HPS203 The Human Mind

Week 1: The Science of the Mind

The Scope of Psychology:

- Cognitive Psychology: the scientific study of cognition, or the collection of mental activities used in perceiving, remembering, and thinking, as well as the act of using those processes.

The mental activities that are included in Cognitive Psychology:

- Perception (recognise an object)
- Attention (focus in class)
- Memory (remember a phone number)
- Concepts (have an idea)
- Language (understanding text)
- Visual knowledge (getting to W building)
- Judgement/decisions (party or study)
- Reasoning/problem solving (how can I graduate)

The Cognitive Revolution:

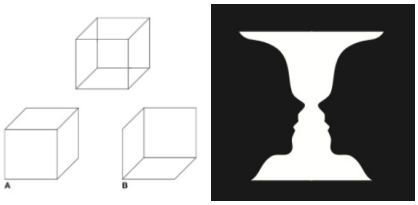
- Introspection:
    - Wilhelm Wundt (1832-1920) and Edward Bradford Titchener (1867-1927) believed that psychology needed too focus on the study of conscious mental events through introspection (to look within oneself).
    - Some thoughts and mental processes are unconscious, so introspection can't account for them, theories aren't testable or falsifiable.
- Behaviourism:
    - John B Watson (1878-1958)
    - Behaviourist theory: Broad principals concerned with how behaviour changes in response to different configurations of stimuli.
    - Behaviour is driven by both internal and external stimuli, you can't ignore the importance of mental entities.
- Kant's Transcendental Method: starts with the observable facts and works backwards from these observations. Essentially ask how these observations would come about, and what were the underlying causes be that led to those effects?
- The two essential themes from the history of cognitive psychology:
    - Mental processes cannot be directly observed; we must study them indirectly.
    - Mental processes must be studied in order for us to understand behaviour.

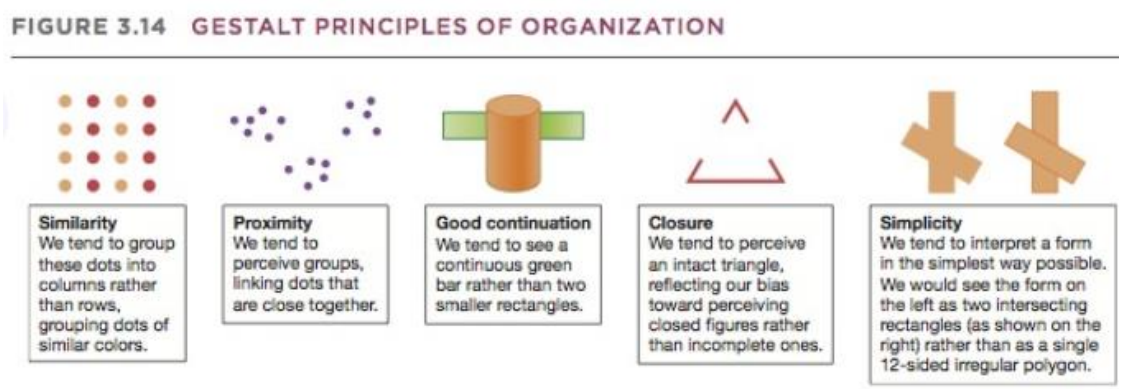
Research in Cognitive Psychology: The Diversity of Methods:

- Working memory: holds information in an easily accessible form.
- Span test: read a list of say 4 items and ask the person to repeat back, if successful with 5 items and so on.
    - Shows working memory has a limited capacity, most people can remember 7 or 8 items. People often report back something incorrect but similar sounding (say D, heard T) even when presented visually suggested working memory has several different components.
- Central Executive: the part that is in charge and is helped out by 'assistants', is sophisticated and does the analysing and interpreting of information.
- Articulatory Rehearsal Loop: one of the assistants that mentally rehearses the information relying on the process of subvocalisation-phonological buffer meaning an auditory image is created in the inner ear, and before it can fade subvocalisation is used again to create a new image, sustaining the material of the buffer.

Form Perception:

- Form perception: The process through which people see the basic shape, size, and position of an object.
- Object recognition: the steps or processes through which people identify the objects they encounter in the world around them.
- Ambiguous or reversible figures demonstrate that perception goes beyond the information presented by specifying an arrangement in depth. For example, the Necker cube (shown below) is a transparent version of both A and B depending on perception, or the ambiguous figure can be either a vase or two faces.





- Both perception of features and their analysis occur concurrently.
- Unconscious interference: the hypothesised steps that perceivers follow in order to take one aspect of the visual scene (like viewing distance) into account in judging another aspect (like size)
- Perceptual constancy: people perceive the constant properties of objects in the world (like size, shape etc.) even though the sensory information we receive about these attributes changes whenever our viewing circumstances change.

Object recognition:

- Bottom-up influences: effects that are governed by the stimulus input itself and that shape the processing of that input.
- Top-down influences: factors arising from a person's knowledge and expectations and shaping their processing of the stimulus input.
- Visual features: the lines that make up an object which when catalogued together help to assist with recognition of an object.
- Tachistoscopic ppresentations briefly displays information (say 20ms), followed by a poststimulus mask (to interrupt any continued processing that participants might try to do for the stimulus just presented) to test recognition.
- Two factors influence recognition: how familiar a stimulus is and recency of view.
- Word-superiority effect: words are easier to perceive than individual letters.
- Two-alternative, forced choice procedure: tests the word-superiority effect, in some trials a single letter will be presented e.g. K, and in others a word e.g. DARK and the participant will be asked: which of the following were in the display: an E or K