

CHAPTER 4

Defining and Conceptualizing Aphasia

A great way to delve into the study of acquired neurogenic language disorders is to first consider *aphasia* in detail. From there, once you master certain factual knowledge while also considering ways of embracing multiple theoretical perspectives regarding aphasia, you will have a strong foundation on which to base more learning and reflection on other types of acquired neurogenic language disorders. This is why we begin this section by defining and conceptualizing aphasia.

Aphasia itself has tremendous variability in terms of how it affects people. Still, describing aphasia and its various manifestations may be at least less complex than describing some of the other neurogenic language disorders, especially those that tend to result from more diffuse areas of injury to the brain. Also, the fact that aphasia has been studied for over 150 years, in contrast to most other neurogenic language disorders, makes it a good starting topic for broader study of neurogenic cognitive-linguistic disorders.

In this chapter, we consider what aphasia is and how to define it. We review various ways of thinking about it, studying it, and assessing it, from a variety of perspectives or frameworks. We also consider how frameworks for conceptualiz-

ing aphasia are relevant to other acquired neurogenic language disorders. After reading and reflecting on the content in this chapter, you will ideally be able to answer, in your own words, the following queries:

1. What is a good way to define aphasia?
2. How have established aphasiologists defined aphasia?
3. What are the primary frameworks for conceptualizing aphasia?
4. How does one choose a preferred framework for conceptualizing aphasia?
5. How are the frameworks for conceptualizing aphasia relevant to other neurogenic language disorders?

What Is a Good Way to Define Aphasia?

In Chapter 1, we considered that a good way to define aphasia is to make sure we include four elements in our definition:

1. It is acquired.
2. It has a neurological cause.
3. It affects reception and production of language across modalities.

4. It is not a sensory, motor, psychiatric, or intellectual disorder.

Incorporating these four elements yields a definition of aphasia that meets Darley's (1982) criteria of clarifying features sufficiently to make the disorder recognizable while differentiating it from other disorders. Let's consider each of those elements in more detail.

Aphasia Is Acquired

It is a *loss of a degree* of language ability. That is, it occurs in people who have already learned language. As we noted in Chapter 1, although aphasia tends to occur most commonly in adults, children also can acquire aphasia, inasmuch as a child who has developed competence in one or more languages may then lose language abilities. However, aphasia is not a congenital language disorder. A person must already have acquired language to be able to lose aspects of it.

The word *loss* in this context must be qualified. People with aphasia typically demonstrate problems of access to stored linguistic representations, not necessarily the stored representations themselves. This fact is at the heart of:

- Functional linguistic gains that many people with aphasia continue to make over years postonset
- Treatment approaches that have been shown to enhance access to intact abilities in people with aphasia
- Research demonstrating that the degree of interference with actual intact linguistic abilities can be manipulated by varying the

modality, complexity, and difficulty of tasks and stimuli

- Fluctuations in linguistic abilities typically demonstrated by people with aphasia from moment to moment and day to day
- Theoretical models focusing on competence (one's true underlying knowledge and abilities) versus performance (one's ability to demonstrate knowledge and abilities in some overt way)

Aphasia Has a Neurological Cause

It is most commonly caused by stroke. It can also be caused by a traumatic brain injury, neoplasm (tumor) affecting the brain, surgical ablation of brain tissue, infections, and metabolic problems. This element of the definition relates to the *acquired* nature of aphasia in that there is a loss of language due to some type of neurological event or condition that leads to a loss of language ability. The onset of aphasia is most frequently abrupt because most of its underlying neurological causes tend to occur suddenly.

Aphasia Affects Reception and Production of Language Across Modalities

Aphasia affects all modalities of language. Reception is affected in terms of auditory comprehension, reading comprehension, and understanding of sign language (in those who have already acquired sign language). Production is affected in terms of the ability to formulate spoken, written, or signed language. Some people with aphasia have more difficulty expressing

themselves than understanding others. Some have more difficulty understanding than expressing. The terms *expressive* and *receptive* aphasia are sometimes used to capture the notion that there are predominant problems with production or understanding, respectively. Still, it is vital to recognize that aphasia affects *all* areas of language, both expressive and receptive. People with expressive aphasia, for example, have problems that affect their comprehension. Even people with mild expressive forms of aphasia tend to have more difficulty processing complex grammatical structures than people without aphasia. Also, most people with receptive aphasia produce speech and writing that is not typical of their language abilities before aphasia onset.

Aphasia Is Not a Speech, Intellectual, Sensory, or Psychiatric Disorder

Aphasia is a *language* disorder. Given how commonly language problems may be confused with other problems, it is important that we use exclusionary criteria in defining aphasia. The exclusionary elements most commonly confused or misunderstood in everyday use of the term *aphasia* are the speech and intellectual aspects, so let's consider those further.

Some laypeople inappropriately refer to aphasia as a "speech" disorder because the content of the speech of people with aphasia tends to be atypical. The abnormal content in aphasia, though, is not caused by a motor problem affecting the speech mechanism but rather a problem in the formulation of linguistic messages. Motor speech disorders (such as apraxia of speech and dysarthria) often occur concomitantly in people with aphasia.

Some may mistakenly consider aphasia to be an intellectual problem because it may sometimes seem, given the interaction abilities of people with aphasia, that their intelligence is reduced. This is simply not so. Educating people in general about this point is an important aspect of advocacy on behalf of people with aphasia. The National Aphasia Association (NAA) and other groups promote such advocacy through buttons, bumper stickers, magnets, and other products emblazoned with the slogan, "Aphasia is a loss of language, not intellect." See an example in Figure 4–1. Like motor speech disorders, disorders of cognition (such as nonlinguistic problem-solving abilities) may co-occur with aphasia, but they are not part what defines aphasia.

Given the complex combinations of symptoms a person with any type of injury to the brain may experience, it is important to identify to the extent possible which deficits *co-occur* with aphasia versus which are parts of the aphasia syndrome itself. The reason one might say "to the extent possible" is that it is very difficult to discern nonlinguistic aspects of cognition, such as certain aspects of memory and attention, from language abilities. There are two reasons for this:

- Using language expressively and receptively requires essential memory and attention functions; as such, we cannot assess language abilities without tapping into memory and attention, too.
- Most of the stimuli and tasks used to study memory and attention require understanding and processing of verbal (or at least symbolic) material and often require verbal responses; if verbal abilities are



Figure 4–1. A person with aphasia displaying an NAA bumper sticker with a vital message. Photo credit: Stephanie Luczkowski. A full-color version of this figure can be found in the Color Insert.

impaired, poor responses may be inappropriately attributed to memory and attention problems.

We will talk more about this as we further consider ways of *conceptualizing* aphasia. For now, since we are still talking about *defining* aphasia, our focus is on keeping the definition simple yet comprehensive and not especially imbued with theoretical principles that are important to consider but not essential to the definition. Note that our present query is, “What is a good way to define aphasia,” not “What is the best of definition of aphasia.” The principles underlying the definition are more important than the specific wording we choose.

How Have Established Aphasiologists Defined Aphasia?

The ways that aphasiologists define aphasia may be categorized as general neurolinguistic definitions, definitions that include nonlinguistic cognitive symptoms (e.g., working memory and attention) as inherent components of aphasia and broader definitions of aphasia as a challenge to social interaction and the impact of that challenge on quality of life. Examples of each are shown in Box 4–1. Note that these are given for illustrative purposes; several of these definitions of aphasia do not meet the definitional requirements given above.

Box
4-1**Examples of Definitions of Aphasia***General neurolinguistic definitions*

“An acquired communication disorder caused by brain damage, characterized by an impairment of linguistic expression and/or reception; it is not the result of a sensory deficit, a general intellectual deficit, or a psychiatric disorder” (Hallowell & Chapey, 2008a, p. 3).

“A family of clinically diverse disorders that affect the ability to communicate by oral or written language, or both, following brain damage” (Goodglass, 1993, p. 2).

“The disturbance of any or all of the skills, associations and habits of spoken and written language produced by injury to certain brain areas that are specialized for these functions” (Goodglass & Kaplan, 2001, p. 5).

“An impairment, due to acquired and recent damage of the central nervous system, of the ability to comprehend and formulate language. It is a multimodality disorder represented by a variety of impairments in auditory comprehension, reading, oral-expressive language, and writing. The disrupted language may be influenced by physiological inefficiency or impaired cognition, but it cannot be explained by dementia, sensory loss or motor dysfunction” (Rosenbek, LaPointe, & Wertz, 1989, p. 53).

Definitions that include cognitive symptoms as inherent components of aphasia

“Impairment, as a result of brain damage, of the capacity for interpretation and formulation of language symbols; multimodality loss or reduction in efficiency of the ability to decode and encode conventional meaningful linguistic elements (morphemes and larger syntactic units); disproportionate to impairment of other intellectual functions; not attributable to dementia, confusion, sensory loss, or motor dysfunction; and manifested in reduced availability of vocabulary, reduced efficiency in application of syntactic rules, reduced auditory retention span, and impaired efficiency in input and output channel selection” (Darley, 1982, p. 42).

Broader definitions of aphasia as a challenge to social interaction and the impact of that challenge on quality of life

“An acquired selective impairment of language modalities and functions resulting from a focal brain lesion in the language-dominant hemisphere that affects the person’s communicative and social functioning, quality of life, and the quality of life of his or her relatives and caregivers” (Papathanasiou, Coppens, & Potagas, 2011, p. xx).

Once you have a clear idea of what aphasia is and is not, it is important to practice defining aphasia until you are able to do it accurately and succinctly without any notes, in writing and speaking. No matter what the work setting, speech-language pathologists (SLPs) are often defining and explaining the nature of aphasia. We must be able to do this clearly and adeptly at varied levels of sophistication depending on the background of people with aphasia and their family members, friends and caregivers, and health professionals and laypeople in general.

In research contexts, it is important that the definition of aphasia used to qualify participants with aphasia for a given study be clearly stated. This is essential to enabling researchers to interpret the findings and evaluate conclusions based on the assumptions that underlie the way the study’s authors define aphasia (McNeil & Pratt, 2001; Roberts, Code, & McNeil, 2003).

What Are the Primary Frameworks for Conceptualizing Aphasia?

Some of the differences in how aphasiologists define aphasia are the result of differences in their theoretical perspectives

on aphasia, not necessarily because they cannot agree on a definition. From the earliest days of aphasiology to the present, trends and developments in research and practice have led to a wide array of options for thinking about and discussing aphasia in clinical practice, research contexts, and everyday life.

The way many aphasiologists conceptualize aphasia reveals something about their own academic roots, that is, the way they were taught to think about it. Others have changed the way they consider aphasia because of personal and professional experiences they have had with people who have aphasia. Still others are influenced by emerging research, education, and advocacy campaigns that challenge them to consider differently what the “best” framework for conceptualizing aphasia is.

No matter what our personal viewpoints, it is important that we know about the varied ways that the construct of aphasia might be considered. This helps us appreciate differences among diagnostic and treatment approaches, aphasia research programs and projects, aphasia textbook contents and emphases, and the orientations of individual clinicians and scholars. Being able to grasp and appreciate the validity of multiple viewpoints at the same time is a fundamental qual-

ity of the excellent clinical aphasiologist. Note that many of the frameworks are not mutually exclusive, although some are.

Unidimensional Frameworks

In a unidimensional framework, all of language is seen as one inseparable whole. Every level of language, from phonology to morphology to syntax to semantics to pragmatics, is included in one cohesive ability or set of abilities. Likewise, production and comprehension are not seen as separable components of language but rather as interwoven. An injury to the brain that results in language deficits in any given aspect of language ability may affect all aspects of language ability. Hildred Scheull is known as the major historic proponent of this framework (Schuell & Jenkins, 1959; Schuell, Jenkins, & Jimenez-Pabon, 1964). The Minnesota Test for Differential Diagnosis of Aphasia (MTDDA; Schuell, 1973), the aphasia language assessment tool that she developed (no longer in press), is based on this framework.

Although to this day there are proponents of this framework, it is generally considered outmoded in light of evidence for a more multidimensional framework of aphasia that might better capture variations among differing manifestations of aphasia. Still, it has the strength of recognizing the interdependence of all aspects of language, receptive and expressive, from phonology to pragmatics. Also, it fits with evidence for a great deal of functional interconnectivity among structures thought to be specialized for language—not just a set of discreet specialized structures. Finally, it is a framework that helps us to consider each individual with aphasia as having a unique set of challenges requiring individualized assess-

ment that leads to the design of an individually tailored treatment program.

Multidimensional Frameworks

Multidimensional frameworks are characterized by the view that there are varied forms or syndromes of aphasia, each syndrome corresponding to a site of the lesion. Any syndrome of aphasia may be characterized by a set of hallmark features. The way the syndromes are classified has varied over the decades. Still, there are common aspects across many classification schemes. Classifications of fluent versus nonfluent and anterior versus posterior forms of aphasia fit this framework. So do the “classical” classification systems suggesting specific aphasia syndromes (e.g., Wernicke’s, Broca’s, transcortical sensory, transcortical motor, mixed transcortical, and conduction aphasia, all of which are discussed in detail in Chapter 10). A strength of this approach is that it recognizes well-established patterns of brain-behavior relationships, which may help us predict particular difficulties with language as well as concomitant problems that may affect a person’s communication abilities. Considering patterns of performance may increase the efficiency with which we develop optimal treatment programs. Likewise, considering the corresponding structural changes in the brain may help us to think critically about *why* a person is having a particular linguistic problem.

Two people who have poor auditory comprehension, for example, may have starkly different lesion locations; knowing the location of their lesions may help us differentiate the nature of their comprehension deficits. Weaknesses of this approach are that it is not a panacea for

understanding the nature of any individual's manifestations of aphasia, let alone for knowing how we might best support a person's meaningful real-life communication and life participation. Given the commonality of multidimensional views in clinical and research practices, we explore multidimensional classification schemes in much greater detail in Chapter 10.

Medical Frameworks

Medical frameworks typically incorporate multidimensional views and thus may be considered a subset of that category of viewpoints. In medical contexts, aphasia is considered primarily at the impairment level, that is, at the level of specific linguistic deficits. There is a focus on analyzing the cause in terms of a disease state (e.g., stroke) or change in body structure (e.g., trauma or neoplasm). Assessment entails identifying deficits, and treatment plans are designed to address those deficits. Operating from this perspective may be consistent with the viewpoints of other rehabilitation team members, especially those focused on physical impairments, and thus help an SLP feel more easily understood when communicating with others about assessment and plans of care. Being able to document the medical nature of language deficits may also be essential to being reimbursed financially for SLP services. Serious drawbacks, though, are that there tends to be a focus on weaknesses, not strengths, and on attempting to "fix" problems at the expense of helping people compensate for and cope with challenges they will likely continue to have long after they are discharged from the medical contexts in which we work with them.

Cognitive Neuropsychological, Psycholinguistic, and Neurolinguistic Frameworks

A **cognitive neuropsychological framework** is based on models of mental representation and types and stages of information processing. **Psycholinguistic frameworks**, which are focused on processing of linguistic information in particular, are a subset of this framework. Components of information processing (or modules) are often conceptualized within boxes in flowcharts, with arrows showing the order of processing stages and interconnections among components. Assumptions are typically made about the degree of functional modularity of any given component (i.e., its independence from or interdependence with other components). Although some who ascribe to this type of framework attempt to associate anatomical structures or networks of structures to specific components, the notion of modules rather than brain structures helps to circumvent the challenges of relating language and cognitive deficits to specific anatomical lesion sites and vice versa.

Kay, Lesser, and Coltheart's (1997) PALPA is an aphasia assessment battery that is well known for its grounding in psycholinguistic theory. A schematic diagram based on their psycholinguistic model for comprehension and production, amplified to include additional components and influences, is shown in Figure 4-2. Auditory lexical perception is shown as beginning with the acoustic input from a speech signal, which first goes through an auditory phonological analysis process, then passes through a phonological input buffer, to a phonological input lexicon, to the semantic system. Orally naming an

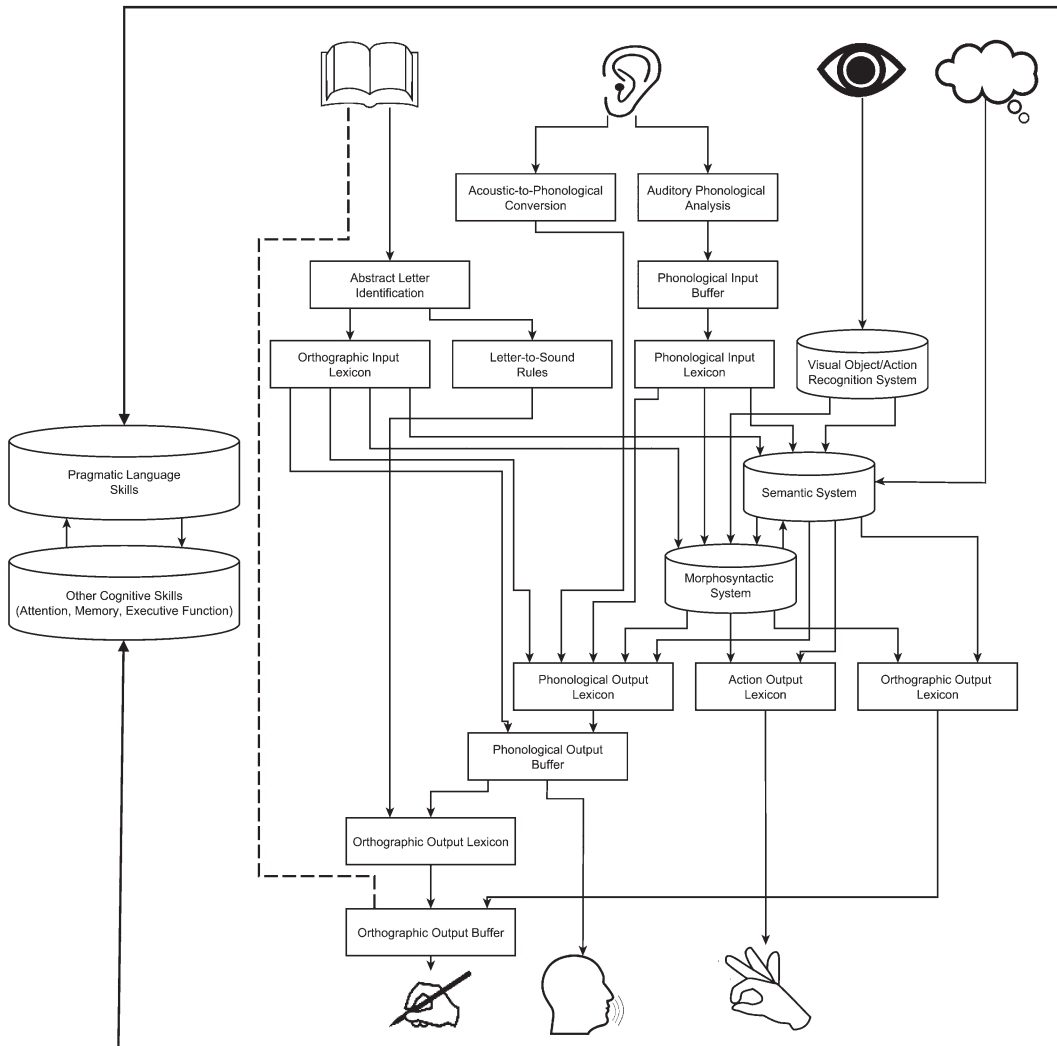


Figure 4–2. Psycholinguistic model of language processing. Image credit: Mohammad Haghighi.

object begins with seeing the object, processing the visual stimulus through the visual object recognition system to the semantic system, then formulating the associated word through the phonological output lexicon and phonological output buffer, finally leading to speech. In a repetition task, since the listener need not

process the auditory stimulus in terms of its semantic properties in order to repeat it, he or she can simply bypass the processes associated with the phonological input buffer, the phonological input lexicon, and the semantic system and simply engage in acoustic-to-phonologic conversion and the phonological output buffer to