Decision Research Domains

Decision making under certainty (multi-attribute choice)

Decision making under risk

Decision making and time (intertemporal choice)

Interactive decision making (game theory)

What makes you choose to have that extra drink?

"Traditional" explanations for this extra drink

1. Because of you 'believe' it is appropriate?

2. Because you expect it will make you 'feel' good?

3. Because you 'prefer' it over reading a book?

Economic theory is the starting point for understanding behaviour in public policy

- Rational Choice Theory and utility maximisation

$$\max_{x_i^t \in X_i} \sum_{t=0}^{\infty} \delta^t \sum_{s_t \in S_t} p(s_t) U(x_i^t | s_t)$$

- In social and health psychology, rational choice theory is embodied in linear 'Expectancy Value' models

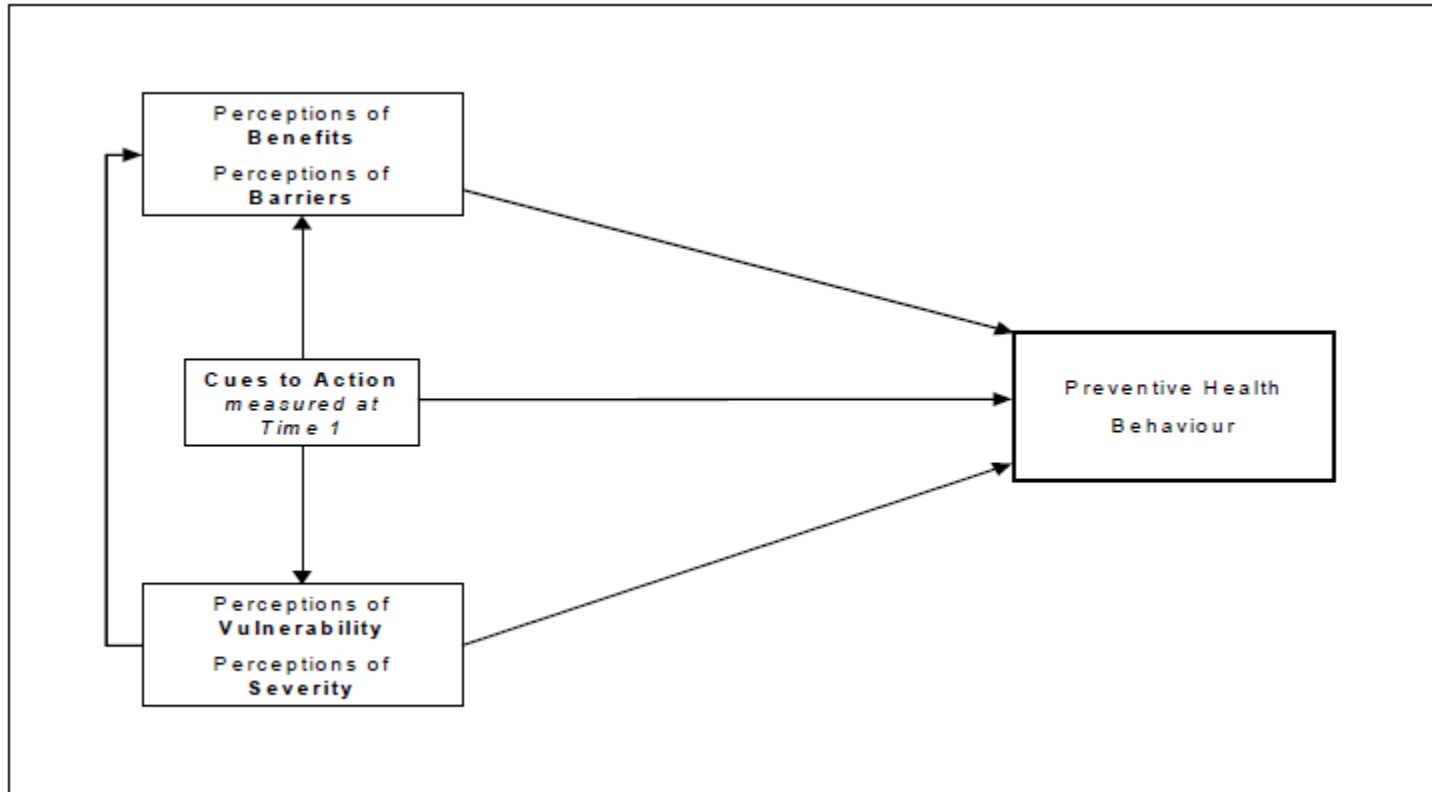# Traditional approaches in public health also describe the causal "inner" states (beliefs, desires, etc.)

Figure 2.4: Rosenstock's Health Belief Model (1975)

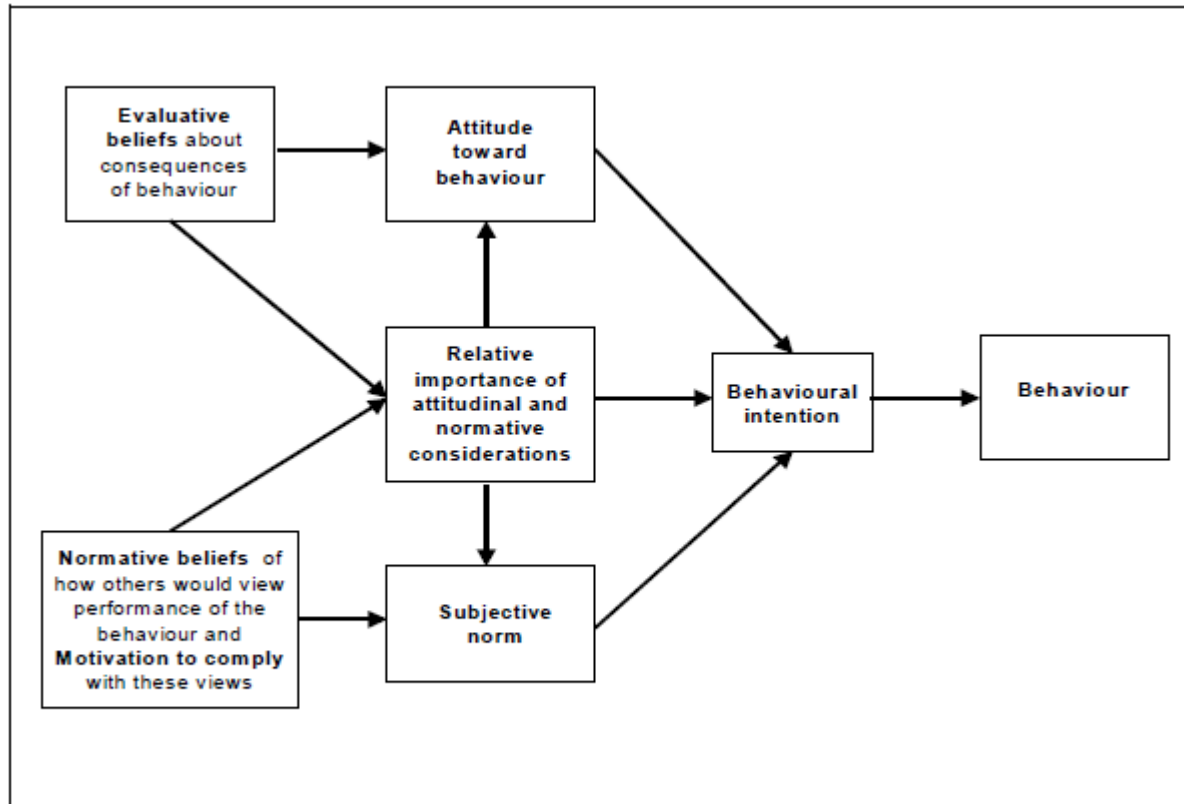# If not good enough, then find more causal states...

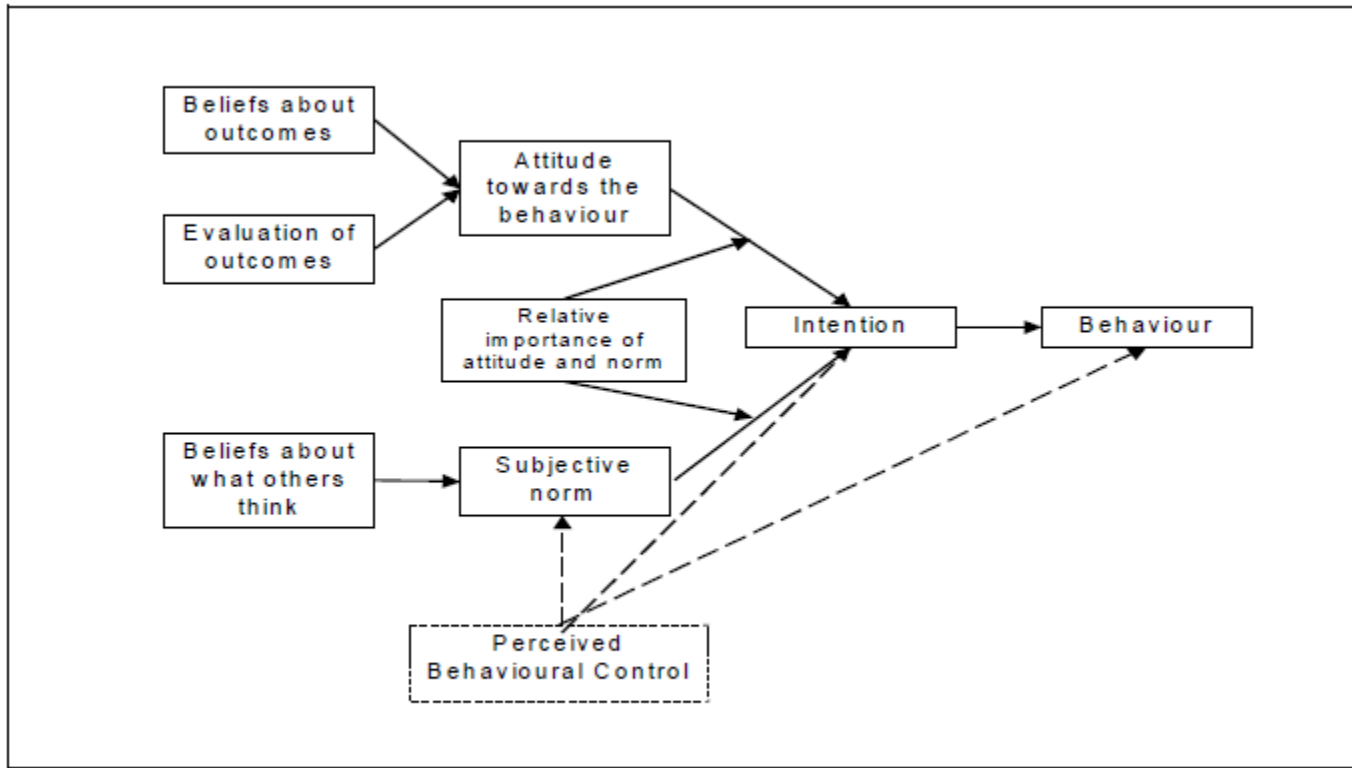Figure 2.3: Fishbein and Ajzen's Theory of Reasoned Action (TRA), (1975)

and more ...

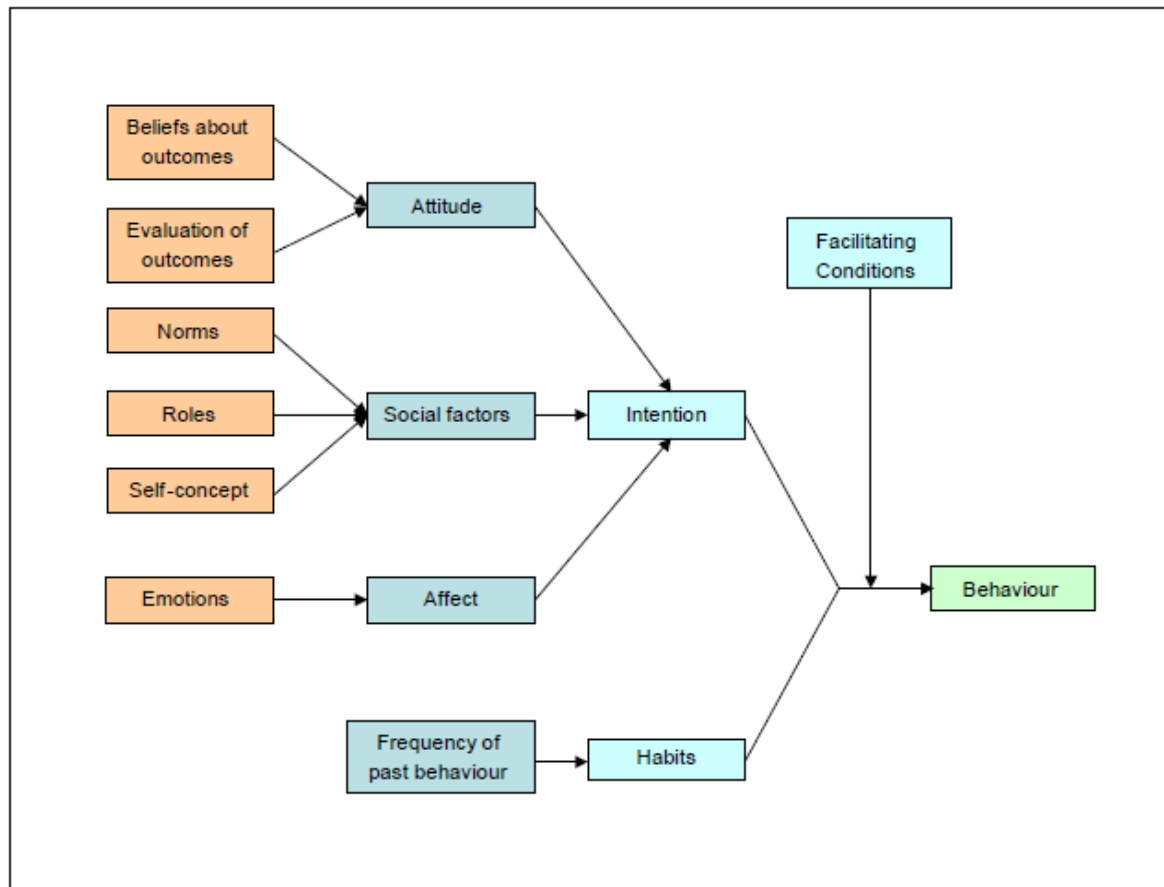Figure 2.6: Ajzen's Theory of Planned Behaviour (TPB), (1986)

and even more...

Figure 2.12: Triandis' Theory of Interpersonal Behaviour (TIB), (1977) [reproduced from Jackson 2005]
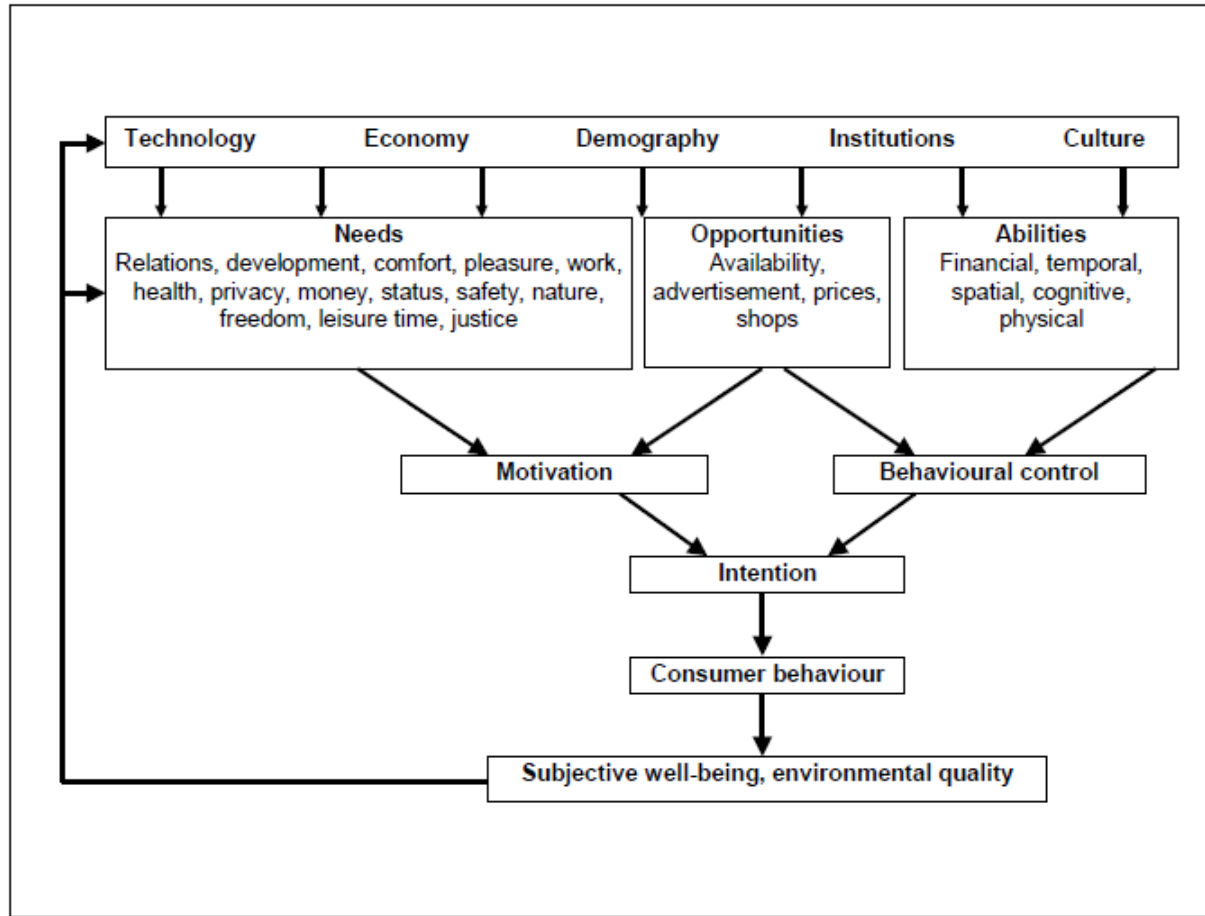
Then add some external factors too...

Figure 2.15: Vlek et al's Needs Opportunities Abilities (NOA) Model (1997)

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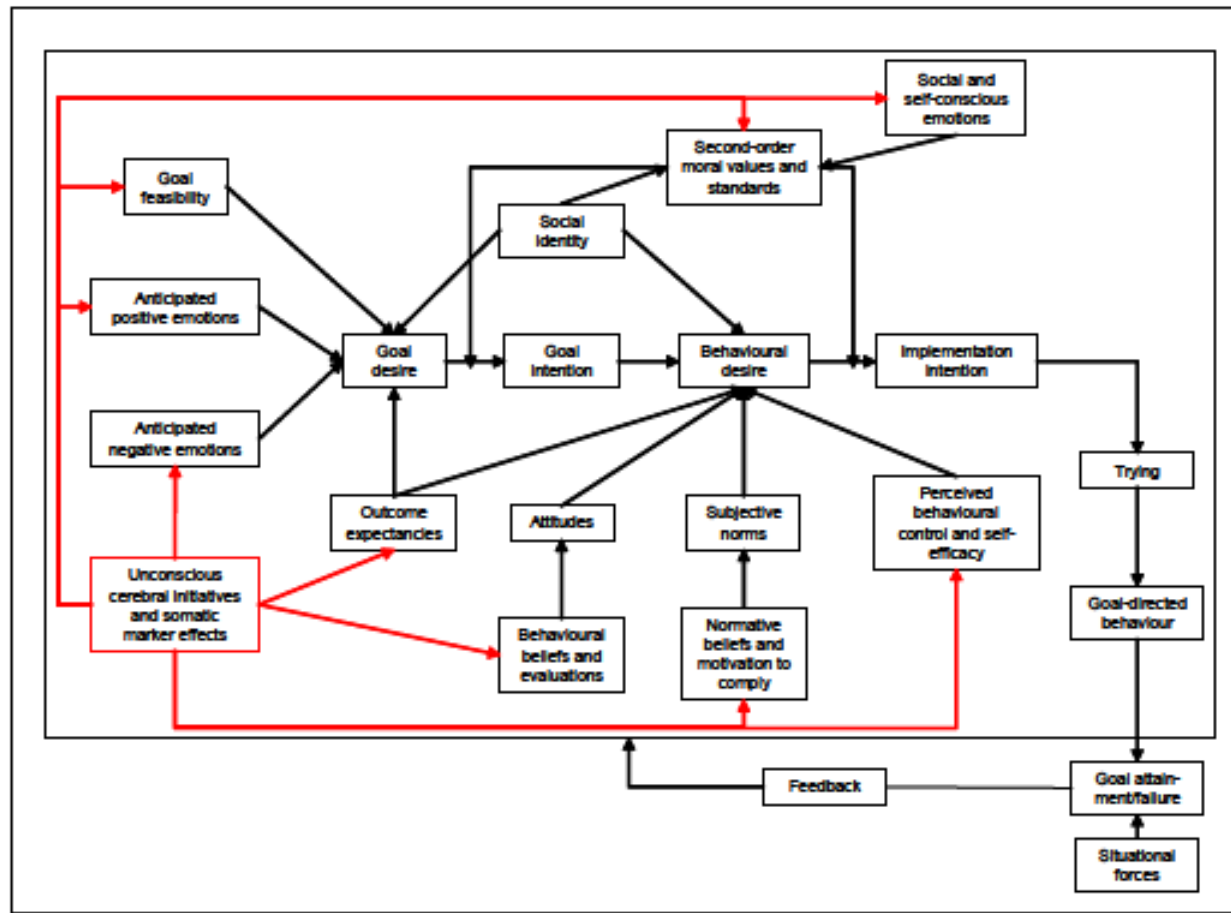
Then link them all together...

Figure 3.21: Bagozzi et al's Comprehensive Model (2002)

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Still only ~ 3%-28% variance explained...

see Webb & Sheeran (2006) for a review

What we have learned over > 50 years of research in behavioural economics?

"People know the price of everything, but the value of nothing" *Oscar Wilde*

"It turns out that the environmental effects on behaviour are a lot stronger than most people expect" *Nobel Laureate Prof Daniel Kahneman*

"Information & information processing are complements" *Colin Camerer*

So why is behaviour so unstable?

- We *infer* our inner life and our actions from (limited) information that is currently accessible
  - o from the environment
  - o from memory

- Corollary: We do not have any direct access to "inner" beliefs, desires etc…
  - o the illusion of 'informed' or 'reasoned' choice

A toy model of the mind

I_t

I_6

I_1

I_2

I_4

I_5

I_3

Memory

Context

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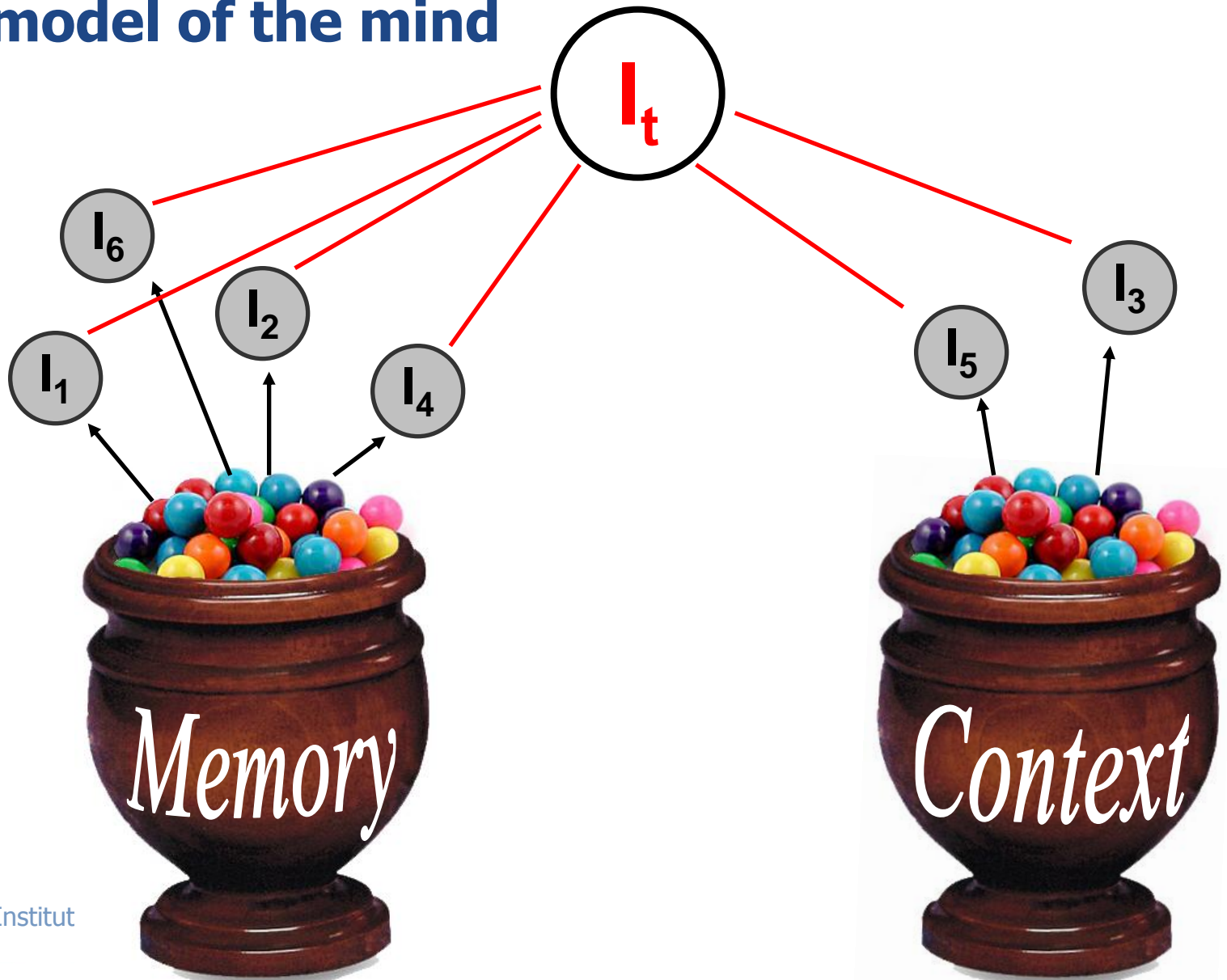
Inferring our own beliefs 1

- Festinger & Carlsmith (1963)
  1. People do a boring task
  2. Then paid $1 or $20 to persuade others to do it
     - People paid more find it more aversive; less likely to do it again, etc.

- Why did I do this?
  - "If I was only paid $1, it can't have been too bad"

Inferring our own beliefs 2

- Reber & Schwarz (1999)
  - □ "Fluency" of reading affects plausibility of a statement
    - ○ **Osarno is a town in Chile**
    - ○ **Osarno is a town in Chile**
  - □ But effect is cancelled when people have an alternative explanation (poor photocopier)

- Alter & Oppenheimer (2006)
  - □ IPOs with 'fluent' names do substantially better
    - ○ **KAR** vs **RDO**

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Inferring our own beliefs 3

- Rothman & Schwarz (1998)
  - Men inferred that they are at higher risk of heart disease after recalling fewer risk-increasing behaviours

- Schwarz et al
  - Generate **3 vs. 6 reasons** why you like your partner and happy with a decision
  - **3**/**6** reasons is **easy**/**hard** → **high**/**low** fluency → infer **strong**/**weak** commitment → **higher**/**lower** self-report on happiness with decision, partner, etc.

Inferring our own feelings 1

- Schachter and Singer (1962)
  - □ Epinephrine injections
    - ○ Raising arousal
  - □ Informed (or not) about side-effects
  - □ Put with **euphoric** or **angry** 'stooges'

- Higher arousal → participants are more **euphoric**/**angry**
- When people can 'explain away' arousal, effect much reduced

Inferring our own feelings 2

- Dutton and Aron (1974)
  - Female interviewers of male bridge-crossers
    - **low** vs **high** bridge
  - Gave phone number for "further explanation"

More calls to interviewers for **high** bridge

Arousal (caused by high bridge) misattributed as caused by attractiveness

Inferring our own feelings 3
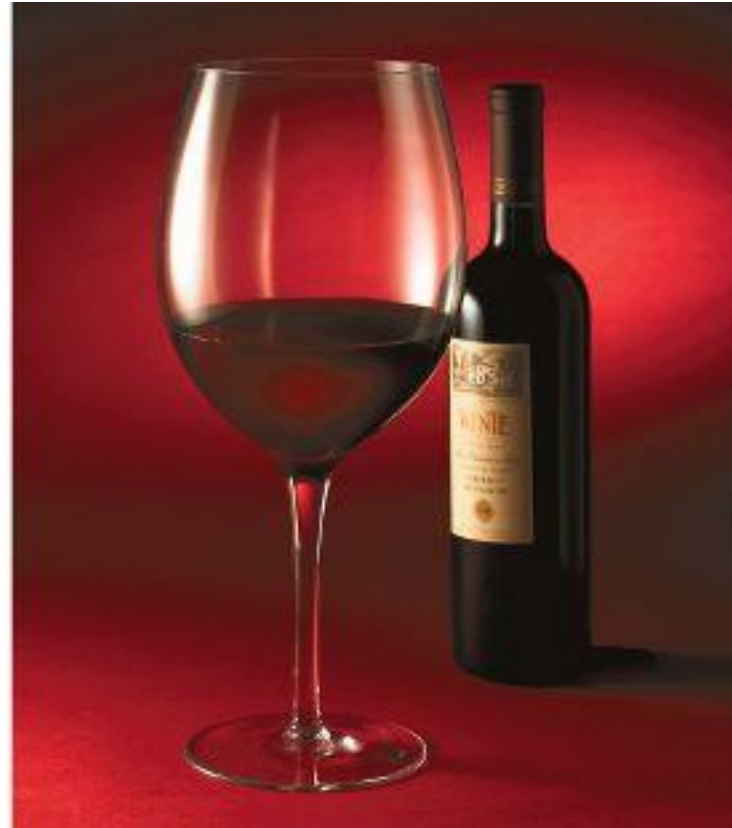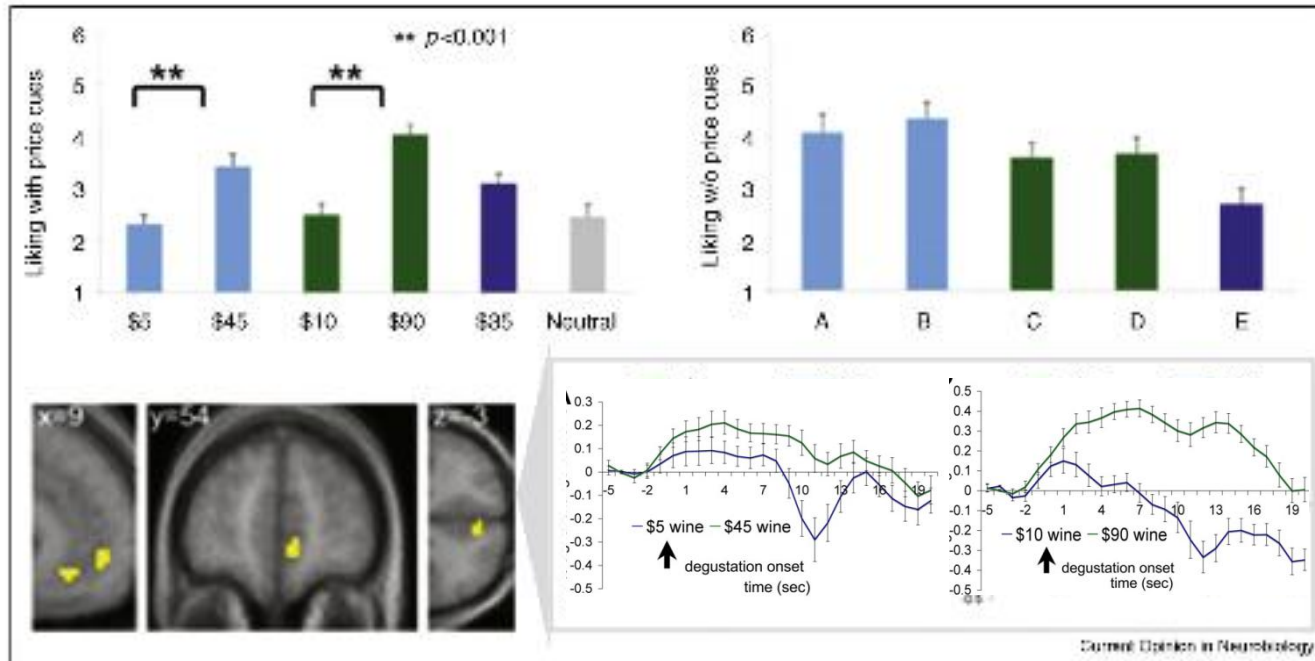

£5   £50

Inferring our own feelings 3

Plassmann H, O'Doherty J, Shiv B, Rangel A:
Marketing actions can modulate neural representation of experienced
pleasantness. Proc Natl Acad Sci U S A 2008, 105:1050-1054.

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Inferring our own preferences 1

- Johansson et al (2006), *Science*
- False feedback on date choices
  - □ not noticed
  - □ rationalization given
  - □ later preferences changed

  - □ And it works with jam

Nature Reviews | Neuroscience

Inferring our own preferences 2

- Vlaev et al (2009)
- People cannot stably determine preferences between pain and money
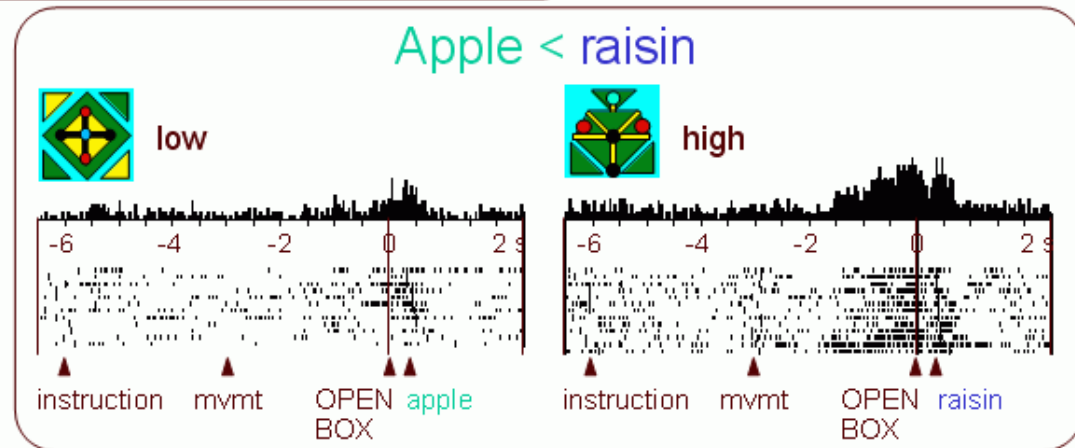- No idea what is a "reasonable" trade-off

Pain Auction
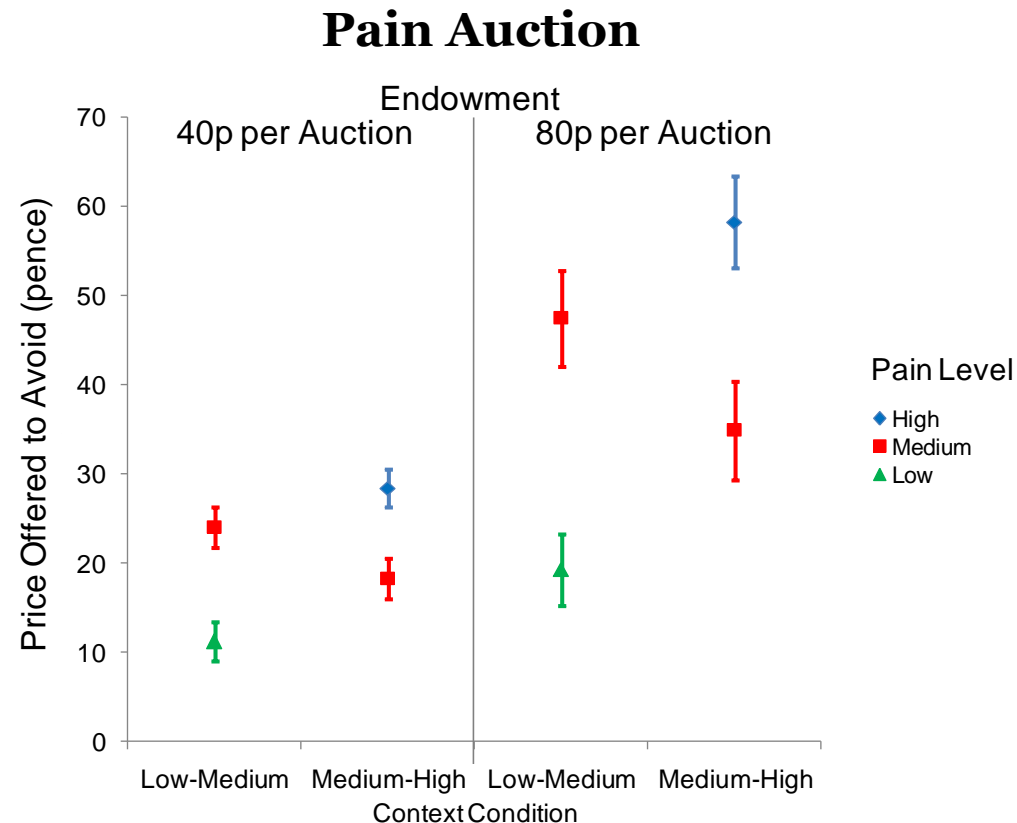
Inferring our own preferences 3
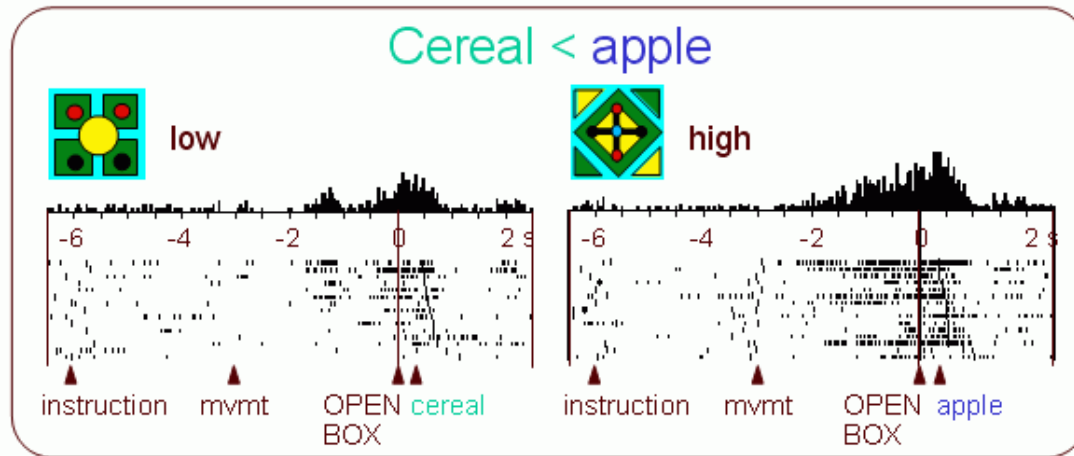
Tremblay & Schultz (1999). Relative reward preference in primate orbitofrontal cortex. Nature 398: 704-708.

Inferring our own preferences 4

- Shafir et al

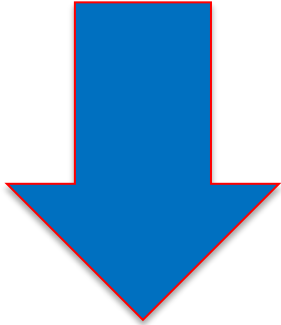Expensive, but exciting holiday

vs.

Cheap, but dull holiday

Bali

Bournemouth

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Which holiday would you **choose**?

Reason: "It's exciting!"
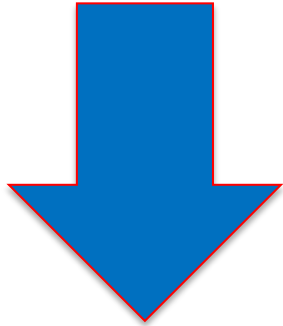
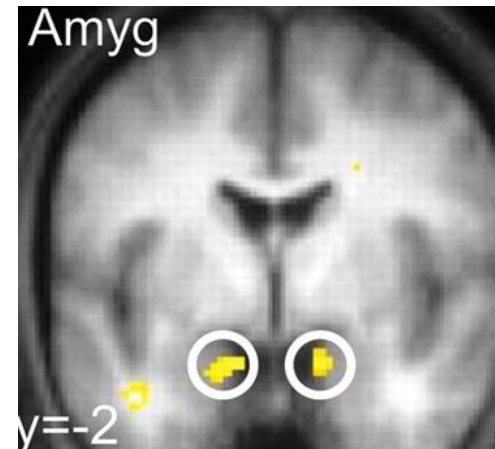**Bali**

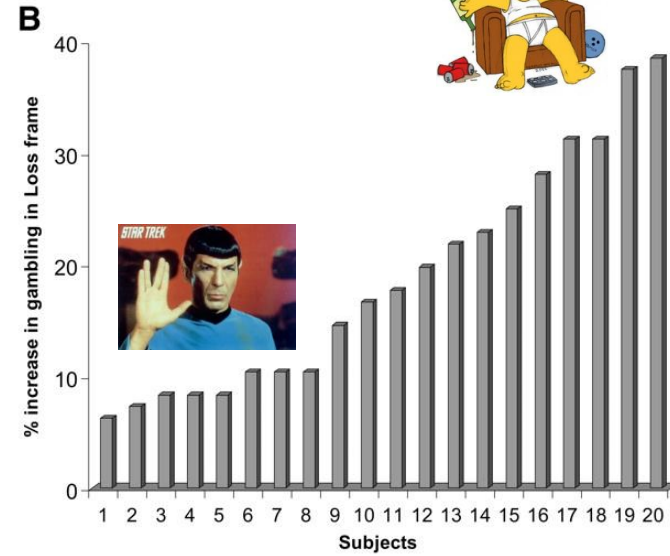

Bournemouth

Inferring our own (risk) preferences 5

A Gain frame

Start of trial

YOU RECEIVE £50

Initial amount

KEEP £20   GAMBLE

keep all
lose all

time

Choose between the gamble or the sure option

B Loss frame

Start of trial

YOU RECEIVE £50

Initial amount

LOSE £30   GAMBLE

keep all
lose all

time

Choose between the gamble or the sure option

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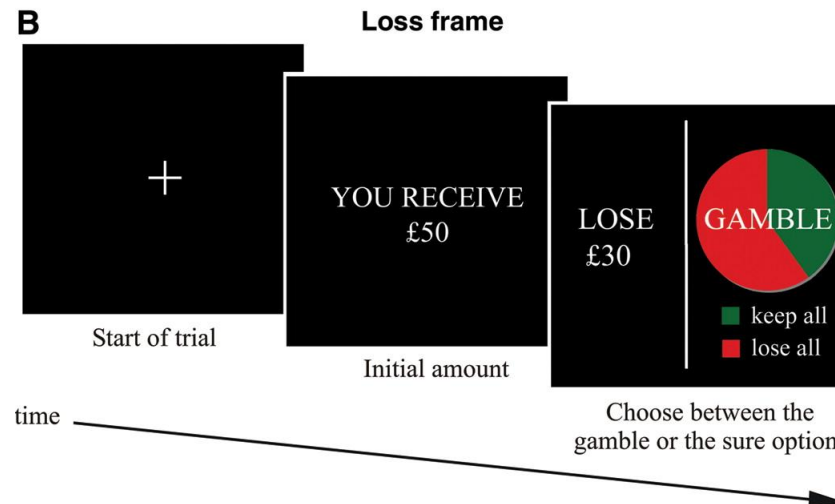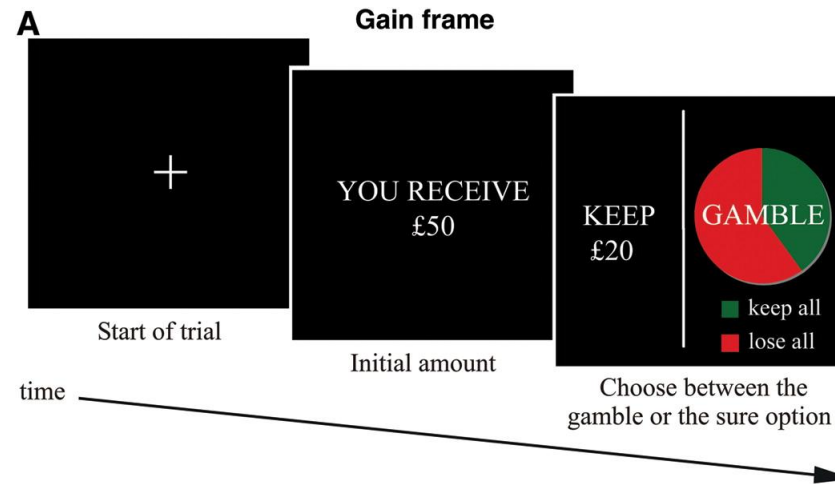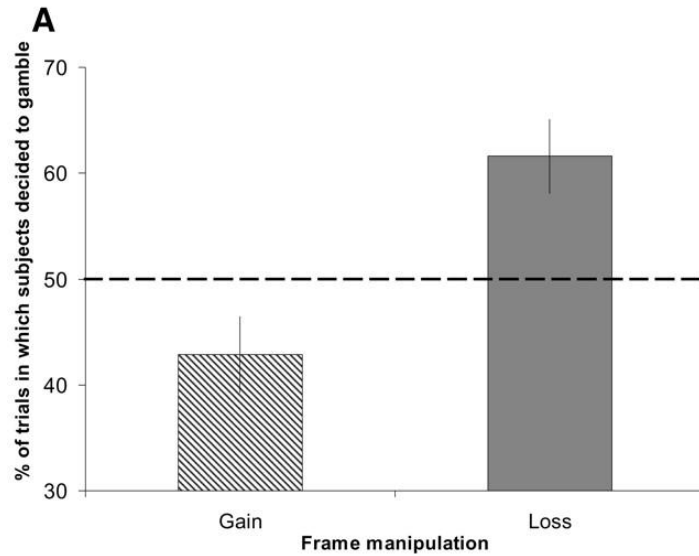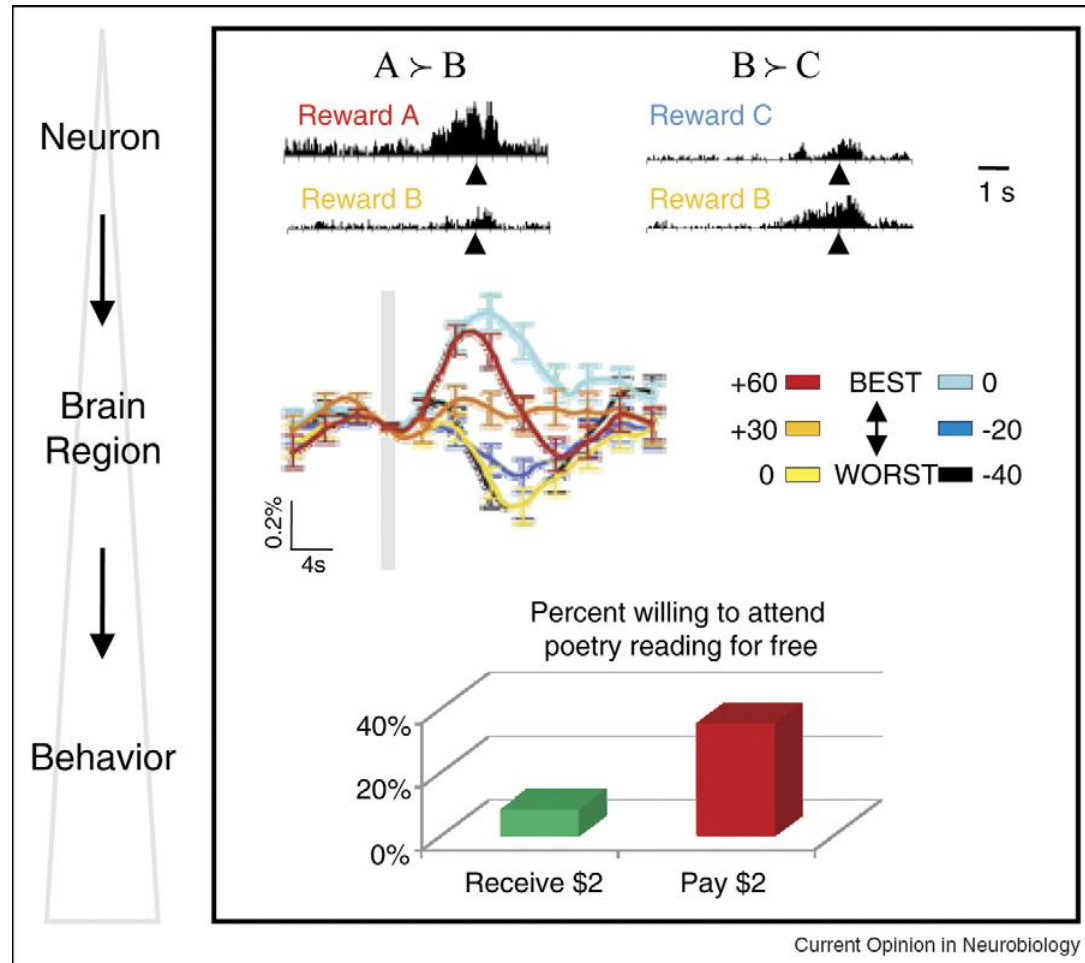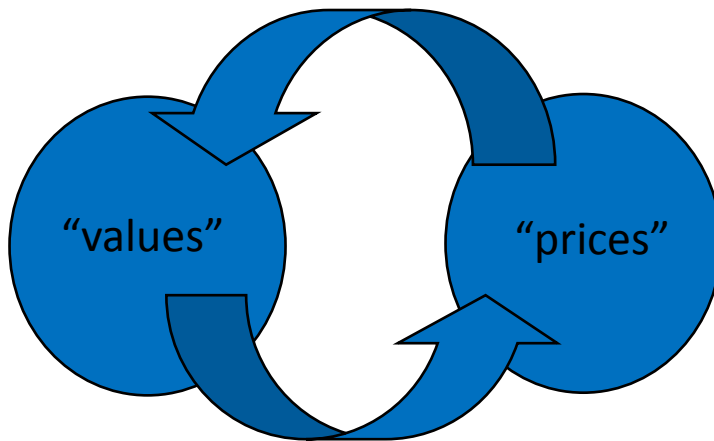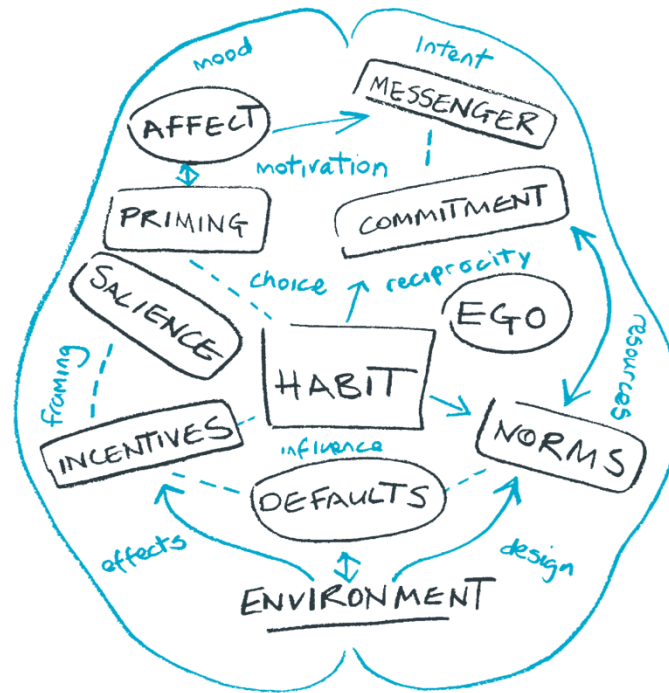
Inferring our own preferences 6

Implications

- Beliefs and values are improvised on the fly
- Not products of stable, if somewhat hidden, motives
- Options are valued relative to what we can compare against

MINDSPACE

Influencing behaviour through public policy

So you could have that extra drink for a mindspace full of reasons...

# Appendix: Relative judgment

Wood , Brown, et al.

Evaluation by *local* comparison

- Mental inference algorithm:
  - Construct a mental sample (mostly friends, colleagues)
  - Count who weighs, drinks, earns *less* than me
  - Count who weighs, drinks, earns *more* than me
 - Compare the two numbers

If all we have is relative comparison...

- Perhaps the most powerful source of comparison is *other people*
- E.g., how we perceive our own weight

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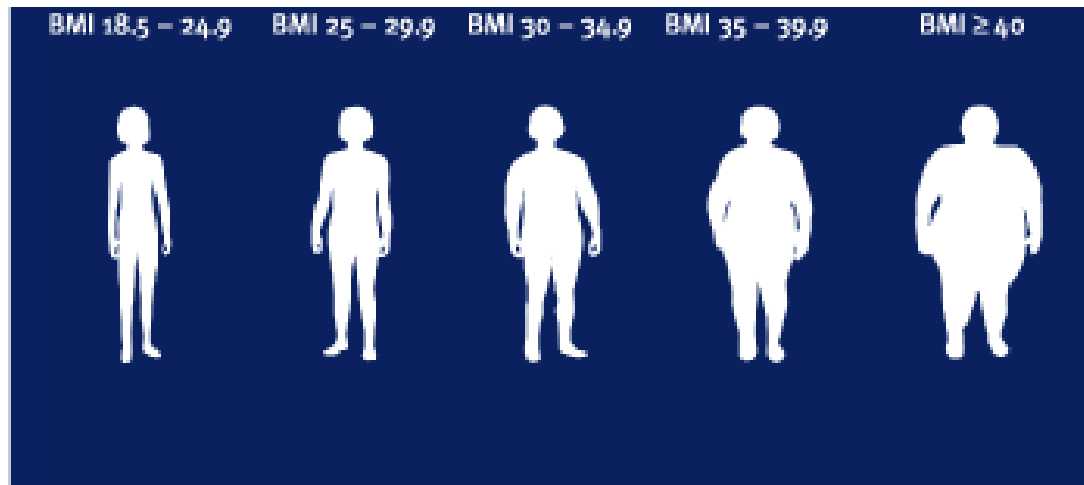
We evaluate ourselves by comparison with others

- People estimate their own weight, BMI etc
- What predicts their estimates?
- Not actual BMI
- But rank BMI measured against friends
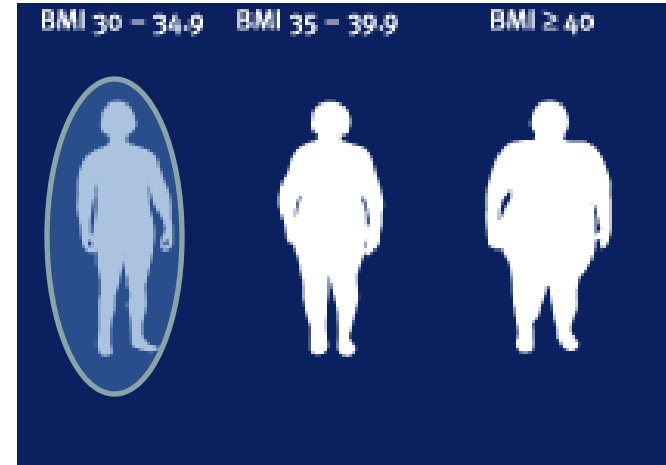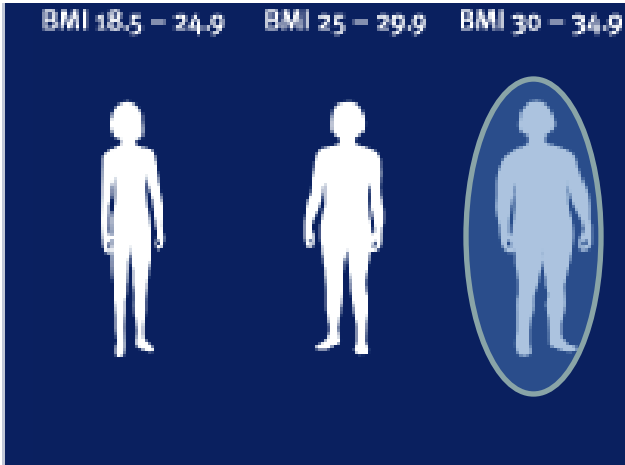
Similarly for alcohol consumption

Result:

- Attitudes and beliefs about consumption are predicted:
  - Not (much) by amount of own drinking
  - Not by relation of own drinking to mean of others
  - Best predicted by rank position of self in assumed distribution

- This mechanism can be used for "nudging" interventions