# Cognitive Psychology

## Attention

**Dichotomy of attention**
- you choose to attend to something —> endogenous attention
- or exogenous attention e.g. loud noise

**Focused 'selective' attention**
- people who play video games until they die
- eating too much while watching tv —> miss cues about how much you've eaten
- vigilance tasks e.g. security guard staring in one place for ages, attention drops off

**Focused auditory attention**
- stereo headphones where a different message is coming in each ear
- separates stream on audio into left ear and right ear
- physical task of discerning the signals is easier so that can focus on the cognitive task of which one to attend to

- **Dichotic Listening Task** — hear two messages and repeat back what they are hearing in one ear
  - initial findings — only things processed from unattended message are the basic physical characteristics e.g. gender, whether its speech or sound
  - locus of selection — point at which you make a decision to accept some material for further processing and other material is rejected
  - assumes we have limited processing
  - early locus of selection —> decision made based on physical characteristics, then material rejected is never processed beyond physical characteristics
  - late locus of selection implies you have processed all the inputs to a higher degree and then made a decision
  - relates to efficiency and effort before making a decision e.g. shallow people make a date selection based on physical characteristics,

**Broadbent's filter theory**
- early locus of selection
- stimuli selected on the basis of physical characteristics
- unattended stimuli not processed further
- people with a low working memory are more easily distracted

**Treisman's attenuation theory**
- designed to account for breakthroughs/intrusions
- attenuator reduces the processing of unattended words
- words which are expected are more likely to be processed
- implies late locus of selection
- things which have lower thresholds e.g. your name are more likely to be heard

**Leaky filter vs. slippage**

- leaky filter would explain why some unattended items receive further analysis
- slippage is where attention suddenly shifts so unattended channel is attended briefly
- what may be happening when we notice our name is just that we are switching our attention

**Lavie's load account**

- we are are likely to be distracted when the task we are doing has a low perceptual load
- locus of selection depends on how much spare capacity we have
- if a task is simple we need a high level of arousal to perform better
- if a task is complex we need a reasonable level of arousal

**Evaluative pressure**

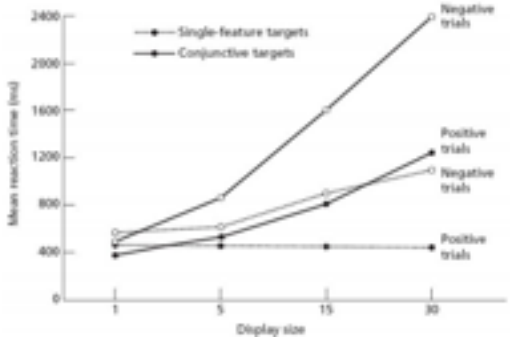
- people were more distracted by task relevant stimuli when stressed out and distraction by irrelevant features were reduced

**Feature integration theory — Treisman & Gelade (1980)**

- task — find odd one out
- feature search — target is easy to find because it is unique on a single dimension e.g only red thing, only circle thing
- conjunction search — target is not unique e.g. not the only red thing, not the only circle — harder to find
- feature search — the whole display is searched in parallel
- conjunction search — serially search the display to find target
- illusory conjunctions
- texture segregation — border defined by either features or conjunctions
- attention defined as process that combines features —> object perception

**Search slope**

- if features are detected pre attentively then it shouldn't matter how many distractors there are = flat search slope — evidence of parallel/pre attentive processing
- but if we are searching the display serially then it will take longer the more distractors there are and the slope will be curved




**Problems with FIT**

- distractors are heterogenous
- but in feature search the distractors are all the same so can be rejected on mass which makes it easier
- no clear distinction between parallel and serial searches in data
- conjunction search may be slower because target is more similar to distractors
- guided search — combining feature maps
- for a triple conjunction FIT predicts a serial search, whereas guided search predicts a more efficient search than for simple conjunctions i.e. if there are 3 features