

Biological and cognitive approaches

IB DP Psychology HL core approaches 1-2 full package

1. The core approaches at a glance

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IB Psychology HL core approaches 1-2: the biological approach (brain and behaviour, hormones, genetics, plus the HL animal-research extension) and the cognitive approach (processes, reliability, emotion, plus the HL digital-world extension). Every claim travels with a named study.

Must-know: Gage and H.M. for localisation; Maguire for neuroplasticity; fMRI versus EEG; Dabbs testosterone and Kosfeld oxytocin; Gottesman MZ-DZ concordance; Caspi 5-HTT 33 versus 17 percent; Harlow for HL animals; serial position and word-length effects; Bartlett schemas; Loftus-Palmer 40.8 versus 34.0 mph with Yuille-Cutshall; Brown-Kulik and Neisser-Harsch; Sparrow for HL digital.

2. The biological approach

The biological approach

Localisation: Gage (frontal personality change) and H.M. (hippocampi removed, no new long-term memories) are the case studies - rich, and as limited as $n = 1$.

Neuroplasticity: Maguire (2000) found taxi drivers posterior hippocampi larger, growing with navigation years - a correlation, not a demonstration of cause.

Techniques: fMRI locates, EEG times, MRI structures, post-mortem confirms.

Hormones: cortisol under chronic stress impairs hippocampal memory; Dabbs linked testosterone to violent offending (correlationally); Kosfeld nasal oxytocin raised trust-game transfers. Genetics: schizophrenia concordance about 50 percent MZ versus 15-20 percent DZ (Gottesman); Caspi 5-HTT shows the gene acting only under severe stress. HL: Harlow wire-versus-cloth mothers, argued through the 3Rs.

3. The cognitive approach

The cognitive approach

Multi-store model: serial position evidence - primacy from long-term, recency from short-term, and recency vanishes after a filled delay (Glanzer-Cunitz). Working memory: executive plus slave systems, predicting the word-length effect. Schema theory: Bartlett War of the Ghosts - retellings reshape toward cultural schemas, memory is reconstructive.

Reliability: Loftus-Palmer verbs moved speed estimates 40.8 versus 34.0 mph and planted broken glass; Yuille-Cutshall real witnesses stayed accurate - conditions decide. Availability heuristic: vivid feels common. Emotion: flashbulb memories are vivid but Neisser-Harsch showed they drift; LeDoux two routes. HL: Sparrow Google effect - remembering where, not what.

Check yourself

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Localisation with both case studies; neuroplasticity with Maguire; what each imaging technique can and cannot show.

The three hormone findings with their correlational cautions; twin concordance; Caspi interaction with both percentages.

HL: Harlow and the 3Rs; the transferability debate.

Serial position and word-length effects; Bartlett; Loftus-Palmer with the Yuille-Cutshall counterpoint; flashbulb drift; HL Google effect.