AP Psychology - Unit 7 Assignment
Memory, Thinking, and Language

Big Questions: How does the process of memory create a unique experience for each individual? How do language and cognitive processes work to influence our ability to think and problem solve?

Cognition and Language Unit Objectives:

- *Explain memory in terms of information processing and distinguish between short-term and long-term memory.*
- *Describe the nature of iconic and echoic memory.*
- *Explain the process of encoding and distinguish between automatic and effortful processing.*
- *Explain the importance of meaning, imagery, and organization in the encoding process.*
- *Describe the capacity and duration of long-term memory and discuss the synaptic changes that may underlie memory formation and storage.*
- *Distinguish between implicit and explicit memory and describe the role of the hippocampus in explicit memory.*
- *Contrast recall, recognition, and relearning measures of memory.*
- *Describe the importance of retrieval cues and explain what is meant by state-dependent memory.*
- *Explain what is meant by retrieval failure and discuss the effects of interference and repression on retrieval.*
- *Describe the nature of concepts and the role of prototypes in concept formation.*
- *Discuss how we use means of trial and error, algorithms, heuristics, and insight to solve problems.*
- *Describe how the confirmation bias and fixation can interfere with effective problem solving.*
- *Explain how the representativeness and availability heuristics influence our judgments.*
- *Describe the effects that overconfidence and framing can have on our judgments and decisions.*
- *Discuss how our beliefs distort logical reasoning and describe the belief perseverance phenomenon.*
- *Describe artificial intelligence and contrast the human mind and the computer as information processors.*
- *Describe the structure of language.*
- *Trace the course of language acquisition and discuss alternative theories of language development.*
- *Describe the research on animal communication and discuss the controversy over whether animals have language.*
- *Discuss the relationship between thought and language. (Whorf's linguistic relativity)*

Cognition and Language Overview

The cognition and language unit explores human memory as a system that processes information in three steps. Encoding refers to the process of putting information into the memory system. Storage is the purely passive mechanism by which information is maintained in memory. Retrieval is the process by which information is accessed from memory through recall or recognition.

This unit also discusses the important role of meaning, imagery, and organization in encoding new memories, how memory is represented physically in the brain, and how forgetting may result from failure to encode or store information or to find appropriate retrieval cues. The chapter discusses the issue of memory construction. How "true" are our memories of events? A particularly controversial issue in this area involves children's memories of sexual abuse.

Most of the cognition and language unit deals with thinking, with emphasis on how people logically-or at times illogically—use tools such as algorithms and heuristics when making decisions and solving problems. Also discussed are several common obstacles to problem solving, including fixations that prevent us from taking a fresh perspective on a

problem and our bias to search for information that confirms rather than challenges existing hypotheses.

The unit also explores how computer systems have been constructed to simulate the neural networks of the human brain. By mimicking the ways in which human neural networks interconnect, computers enable scientists to study how human systems process sensations and memories and how the thought process works.

The rest of the unit is concerned with language, including its structure, development in children, use by animals, and relationship to thinking. Two theories of language acquisition are evaluated: Skinner's theory that language acquisition is based entirely on learning, and Chomsky's theory that humans have a biological predisposition to acquire language.

Unit 7 Reading Assignment(s)

You are responsible for the reading listed below; it is meant to supplement the material discussed in class and there may be a pop quiz at any point.
- **OpenStax Psychology Textbook:** Chapters 7 – Pages 1-16 and All of Chapter 8 (Posted on Class Website)

Unit 7 Vocabulary Terms & Flip Book

Psychology is a term heavy course; you are responsible for the terms below. You will have a vocabulary quiz every other unit. For the quiz I will pull terms from the Unit vocabulary lists.

Unit 7 Flip Book: Each term should be on its own card. Each card will have the term *thoroughly and clearly* defined on the back. Each card will be **taped** into a **manila folder**, **numbered**, and turned in the day of the unit test.

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1. Memory	28. Priming
2. Encoding	29. Mood-Congruent Memory
3. Storage	30. Proactive Interference
4. Retrieval	31. Retroactive Interference
5. Sensory Memory	32. Misinformation Effect
6. Short-Term Memory	33. Source Amnesia
7. Long-Term Memory	34. Cognition
8. Working Memory	35. Concept
9. Parallel Processing	36. Prototype
10. Automatic Processing	37. Algorithm
11. Effortful Processing	38. Heuristic
12. Rehearsal	39. Insight
13. Spacing Effect	40. Fixation
14. Serial Position Effect (Primacy-Recency)	41. Mental Set
	42. Functional Fixedness
15. Visual Encoding	43. Representativeness Heuristic
16. Acoustic Encoding	
17. Semantic Encoding	44. Availability heuristic
18. Mnemonics	45. Overconfidence
19. Chunking	46. Belief Perseverance
20. Iconic Memory	47. Framing
21. Echoic Memory	48. Language
22. Long-Term Potentiation (LTP)	49. Phoneme
	50. Morpheme
23. Flashbulb Memory	51. Grammar
24. Implicit Memory	52. Semantics
25. Explicit Memory	53. Syntax
26. Recall	54. Linguistic Determinism
27. Recognition	

Part II - AP Questions

Directions: Thoroughly answer the following questions. All answers <u>must</u> be handwritten in complete sentences and in your own words.

1. Below on the left, draw a simple picture of the information-processing model. On the right, define the three main areas – **encoding**, **storage**, and **retrieval**.

2. Imagine you go through a typical day in your life. What is one example of something that would happen that would require automatic processing? What is one example of something that would require effortful processing?

3. What is iconic and echoic memory? How are they different (ex: duration)?

4. Give one example from your own life of an implicit memory and an explicit memory.

5. Give one example each for retroactive interference and proactive interference. **HINT:** This is the <u>HARDEST</u> concept for students to differentiate in this unit. Make sure you understand the difference between the two!

6. You attend a lecture debate between Noam Chomsky and B.F. Skinner regarding how children develop language. Using what you know about each person's theory, who do you agree with and why?

Part III – Student Choice

Choice A: Personal Connection/Impact

Type a brief description concerning an experience, memory, story, event, etc that connects to key concepts associated with the unit. Relevant vocabulary must be properly utilized throughout and responses must connect in a coherent and logical manner.

The purpose of this assignment is to build personal connections with course content to your own lives. By doing so, content becomes more meaningful and retention becomes easier.

Responses must at least one full page, typed, double-spaced, with 12 pt. Times New Roman font. Reasonable margins and paragraph spacing must be used.

-OR-

Choice B: Concept Map

Create a Unit Concept Map using the following categories:
- Encoding
- Storage
- Retrieval
- Biological Factors

Requirements:
-Must be hand drawn on one 8.5" x 11" sheet of paper
-ALL essential vocabulary for each concept must be appropriately located/placed