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Atkinson-Shiffrin Model

The Atkinson-Shiffrin model is a theory of human memory that was proposed by Richard Atkinson and Richard Shiffrin in 1968.

Essentially, both men used this model to show that the human memory could be broken down into three different memory stores:

- Sensory Memory
- Short-Term Memory
- Long-Term Memory

The concept of sensory memory was originally left out of their 1968 model before being added later. Our senses experience different things in terms of sight, hearing, touch, feeling and taste but only a fraction of this is remembered. This was the basis of the Atkinson-Shiffrin model which showed how each of the above forms of memory worked.

Sensory Memory

We take in enormous amounts of information through our senses but the vast majority of it cannot be processed correctly due to the limitations of our memory. Information not attended to immediately is held in our <u>sensory memory</u> [1] which holds onto this knowledge for a very short period of time.

All of our senses have sensory memory systems but the systems focused on by the <u>Atkinson-Shiffrin model</u> [2] relate to sight and sound known as iconic and echoic memory respectively. Iconic memory lasts less than half a second while echoic memory ceases after three or four seconds.

Short-Term Memory (STM)

This relates to memories of information which is retained by our senses long enough for it to be used. An example of this is a telephone number which needs to be remembered before being dialed. The Peterson and Peterson study of 1959 showed that <u>Short-Term Memory</u> [3] (STM) lasts for less than 30 seconds unless the information is attended to within that timeframe. The 1956 Miller study stated that <u>seven (plus or minus two)</u> [4] pieces of information can be learned in that 30 second period. Yet this has been disputed since, with the belief that STM varies depending on conditions.

Long-Term Memory (LTM)

The Atkinson-Shiffrin model believed that STM could be transferred to <u>Long-Term Memory</u> [5] (LTM) if the information was processed and learned fast enough. LTM has a limitless capacity and is capable of lasting a lifetime. This basically means we never lose the ability to store new information regardless of how long we live.

Criticisms

The fact that the Atkinson-Shiffrin model is extremely linear has drawn criticism from psychologists who state that this model does not account for STM and LTM memory stores. Though this model was an excellent base for further memory theories to be espoused, its rigidity appears to be its biggest Achilles Heel.

For example, autistic savants have the ability to perfectly recall exact figures and facts without ever having to rehearse. The Atkinson-Shiffrin model suggests that memories decay over time yet certain savants appear capable of total recall decades later. Therefore, it may be too simplistic to suggest that every mind possesses exactly three memory stores.

There are also rare occasions when STM is damaged but LTM is not. According to the Atkinson-Shiffrin model, this should not be possible. Their model suggests that information that cannot get through STM should never be encoded in LTM. This is the earliest and most simplistic model and can no longer be taken as Gospel. More advanced models with the benefits of modern research should take precedence though the Atkinson-Shiffrin model cannot be discounted entirely.

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Links

[1] https://explorable.com/sensory-memory
[2] http://users.ipfw.edu/abbott/120/AtkinsonShifrin
[3] https://explorable.com/short-term-memory
[4] http://www.musanim.com/miller1956/
[5] https://explorable.com/long-term-memory