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A-LEVEL PSYCHOLOGY REVISION NOTES

Memory

AQA Psychology 7181 (AS) and 7182 (A-level)

2025 specification · spec sections 3.1.2 (AS) and 4.1.2 (A-level)

Compiled by **Simply Psychology** · simplypsychology.org/a-level-memory.html

Contents

How to use these notes. Memory content is identical for AS and A-level. Definitions of *coding, capacity, duration, STM, LTM, interference, retrieval failure* and *the cognitive interview* follow AQA's 2025 *Subject specific vocabulary*. Studies are presented with procedure → findings → evaluation; key terms are in **bold**.

Note on the 2025 specification: Types of long-term memory (episodic, semantic, procedural) were removed from the 2025 spec and are not covered in these notes.

AQA 2025 SPECIFICATION — MEMORY CONTENT

- **The multi-store model of memory**: sensory register, short-term memory and long-term memory. Features of each store: coding, capacity and duration.
- **The working memory model**: central executive, phonological loop, visuo-spatial sketchpad and episodic buffer. Features of the model: coding and capacity.
- **Explanations for forgetting**: proactive and retroactive interference and retrieval failure due to absence of cues.
- **Factors affecting the accuracy of eyewitness testimony**: leading questions, post-event discussion, and anxiety; the use of the cognitive interview.

1 The Multi-Store Model of Memory

The **multi-store model (MSM)** was proposed by **Atkinson and Shiffrin (1968)**. It is a *structural* model that views memory as flowing through three separate stores in a fixed, linear sequence: **sensory register → short-term memory → long-term memory**.

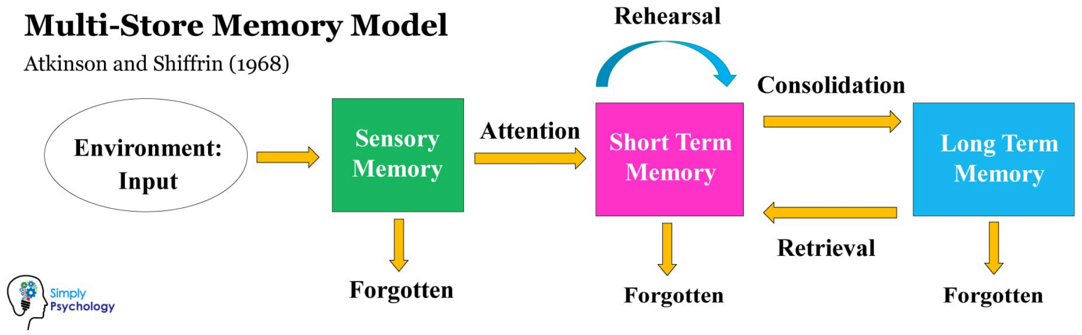

Figure 1.1 — Atkinson and Shiffrin's (1968) multi-store model. Attention transfers information from the sensory register to STM; maintenance rehearsal transfers it from STM to LTM; retrieval brings stored information back into STM.

THREE FEATURES OF EVERY MEMORY STORE

Coding — how sensory information is transformed into a format that can be stored in memory (visual / acoustic / semantic).

Capacity — the amount of information that can be held within / stored in memory.

Duration — the length of time that information can be held in memory.

The Three Stores

Store	Coding	Capacity	Duration
Sensory register	Modality specific (iconic — visual; echoic — auditory; haptic — touch; etc.)	Very large / unlimited (receives input from all senses).	Iconic: ~250 ms (¼ second). Echoic: 3–4 seconds. Information fades unless attention is paid.
Short-term memory (STM)	Primarily **acoustic** (Baddeley 1966 — acoustically-similar words harder to recall in STM).	Limited — **7 ± 2 items** (Miller 1956: "the magic number seven"); can be increased by **chunking**.	**~18–30 seconds** without rehearsal (Peterson & Peterson 1959 — recall fell to under 10% after 18 seconds when rehearsal was prevented).
Long-term memory (LTM)	Primarily **semantic** (Baddeley 1966 — semantically-similar words harder to recall after a 20-min delay).	Unlimited (no research has identified a limit).	Potentially a lifetime. Bahrick et al. (1975) — participants recognised school classmates' names and faces up to 50 years on.

How Information Moves Between Stores

- **Attention** moves information from the sensory register to STM.
- **Maintenance rehearsal** (repeating information) keeps it in STM and, if sustained, transfers it to LTM.
- If maintenance rehearsal does not occur, information is forgotten through **decay** or **displacement**.
- Information is retrieved from LTM back to STM when needed.

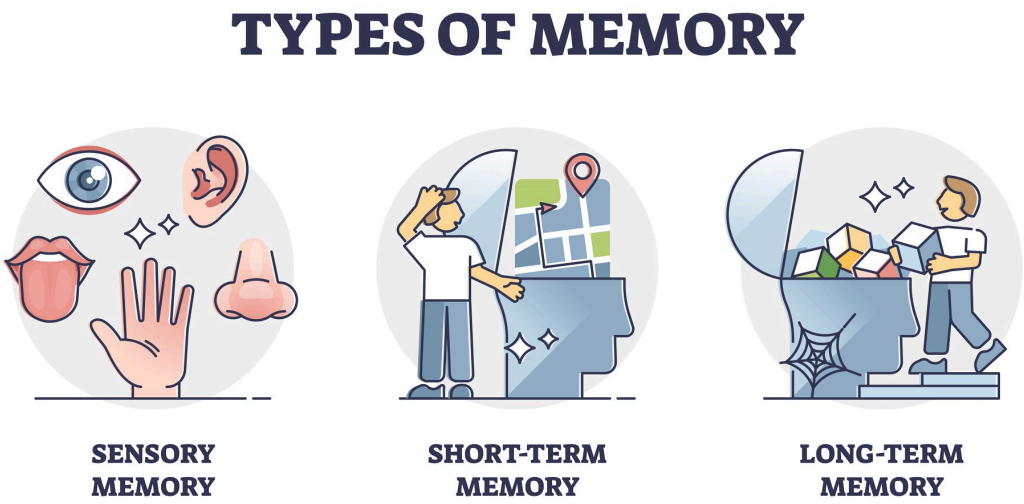

Figure 1.2 — A simplified view of the three stages of memory. Information is lost at each stage through decay (sensory register) or displacement / interference (STM and LTM).

Evaluation

Strength — supporting evidence for separate stores (Baddeley 1966). A key strength of the MSM is research support for the idea that STM and LTM are distinct stores with different coding. Baddeley (1966) found that participants made more errors with *acoustically* similar words in STM (e.g. cat, mat, hat) but more errors with *semantically* similar words in LTM (e.g. large, big, huge). This is important because the coding pattern is exactly what the MSM predicts — STM coded acoustically, LTM coded semantically. This therefore supports the validity of Atkinson and Shiffrin's claim that STM and LTM are functionally separate stores.

Strength — case study of HM (Henry Molaison). Further support comes from the case of HM, who had his hippocampus removed in 1953 to treat severe epilepsy. Afterwards, HM could hold a conversation (intact STM) but was unable to form any new long-term memories. This is important because it demonstrates a dissociation: STM and LTM can be selectively damaged, which is only possible if they are separate stores located in different brain regions. This strengthens the construct validity of the MSM's distinction between STM and LTM, though the idiographic nature of single-case research limits how widely the findings can be generalised.

Limitation — STM is not a single, unitary store (Shallice and Warrington 1970). A major limitation of the MSM is that it portrays STM as a single store, but the case of patient KF (Shallice and Warrington 1970) contradicts this. After a motorcycle accident, KF had impaired STM for verbal information but intact STM for visual information. This is important because if STM were a single store, both modalities should be equally impaired. This therefore undermines the validity of the MSM and supports Baddeley and Hitch's (1974) **Working Memory Model**, which proposes separate phonological-loop and visuo-spatial-sketchpad components — a more accurate account of STM.

Limitation — over-emphasis on maintenance rehearsal (Craik and Lockhart 1972). A further limitation is the MSM's claim that *maintenance* rehearsal alone transfers information from STM to LTM. Craik and Lockhart (1972) argued that **depth of processing** matters more — elaborative rehearsal (engaging with meaning) produces durable LTM, whereas maintenance rehearsal (rote repetition) does not. This is supported by everyday experience: a celebrity-magazine article read once is remembered because it is processed semantically, while revision notes re-read many times are quickly forgotten. This challenges the MSM's mechanism for LTM transfer and suggests the model is too simplistic.

Limitation — artificial lab tasks (low mundane realism). The studies that originally supported the MSM (Peterson and Peterson 1959; Jacobs 1887) used nonsense syllables, digit strings and word lists with no personal meaning. This is important because real-world memory typically deals with meaningful, contextually rich material such as conversations, faces and routes. Bahrick et al. (1975) found participants could still recognise 90% of high-school classmates' names 14 years on — far longer than the lab-based "duration" estimates suggest. This limits the ecological validity of the MSM and means its features (capacity, duration) may not generalise to everyday memory use.

Conclusion. Overall, the MSM was a foundational structural model that successfully introduced the distinction between STM and LTM. However, evidence for multiple STM components (Shallice and Warrington), the role of elaborative rehearsal (Craik and Lockhart), and the artificiality of supporting studies mean a more complex multi-component model — the WMM — is now considered a more valid account of short-term memory.

2 The Working Memory Model

Proposed by **Baddeley and Hitch (1974)** as an alternative to the MSM's view of STM as a single passive store. The **Working Memory Model (WMM)** views STM as an *active*, multi-component system that both stores and processes information at the same time.

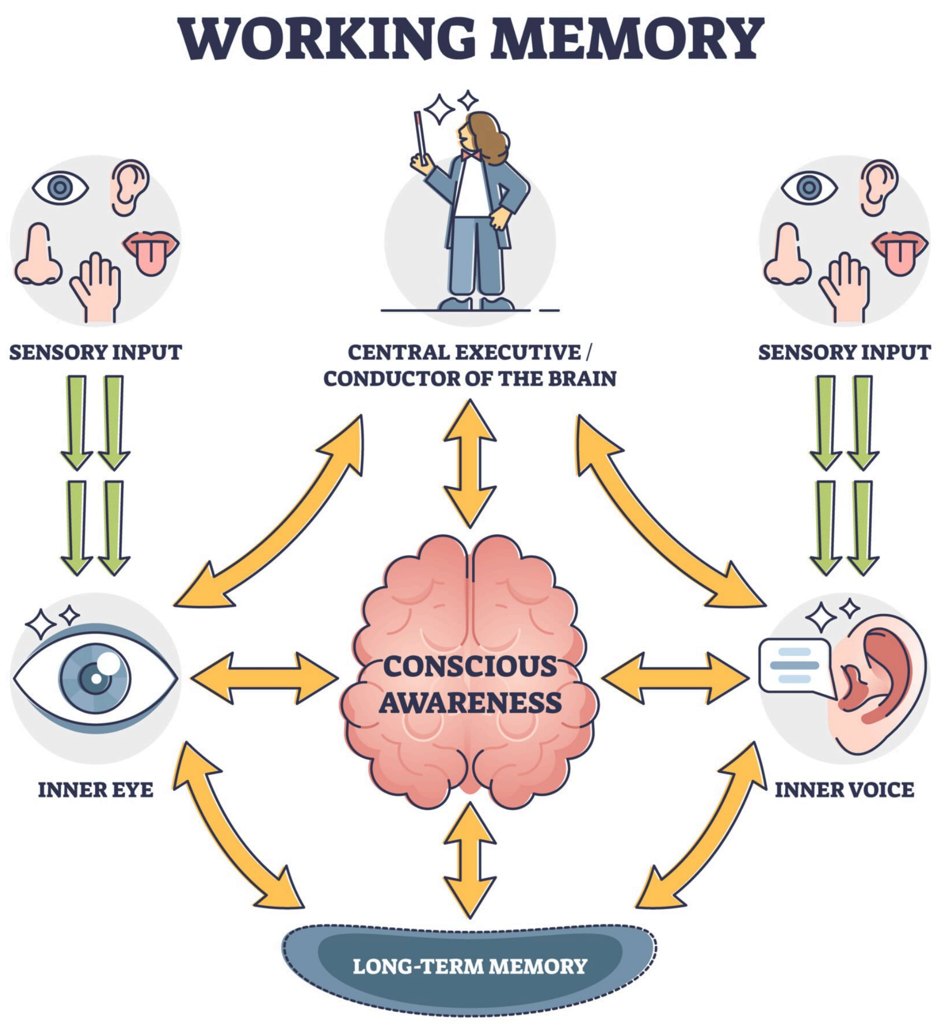

Figure 2.1 — Baddeley and Hitch's (1974) Working Memory Model, with the episodic buffer added by Baddeley (2000). The central executive directs attention to the phonological loop (verbal/auditory), visuo-spatial sketchpad (visual/spatial) and episodic buffer, which integrates information from the slave systems with long-term memory.

The Four Components

Component	Function	Coding	Capacity
Central executive	The "boss" of working memory — allocates attention to the slave systems, oversees higher-level thinking (planning, decision-making, problem-solving).	Modality-free (can process any sensory input).	Very limited — can manage only one stream of information at a time (~4 chunks).
Phonological loop	Stores and processes verbal / auditory information. Split into the *phonological store* ("inner ear" — holds spoken words) and the *articulatory control process* ("inner voice" — silent rehearsal).	Acoustic.	Limited — about 2 seconds' worth of speech (the "word-length effect" shows shorter words are easier to recall than longer ones).
Visuo-spatial sketchpad	Stores and manipulates visual and spatial information — the "inner eye". Picturing a layout, mentally navigating a familiar route.	Visual + spatial.	Limited — about 3–4 visual items (Logie subdivides into a *visual cache* and an *inner scribe*).
Episodic buffer	Added by Baddeley in 2000. Integrates information from the slave systems with LTM into a single coherent representation (a "running episode").	Modality-free.	Limited — about 4 chunks.

Evaluation

Strength — clinical evidence from patient KF (Shallice and Warrington 1970). A major strength of the WMM is supporting evidence from the case of patient KF, who after a motorcycle accident had impaired STM for *verbal* information but intact STM for *visual* information. This is important because the dissociation maps directly onto the WMM's distinction between the phonological loop (damaged) and the visuo-spatial sketchpad (intact). This therefore supports the validity of treating STM as a multi-component system rather than a single store, and provides exactly the pattern the MSM cannot account for.

Strength — dual-task evidence. A further strength is experimental evidence from dual-task studies. Baddeley and Hitch (1976) showed that participants could simultaneously perform a verbal task (e.g. answering "true/false" questions) and a visual task (e.g. tracking a moving spot) without interference — but performance dropped sharply when both tasks used the *same* slave system. This is important because the pattern of interference confirms that verbal and visual information are processed by separate components with their own limited capacities. This strengthens the construct validity of the phonological loop and visuo-spatial sketchpad as distinct sub-systems.

Strength — neuroscientific support (Paulesu et al. 1993). Brain-imaging research adds biological credibility to the WMM. Paulesu et al. (1993) used PET scans and found the phonological store activated areas of the parietal lobe while the articulatory control process activated Broca's area in the frontal lobe. This is important because identifying distinct neural substrates for the two sub-components of the phonological loop converges with the behavioural data and supports the model's anatomical reality. This strengthens the validity of the WMM by triangulating cognitive evidence with neuroscience.

Limitation — the central executive is poorly specified. A major limitation is the vagueness of the central executive. Baddeley himself described it as "the most important but least understood" component, and it is typically treated as a homogeneous attentional system. This is a problem because critics (e.g. Eslinger and Damasio 1985, patient EVR) suggest the central executive may itself be composed of multiple sub-components. This weakens the WMM because the most important part of the model is the least well-defined, making it difficult to falsify or test directly.

Limitation — over-reliance on case-study evidence (generalisability). Many of the WMM's key supports — KF, EVR, SC — are individual brain-damaged patients. This is important because such cases are **idiographic** and may not represent typical working memory in healthy populations: the trauma may have caused additional, unmeasured changes (e.g. compensatory reorganisation). This limits the generalisability of conclusions drawn from these patients and means the WMM's component-structure claims need converging evidence from healthy participants.

Limitation — alternative explanation (Cowan's embedded-process model). A further limitation is that competing accounts of working memory exist. Cowan (1999) proposes an *embedded-process* model in which working memory is an activated subset of LTM rather than a structurally separate store, focused around a four-chunk capacity limit. This is important because the existence of a viable alternative shows the WMM is not the only way to model active short-term cognition. This weakens the WMM's exclusive claim to capture how working memory operates, though the WMM remains the more widely taught and clinically applied framework.

Conclusion. Overall, the WMM is a clear improvement on the MSM's single-store view of STM and is well supported by clinical, behavioural and neuroscientific evidence. However, the vagueness of the central executive and the existence of alternative models mean the WMM is best treated as a strong working framework rather than a complete account of short-term memory.

EXAM TIP — APPLYING WMM TO A SCENARIO

For AO2 questions (e.g. "explain why Bryan can drive and listen to music but Bob cannot"), use the *dual-task* principle: experienced behaviour is automated, freeing the central executive to delegate driving to the visuo-spatial sketchpad and conversation to the phonological loop. Novice behaviour requires all central-executive capacity, so concurrent tasks compete.

3 Explanations for Forgetting: Interference

INTERFERENCE (AQA DEFINITION)

Interference is an explanation for forgetting when *similar material* — e.g. the vocabulary of two similar languages such as Italian and Spanish — is confused in recall from long-term memory. Forgetting occurs because other information disrupts the target memory; the memory is not necessarily lost, but cannot be retrieved cleanly.

The Two Types of Interference

Type	Direction	Example
Proactive interference *(pro = forward)*	Past memories inhibit an individual's ability to retrieve newly learned memories. Old material moves forward in time and disrupts new learning.	An experienced typist trained on QWERTY struggles to learn a Dvorak keyboard layout — old motor memories intrude.
Retroactive interference *(retro = backward)*	Newly learned information interferes with the recall of previously learned information. New material moves backward in time and disrupts old memories.	Learning a new bank PIN makes it harder to recall the old one. A Spanish-speaker who starts learning French finds Spanish vocabulary becomes harder to recall.

Supporting Research

McGeoch and McDonald (1931). Participants learned a list of 10 adjectives to perfect recall, then learned a second list. The more *similar* the second list (synonyms vs. unrelated words vs. numbers), the worse the recall of the original. Synonyms produced the worst recall — demonstrating that **similarity** drives interference.

Greenberg and Underwood (1999). Participants learned four word-lists with 48-hour gaps. Recall fell from 69% (list 1) to 25% (list 4). Direct evidence for proactive interference — each new list was disrupted by accumulated earlier learning.

Baddeley and Hitch (1977) — rugby players. Field study: rugby players were asked to recall the names of teams they had played that season. Players who had played *more* games recalled fewer team names. Supports interference operating in everyday life, not just the lab.

Evaluation

Strength — robust experimental support. A key strength of interference theory is the volume of supporting lab evidence. McGeoch and McDonald (1931) found that recall of a learned word list got progressively worse the more semantically similar the second list was — synonyms produced the worst recall, while unrelated material produced the least interference. This is important because it isolates *similarity* as the active ingredient in interference, exactly as the theory predicts. The convergence of decades of lab work (McGeoch and McDonald; Underwood 1957; Greenberg and Underwood 1999) therefore strengthens the validity of interference as a genuine cause of forgetting.

Strength — real-world evidence (Baddeley and Hitch 1977). Further support comes from real-world research. Baddeley and Hitch (1977) asked rugby players to recall the names of teams they had played that season and found recall was poorer for players who had played *more* games — direct evidence of retroactive interference outside the lab. This is important because it shows interference effects are not a lab artefact but operate in meaningful everyday memory contexts. This increases the ecological validity of interference theory and supports its application to study advice (e.g. avoid revising two similar subjects back-to-back).

Limitation — artificial materials in lab research. However, a limitation is that most lab studies of interference use nonsense syllables, paired associates or word lists. This is important because such materials are deliberately designed to maximise similarity and have no personal meaning, which may inflate the effect compared to everyday memory. Real-world memories carry context, emotion and meaning that may make them more resistant to interference. This limits the external validity of lab evidence and suggests interference effect sizes outside the lab may be considerably smaller.

Limitation — accessibility vs availability (Tulving and Psotka 1971). A serious counter-challenge comes from Tulving and Psotka (1971), who showed that apparent interference effects could be *eliminated* by providing category cues at recall. When participants were given the category names as retrieval cues, recall rose back to baseline. This is important because it suggests interference does not actually destroy memories — the memories are still available in LTM but are **inaccessible** without the right cues. This weakens interference as a stand-alone explanation and suggests **retrieval failure** (next section) may be the more fundamental mechanism.

Limitation — individual differences. Interference theory also struggles to explain individual variation. Participants with higher working-memory capacity show *less* susceptibility to interference (Kane and Engle 2000), and older adults show more. This is important because if interference were a uniform mechanism it should affect everyone equally. The presence of consistent individual differences suggests dispositional cognitive factors moderate the effect, meaning interference is part — but not all — of the explanation for forgetting.

Application — practical value. Despite these limitations, interference research has clear practical value. It informs study advice (space out similar subjects; interleave rather than block topics) and language-learning recommendations (avoid back-to-back lessons on Spanish and Italian). These applications have measurable benefits for educational outcomes, supporting the real-world utility of the theory.

4 Explanations for Forgetting: Retrieval Failure

RETRIEVAL FAILURE (AQA DEFINITION)

Retrieval failure is an explanation for forgetting when material is stored in the LTM but cannot be consciously recalled because of a **lack of retrieval cues** to "jog the memory". The memory has not been lost — only the access path to it.

The Encoding Specificity Principle (Tulving, 1983)

Tulving's **encoding specificity principle** states that recall is best when the *cues present at retrieval* match those present at *encoding*. If the cues are absent or different, retrieval failure occurs.

Two Main Types of Cue-Dependent Forgetting

1. Context-dependent forgetting (external cues)

The external environment (location, weather, sounds, smells) acts as a cue. If the environment at recall differs from the environment at encoding, retrieval is impaired.

KEY STUDY — GODDEN AND BADDELEY (1975)

Procedure: Deep-sea divers learned a list of 38 words either on land or underwater, then recalled the words either on land or underwater. This created four conditions: learn–land/recall–land, learn–land/recall–water, learn–water/recall–land, learn–water/recall–water.

Findings: Recall was **50% lower** in conditions where learning and recall environments did not match. Direct support for context-dependent forgetting.

2. State-dependent forgetting (internal cues)

The person's internal physical or emotional state acts as a cue. If the state at recall differs from the state at encoding, retrieval is impaired.

KEY STUDY — CARTER AND CASSADAY (1998)

Procedure: Participants learned word lists either under the effects of antihistamine drugs (drowsy state) or without them. Recall was tested either in the same state or the opposite state.

Findings: Recall was significantly worse when learning and recall states did not match (e.g. learned on drugs → recalled sober). Supports state-dependent forgetting.

Evaluation

Strength — substantial research support. A major strength of retrieval failure is the breadth of supporting evidence. Godden and Baddeley's (1975) deep-sea divers study found recall was 50% lower in mismatched learn–recall environments, while Carter and Cassaday (1998) showed the same pattern using internal antihistamine states. Abernethy (1940) found students recalled better in the room they had studied in than in a different room. This is important because the effect replicates across multiple cue types (external location, internal physiological state, learning environment), demonstrating the encoding specificity principle is robust. This strengthens the validity of retrieval failure as a general explanation for forgetting.

Strength — strong real-world applications (economy and EWT). A further strength is the explanation's strong applied value. The cognitive interview (Section 6) uses **context reinstatement** to improve eyewitness recall, while exposure-based therapies for PTSD deliberately reintroduce situational cues. These applications reduce wrongful convictions and improve trauma treatment, with measurable economic benefits via the justice system and NHS. This is important because applied success is strong evidence that the underlying mechanism — cue-dependent retrieval — is real and useful, going beyond what lab data alone could establish.

Limitation — context effects only matter in extreme differences (Baddeley 1997). However, a limitation is that the contexts used in lab studies are unusually extreme. Baddeley (1997) argued the everyday environments in which we encode and recall information (e.g. classroom vs library) are rarely as different as land vs underwater. This is important because if retrieval failure only operates under extreme context mismatch, it cannot explain the bulk of everyday forgetting, which occurs in moderately similar settings. This narrows the explanatory range of the theory and questions its real-world significance for everyday memory loss.

Limitation — weaker effects with meaningful material (Smith and Vela 2001). A further limitation comes from Smith and Vela's (2001) meta-analysis, which found context-dependent forgetting effects were significantly weaker for meaningful material (sentences, prose) than for unconnected word lists. This is important because real-world memory typically involves meaningful, semantically rich material rather than nonsense syllables. This restricts the generalisability of retrieval-failure evidence and suggests the effect may be partly an artefact of the unconnected-word-list paradigm used in classic studies.

Limitation — circular reasoning in the encoding specificity principle. A logical limitation, raised by Nairne (2002), is that the encoding specificity principle risks circularity. The principle states that cues only aid retrieval if they were present at encoding — but if a cue fails to aid retrieval, we can simply claim it was not encoded. This is important because it makes the theory difficult to falsify, which violates Popper's criterion for a scientific theory. This is a problem for retrieval failure as a fully scientific explanation, although the convergence of independent lab evidence partially defends the theory.

Conclusion. Overall, retrieval failure due to absence of cues is one of the most strongly evidenced explanations of forgetting, with both robust lab support and substantial real-world application via the cognitive interview. Its limitations — circular reasoning, weaker effects for meaningful material, and extreme contexts in supporting studies — suggest it works best as part of a broader account of forgetting that also includes interference and decay.

EXAM TIP — COMPARING THE TWO EXPLANATIONS

Interference says the memory is *disrupted by similar material*. Retrieval failure says the memory is *intact but inaccessible without the right cues*. Tulving & Psotka's evidence (cues restore interference-based forgetting) suggests retrieval failure may be the more fundamental explanation.

5 Factors Affecting the Accuracy of Eyewitness Testimony

Eyewitness testimony (EWT) is the recollection of a witness about a crime or event they observed. Psychological research has shown that EWT is more fallible than was once assumed — and the AQA spec identifies three factors that affect its accuracy: **leading questions, post-event discussion, and anxiety**.

1. Leading Questions

A **leading question** is one whose wording suggests a particular answer or implies what the answer should be. Leading questions can *distort* memory of the original event.

> **KEY STUDY — LOFTUS AND PALMER (1974)**
>
> **Procedure:** 45 students watched film clips of car accidents and were asked to estimate the speed of the cars. The verb used in the question was varied: *"How fast were the cars going when they ___ each other?"* Verbs used: **contacted, hit, bumped, collided, smashed**.
>
> **Findings:** Estimated speed varied with the verb — from 32 mph ("contacted") up to 41 mph ("smashed"). A second experiment showed that participants who heard "smashed" were more likely to falsely report having seen broken glass at the scene (when there was none).
>
> **Conclusion:** Leading questions can distort the memory of an event — supporting the **substitution hypothesis** (the wording substitutes for the original memory).

2. Post-Event Discussion

Post-event discussion (PED) occurs when co-witnesses share their accounts of an event with each other. PED can alter individual memory through **memory conformity** and **source confusion** (mistaking what someone else said for what one personally witnessed).

> **KEY STUDY — GABBERT ET AL. (2003)**
>
> **Procedure:** Pairs of participants each watched a different video of the same crime — but each video showed details the other didn't (e.g. one showed the thief steal money, the other showed her steal a different item). The pairs then discussed the event before being individually tested on their memory.
>
> **Findings: 71%** of witnesses who discussed the event mistakenly recalled items they had not seen. In a control group with no discussion, this was **0%**.
>
> **Conclusion:** Co-witnesses' accounts can blend into our own — through either conformity (going along with the group) or source confusion (genuinely mistaking the discussion content for our own memory).

3. Anxiety

Anxiety has **complex and contradictory effects** on EWT — some research shows it improves recall, other research shows it impairs recall.

Anxiety *impairs* recall — the weapon focus effect

> **KEY STUDY — JOHNSON AND SCOTT (1976)**
>
> **Procedure:** Participants overhead one of two arguments in an adjacent room. In the *low-anxiety* condition, a man emerged holding a pen with greasy hands. In the *high-anxiety* condition, the argument was more heated, glass smashed, and the man emerged holding a paper knife covered in blood. Participants then identified the man from photographs.
>
> **Findings:** Identification accuracy was **49% (low anxiety)** vs **33% (high anxiety)**. The weapon "draws" attention, reducing memory for the perpetrator's face — known as the **weapon focus effect**.

Anxiety *improves* recall — flashbulb memories

> **KEY STUDY — YUILLE AND CUTSHALL (1986)**
>
> **Procedure:** Field study of 13 real witnesses to a gun-shop shooting in Vancouver. Witnesses were re-interviewed five months later. Anxiety levels at the time of the event were rated.
>
> **Findings:** Witnesses' memories were **highly accurate** even five months later. The most anxious witnesses had the *most* accurate recall — suggesting that under extreme stress, memory can be enhanced (the "flashbulb memory" effect).

Reconciling the contradiction — the Yerkes-Dodson Law

Performance follows an **inverted-U relationship** with arousal: too little arousal → poor performance; moderate arousal → optimal performance; too much arousal → poor performance. Lab studies of EWT typically induce moderate-to-high anxiety; real crimes may induce extreme anxiety that paradoxically improves recall. Both can be true.

Evaluation

Strength — strong practical applications (application + economy). A major strength of EWT research is its profound real-world impact. Loftus's work on leading questions directly informed the development of the **cognitive interview** (Section 6) and reformed police interviewing practice in the UK and US. This is important because reducing reliance on faulty eyewitness identification helps prevent wrongful convictions — the Innocence Project has shown around 70% of US DNA exonerations involved mistaken EWT. This reduces appeals costs, miscarriages of justice and the economic burden of wrongful imprisonment, illustrating the substantial applied value of EWT research.

Limitation — artificial tasks lack emotional impact (Foster et al. 1994). However, a limitation is that most lab studies use video clips or staged events rather than real crimes. Foster et al. (1994) found that participants who believed they were watching a real robbery — and that their identification would be used in a real trial — were significantly more accurate than those who thought it was just an experiment. This is important because lab participants lack the genuine anxiety, threat and consequence of real witnessing. This limits the ecological validity of lab-based EWT findings, and suggests Loftus and Palmer's leading-question effect may be exaggerated by the low stakes of lab settings.

Counterpoint — field evidence (Yuille and Cutshall 1986). A counterpoint is that real-world field research has often found EWT to be surprisingly accurate. Yuille and Cutshall's (1986) study of 13 witnesses to a Vancouver gun-shop shooting found accurate recall five months on, with the most anxious witnesses producing the most accurate testimony. This is important because it challenges the broad picture from lab research that EWT is highly fallible, and supports the Yerkes-Dodson Law: under extreme real-world arousal, memory can be enhanced. This means lab findings may overstate EWT's unreliability in serious crimes.

Limitation — individual differences (generalisability). A further limitation is that EWT research typically reports group averages, obscuring large individual variation. Geiselman et al. (1986) found children under 8 are markedly less accurate than adults, while police officers and trained observers tend to be more accurate. Older adults may show "own-age bias" — better recall of faces of similar age. This is important because the policy implications of EWT research differ depending on witness age and expertise. This limits generalisability of group-level conclusions and supports the use of individualised assessments in court rather than blanket scepticism about EWT.

Limitation — ethical implications and socially sensitive research. EWT research is also **socially sensitive**. Findings about leading questions and weapon focus directly shape how juries weigh eyewitness identification, with major consequences for convictions and acquittals. This is important because over-application of laboratory findings (e.g. dismissing all eyewitness identification as unreliable) could allow the guilty to go free, while under-application could maintain wrongful convictions. EWT research therefore carries an ethical responsibility for how findings are communicated to police, lawyers and the public.

6 The Cognitive Interview

THE COGNITIVE INTERVIEW (AQA DEFINITION)

A method of interviewing eyewitnesses which allows the interviewer to draw **more accurate testimony / information** about the event than standard interview methods. It involves strategies such as changing the chronological order of events when questioning, asking witnesses to **report everything**, to **report from a different perspective** and to **reinstate internal and external contexts**. The cognitive interview **avoids the pitfalls of leading questions**.

Developed by **Fisher and Geiselman (1992)** as an alternative to the standard police interview. The cognitive interview is grounded in cognitive-psychology principles of memory: *cue-dependent retrieval*, *multiple trace theory* and *schema disruption*.

The Four Core Techniques

Technique	What the interviewer asks	Theoretical basis
Report Everything (RE)	"Tell me everything you can remember, no matter how trivial or out of order it seems — even details that may not feel important."	Trivial details may trigger associations that unlock more central information. The witness should not censor themselves.
Reinstate the Context (RC)	"Picture the scene in your mind. What was the weather like? Where were you standing? What did you hear, smell, feel? What were you doing just before?"	**Context-dependent retrieval** (Tulving). Matching the cues at recall to those at encoding (Godden & Baddeley deep-sea divers) improves access to stored memories.
Change the Order (CO)	"Now describe the events in reverse order, starting at the end."	Disrupts **schemas** ("what usually happens in a robbery") so the witness reports from actual memory rather than expectations. Reduces fabrication.
Change Perspective (CP)	"Describe what happened from the perspective of another witness — for example, the shopkeeper or someone watching from across the street."	Further disrupts schemas; forces re-examination of details the witness's own perspective may have missed.

The Enhanced Cognitive Interview (ECI)

Fisher et al. (1987) extended the standard CI with **social and communication elements**:

- Reduce **witness anxiety** by building rapport at the start of the interview.
- Allow witnesses to **set the pace** — no interruptions.
- Use **open-ended questions** rather than closed leading ones.
- Tailor the language to the witness's age and background.

Effectiveness

Köhnken et al. (1999). Meta-analysis of **53 studies** found the cognitive interview produced an average **34% more correct information** than the standard interview. This is a large and well-replicated improvement.

Evaluation

Strength — strong meta-analytic support (Köhnken et al. 1999). A major strength of the cognitive interview is robust empirical support. Köhnken et al.'s (1999) meta-analysis of 53 studies found the CI produced on average **34% more correct information** than the standard police interview. This is important because it is a large, well-replicated improvement across many witness types, settings and crime simulations. This strengthens the validity of the CI as a genuinely more effective interview technique and justifies its widespread adoption.

Strength — theoretically grounded in cognitive psychology. A further strength is the explicit theoretical basis of each technique. **Reinstate the context** draws on Tulving's encoding specificity principle (supported by Godden and Baddeley 1975); **change the order** and **change perspective** disrupt schema-driven reconstruction; **report everything** exploits multiple-trace theory. This is important because the CI was designed deliberately to apply established memory principles, not assembled ad-hoc. This strengthens the construct validity of the CI — it works because it activates known mechanisms of cue-dependent retrieval.

Limitation — increase in incorrect details (Köhnken et al. 1999). However, a limitation is that the same Köhnken meta-analysis found *incorrect* information also rose alongside correct details. This is important because in a forensic context the cost of false information (wrongful conviction, false leads) can be as serious as missing correct information. The CI therefore increases the *volume* of recall but does not necessarily improve its accuracy proportionally, which means investigators must still corroborate witness statements with independent evidence.

Limitation — less effective with young children (Geiselman et al. 1986). A further limitation is that the CI is less effective with children under 8. Geiselman et al. (1986) found younger children struggled with the cognitive demands of *change perspective* in particular, since this requires the ability to take another's viewpoint — a skill not fully developed until around age 7. This is important because children are frequent witnesses in cases involving abuse, family violence and bullying. This limits the population validity of the CI and means modified versions are needed for child interviews.

Limitation — time and training costs. A practical limitation is that the CI takes substantially longer than a standard interview and requires officers to be specifically trained — Kebbell and Wagstaff (1997) found UK officers often used only the **report everything** and **context reinstatement** components because of time pressure. This is important because the full CI's effectiveness depends on using all four techniques in combination, so partial implementation reduces real-world gains. This is an example of a research-to-practice gap that limits the CI's net contribution to investigations.

Strength — large applied success (economy). Despite these limitations, the CI is now standard practice in UK police interviewing (incorporated into the PEACE model), making it one of the most successful real-world applications of cognitive psychology. By improving the quality of evidence at the investigation stage, the CI can reduce wasted court time, prevent wrongful convictions and lower the economic burden of miscarriages of justice. This is important because measurable applied success is itself strong evidence for the underlying mechanism of cue-dependent retrieval, and supports continued investment in CI-based training for police.

Conclusion. Overall, the cognitive interview is a robust, theoretically grounded improvement on standard police interviewing, with strong meta-analytic support and widespread adoption. Its limitations — accuracy not scaling with volume, weaker effects with young children and partial real-world implementation — qualify rather than overturn its status as one of psychology's most successful applied contributions.

These revision notes were prepared for Simply Psychology and cover spec sections 3.1.2 (AS) and 4.1.2 (A-level) of the AQA Psychology 2025 specification. Definitions of *coding, capacity, duration, STM, LTM, interference, retrieval failure* and *the cognitive interview* follow AQA's official *Subject specific vocabulary*. For deeper coverage of any topic, see simplypsychology.org/a-level-memory.html.