



# PSYCHOLINGUISTICS

## LECTURE 09

### APHASIAS (2)

# ALZHEIMER'S DISEASE

- Alzheimer's disease is an irreversible, progressive brain disorder that slowly destroys memory and thinking skills, and, eventually, the ability to carry out the simplest tasks. In most people with Alzheimer's, symptoms first appear in their mid-60s.
- Alzheimer's disease is named after Dr. Alois Alzheimer. In 1906, Dr. Alzheimer noticed changes in the brain tissue of a woman who had died of an unusual mental illness. Her symptoms included memory loss, language problems, and unpredictable behavior. After she died, he examined her brain and found many abnormal clumps (now called amyloid plaques) and tangled bundles of fibers (now called neurofibrillary, or tau, tangles).

## CONT...

- These plaques and tangles in the brain are still considered some of the main features of Alzheimer's disease.
- Another feature is the loss of connections between nerve cells (neurons) in the brain. Neurons transmit messages between different parts of the brain, and from the brain to muscles and organs in the body.

# SIGNS AND SYMPTOMS OF ALZHEIMER'S DISEASE

- Memory problems are typically one of the first signs of cognitive impairment related to Alzheimer's disease.
- Some people with memory problems have a condition called mild cognitive impairment (MCI). In MCI, people have more memory problems than normal for their age, but their symptoms do not interfere with their everyday lives.
- Movement difficulties and problems with the sense of smell have also been linked to MCI. Older people with MCI are at greater risk for developing Alzheimer's, but not all of them do. Some may even go back to normal cognition.
- The first symptoms of Alzheimer's vary from person to person. For many, decline in non-memory aspects of cognition, **such as word-finding,** vision/spatial issues, and impaired reasoning or judgment, may signal the very early stages of Alzheimer's disease.

# STAGES OF ALZHEIMER'S DISEASE

- **Mild Alzheimer's Disease:** As Alzheimer's disease progresses, people experience greater memory loss and other cognitive difficulties. Problems can include wandering and getting lost, trouble handling money and paying bills, repeating questions, taking longer to complete normal daily tasks, and personality and behavior changes. People are often diagnosed in this stage.
- **Moderate Alzheimer's Disease:** In this stage, damage occurs in areas of the brain that control language, reasoning, sensory processing, and conscious thought. Memory loss and confusion grow worse, and people begin to have problems recognizing family and friends. They may be unable to learn new things, carry out multistep tasks such as getting dressed, or cope with new situations.
- **Severe Alzheimer's Disease:** Ultimately, plaques and tangles spread throughout the brain, and brain tissue shrinks significantly. People with severe Alzheimer's cannot communicate and are completely dependent on others for their care.

## WHAT CAUSES ALZHEIMER'S DISEASE?

- Scientists don't yet fully understand what causes Alzheimer's disease in most people. In people with early-onset Alzheimer's, a genetic mutation may be the cause. Late-onset Alzheimer's arises from a complex series of brain changes that occur over decades. The causes probably include a combination of genetic, environmental, and lifestyle factors. The importance of any one of these factors in increasing or decreasing the risk of developing Alzheimer's may differ from person to person.



# AMNESIA

- Amnesia is a general term that describes memory loss. The loss can be temporary or permanent, but 'amnesia' usually refers to the temporary variety. Causes include head and brain injuries, certain drugs, **alcohol**, traumatic events, or conditions such as Alzheimer's disease. Amnesia has the following types:
  - A) Retrograde amnesia
  - B) Anterograde amnesia. ...
  - C) Transient global amnesia. ...
  - D) Infantile amnesia.

# DEMENTIA

- **Dementia** is an overall term for diseases and conditions characterized by a decline in memory, language, problem-solving and other thinking skills that affect a person's ability to perform everyday activities.
- Memory loss is an example.
- Alzheimer's is the most common cause of **dementia**.



# DYSGRAPHIA

- Dysgraphia is a disease that cause difficulty to write.
- All young kids have some difficulty when it comes to writing. But if your child's handwriting is consistently distorted or unclear, that may be caused by a learning disability called dysgraphia.
- This is a nervous system problem that affects the fine motor skills needed to write. It makes it hard for a child to do handwriting tasks and assignments.

# SYMPTOMS

- Kids with dysgraphia have unclear, irregular, or inconsistent handwriting, often with different slants, shapes, upper- and lower-case letters, and cursive and print styles. They also tend to write or copy things slowly.
- Difficulty spacing things out on paper or within margins (poor spatial planning)
- Frequent erasing
- Inconsistency in letter and word spacing
- Poor spelling, including unfinished words or missing words or letters
- Unusual wrist, body, or paper position while writing
- This learning disability also makes it hard to write and think at the same time. Creative writing tasks are often especially hard.

# DYSLEXIA

- Dyslexia has been defined in different ways:
- For example, in 1968, the World Federation of Neurologists defined dyslexia as "a disorder in children who, despite conventional classroom experience, fail to attain the language skills of reading, writing, and spelling commensurate with their intellectual abilities."

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- The International Dyslexia Association offers the following definition of dyslexia:
- "Dyslexia is a specific learning disability that is neurobiological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede growth of vocabulary and background knowledge."

# TYPES OF DYSLEXIA

- **Primary dyslexia:**

- This is the most common type of dyslexia, and is a dysfunction of, rather than damage to, the left side of the brain (cerebral cortex) and does not change with age.
- There is variability in the severity of the disability for Individuals with this type of dyslexia, and most who receive an appropriate educational intervention will be academically successful throughout their lives.
- Unfortunately there are others who continue to struggle significantly with reading, writing and spelling throughout their adult lives.

# SECONDARY DYSLEXIA AND TRAUMA DYSLEXIA

- **Secondary or developmental dyslexia:**
  - This type of dyslexia is caused by problems with brain development during the early stages of fetal development. Developmental dyslexia diminishes as the child matures. It is also more common in boys.
- **Trauma dyslexia:**
  - This type of dyslexia usually occurs after some form of brain trauma or injury to the area of the brain that controls reading and writing. It is rarely seen in today's school-age population.



# SIGNS AND SYMPTOMS OF DYSLEXIA

- Delayed early language development
- Problems recognizing the differences between similar sounds or segmenting words.
- Slow learning of new vocabulary words
- Difficulty copying from the board or a book.
- Difficulty with learning reading, writing, and spelling skills
- Recalling sequences of things or more than one command at a time can be difficult.
- Parts of words or parts of whole sentences may be missed, and words can come out sounding funny.
- The wrong word or a similar word may be used instead.

# MIXED TRANSCORTICAL APHASIA

- Mixed Transcortical Aphasia is a type of aphasia in which repetition is the primary language ability that is present.
- It is an uncommon type of aphasia. Mixed transcortical aphasia has also been called ***isolation*** aphasia.
- It is considered a more severe form of aphasia.

# CHARACTERISTICS OF MIXED TRANSCORTICAL APHASIA

- Severe impairment in spoken language:
  - Speech is non-fluent, meaning that it is slow and halting
  - Speech does not have typical rhythm or prosody
- Spoken language is often a repetition of what is said to them
- Difficulty initiating speech or creating spontaneous language
- Language comprehension impairments are present
- Reading is impaired
- Writing ability is impaired; likely resembles spoken language
- Repetition skills are a strength:
  - Repetition skills might be completely intact or mildly impaired, i.e. many people might be able to repeat a 3-4-word sentence

# CAUSES AND TREATMENT OF MIXED TRANSCORTICAL APHASIA

- Mixed transcortical aphasia is due to damage that is near the language centers of the brain. The language centers include Broca's area (responsible for language production) and Wernicke's area (responsible for language comprehension). However, it is not due to damage directly to those areas. Rather, it isolates those areas from the rest of the brain.
- It is often helpful to incorporate gestures, drawings, and pictures into communication. Pictures and drawings are easier for people with mixed transcortical aphasia to understand than words. It can also be helpful to speak slowly and focus on key words.

# TRANSCORTICAL SENSORY APHASIA

- Transcortical Sensory Aphasia (TSA) has a lot in common with Wernicke's aphasia. People with TSA produce connected, flowing speech. However, that speech is likely to lack meaning due to word errors and invented words.
- TSA is less common than other types of aphasia, including the similar Wernicke's aphasia. TSA is similar to Wernicke's aphasia because TSA is due to damage in the brain that occurs close to Wernicke's area. TSA can be difficult to diagnose based on medical imaging. Speech-language pathologists (SLPs) are typically able to diagnose it based on testing. The SLP will evaluate spoken language, comprehension, repetition, reading, and writing in order to diagnose TSA.

# TRANSCORTICAL MOTOR APHASIA

- Transcortical Motor Aphasia (TMA or TMoA) is a type of aphasia that is similar to Broca's aphasia. TMA is due to stroke or brain injury that impacts, but does not directly affect, Broca's area. TMA is the result of a stroke or brain injury that is near Broca's area. Because of this, Broca's area can be isolated from other areas of the brain even though it was not directly damaged.
- TMA is less common than Broca's aphasia. People with TMA typically have impairments with spoken language. However, they typically have an easier time with language comprehension.



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- Speech is halting with a lot of starts and stops. People with TMA typically have good repetition skills, especially compared to spontaneous speech. For instance, a person with TMA might be able to repeat a long sentence. However, the same person might be unable to answer the question “Where did you go today?”
- Severity can range from mild to severe. Someone with mild TMA might only have difficulties with word-finding and more complex sentence structure. Someone with severe TMA might have little to no verbal speech.

# CHARACTERISTICS OF TRANSCORTICAL MOTOR APHASIA

- Word-finding difficulty (word is “on the tip of the tongue”)
- Difficulty with sentence structure and “function” words, like articles and prepositions
- Speech might consist mostly of content words, like nouns and verbs
- Speech is slow and halting, and lacks intonation and rhythm
- Comprehension might be intact or only mildly impaired
- Difficulty with initiating speech
- Writing is likely impaired; writing often resembles spoken language