

## Introduction to Cognitive Psychology: PSY 200

Greg Francis, PhD

Department of Psychological Sciences

Psychological Sciences Building, Room 3186

(765) 494-6934

email: [gfrancis@purdue.edu](mailto:gfrancis@purdue.edu)

<http://www.psych.purdue.edu/~gfrancis/Classes/PSY200/indexF16.html>

### **Study Guide for Exam 3**

*Exam Date: 01 November 2017*

The exam will include 50 multiple choice questions worth 2 points each. Total points on the exam is 100. This exam makes up 15% of your class grade. The exam is given in class.

Make sure you understand the following topics. The exact nature of the question is what I think up for the exam, but if you understand all of the following topics well, then you should be able to answer a variety of questions on the topics. If a researcher's name is given here, you should be certain that you know the name and the associated experiment or theory.

#### **Lecture 17: Encoding specificity**

1. Understand the procedure and typical results of a part-set cuing experiment. Be able to explain why it is important.
2. Be able to explain how discrimination makes memory (in some ways) similar to visual search.
3. Know what the *encoding specificity principle* is. Be able to describe (in detail) at least two experiments (general procedures and general results) demonstrating this principle. Know the basic properties and findings of all of the encoding specificity type of experiments.
4. Be able to explain why the encoding specificity principle makes it very difficult to determine if something is forgotten.
5. Be able to explain why the encoding specificity experiments imply that forgetting is often a retrieval problem. Why must forgetting (or memory) be defined relative to a particular task?
6. Be able to describe the effect of classrooms on memory.

#### **Lecture 18: Memory discrimination**

1. Be able to describe the CogLab False memory experiment, the expected results, and the conclusions. Be able to explain how the effect is related to memory discrimination and source monitoring.
2. Know the meaning of the terms "retroactive" and "proactive" interference. Be able to give at least one example of each.

3. Understand how proactive interference (PI) might cause subjects in a memory experiment to do worse on later trials. Be able to explain how this would be shown in the data and also why it might happen.
4. Know what release from PI is. Be able to give at least one example.
5. Be able to explain what kind of interferences operate in the phonological loop and whether the influence storage or retrieval.
6. Be able to describe the experiment (indoor vs. outdoor sports) that demonstrates that proactive interference operates at memory recall rather than memory storage.

### **Lecture 19: Constructive memory**

1. Be able to explain some of the difficulties of eye-witness testimony. Why is memory on such tasks constructive?
2. Be able to describe the memory reports from studies by Penfield (1959). Be able to describe the problems with this line of research.
3. Know the characteristics of “flashbulb” memories. Know some of their limitations as indications of really good memory. Be able to describe the experimental study of flashbulb memories compared to memories of ordinary events.
4. Understand the characteristics of memory misattribution in the case of Donald Thomson.
5. Be able to describe the Loftus & Palmer (1974) experiment that shows how easily memories can be influenced by subsequent questions. Understand the significance of these studies for trusting eye-witness testimony.
6. Understand, in general, how memory misattribution can allow for memory “implants” and potentially cause problems for patients undergoing therapy.

### **Lecture 20: Amnesia**

1. Be able to discuss how memory and memory confidence are *cognitive events*, and why this matters when judging properties of memory.
2. Know what amnesia is. Know the terms *anterograde* and *retrograde* amnesia.
3. Know the general scope and duration of retrograde amnesia (for most cases). Understand some of the difficulties in studying retrograde amnesia.
4. Be able to describe the difference between declarative (explicit) and nondeclarative (implicit) memory systems in LTM.
5. Know the type of amnesia suffered by patient HM. Know the basic limitations of his amnesia, and understand the studies that show he (and other amnesics like him) could learn some new information.
6. Be able to discuss the behavior of anterograde amnesiacs on tasks like the memory span experiment or a recall task that produces a serial position curve.

7. Know what *infantile amnesia* is. Know the basic explanation of it.
8. Know what *repression* is. Understand why memory researchers are skeptical of the evidence used by clinicians to support the idea of memory repression.

### **Lecture 21: Improving memory**

1. Be able to describe the methods (in general) and results of studying in different contexts and how it affects memory of recall in a neutral context. Understand that similar effects exist for temporal context.
2. Understand how level of processing affects memory recall.
3. Understand the study that shows that level of processing is more important than intent to learn. Why is this important when studying material that you know will be tested?
4. Understand what is meant by a judgment of learning (JOL) and how to make it more accurate.
5. Understand the role of recall practice on memory. Be able to describe the experiment that demonstrates this effect.
6. Understand the findings about learning styles. Be able to explain what kind of data is needed as evidence that different students have different learning styles.

### **Lecture 22: Improving memory**

1. Be able to describe, in general terms, how subject SF increased his memory span to 81 digits. Know the limitations of this approach.
2. Understand the method of loci for improving memory. Be sure to understand the role imagery plays in this method.
3. Understand the peg word and link word methods for improving memory. Be sure to understand the role imagery plays in these methods.
4. Understand, in general, why S had an excellent memory and how it was related to his synesthesia.
5. Understand the claims about brain training techniques and the warnings about these claims.
6. Understand the importance of sleep for certain types of memory. Be able to describe the experiment that demonstrates this importance.

### **Lecture 23: Mental representation**

1. Understand why the *definition* approach to concepts has problems.
2. Understand the prototype theory of concepts.
3. Be able to describe the CogLab version of the Posner & Keele (1968) experiment on concept formation. Know the methods and typical experimental results. Also be able to discuss how the typical results suggest the existence of a prototype.

4. Be able to explain why the prototype theory has difficulties with some concepts (e.g., *ad hoc* concepts).
5. Understand the exemplar theory of concepts.
6. How do prototypicality effects appear in an exemplar model?
7. Understand the properties and characteristics of propositions.
8. Understand the graphical (network) representation of propositions.
9. Understand the methods and results of the study by Ratcliff & McKoon (1978). (Within proposition priming.)

**Lecture 24: Mental imagery**

1. Understand the conflict between memories of perceptual events being represented as propositions or concepts or as some kind of imagery.
2. How do the limitations of what we can do with mental images imply that mental images are not identical to real images?
3. How does the demo that asked you to identify relative positions of cities indicate that propositional information influences mental images?
4. Be able to describe Kosslyn's (1976) experiment on size effects in mental images. Why does this suggest that mental images are not only propositions?
5. Be able to describe the CogLab version of the mental rotation experiment. Be able to describe the typical results and to explain how the typical results indicate that mental images are (at least somewhat) like real images.
6. Be able to describe the basic properties and findings of the fMRI experiment on mental rotation.