

### Reward optimisation

- People tend to discount the value of things you need to wait for e.g. want \$500 now over \$1000 in 1 year
- **Self-control** – delaying immediate gratification for a bigger long-term reward
- **Impulsivity** – forgoing a larger long-term reward for immediate gratification
  - Can be measured by making Ps wait for a future reward
  - E.g. **marshmallow test** – kids who wait longer do better at school, not get into trouble with law
  - E.g. **smokers** – smokers discount the value of money at a much greater rate than non-smokers (more impulsive), return to normal after no smoking for 12 months – impulsivity appears to result from drug use
- Why do delayed rewards lose value?
  - Risk of losing reward – risk is compounded for each period of time → predicts an exponential curve for the present value of a delayed reward, actually a hyperbolic curve
  - Expected transaction costs e.g. **have to come back to collect money**
  - Concave utility effects on reward – reward has only subjective value, individuals w/ a greater amount of a reward value it less e.g. **need to pay high income earners larger bonuses to get the same amount of additional work compared w/ lower income earners**

### How to increase self-control

- Make immediate rewards less obvious e.g. **children look away from marshmallow**
- Distraction from immediate reward
- Delay immediate reward e.g. **smokers do ritual before having cigarette**
- Use reward substitution for the activity associated w/ delayed gratification
- Make the longer term rewards or risk more salient
- Physical exercise

### Is choice preferred?

- If given a choice b/w 6 or 24 jams → more people stopped w/ 24 jams, more people bought w/ 6 jams
- If given a choice b/w 6 or 24 essay topics → more people completed essay w/ 6 questions and to a higher level
- People like to choose but wide choice leads to...
  - Escalation of expectations
  - Frustration – shouldn't need to compromise
  - Paralysis

Lecture 8 (21/03) & Lecture 9 (22/03) – Control and motivational effects of failure, success and self-efficacy

- What if we learn more than to repeat/stop Rs that cause desirable/undesirable Os

Uncontrollable stressors – Seligman & Maier

- Dogs in shuttle boxes
- Tripartite design
  - No shock (control) – no exposure to stressor
  - Escapable shock (escape) – dogs could switch off shock electrode with nose plate
  - Inescapable shock (yoked) – couldn't turn electrode off, escape dog in control of their electrode Note: yoked means attached to another animal
    - Yoked condition compared to control condition to determine if effect was +/-ve
- Dogs w/ no control over stressor failed to learn – learned helplessness effect
- Exposure to uncontrollable stressor causes the following impairments...
  - Cognitive – can't learn about use of behaviour to change O, trans-situational (led to failure in other tasks)
  - Motivational – failure led Ps to stop responding in later tasks
  - Emotional – depressive state incl. compromised eating, sleeping, sociality⇒ Learned hopelessness theory of depression

**Contingency learning**

- If and only if R occurs, then O occurs
- $\Delta P = p(O | R) - p(O | no R)$
- Feeling of control if...
  - +ve relation b/w R and O (R can induce O) when  $\Delta P > 0$
  - -ve relation b/w R and O (R can inhibit O) when  $\Delta P < 0$
- Learned helplessness when no relation b/w R and O,  $\Delta P = 0$

Learned helplessness (LH)

- Experience with non-contingency interferes with learning about contingencies
- Perceived/real absence of control over O
- Inoculation – prior experience w/ control ↓ impact of loss of control
- Some people are less affected by uncontrollable stressors – due to attributional styles
  - Internal vs. external
  - Global vs. Specific
  - Permanent vs. temporary
  - Optimism vs. pessimism

**Depression**

- Attempt to link to LH
  - Similar behavioural, motivational, emotional characteristics
  - Similar neurochemistry – can be prevented and cured by anti-depressants
- Hopelessness depression e.g. chronic pain, grief
- Depressive realism – depressed people detect contingencies more accurately than non-depressed people, people with depression aren't as optimistic about how much control they have in their lives

**Optimism bias** – overestimation of likelihood of +ve events and underestimation of likelihood of -ve events

- Leads to success – more optimistic people have more motivation
- Can lead to unhealthy choices – people think they are less at risk than others e.g. less likely to get cancer from smoking

### **Expectancy-value theories**

- People are good at estimating how good they will be at something
- *Expected utility of action = value of goal × probability of obtaining goal*
- Generally, more valuable O are harder to obtain
- Energy that drives a behaviour is...
  - Awareness of potential satisfaction activates behaviours to lead to goal
  - Awareness that goal can be obtained
- Reward could be...
  - **Extrinsic** e.g. satisfying expectation
  - **Intrinsic** e.g. feeling competent
  - **Affective** e.g. happiness

### **Dunning-Kruger effect**

- People with poor experience at a task are not good at estimating how good they will be at the task
- E.g. Man robbed a bank with lemon juice on face because thought it would make him invisible since it is used in invisible ink

### **Types of motivation**

**Extrinsic motivation** – doing something because it leads to a separable outcome

- Behaviour driven by external rewards
  - Tangible e.g. money
  - Psychology e.g. fame, status
- Explanations
  - Behavioural psychologists – behaviour has been learned from past rewards
  - Economists – behaviour is rational to obtain rewards
- Undermining children's intrinsic interest with extrinsic reward – **Lepper & Greene**
  - Children making art were observed in a room
  - Moved into another room in 1 of 3 conditions
    - Expected reward
    - No reward (control)
    - Unexpected reward
  - Children under Rft (expected reward) had ↓ intrinsic motivation due to expected extrinsic reward – motivation is undermined