



How Does Memory Change With Age?

The retention of information over time

Class Objectives

- What is memory?
- What factors influence our memory?


Think about the importance of your memory...

It's hard to even attempt to visualize the amount of information locked inside your brain? It is truly remarkable




Do infants *even* have a memory??

Yes...the foundation of memory is laid down in the first few months following birth. Young babies remember events for days or even weeks at a time!



What kind of memory do infants have?

Scientists have confirmed that infants have great difficulty storing new memories in their first year.



Research on Infant Memory

- The most dramatic evidence comes from a series of experiments in which 3 month-old infants were taught to make a mobile move by kicking their legs (Rovee-Collier, 1990).
- When some infants returned to the experiment 1 week later, they immediately began to kick-indicating they remembered.

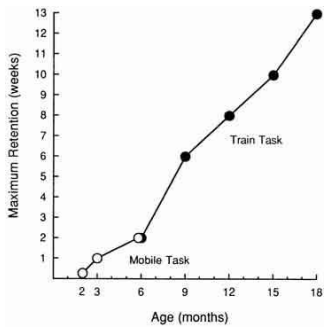
The Mobile Game (2 - 6 Months of Age)



3-Month-Old

Other infants were retested at 2 weeks and demonstrated forgetting. However, they could remember if a reminder session was provided that helped infants recollect the experience.

Infants Remember Longer As They Get Older



Infant Memory

- Research supports an increased ability to retain learned information as infant grows older
- Because there are many types of memory, it's not surprising that infants remember some things better than others
 - Ex: language, images, actions, forgotten faces, smells, memorized facts and so on...





What is Your Earliest Memory?

Take a minute and write down any content that you can remember:


- How old were you?
- What were the details of the event
- Do you remember the memory or do you remember hearing about the memory?

- Infants have great difficulty storing new memories in their first year known as Infantile amnesia which is the inability to remember events from one's early life
 - Usually events that happened before the age of 2.
- But, we do remember a increasing number of events from about the age of 3 or 4 years.




Think on Your Own....

How would YOU explain the cause of infantile amnesia?



Inadequate Sense of Self

Infants and toddlers lack a sense of self. Their early experiences are not represented in autobiographical memory, so they can't be recalled later in life.



Theories Explaining Infantile Amnesia

- One theory is that infants lack adequate language to successfully store memories.
 - How can we recall a memory before we have the language to organize our thoughts?
- Once children learn to talk (about 2 years) they tend to rely on language to represent their past
 - Early prelingual experiences may be difficult to retrieve from memory without proper language.

Memory rapidly improves in older infants and toddlers. Youngsters can recall more of what they experience and remember it longer

When shown novel actions with toys and later asked to repeat it, toddlers can remember more than infants and remember the actions for longer periods of time.

Memory in Children

- Use of *memory strategies*
 - Activities that improve remembering
 - Rehearsal: repetitively naming information that is to be remembered
 - Organization: information to be remembered should be structured so that related information is placed together
 - Elaboration: embellishing information to be remembered to make it more memorable

Organization Example:

A seventh grader trying to remember battles of the Civil War could organize them geographically or chronologically.

Elaboration Example

A child cannot remember if the second syllable of rehearsal is spelled *her* (as it sounds) or *hear*. The child could remember the correct spelling by reminding himself that rehearsal is like re-hear-ing.

- Thus, thinking about the word in that context makes it easier to remember its spelling.

Knowledge that allows a child to organize information and give it meaning increases gradually with age.

Children's Memory of Their Own Lives

- Scripts

- Abstract generalized accounts of familiar repeated events

- For example, a child describing what happens during a birthday party "you play games, open presents, and eat cake".

Children's Memory

- Preschoolers' memories for activities are better than their memories for objects because children find it easier to remember events that follow a logical order than events that do not

- For example, 3 and 5 year olds have a better memory for activities involved in making pretend cookies out of Play-doh than they do for activities involved in a sandbox – because they can occur in any order

- (you put ingredients in a bowl, then you mix ingredients, then you roll the dough, then you put pieces on a tray to cook, etc...)



Memory in Adolescence

- Working memory capacity increases during adolescence but decreases during adulthood

- Working memory is linked to reading comprehension and problem solving, which is why as we get older we get better at solving analogies because of working memory
- In children working memory gets overloaded – whereas in adolescents and adults it doesn't

Memory Changes Older Adults

- Have worse episodic memory than younger adults
- *Episodic memory* (memory of information about where and when things happened)
 - Example of explicit memory – older adults more likely to forget what they wanted to buy at the grocery store

Late Adulthood Memory

- Have more difficulty retrieving semantic memories than younger adults
- *Semantic memory* (knowledge about the world, personal expertise, general academic knowledge, common things) - older adults have less of a problem with semantic memory than episodic memory
 - Prospective memory (remembering something about the future) starts to decline

- Older adults have more difficulty with *source memories* than younger adults

- Example of Source memory:
Tell a joke to someone (can't remember who told it to you)... you tell it back to the person who told you

On Your Own

● Please read the following sections on your own:

- Memory in Adolescence and Adulthood (p. 265-270)
- Childhood: Concept Formation (p.270-271)
- Childhood: Solving Problems (p. 275-277)
- Adulthood: Problem Solving, Use It or Lose It, and Cognitive Training (p. 278-280)
