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ABSTRACT

This brochure discusses briefly, in lay terms, how one individual can approach communicating with another individual who has suffered a stroke. Two kinds of aphasia (language loss) are distinguished: Broca's aphasia, in which the ability to process grammar is impaired, and Wernicke's aphasia, in which neurological damage impairs the ability to understand what is said and connect words to their meanings. Examples of language change in each case are offered, with explanations of how these changes occur. A concluding section discusses the potential for recovery of language after a stroke, noting differences related to the individual's age, length of time after the stroke, and degree to which other areas of the brain can support re-learning. (MSE)

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How can I communicate with a relative who's had a stroke?

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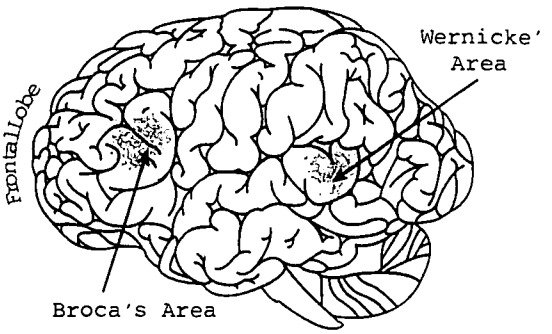
My uncle had a stroke recently, and he's having trouble with language. How can I communicate with him?

Every case is different, so it's important to check with your uncle's doctor. But some general information may help.

Your uncle is suffering from **aphasia**. This means that the stroke damaged a part of his brain that's important for using language. How you can communicate with him will depend on what kind of aphasia he has — and that depends on what part of his brain was damaged by the stroke.



Although it's not obvious in normal language use, our knowledge of language is made up of many sub-types of knowledge working together. We know the words of our language, what they mean, how to put them together in a sentence, and how to produce the sounds that make up the words. We also know how to interpret the speech of other people. All of these types of knowledge are controlled by a language network involving several different areas of the brain.

When the brain suffers a stroke or other injury (in a car accident, for example), one part of the language network may be preserved when another is lost. If the damage only affects a small area that is involved primarily with one aspect of language, only that aspect is likely to be affected.

Two of the main types of aphasia are called Broca's and Wernicke's. These aphasias are named after the neurologists who discovered them.

What is Broca's aphasia?

If it's hard for your uncle to talk, his sentences are short and broken up, and they sound a little like a telegram (lacking small words like *the* and *but*), then he probably has Broca's aphasia. Broca's aphasics frequently suffer from 'agrammatism', which means 'no grammar'.

Grammar is what tells us how to put words together to form sentences. If the part of the brain marked 'Broca's area' in the diagram is damaged, this ability may be impaired. Without grammatical knowledge, your uncle may still know words and their meanings, but he will find it hard to put them together into a sentence, and will not be able to add the small 'function' words that tell how the content words are related to each other. Because Broca's area is near the brain area involved in producing speech sounds, he may also find it hard to speak, and his speech may be slow and require a lot of effort.

This loss of grammatical knowledge also makes it hard for him to understand the sentences he hears. Sometimes he will be able to work out the meaning of a sentence using only the meanings of the words:

(1) The dog stole the steak.

(2) The steak was stolen by the dog.

Even if all you knew about these sentences were the meanings of the words *dog*, *steak*, and *stole*, you could easily tell what the sentences mean.

But some sentences are much more difficult:

(3) The passenger insulted the taxi driver.

(4) The taxi driver was insulted by the passenger.

If all you knew about these sentences were the meanings of *passenger*, *taxi driver*, and *insulted*, you wouldn't know who insulted whom, because both possibilities make sense.

In trying to work out the meaning of a sentence, aphasic people often assume that the words go together following the basic word order of the language. For English, that means that the person or thing performing an action comes first, followed by the action, followed by the thing acted upon (as in sentence (1)). This strategy works well for 'active' sentences like (3), but it gives the wrong results for 'passive' sentences like (4), so they are often misunderstood.

If you speak to your uncle in sentences that are simple and straightforward, using basic word order, he is more likely to understand what you say. In listening to him you will need to be patient, since it may take a lot of time and effort for him to speak. And you may need to do some guessing too, because the small linking words may be missing, resulting in sentences like *Go store pay newspaper.* He may also become easily frustrated, since he is aware of the mistakes he is making.

What is Wernicke's aphasia?

If your uncle talks fluently and has no trouble combining words into sentences, but seems to choose the wrong words or uses made-up words, then he probably has Wernicke's aphasia.

Wernicke's area (see diagram) controls language comprehension. Damage to this area impairs a person's ability both to understand what is said to him and to connect words to their meanings.

If your uncle has Wernicke's aphasia, he probably talks fluently and effortlessly, but what he says often makes little sense. He may say *shoe* when he means *salt*. He may use a lot of 'empty' words, like *thing, it,* and *do*. Or he may make up words that don't exist, like *glorn* or *jangful*. And he probably doesn't realize that these are not the words he intended and that you can't understand what he is saying, since his ability to understand his own speech is also impaired.

But the fact that he can't always name things correctly doesn't mean that he doesn't know what they are. He knows what he wants to say, and believes that he is saying it correctly. He may say "Please pass me the shoe" when he wants the salt, but he knows that shoes go on feet and salt goes on dinner.

Misunderstandings are inevitable with a Wernicke's aphasic, but it may help to use gestures along with your words, and to encourage your uncle to point to things and show you what he means.

As you can see, Wernicke's aphasia is very different from Broca's aphasia. Because a person with Wernicke's aphasia has an intact grammar, his speech may sound normal until you really try to understand it. It's the content words that are affected, and without them, the meaning is lost. If your uncle has Wernicke's aphasia, he will be much less likely than a Broca's aphasic to feel frustrated with his own speech; instead, he may become frustrated and angry with those he is talking to, who seem unable to understand him, and who are talking in a way that makes no sense to him.

Will my uncle ever recover his ability to talk normally?

Virtually all aphasics recover at least a small amount of the lost ability during the first days or weeks after the stroke, but after the first two months improvement is much slower. Your uncle will probably never be able to function as well as he could before the stroke.

Exactly how much he improves will depend on a number of things. For example, in right-handed people language abilities are usually stored on the left side of the brain, while in left-handed people they often exist on both sides. The more widely the knowledge is distributed, the more likely it is that it will escape the effects of a stroke. Age makes a difference as well; children typically show less permanent effects than adults do. Also, other areas of your uncle's brain may be able to take over for the damaged area and re-learn some of what was lost. And finally, with speech/language therapy he may be able to either regain access to impaired language or learn techniques to help compensate for the lost knowledge.

Brain-monitoring tools such as CAT scans and MRIs can show how extensive the damage to your uncle's brain is. Psycholinguists (who study the mental processes involved in language use) and neurolinguists (who study the brain mechanisms that underlie those processes) use these tools to learn how the brain directs normal language use, and to find out what happens when someone suffers a head injury or a stroke. The more we know about how the human brain normally functions in language use, the better prepared we will be to help people who suffer from aphasia.

For further information

The Garden of Delights (a movie in Spanish)
Libben, Gary. 1997. "Brain and Language." In **Contemporary Linguistics**, ed. by William O'Grady, Michael Dobrovolsky, and Mark Aronoff, 415-36. New York: St. Martin's Press.

The Linguistic Society of America was founded in 1924 for the advancement of the scientific study of language. The Society serves its nearly 7,000 personal and institutional members through scholarly meetings, publications, and special activities designed to advance the discipline.

The Society holds its Annual Meeting in early January each year and publishes a quarterly journal, LANGUAGE and the LSA Bulletin. Among its special education activities are the Lingusitic Institutes held every other summer in odd-numbered years and co-sponsored by a host university.

The web site for the Society (http://www.lsadc.org) includes a Directory of Programs in Linguistics in the United States and Canada, The Field of Linguistics (brief, non-technical essays describing the discipline and its sub-fields), and statements and resolutions issued by the Society on matters such as language rights, the English-only/English-plus debate, bilingual education, and ebonics.

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