Social Cognition

Social cognition

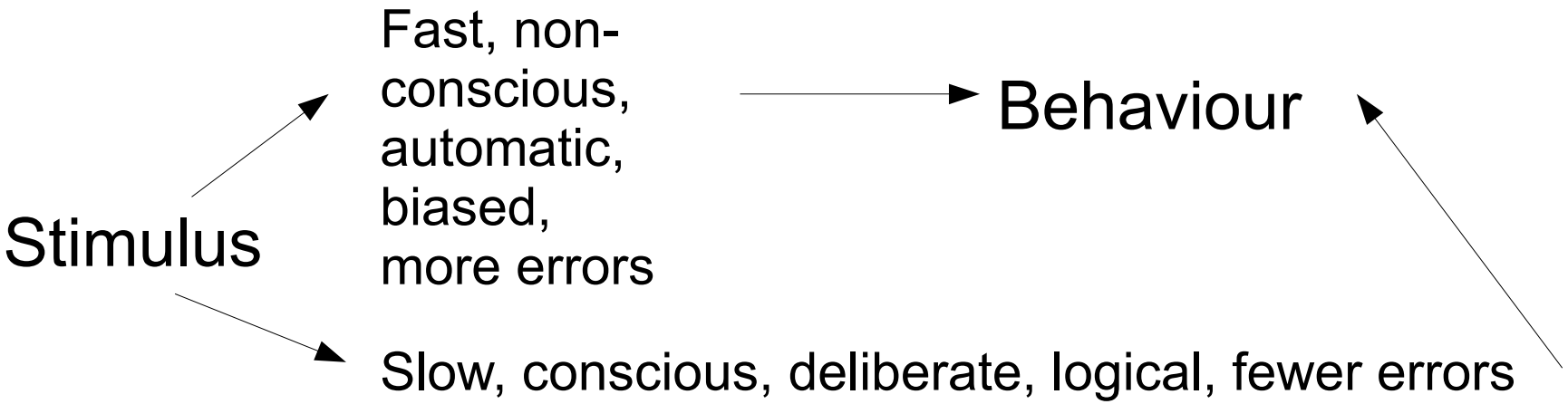
- Interpretation, memory, and use of information about the social world
- Some fields (economics) incorrectly assume that people make rational decisions about their behaviour
- We all have tendencies that override our ability to think logically about situations
  - It is difficult to change fixed ideas, even in situations when rationally we should be influenced by new information
  - There is too much information to take in, so we only remember or pay attention to some of it

Social cognition

- Many of these tendencies operate without our being aware of them
- While logical thinking might sound ideal, it is slow and costly in terms of mental resources
- Automatic processing is much faster and save mental effort

Social cognition

Schemas, scripts, heuristics



Schemas

- Conceptual mental frameworks that help up to organize social information
- You can think of schemas as the lens or frame you look at the world through

Schemas

- Event schemas (scripts) - what we expect to happen in a social situation
  - When I stand near the bar and look at the bartender, she is going to come over to me and ask me for the what drink I would like. After she makes and gives me the drink, I will pay her and then leave a couple dollars on the counter before I walk away
- Role schemas – beliefs about proper behaviours
  - I expect the professor to spend most of the class lecturing and the students to spend most of the class listening. If a student wants to speak, he or she will raise their hand

Schemas

- Person schemas – expectations or beliefs about a particular person
  - He is a fairly unmotivated person who works part time and doesn't have any hobbies. He spends most of his time watching television. He drinks alcohol and smokes pot regularly.
- Video example of person and script schemas

Schemas

- Schemas act as a filter to keep our attention focused on information consistent with that schema
- Information that is not consistent with the schemas is less likely to enter consciousness, unless it cannot be ignored
- Three basic ways that schemas affect our thinking:
  - Attention
  - Encoding new information
  - Retrieving old information?
- How do we know?
  - Dwell time
  - Distractibility
  - Explicit awareness

Schemas

- We are not capable of remembering every piece of information that we are exposed to
- People tend to preferentially encode information that is either consistent with their schemas or that is extremely divergent from their schemas
- But the contradictory information is “tagged” in memory as a special case, instead of being perceived as a contradiction of the schema
  - Frontal vs temporal lobe roles in memory

Schemas

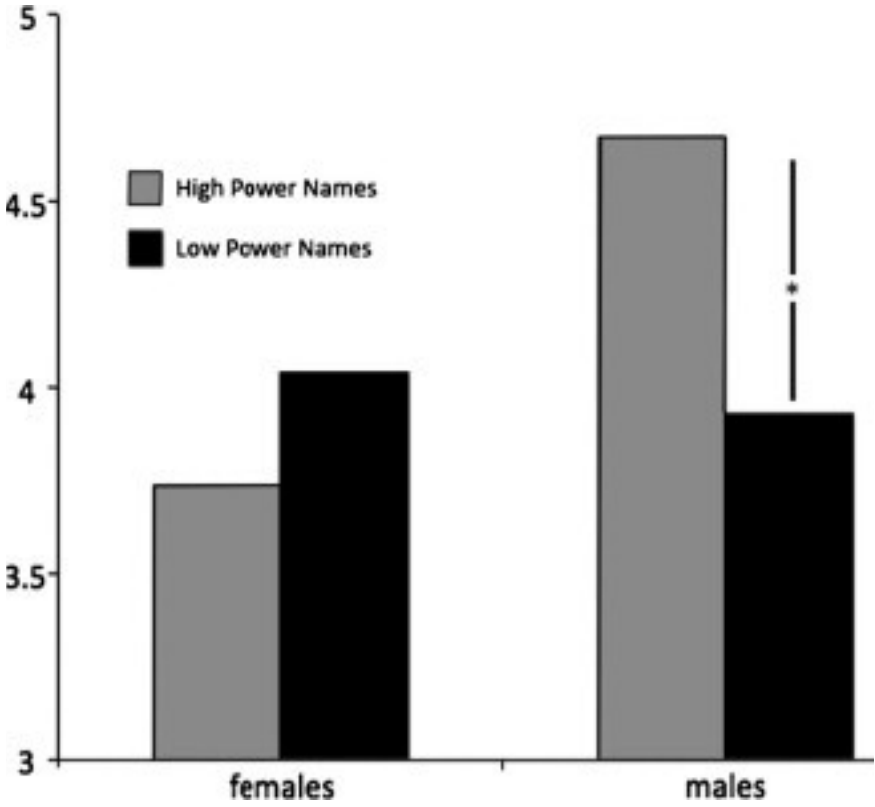
- Males are more likely than females to attend to and encode information regarding power (Mason, Zhang & Dyer, 2010)

T1 power words

authority	empire	powerful	superior	dominate
boss	executive	prestige	tyrant	pope
captain	force	queen	wealth	power
capture	forceful	reign	leader	dominant
command	god	rule	strength	strong
control	influence	defeat	dictator	king

T1 neutral words

account	file	photograph	role	district
actually	flower	program	simply	family
bed	grapes	suddenly	sit	puddle
braid	island	teeth	staff	rainbow
central	meeting	trail	style	tent
current	park	truck	dawn	daily



Schemas

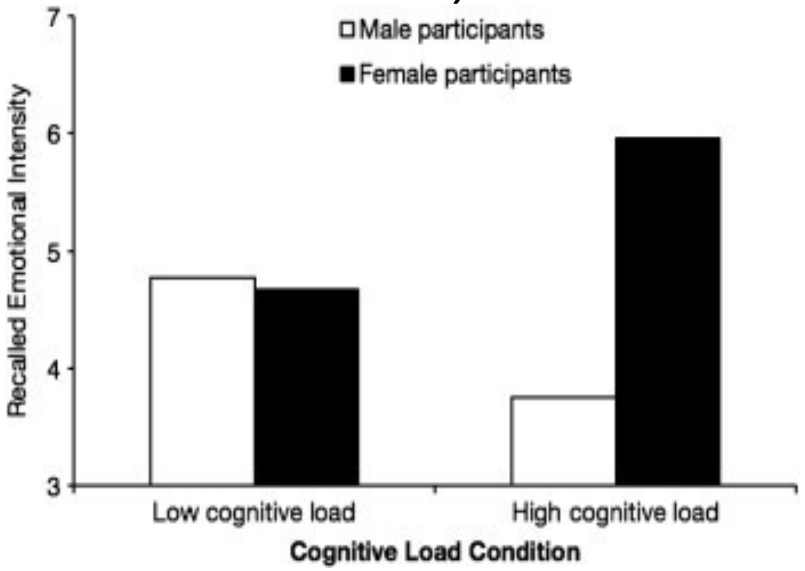
- People do make use of schema consistent information more often than contradictory information
- But it is not clear whether recall ability is actually different
- We probably can recall information just as well (as long as we paid attention to it and encoded it in the first place), whether or not it is consistent with our schemas

The downside of schemas

- Perseverance effect
  - How did Bernie Madoff steal so much money? Despite clear evidence of fraud, people investing with him were unable to change their person schema that he was a kind and trustworthy man (Markopolos, 2010)
- Self-fulfilling prophecies
  - Teachers act in a way that benefits the students that they think (schema) will do the best in their class (Rosenthal & Jacobson, 1968)
- Schemas can be activated externally
  - Advertisements that focused on body appearance increased schemas regarding body dissatisfaction, particularly in women (Hargreaves & Tiggemann, 2002)

The downside of schemas

- Particularly powerful when mental effort or cognitive load is higher
  - 20 minutes after watching a sad movie, self-schemas about emotionality were more stereotyped when under cognitive load (Van Boven & Robinson, 2012)



- Stereotypes and prejudice are forms of schemas

Heuristics

- Simple rules for making complex decisions rapidly and efficiently
- Remember, we are exposed to too much information to be able to process it all
- Some common heuristics:
  - Representativeness
  - Availability
  - Anchoring
  - Framing

Representative heuristic

- The more similar someone or something is to a known group, the more likely it is a member of that group
- We make assumptions about people based on their similarity to groups
  - Where they are from
  - What they do for a living
  - What causes their behaviour
  - What behaviour they will engage in

Representative heuristic

- Which of these sets of numbers would you be more likely to play in the lottery?
  - 1, 2, 3, 4, 5, 6, 7
  - 4, 6, 2, 7, 3, 1, 9
- Pretend you meet two people:
  - Someone reserved, polite, and rigid
  - Someone boisterous and opinionated, who calls everyone “Buddy”
  - Which one would you predict is British and which one would you predict is American?

Representative heuristic

- Often fails because we do not take into account *base rates* or the frequency of a particular event in the total population
- Generally speaking, people are quite poor at intuitively making statistical or probabilistic decisions
  - A particular heart disease has a prevalence of 1/1000 people. A test to detect this disease has a false positive rate of 5%. Assume that the test diagnoses correctly every person who has the disease. What is the chance that a randomly selected person found to have a positive result actually has the disease?

Availability heuristic

- Making judgments based on how easily the information can be brought to mind
- We are better are bringing to mind extreme or memorable events
  - Violent crime rates
  - Aviation accidents
- Priming studies show that external circumstances can increase the availability of certain information
  - Increased availability of that information influences our judgments and our behaviour

Availability heuristic

- Participants were required to unscramble words to make a correct sentence (Bargh, Chen, Burrows, 1996)
- Rude vs polite words
  - aggressively, bold, rude. bother, disturb, intrude, annoyingly, interrupt, audaciously, brazen, impolitely, infringe
  - respect, honor, considerate, appreciate, patiently, cordially, yield, polite, cautiously
- Old vs neutral words
  - worried, Florida, old, lonely, grey, selfishly, careful, sentimental, wise, stubborn, courteous, bingo, withdraw, forgetful, retired, wrinkle, rigid
  - exercising, flawlessly, occasionally, rapidly, gleefully, practiced, optimistically, successfully, normally, send

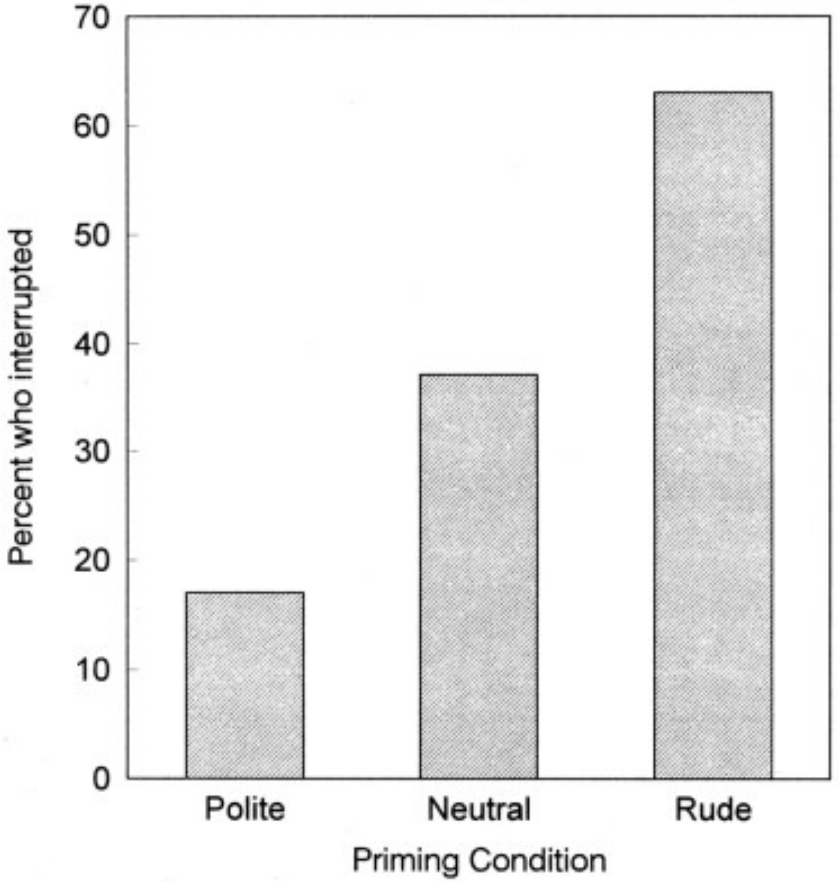


Figure 1. Percentage of participants who interrupted the experimenter within the 10-min period, by trait priming condition (Experiment 1).

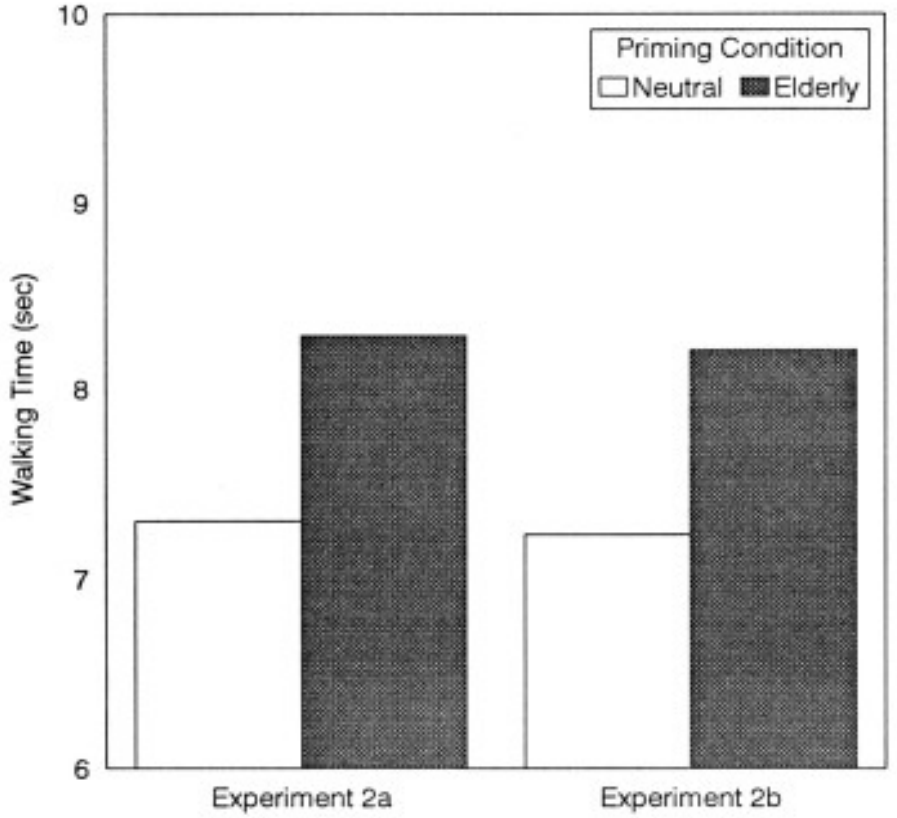


Figure 2. Mean time (in seconds) to walk down the hallway after the conclusion of the experiment, by stereotype priming condition, separately for participants in Experiment 2a and 2b.

Availability heuristic

- We use the availability heuristic to make judgments of the distribution and frequency of opinions in our social group
  - The more something is repeated the more we believe it is true (Begg et al, 1992), independent of the credibility of the person telling us
- False consensus effect
  - Tend to overestimate frequency of people engaging in risky behaviours (binge-drinking, drug use, unprotected sex)
  - When one person advocates for something multiple times, we think that position is more commonly held than if we hear it a single time (Weaver et al, 2007)

Availability heuristic

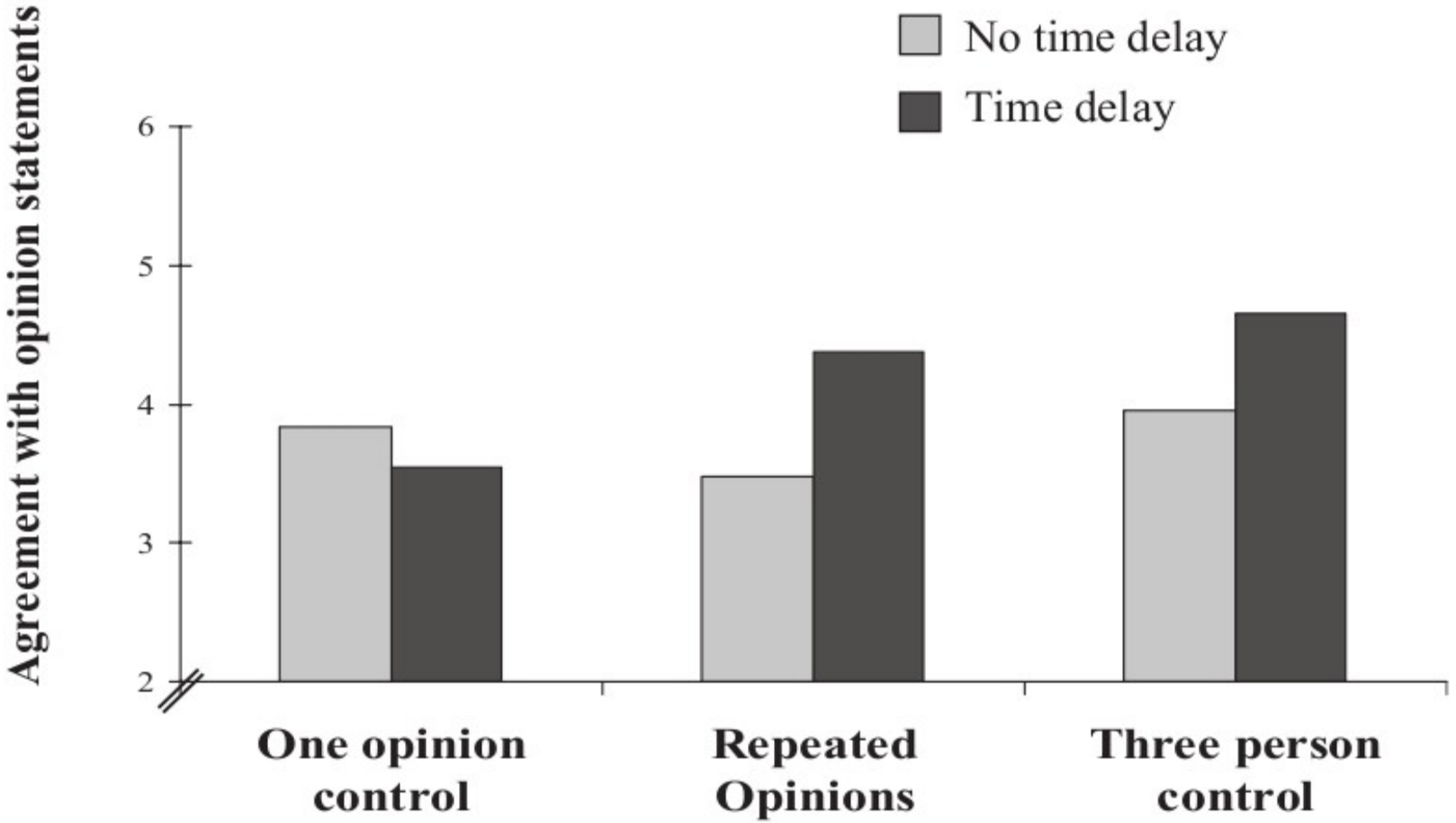


Figure 1. Study 5: The effects of time delay and number of opinions on estimates of general student support for professional schools. Higher numbers indicate more agreement with the opinion statements (greater favorability toward professional schools).

Anchoring

- When making judgments or decisions, the tendency to use some number or value as a starting point and then adjusting from there
  - The original price for something
  - Your initial estimate of how long something will take
  - Your first impression of a person or a place
  - Critics rating
  - How much to pay back on your credit card (Stewart, 2009)
- Even when you are provided with information that should change your initial assessment, you are likely to make only small adjustments
  - Diagnosis
  - Negotiating the price of a home
  - Continuing to gamble after winning the first time

Heuristics and automatic thinking

- Two distinct cognitive processes (and systems in the brain) for decision making:
- Logical, deliberate, and controlled
  - Pre-frontal cortex (reasoning)
- Automatic, fast, non-conscious
  - Amygdala (emotions)

Other biases

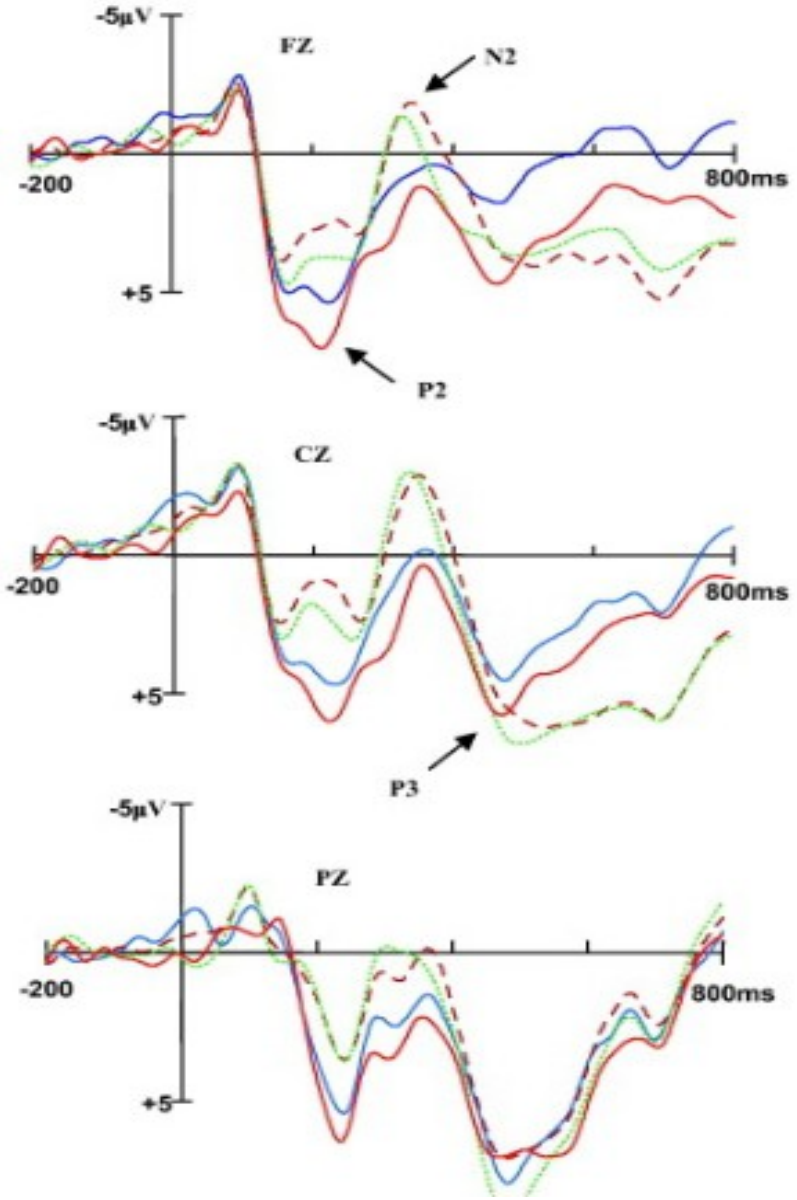
- Negativity bias
- Optimistic bias
- Good-old-days bias
- Counterfactual thinking
- Thought suppression
- Emotional reasoning

Negativity bias

- People are more sensitive to negative information than positive information
- Makes evolutionary sense, because negative information is more likely to be harmful and so should be attended to
- Particularly evident in people with mental illness
  - Depression people perceive faces as being more negative (Leyman et al, 2007)
  - Anxious people perceive pictures of faces as being more threatening (Richards et al, 2011)
  - Causality?

Negativity bias

- Occurs very quickly, and probably even before we are conscious of the information (Yang et al, 2010)
- Can keep information from ever reaching consciousness
- And this varies by temporary or induced mood states (Chen et al, 2008)



Optimistic bias

- Although we pay more attention to negative information, *when it concerns ourselves* we are more likely to be optimistic about the future
- Overconfidence barrier
  - Driving (Deery, 1999; McCormick, Walkey, & Green, 1986)
  - Gambling (Goodie, 2005)
  - Investing (Barber & Odean, 2001; Grinblatt & Keloharju, 2009)

Optimistic bias

Table 1. Percentages of drivers rating themselves above, equal to and below average

Bipolar scales used to rate drivers			Percentage rating "me as a driver"		
			below "average"	equal to "average"	above "average"
foolish	-	wise	8.99	35.39	55.62
unpredictable	-	predictable	15.17	32.02	52.81
unreliable	-	reliable	7.30	26.40	66.29
inconsiderate	-	considerate	10.11	27.53	62.36
dangerous	-	safe	11.24	30.34	58.43
tense	-	relaxed	19.66	28.09	52.25
worthless	-	valuable	14.61	48.32	37.08
irresponsible	-	responsible	6.74	35.39	57.86
Total rating			15.73	4.50	79.77

Optimistic bias

- Planning fallacy – tendency to make overly optimistic predictions about how long something will take to do
- When we think about a project, we think about how we *will* do it and how it *will* feel to be done, instead of thinking of our past experience of how long similar projects *really do* take
- The more we *want* to finish a project on time, the more likely we are believe that we *will* finish on time

Optimistic bias

- When people expect a negative consequence, they “brace for loss” by further lowering expectations (Shepperd et al, 2000)
  - *Unexpected* bad news is the worst
  - Bracing for loss serves to protect us from the effects of very bad news

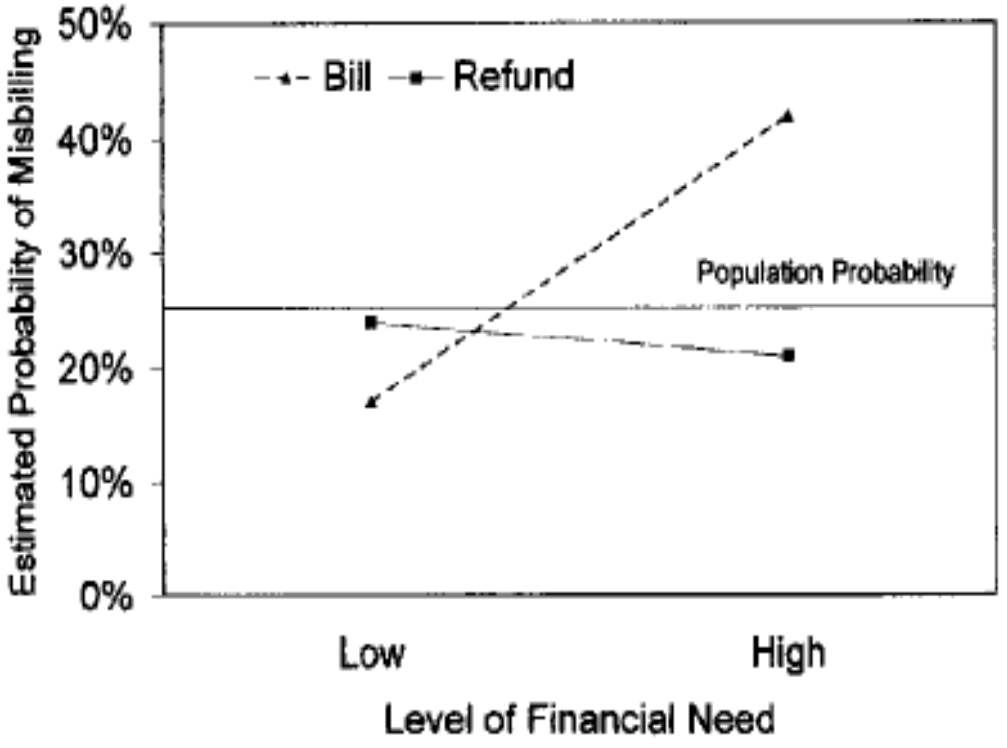


Figure 1. Probability estimates in Experiment 1.

Good-old-days bias

- After a major event that can be blamed for current circumstances, people sometimes remember the past as being more positive than it really was
- Mild traumatic brain injury (Iverson et al, 2010)
  - People with an mTBI and healthy controls were given a measure of post-concussion symptoms
  - They were asked to report their current symptoms, and their symptoms from several months ago (before the injury)

Good-old-days bias

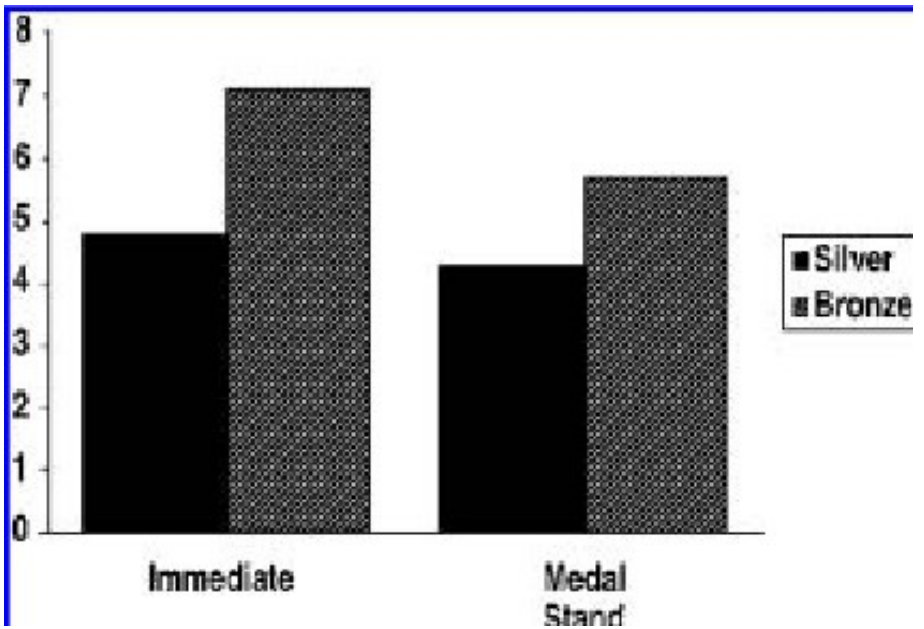
BC-PSI items	Descriptive statistics Mean (*SD*) 1. MTBI current	2. MTBI retro.	3. Healthy controls
Headache	3.0 (1.1)	0.4 (0.7)	0.4 (0.8)
Dizziness	2.1 (1.4)	<0.1 (0.3)	0.3 (0.8)
Nausea	1.4 (1.5)	0.1 (0.5)	0.3 (0.7)
Fatigue	2.7 (1.3)	0.3 (0.6)	0.8 (1.1)
Sensitive to noise	1.9 (1.6)	0.1 (0.4)	0.3 (0.8)
Irritable	2.0 (1.5)	0.2 (0.5)	0.6 (1.0)
Sad	1.8 (1.5)	0.1 (0.5)	0.5 (1.0)
Nervous/Tense	1.9 (1.5)	0.1 (0.5)	0.4 (0.9)
Temper problems	1.4 (1.5)	0.1 (0.5)	0.5 (1.0)
Poor concentration	2.6 (1.4)	<0.1 (0.2)	0.6 (1.1)
Memory problems	2.1 (1.5)	0.2 (<0.1)	0.5 (1.1)
Difficulty reading	1.7 (1.6)	0.4 (<0.1)	0.4 (0.9)
Poor Sleep	2.6 (1.5)	0.8 (<0.1)	0.7 (1.1)
Total Score	27.3 (12.9)	2.0 (3.2)	6.2 (8.0)

Counterfactual thinking

- People have a tendency to think about what might have happened in a situation
- When we can more easily think of alternative ways that a situation could have happened, we are more likely to influenced by counterfactual thinking

Counterfactual thinking

- Upward counterfactual thinking
  - Comparing current reality with more positive possible outcomes
- Downward counterfactual thinking
  - Comparing current reality with more negative possible outcomes
  - Medvec et al, 1995



Thought suppression

- Trying to keep certain thoughts out of consciousness
  - Automatically watching for signs of the thoughts, and deliberately trying to distract self from the thoughts
- Paradoxically, trying to restrict thoughts typically increases them
  - Rebound effect

Emotion and cognition

- Mood-dependent memory
  - When in a positive mood, people are more likely to remember information that they learnt while in a positive mood
  - When in a negative mood, people are more likely to remember information that they learnt while in a negative mood
  - Effect is especially true for people who more often have dissociative experiences (Kanayama, Sato & Ohira, 2008)

Emotion and cognition

- Mood congruence effects
  - More likely to remember positive information when we are in a positive mood, and more likely to remember negative information when we are in a negative mood
- Both mood congruences effects and mood dependent memory effects can be seen with *induced* moods
  - For example, showing a sad movie immediately before giving a memory test

Emotion and cognition

- Cognitive-behavioural therapy is based on the notion that changing thoughts and behaviour can result in changes to emotion
- Individuals with depression and anxiety often have additional or exaggerated cognitive biases
  - Overly negatively biased thinking
  - All-or-nothing thinking
  - Catastrophizing
- Decisions to engage in certain behaviours can also have a major impact on our moods