

Overview of Aphasia

General Definition

- disruption in the using and understanding of language following neurological injury or disease that is not related to general intellectual decline or sensori-motor deficits
- not applied to patients with communication disorders related to traumatic brain injury, nondominant or right hemisphere brain damage, or a dementing disease
- basic assumptions
 - intellect is spared
 - motor system is spared
 - all modalities are impaired, although not always to the same degree
 - language competence is not "lost" but access or performance is disrupted

Symptoms of Aphasia

- Comprehension deficits
- Disruption in speech fluency*
 - reduced phrase length
 - impaired articulatory agility
 - reduced speech rate
 - disrupted grammatical form
- Impaired naming (anomia)
 - paraphasias
 - neologisms
 - jargon
 - pauses
 - circumlocutions
- Repetition difficulties*
- Disruptions in written language abilities
 - alexia or acquired dyslexia
 - agraphia or acquired dysgraphia

*The presence of fluent speech and/or intact repetition skills may signal the presence of specific subtypes of aphasia

Speech Behaviors Commonly Observed in Aphasia

Speech Behavior	Example	Common Underlying Impairment(s)
Anomic Pause	"Can you hand me the...er...remote?"	Semantic Representation Lexical Access Phonologic Representation Phonologic Processing
Semantic Paraphasia	"Can you hand me the TV?"	Semantic Representation Lexical Access
Phonemic Paraphasia	"Can you hand me the rebote?"	Phonologic Representation Phonologic Processing
Anomic Circumlocution	"Can you hand me the...other there... the clicker...for the TV?"	Semantic Representation Lexical Access Phonologic Representation Phonologic Processing
Neologism	"Can you hand me the jazzlepam?"	Semantic Representation Lexical Access Phonologic Representation Phonologic Processing
Jargon	"Griss me the jazzlepam."	Semantic Representation Lexical Access Phonologic Representation Phonologic Processing
Agrammatism	"You...uh... remote?"	Morphosyntactic Processing
Paragrammatism / Empty Speech	"Fast the jazzleman on the choose."	Semantic Representation Lexical Access Morphosyntactic Processing

Concomitant Cognitive Symptoms

Although linguistic problems clearly are the most prominent symptoms observed in and typically reported by patients with aphasia, a growing body of research indicates that aphasia is often accompanied by deficits in cognition that extend beyond language processing.

- Attention Problems
 - sustained attention
 - attention switching
 - focused and divided attention
 - hemispatial neglect
- Memory Problems
 - short term memory and working memory
 - long term memory deficits are not well described
- Executive Function Problems*
 - problem solving and reasoning
 - planning
 - organization
 - inhibition
 - self-monitoring
 - cognitive flexibility

*There is little consensus on whether a significant relationship exists between presence of executive function problems and aphasia type or severity, or lesion size or location.

Explanations of Aphasia

- General versus specific deficits:
 - aphasia reflects a generalized impairment of all language functions, such that the term aphasia applies only to individuals who exhibit deficits across modalities and linguistic functions
 - aphasia can and should be additionally applied to selective impairments of specific language functions (e.g., naming, reading)
- Loss versus access problem
 - underlying language skills, processes, or representations are lost as a result of the brain injury causing the aphasia (i.e., loss of language competence)
 - aphasia reflects disrupted access to or execution of intact language structures (i.e., disrupted language performance)
- Specific impairments
 - reduced ability to use language propositionally (i.e., with the intent to communicate a specific meaning)
 - impaired ability to form abstractions, a skill required to manipulate linguistic symbols
 - disruptions to specific linguistic processes (e.g., morphosyntactic parsing), either individually or in concert, result in predictable language performance breakdowns
 - disruption of the cognitive processes supporting language or reduced access to or inefficient allocation of cognitive resources to the mental processes relevant to language

Classification Systems for Aphasia

Dichotomous Classification Systems

- fluent vs nonfluent
- receptive vs expressive

Connectionist Classification System

Aphasia Type	Predicted Site of Lesion	Comprehension	Fluency	Naming	Repetition
Broca's	Broca's Area	Mild to moderately impaired	Nonfluent	Impaired	Similar to spontaneous speech
Wernicke's	Wernicke's Area	Moderately to severely impaired	Fluent	Impaired	Similar to spontaneous speech
Global	Anterior and posterior left hemisphere	Moderately to severely impaired	Nonfluent	Impaired	Similar to spontaneous speech
Transcortical Motor	Anterior or superior to Broca's Area	Mild to moderately impaired	Nonfluent	Impaired	Less impaired than spontaneous speech
Transcortical Sensory	Posterior temporal lobe extending into the occipital lobe	Moderately to severely impaired	Fluent	Impaired	Less impaired than spontaneous speech
Transcortical Mixed (Isolation)	Anterior and posterior association areas in the left hemisphere	Moderately to severely impaired	Nonfluent	Impaired	Less impaired than spontaneous speech
Conduction	Left arcuate fasciculus and/or supramarginal gyrus in the inferior parietal lobe	Mild to moderately impaired	Fluent	Impaired	More impaired than spontaneous speech
Anomic	Anywhere in the left hemisphere	Normal to mildly impaired	Fluent	Impaired	Similar to spontaneous speech

Other Aphasia Types

- Subcortical aphasia: aphasia resulting from damage to non-cortical sites (e.g., thalamus, basal ganglia)
- Crossed aphasia: aphasia resulting from lesions to the right hemisphere.
- Pure aphasias
 - pure alexia or word blindness
 - pure agraphia
 - pure word deafness
- Primary progressive aphasia (PPA)