Sensory Memory

- In the course of a typical day, thousands of sights, sounds, smells and other stimuli bombard your sensory receptors.
- All of this info, whether you pay attention to it or not, is temporarily held in sensory memory.

Important features

- Stores sensory impressions long enough for each impression to slightly overlap the next. Thus we perceive the world around us as continuous, rather than a series of disconnected visual images of disjointed sounds.
- TEST – quickly wave a pen back and forth in front of your face. You should see the fading image trailing the pen.

Attention the key to encoding

- By directing our attention to the info the process of transferring the info to STM occurs and we become consciously aware of it.
- EG – if attention is focussed on reading this PowerPoint, you will be unaware of many of the sounds around you. Although this info has been received – until you direct your attention you don’t notice eg. The feel of your watch or the sounds of birds outside.

Selection of what to encode

- Sensory information remains in sensory memory just long enough for us to attend to and select the information to be transferred to short-term memory (STM).
- We are not consciously aware of the majority of the information that enters our sensory memory.

Important features

- Sensory Memory is the entry point of memory – the initial stage of the memory system in which all of the stimuli that bombard our sense are retained in their original sensory form (that is, exact copies and not encoded) for a very brief time.
- Sensory memory has the capacity to store all sensory experiences (briefly), and therefore it is assumed to be unlimited in capacity.

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All of this info, whether you pay attention to it or not, is temporarily held in sensory memory.
What can be attended to?

- Any stimulus that is registered in sensory memory is available to be selected for attention. EG: all the objects in your visual field and all sounds loud enough for you to hear.

- If sensory info is not attended to and no further processing (encoding) occurs, it fades and is permanently lost from experience.

Sensory registers

- Incoming sensory info is stored in separate sub-systems called **sensory registers**.

- Psychologists believe there are separate sensory registers for each of the senses.

Sensory registers

- Example:
  Imagine the many visual images you process while at a nightclub (or underage disco 😎). These will be stored in the visual sensory register (also called **iconic memory**), while the sounds of music, voices and people dancing will be stored in the auditory sensory register (also called **echoic memory**).

Iconic Memory

- Iconic Memory (from the Greek word icon, which means image) is the name given to visual sensory memory, or the memory of visual sensory information.

- Visual images in their original form are usually retained in iconic memory for about one-third (1/3) of a second, but they last just long enough for identification of the stimulus to begin.

Experiencing iconic memory

- Close your eyes for one minute. Near the end of the minute, hold your hand about 25 centimetres in front of your eyes. Then open your eyes and rapidly close them again. You should see an image of your hand that fades away in less than a second.

Experiencing iconic memory in real life

- The movies
- Sparklers
- See examples on pg.340
Echoic Memory

- Echoic memory (from the word echo) is the name given to auditory sensory memory, or the memory of auditory sensory information.
- Echoic memory processes all kinds of sounds, such as speech, the barking of dog, and the sirens of emergency vehicles.

Why echoic memory?

- It is called echoic memory because sounds linger in it like an echo.
- To experience echoic memory, clap your hands once and notice how the sound remains for a very brief time and then fades away.

How long is it stored?

- Echoic memory stores information for longer periods than does iconic memory, typically three or four seconds.

<table>
<thead>
<tr>
<th>Iconic (visual) Memory</th>
<th>About 0.2-0.4 seconds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Echoic (auditory) Memory</td>
<td>About 3-4 seconds</td>
</tr>
</tbody>
</table>

Example

- Consider times when your attention has been focussed on a book you are reading or a television program you are watching, and someone asks you a question. Often, you are aware they are speaking, but since your attention is focused elsewhere, you do not immediately comprehend the message. However, within a couple of seconds you ‘What?’ and then answer the question before the person has time to repeat it.

How is it that we can do this?

- Because the sound of the original question is held in echoic memory for a few seconds, when you directed your attention to what the person said, the information was passed onto STM where it could be interpreted.
- Echoic memory stores the tail-end of the question temporarily while earlier parts of the messed are being processed.
Echoic memory & speech

- You perceive speech by blending successive spoken sound that you hear. When you hear a word pronounced, you hear individual sounds, one at a time.

- You cannot identify a word until you have heard all the sounds that make up the word, so auditory information must be stored long enough for all sounds involved to be received.