Encoding depth and retrieval routes

Supported GRE teaching and original transfer practice

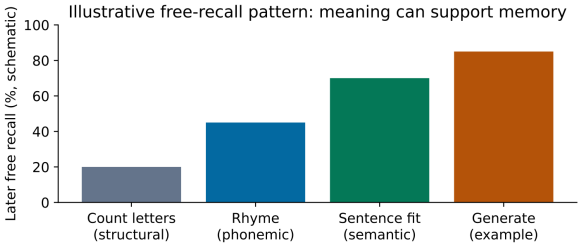
Encoding depth and retrieval routes

- Explain **levels of processing** 加工水平.
- Separate maintenance from **elaborative rehearsal** 精细复述.
- Use **transfer-appropriate processing** 迁移适宜性加工 and **encoding specificity** 编码特异性.
- Design and read studies that separate encoding from retrieval.

Levels of processing

- Shallow (structural): the look of the word, such as its typeface.
- Intermediate (phonemic): its sound, such as what it rhymes with.
- Deep (semantic): its meaning and links to other knowledge.
- People who process deeply without intending to learn can remember more than people who intend to learn but process shallowly.

Figure: Levels of processing



Invented values illustrate one pattern, not a universal ranking or a study result.

- Deeper, meaning-based processing usually supports better recall
- Read the axes and units first.

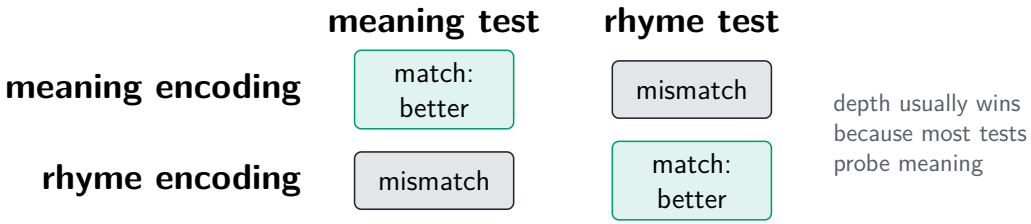
Rehearsal and elaboration

- Maintenance rehearsal repeats material without changing it. It keeps the material active but builds weak long-term traces.
- **Elaborative rehearsal** links material to meaning, images and what you already know. It builds lasting traces.
- The generation effect: words you produce yourself ("hot – c_ _ _") are remembered better than words you only read.
- The self-reference effect: relating material to yourself is a strong form of elaboration.

Transfer-appropriate processing

- On a normal recognition test, meaning-encoded words win.
- On a rhyme test ("Was there a word that rhymed with *eagle*?"), rhyme-encoded words win.
- Depth usually helps because most tests ask about meaning, but the match decides.

Figure: Transfer-appropriate processing



- The match between encoding and test decides, not depth alone.
- Match each part of the diagram to the text.

Encoding specificity

- Context: divers who learned words underwater recalled them better underwater than on land (Godden and Baddeley, 1975).
- State: material learned in one physical or emotional state is often recalled better in the same state.
- Context effects are real but modest; good cues from meaning are usually stronger.

Worked example: a two-by-two study

- Group 1 judges each word's meaning; group 2 judges its rhyme. Exposure time is the same.
- Half of each group takes a meaning test and half a rhyme test.
- If meaning wins on the meaning test but rhyme wins on the rhyme test, the result is an interaction: transfer-appropriate processing. If meaning wins on both, depth is the stronger effect.

Worked example: naming the effect

- A student reads a definition five times and forgets it a week later: maintenance rehearsal.
- A student who writes her own example of each term remembers them: elaboration, and the generation effect.
- A witness recalls more details when taken back to the scene: **encoding specificity** (context).

Common errors

- Equating repetition with learning.
- Thinking the intention to learn matters more than the type of processing.
- Claiming deeper processing wins on every test.

Common errors (2)

- Confusing transfer-appropriate processing (type of processing) with context effects (setting or state).
- Comparing groups that had different amounts of exposure.

Key terms

- **levels of processing**: The idea that memory strength depends on how deeply information is analysed.
- **elaborative rehearsal**: Linking new material to meaning, images and existing knowledge.
- **transfer-appropriate processing**: The principle that memory is best when encoding matches the processing the test requires.
- **encoding specificity**: The principle that a cue helps recall if it was part of the original encoding.

Check yourself

- Which question gives the deepest processing: "Is it in capitals?", "Does it rhyme with *cat*?" or "Is it a kind of animal?"
- A rhyme-encoded list is remembered better on a rhyme test. Which principle explains this?
- A student studies with music and is tested in silence. Which principle predicts a small cost?