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A-Level Psychology

Cognitive Psychology · Key Studies

Edexcel Psychology (9PS0) | Key Studies | 6 entries

The named classic and contemporary studies for Cognitive Psychology - memory models, reconstructive memory and more.

Classic study

Baddeley (1966) - Coding in STM and LTM

Aim: investigate whether short-term memory (STM) and long-term memory (LTM) encode information differently - acoustically or semantically. **Method:** laboratory experiment; participants recalled word lists that were either acoustically similar (cat, cab, can), acoustically dissimilar, semantically similar (big, large, huge) or semantically dissimilar. Recall was tested immediately (STM) or after a 20-minute delay with an interference task (LTM). **Findings:** immediate recall was much worse for acoustically similar words; delayed recall was much worse for semantically similar words. **Conclusion:** STM codes mainly acoustically (by sound) whereas LTM codes mainly semantically (by meaning), supporting separate stores in the multi-store model. **Evaluation:** + controlled laboratory design gives high reliability and isolates coding as the variable; − artificial word-list task lacks ecological validity, so it may not reflect everyday memory; − only tested verbal material, so findings may not generalise to visual or other types of memory.

Contemporary studies

Sebastián and Hernández-Gil (2012) - Development of digit span

Aim: investigate how the phonological loop component of working memory (digit span) develops with age in Spanish children, and compare it with English-speaking norms. **Method:** 570 children aged 5−17 from Madrid were read sequences of digits and asked to repeat them back in order; the longest sequence correctly recalled gave each child's digit span. **Findings:** digit span increased steadily with age, from about 3·8 digits at age 5 to about 5·8 digits by age 17; Spanish spans were consistently shorter than reported English-speaking spans. **Conclusion:** verbal working-memory capacity grows through childhood, and language differences (Spanish number words take longer to say) reduce span, supporting the word-length effect within the phonological loop. **Evaluation:** + large sample improves population validity and reliability; + supports the working memory model with real developmental data; − a cross-sectional design cannot rule out cohort effects; − cultural and language specificity limits generalisation to other languages.

Schmolck et al. (2002) - Semantic memory and the medial temporal lobe

Aim: examine how damage to the medial temporal lobe and lateral temporal cortex affects semantic memory, clarifying which brain areas support different memory types. **Method:** quasi-experiment with brain-damaged patients (including amnesic patient HM and others with varying lesion extents) plus controls; participants completed nine semantic tasks, such as naming, defining and matching pictures to descriptions. Memory performance was later correlated with the extent of brain damage shown on MRI. **Findings:** patients with damage limited to the medial temporal lobe were only mildly impaired, whereas those with additional damage to the lateral temporal cortex were severely impaired on semantic tasks. **Conclusion:** the lateral temporal cortex is critical for storing semantic knowledge, while the hippocampus and medial temporal lobe are more involved in forming new memories - supporting localisation of memory function. **Evaluation:** + use of MRI gives objective evidence linking lesion site to deficit; − very small, unique patient sample limits generalisation; − pre-injury ability is unknown, so individual differences may confound the results.

Other key studies/evidence

Loftus and Palmer (1974) - Reconstructive memory and leading questions	**Aim:** investigate whether leading questions distort the accuracy of eyewitness memory for a car accident. **Method:** laboratory experiment; in Experiment 1, 45 students watched films of car crashes then estimated speed using the question 'How fast were the cars going when they ___ each other?' with the verb varied (hit, smashed, collided, bumped, contacted). Experiment 2 added a one-week follow-up asking whether participants saw broken glass (there was none). **Findings:** the verb 'smashed' produced the highest mean speed estimate (about 40·8 mph) and 'contacted' the lowest (about 31·8 mph); 'smashed' participants were also more than twice as likely to report seeing non-existent broken glass. **Conclusion:** post-event information from the wording of a question can reconstruct and distort a memory, showing memory is not a fixed recording - supporting reconstructive memory theory. **Evaluation:** + high control and replicability; + real-world relevance to police questioning and eyewitness testimony; − artificial film clips lack the emotion of a real accident, lowering ecological validity; − a student sample may differ from older drivers in memory and confidence.
Tulving (1972) - Episodic and semantic memory	**Aim:** propose and support a distinction between episodic memory (personal events) and semantic memory (general knowledge) within long-term memory. **Method:** a theoretical review later supported by brain-imaging evidence; in PET-scan studies Tulving and colleagues had participants recall episodic memories (personal experiences) versus semantic memories (facts) while blood flow in the brain was measured. **Findings:** episodic and semantic recall activated different patterns of brain activity, with episodic retrieval linked more to the frontal lobes; the two types could be impaired independently in patients. **Conclusion:** long-term memory is not a single store but is divided into separable episodic and semantic systems, refining the multi-store model. **Evaluation:** + supported by objective brain-scan evidence and case studies; − early imaging methods were limited and findings were not always replicated; − the episodic−semantic boundary can be hard to define, since recalling a fact may also recall the event of learning it.
Steyvers and Hemmer (2012) - Reconstructive memory in natural scenes	**Aim:** test whether prior knowledge (schemas) improves or distorts memory for objects in everyday scenes. **Method:** laboratory experiment; participants viewed photographs of natural scenes (for example a kitchen or a hotel) for a few seconds, then recalled the objects present; recall was compared against what objects people expected such scenes to contain. **Findings:** participants recalled scene-consistent (expected) objects more accurately, but also reported objects that fit the scene schema yet were not actually present, especially when viewing time was short. **Conclusion:** prior expectations help memory by filling gaps but also introduce schema-based errors, supporting reconstructive memory in realistic settings. **Evaluation:** + uses naturalistic scenes, improving ecological validity over word lists; + supports reconstructive theory with everyday material; − laboratory recall is still controlled and may not match real-life eyewitness conditions; − the number of objects per scene was limited, restricting how far results generalise.