Encoding specificity

PSY 200
Greg Francis
Lecture 17

What to do if you are drunk while studying for an exam.

Context

- The context within which you learn and recall can have a profound impact on your memory
  - e.g., part-set cueing
  - given part of a set that has been learned, subjects recall fewer of the remaining items than with normal free recall
  - Interference of recall
    - Have to keep checking if an item you recall is already on the list
  - Demonstration

Context

- The effect of part-set cueing suggests that to measure memory you must consider the conditions at test
  - Memory is more often about discrimination of memory traces and not about the strength of memory traces
  - Similar to visual search experiments

Context

- But memory is not exactly the same as visual search
  - Information must be encoded in memory as well as recalled
    - Such encoding can alter what features are stored as part of the memory
    - Which changes the discrimination of subsequent recall
  - It turns out, that to maximize recallability
    - the effort and conditions at the time of learning must be consistent with the properties and conditions of the test

Encoding specificity principle

Representative study

- Subjects in two groups
  - see the same words, but have different tasks
  - This changes the encoding of information in memory

Semantic judgement

The man threw the ball to the

Rhyme judgement

CHEESE

SNEEZE

Test

- Each group is then split into two subgroups that vary in the recall of information
  - 1) Normal recognition task
  - 2) Shown a word and asked if any of the target words rhymed with this word

Recognition test

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<thead>
<tr>
<th>Standard</th>
<th>Rhyme</th>
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<tbody>
<tr>
<td>9</td>
<td>3</td>
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<td>5</td>
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Study

<table>
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<th>Rhyme</th>
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Significance
- It is not that one learning strategy is better than the other
  - or that one testing strategy is better than the other
- Encoding (learning) of information and recall of information need to match
- This means it is very difficult to test for absolute memory
  - subject’s performance depends on many factors

Encoding specificity
- Memory is better when the cues available during recall match the cues available during encoding
  - Tulving & Osler (1968)

Results
- cue does not always help

Class results (170 participants)
- Best recall when test with same cue as at study
  - "Lure" is a word that was not studied
Surrounding context

- Deep-sea divers learn words (Godden & Baddeley, 1975), either
  - on land (dry)
  - under water (wet)

Significance

- Decompression tables for divers
  - want to remember when under water
  - generally study while on land
- Researchers working under water have difficulty recalling their details on land
  - E.g., counts of species
- How do you know if something is forgotten?
  - changing context may allow subject to recall seemingly forgotten information
  - forgetting = retrieval problem?

Forgetting

- Forgetting is not always a characteristic of a memory system, or your brain
  - although it could be in some cases, it is not always
- Forgetting must be defined operationally
  - specify the task and context of retrieval
  - You can never be certain that if you are placed in a different context you will still show forgetting

Internal context

- Goodwin et al. (1969)
- Subjects drink 10 oz. 80 proof vodka, mixed in sugar-free lemon-lime drink
  - or a similar tasting drink (bit of vodka on top of drink)
- Test memory 24 hours later
- Subjects are either:
  - Sober at study, sober at test
  - Drunk at study, sober at test
  - Sober at study, drunk at test
  - Drunk at study, drunk at test

Best recall if study and test states are the same

- Similar effects for marijuana cigarettes (Eich et al., 1975)
Testing

- So, if you are intoxicated while studying for an exam
  - and you didn’t study before
- You should be intoxicated while taking the exam

Mood

- Mood has a similar effect (Eich et al, 1994)
  - Mood induced by music and directed thoughts

Classrooms

- Is memory better when you are tested in the same room as lectured?
  - significant for final exams!
- Smith et al. (1978)
  - Subject studied words in one of two contexts (on separate days)
  - Varied classroom and dress of experimenter

Conclusions

- Context
- Encoding specificity
  - memory best if study and test are similar
- Cues
- Environment
- State
- Mood
- Classrooms

Next time

- Discrimination in memory
- Proactive interference (PI)
- Release from PI
- CogLab on False memory due!
- How to take a test.