movement towards the interviewer for those who watched the porn.
- **Recall measures – Participants were given time to write down as much as they could remember about the interview:**
- Priming significantly influenced the macho men's memory for the female experimenter:
- Over the full 5 min of recall, % of info regarding her physical characteristics:
- 47% (porno video) vs. 35% (control video)
- In 1st minute of recall: 72% vs. 49%
- No priming effects among androgynous men
- Conclusion: Porn can prime some men to view women as sex objects.
- **Effects of sexist ads:**
- Macho or androgynous men
- Watched sexualised or non-sexualised ads
- Completed a lexical decision task (decide whether a word is a word or a non word) → compared 'babe' vs. 'sister'; babe should be identified faster if they view women as sexual objects.
- Participants then interviewed a woman → Chose between sexist and non-sexist questions.
- **Results – Decision Task:**
- For words that positioned women as sexual objects (e.g. babe), men responded to sexual words faster after watching sexualised ads.
- For words that positioned women as non-sexual objects (e.g. sister), men responded to non-sexual words faster after watching non-sexualised ads.
- No effect of macho vs. androgynous men.
- **Results – Interview:**
- Participants who saw the sexualised ads engaged in sexualised behaviour during the interview.
- Viewed the subject of the interview as less competent after watching sexualised ads.
- Conclusion: Sexualised commercials prime men, irrespective of whether they are macho or androgynous, to view women as sex objects.
- **Effects of sexually explicit video games:**

- Participants played either a sexually based video game, Sims or Pac-man.
- Then did the same lexical decision task as above.
- Men were faster to respond to sexual words after playing sexual game.
- No effect of other primes on response speed.

Lecture 20: Controlled Influences on Behaviour

- **Self-regulation:**
- Capacity to control goal-directed behaviours
- Bringing behaviour, thoughts and emotions into line with desired outcomes → requires monitoring, resisting alternatives and keeping focus.
- Controlled by the prefrontal cortex.
- **Benefits of self-regulation:**
- Delay of gratification → Ability to delay gratification at preschool age predicted social and intellectual performance in high school.
- **Ironic Process Theory:**
- Mental control is achieved through two processes:
- Intentional operating process → searches for distracters; conscious, effortful, and interruptible.
- Ironic monitoring process → used to monitor whether the to-be-suppressed thought is resurfacing; unconscious, less effortful, and uninterruptible.
- **Why is the Monitoring Process Considered to be Ironic?**
- Because when we are under cognitive load, the monitoring process can lead us to notice what we're trying to ignore.
- Intentional operating process is effortful → weakened under cognitive load
- But the monitoring process is still going strong
- So, we end up having lots of recurring thoughts about what we don't want to think about.
- **Evidence:**
- Some participants had to attempt a putt while remembering an 8-digit number while others just did the putt.
- Both groups were told 'don't overshoot the putt'.
- Results:
- **Rebound:** Participants who had to remember the number were more likely to overshoot the putt → due to higher demand on cognitive load
- **Ego-depletion/Strength Model of Self-regulation:**
- Self-regulation relies on a limited energy source
- A single act of self-regulation consumes this energy source, creating a state of ego depletion.
- Therefore, self-regulation is like a muscle:
- Good at first but then becomes fatigued, must recover after use and can be strengthened with "exercise".
- The single energy source is not domain specific so depletion of resources in one area can affect an entirely unrelated area.
- **Empirical Evidence for Ego Depletion:**
- Participants who had to refrain from eating cookies spent less time solving an unsolvable puzzle than participants who had to refrain from eating radishes.
- Participants who had to suppress thoughts of a white bear consumed more alcohol.
- **Exercising self-regulation:**
- Exercise of self-regulation produces generalised "strength".
- Examples of self-regulation exercises:
- Physical exercise, practise study habits and monitor for posture, mood
- Following an exercise program, participants recorded significantly improved self-regulation in unrelated areas, e.g. study, reduced impulse spending, spent less time watching TV
- **Summary:**
- Self-regulation is the human capacity to control responses for goal-directed action.

- Mental control is dependent on cognitive capacity.
- When cognitive capacity is low, rebound effects may occur
- Self-regulation relies on a single energy source that can be depleted, but can be strengthened with exercise.