It is possible to break the part of your brain that translates thoughts into words. Allow me to explain!

INTRO

Aphasia is the disorder that occurs when brain damage makes it harder for you to use language. It may affect the way you speak and understand speech, among other symptoms. Researchers have created types of aphasia based on symptoms, but because the brain's language centers are complex, these categories are not perfect. Most researchers agree that there are at least eight subtypes of aphasia, each defined by the limits of that person's language capabilities (Pedersen, Vinter, & Olsen, 2004). Today, let's discuss the three types that are most well-documented.

A crucial distinction between the subtypes of aphasia is between fluent and nonfluent aphasias. Fluency is the "flow" of words, or how easy it is to speak a bunch of words in sequence.

Speaking rhythmically in full sentences, even if some of the words are nonsense, is considered fluent, while speaking in incomplete sentences, using one or two words at a time and ignoring typical grammatical structure, is considered disfluent (Hodges & Patterson, 1996).

The most common and most severe type is called global aphasia (Pedersen, Vinter, & Olsen, 2004). People with global aphasia lose the ability to choose and use words without great effort, and also lose the ability to understand the words used by others. It is a disfluent aphasia, with the most severe cases having all language skills disrupted to the point that they can only communicate using facial expressions and basic gestures.

Around 1897, a woman developed severe problems with language following what was probably a stroke. Today, we would call this case global aphasia. At first, she appeared to be deaf, but then she began to show responses to sounds such as a closing door or a ticking clock. She did not, however, seem to understand most *words*. She did seem to understand simple written questions, and could reply by writing. Although her writing contained mistakes. One sentence that she wrote reads: "I two notes and ther is a little nonsense read yes I let me to let you know I would like to a deal to make stronger than I was..." seemingly trying to indicate that she knew her communication wasn't great but she felt like she was improving. Eventually, she spoke, but only one or a few words at a time (Bramwell, 1897).

Less severe than global aphasia is a type called Wernicke's aphasia. These people can speak fluently, and can use full sentences. However, the sentences usually contain extra nonsense words, and listeners have trouble decoding what they are trying to say. To the person with fluent aphasia, however, they feel as if they are communicating effectively and they may be unaware of

the errors in their speech (Hillis, 2007). This can lead to what is known as jargon aphasia, in which the afflicted person paraphrases with unusual word choices, and may even invent words or phrases, resulting in long sentences that carry very little meaning for the listener (Mesulam, 2010). Additionally, those with Wernicke's aphasia generally cannot understand the meanings of words when they read or hear them. This can lead to frustrating situations in which they think that they are communicating effectively, but aren't, and listeners may not be able to communicate that they don't understand.

For example, in 2003 a study was published about a 75-year-old woman who had been diagnosed with Wernicke's aphasia. She tended to write and speak fluently, but her sentences lacked concrete nouns and instead included extra words. When she was asked to write down the sentence "He wanted the dog to go home," she instead wrote, "The boys run and the dog is all home." When she was asked to describe a picture, what she said included this sentence: "And that's the boy going to getting with it over there" (Binder, 2003).

In contrast is Broca's aphasia, which is a disfluent subtype. These people struggle with producing sentences when speaking, and usually speak only in short bursts. They may shorten sentences into single words in order to avoid the effort of retrieving additional words from their damaged word bank. Fortunately, people with Broca's aphasia *can* understand the speech of others. They can answer yes or no to questions, and generally do not have as much trouble understanding when compared to someone with Wernicke's aphasia (Mesulam, 2010). They also often have "islands of fluent production" where very well-learned phrases such as "you know what I mean" are still able to be said fluently (Hillis, 2007). Additionally, abilities such as singing familiar songs may be intact and fluent in patients with this type of aphasia (Ramachandran, 2011).

In 1920, a case of Broca's aphasia was described in which a military officer with a head injury used only a few words at a time. He used long pauses in between while he searched for the words he wanted. Here is how he explained what it felt like: "I sometimes— have to— alter the whole— to alter the sentence— because— I— have— difficulty— in finding— the word." He sometimes used colorful expressions in the place of common words in order to avoid words that he failed to remember. He reported that silent thought was easier than speaking, as if speaking was messing up his words (Head, 1920).

Aphasia generally results due to damage to the left hemisphere of the brain, especially the temporal lobe. The type of aphasia that you develop is related to which areas are damaged. If you scan a person's brain and look at the damage, you can sometimes predict which kind of aphasia they will experience, although it isn't a perfect science (Yourganov, Smith, Fridriksson, & Rorden, 2015).

Aphasia is not always permanent. Speech and language therapy interventions are often effective in restoring some communication abilities in aphasics (Brady, Godwin, Enderby, Kelly, & Campbell, 2016). Over time, aphasia can become milder, and can even change type, such as global aphasia becoming Wernicke's aphasia (Pedersen, Vinter, & Olsen, 2004). Language is a complicated set of processes in the brain, and aphasia is one of the most complex ways that your brain can break.

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