

How do people process information over the life span?

Chapter 7  
Information Processing

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Class Objectives

- What is the Information-Processing Approach?
- What is attention...and how it is effected by age?
- Changes in Memory

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What is Information Processing?

- This approach focuses on the ways  
\_\_\_\_\_  
\_\_\_\_\_
- The information-processing approach analyzes how people:
  - Manipulate information
  - Monitor information
  - Create strategies for handling information

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Information-Processing  
Approach answers questions  
like:

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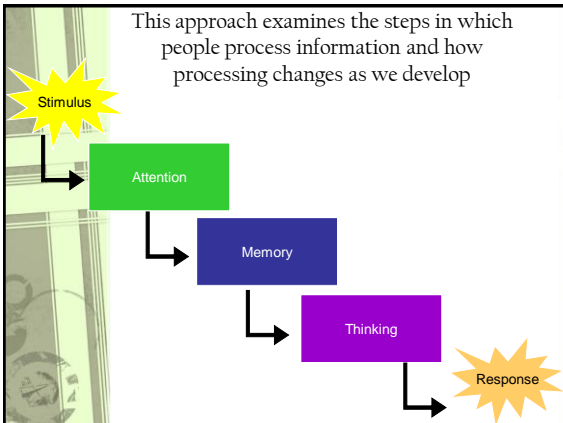
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Information processing in  
humans is often compared to

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The physical brain is analogous to a computer's  
hardware and cognition is analogous to a computer's  
software



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**“Pay Attention!”**

We have all heard that screamed at us from one time or another...but what does it mean to *pay attention*?



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Attention refers to the focusing of mental resources

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Have you ever been in a class where you knew you should be listening and taking notes but the lecture was so BORING that you started to notice other things?

Your focus still exists...but now it has changed direction!

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## Attention

- *Sustained attention:* The ability to \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- \_\_\_\_\_  
Focusing on a specific aspect of experience that is relevant while ignoring others that are irrelevant
- *Divided attention:* Concentrating on more than one activity at a time

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## How Does Our Attention Change As We Age?



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## Think on your own...

Think about an infant's ability to focus and someone your age or older... what differences would you expect?

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## Developmental Changes in Attention

- During infancy:
  - Infants as young as 4 months of age can selectively attend to an object
  - Infants' attention is governed by novelty and habituation so when objects become familiar

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## Research on attention in children

- Ruff, Capozzoli, and Weissberg (1998) observed preschoolers in several settings (watching puppet show, free play with toys)
  - Children who were actively engaged in the puppet show or free play exhibited focus attention (posture, facial expressions, spontaneous comments)
  - children who left the table exhibited inattention

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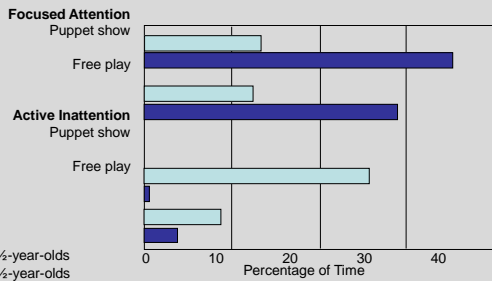
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## Ruff, Capozzoli, and Weissberg (1998)



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### What does this suggest?

- This study found that \_\_\_\_\_  
\_\_\_\_\_
- Overall 4 ½ year olds spent more time in focused attention and much less time in active inattention
- BUT even though there is an improvement in focused attention they are still spending less than half their time in focused attention
- Maintaining focused attention is a demanding skill – one that emerges  
\_\_\_\_\_  
\_\_\_\_\_

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### Control over attention shows important changes in childhood

- During childhood *selective attention* changes:  
\_\_\_\_\_
- \_\_\_\_\_  
\_\_\_\_\_ and what is external is more likely to get their attention.  
\_\_\_\_\_
- \_\_\_\_\_  
\_\_\_\_\_ grabs their attention

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For example, if an attractive clown is used to present the directions for solving problem, the preschool children are more likely to ignore the directions and pay attention to the clown.

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Elementary-school children have more cognitive control of attention and can attend more effectively to the dimensions of the task that are relevant to solving the problem or performing the task.

This improvement in cognitive control allows school-age child to pay better

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Increase in attention to relevant information increases steadily through the elementary and secondary school years.

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### Changes in Attention during Adulthood

- During early adulthood attention skills are excellent but during older adulthood
- Older adults may not be able to focus on as easily as younger adults

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### Changes in attention during late adulthood

- Older adults are as good as young and middle-age adults on sustained attention
- Less adept at focusing on specific aspects of an experience while ignoring others

- \_\_\_\_\_  
\_\_\_\_\_

- Older adults are less effective at performing more than one task at a time \_\_\_\_\_

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### Think on your own... Apply your knowledge

Imagine that you are a teacher – what strategies can you come up with to help children pay attention in class?

Do your strategies differ if you are a kindergarten teacher or a fifth-grade teacher? What if you are a high-school teacher?

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### Next Class- The next step in the Information Processing Process

### MEMORY

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