Study Guide Unit 2

1. Identify three different aspects in human memory processes.
   - Encoding
     - Paying attention
   - Storage
     - Keeping information
   - Retrieval
     - Recalling information

2. Know the 3-stage processing model of memory proposed by Atkinson & Shiffrin and its limitations
   - Sensory memory
     - Extremely brief sensory activation
     - Some sensory input never enters conscious processing
     - Types
       - Iconic memory (Visual)
       - Echoic memory (Auditory)
     - Environmental input that enters our sensory memory
       - We more or less immediately lose most of this.
       - However, what we pay attention to then enters short-term memory
     - Limitation
       - A part of perception rather than actual memory
   - Short-term memory
     - The capacity of short-term memory is typically limited to 7 (+/- 2) items (Miller, 1956)
       - "The Magical Number Seven"
     - In the absence of rehearsal, "pure capacity" is probably closer to 3-5 items
   - Long-term memory
     - Memory for experiences and information accumulated over your lifetime
     - Large capacity
     - Anything other than what we are currently processing in STM
     - Two minutes ago is probably well beyond your STM/WM capacity

3. Be able to define STM (classical term) and know related terms (Rehearsal, decay, magic number seven, etc) and how they work in STM
   - STM: the part of memory that holds only small amount of information that the person is actively using
   - Rehearsal: repetition strategy that maintains information in short-term (working)

- Decay: without rehearsal, items are quickly forgotten. One way to lose information from STM
- Magic number seven: the capacity of STM is typically limited to 7 (+/- 2) items

4. What is the serial position effect? What is the source of primacy? What is the source of recency?
   - Serial Position Effect
     - The position of the item in a list makes a difference on our ability to remember.
   - Primacy effect
     - Better recall for items at beginning of list
     - More rehearsal
     - Stored into LTM
   - Recency effect
     - Better recall for items at end of list
     - Still in WM with less interference

5. Know two different types of interference
   - Proactive interference
     - Difficulty learning or recalling new material because some previously learned material continues to interfere with formation of new memories
   - Retroactive interference
     - Difficulty learning or recalling old material because some recently learned material interferes with old memories

6. Be able to define WM and explain differences between STM and WM
   - Short Term Memory
     - The part of memory that holds only the small amount of information that the person is actively using
       - Older theory
       - Does NOT account for attention
   - Working Memory
     - The brief, immediate memory for the limited amount of material that a person is currently processing. Part of working memory also actively coordinated ongoing mental activities
       - Newer theory
       - Does account for attention

7. Know the 4 different parts in WM and their roles, and be able to how those four part work in WM?
   - Central executive

- The "boss" of working memory
- Duties:
    - Plans
    - Problem solves
    - Initiates decision processes
    - Coordinates the other systems
- Integrates information from the phonological loop, the visuospatial sketchpad, the episodic buffer, and long-term memory
- Plays a role in: focusing attention, selecting strategies, transforming information, and coordinating behavior
- Suppressing irrelevant information
- Characteristics
    - Plans and coordinates, but does not store information
    - Executive supervisor
    - Decides which issues deserve attention
    - Selects a strategy
    - Decides how to tackle a problem
    - Limited ability to perform simultaneous tasks

o Visuospatial sketchpad
- Processes both visual and spatial information
- Allows you to:
    - Store visual appearance and relative position
    - Store visual information encoded from verbal stimuli

o Episodic buffer
- Temporary storehouse that can hold and combine information from the phonological loop, the visuospatial sketchpad, and long-term memory
- Integrates information from different modalities so that you can manipulate information for interpretation

o Phonological loop
- Processes a limited number of sounds for a short period of time
- Also active during subvocal rehearsal process
- Process language, sounds that we hear, and sounds that we make
- Examples
    - Phonological loop → long term memory
    - Used during self-instruction
    - Leaning new words in your first language
    - Producing new language
    - Mathematical calculations and problem-solving tasks

7-1 What is an acoustic confusion? And subvocalization?

- Subvocalization: Repeat to self, the voice in your head as you read silently to yourself
- Acounstic confusion: make fewer errors when the letters do not sound similar, relative to when they do