

Aphasic Victim as Investigator

Dorothea Wender, PhD

• The author (a classics professor) suffered a cerebrovascular accident, resulting in aphasia. In order to learn whether speech therapy helps aphasic patients to recover, the patient worked on Greek vocabulary and grammar and ignored Latin. (Both languages were equally well-known before the accident; skills in both languages had been totally lost afterward.) This case demonstrates the value of retraining an aphasic. After three years, testing demonstrated a professorial level of the Greek language, but Latin was essentially still missing.

(*Arch Neurol* 1989;46:91-92)

After a cerebrovascular accident this investigator, a classics professor, had lost a large number of English words, some syntax, and the ability to read and write. In addition, ancient Greek and Latin, the two languages she had taught for 20 years, were totally missing, except for a scant knowledge of some letters of the alphabets and a small number of names like Zeus and Caesar. Having heard from her speech pathologist the belief that working hard on relearning words would help her immensely, and then having heard the opposite from several neurologists, the patient proceeded to investigate. Her experiment was to study ancient Greek grammar and vocabulary and to leave Latin, as the control, completely alone. After three years an examination made it clear that her knowledge of Greek was very good and her Latin

still mainly missing; therefore, this report seems to prove that working, either alone or in combination with volunteers or professional therapists, does seem to improve at least some aphasic victims.

REPORT OF A CASE

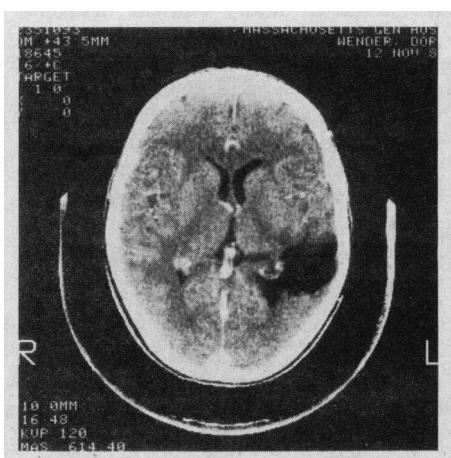
The patient, a 45-year-old right-handed classics professor, suffered an onset of darkening vision, with right-sided hemiparesis and aphasia of jargon type. A computed tomographic scan showed a hematoma in the left temporal lobe, extending from the left temporal tip in the vicinity of the left middle cerebral artery back to the area of the trigone. It extended deeply to the level of the internal capsule (Figure). Arteriography showed a large avascular mass in the left temporal lobe without abnormal vessels or evidence of tumor. Steroid therapy left the patient with only mild hemiparesis and some speech improvement. One week later, the patient was fully ambulatory, with minimal weakness of right grip and homonymous hemianopia on the right side. A month later, the patient showed intelligibility of speech (70%), but with some naming defects, alexia, and agraphia. The patient received approximately 30 hours of formal speech therapy, in addition to help from her daughters, previous students, and colleagues; mainly, however, she taught herself.

Two months after the cerebrovascular accident, the patient began to relearn Greek while ignoring Latin. Her idea came from the disagreement between her neurologist and her speech pathologist: the latter begged her to spend as much time as possible at home working on relearning to speak, read, and write English; the former said, "Don't bother working so hard; just wait; either your language will come back spontaneously... or it won't." It occurred to the patient that she (as the subject) could perform an unusual experiment, since she could try to relearn Greek (or Latin), using Latin (or Greek) as an excel-

lent control. She would, of course, work on English at the same time, but that would not be part of the study. (It is perhaps interesting that, although the patient thought of the experiment in precisely the way described above, she did not at the time "know" the words "control," "idea," "language," "Greek," "Latin," "English," or "experiment." In fact, it was three years later when she relearned the words "experiment" and "control" for the first time after her stroke; she needed the words for the first draft of this article. She had, obviously, originally thought without words.)

Ten months after the accident the patient had relearned enough Greek, with the help of a textbook and intensive study, to be able to teach elementary Greek again. Two years after the accident, with further study every day, the patient taught two advanced Greek courses. By the end of 1982, three years after the accident, she felt ready for an examination.

Although her command of Greek was still not as good as before the cerebrovas-



Computed tomographic scan of patient showing hematoma in left temporal lobe, extending from left temporal tip in vicinity of left middle cerebral artery back to area of trigone.

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From the Classics Department, Wheaton College, Norton, Mass.

Reprint requests to 109 E Main St, Norton, MA 02766 (Dr Wender).

cular accident, the patient's efforts resulted in a marked discrepancy between her ability in Greek and that in Latin. In a vocabulary test administered by a colleague she correctly identified 35 out of 41 Greek words, vs 12 Latin words out of 41. In addition, and more strikingly, her translation of a passage of Plato was marked by the examiner (Eva Stehle, PhD, Classics Dept, Wheaton College, Norton, Mass) as "almost totally correct," but that of a passage of Cicero "only a few words right. She was not able to translate any complete sentence."

A well-known aphasiologist (N. Geschwind, MD, personal communication, 1982) was contacted in December 1982, and, after reading the patient's first draft of this article, commented in a telephone call (January 1983) the following: (1) one reason for her surprising recovery came from the fact that her father and one daughter were ambidextrous; (2) her idea for the experiment was interesting and could be repeated, as she suggested, with bilingual aphasics (eg, patients in Québec); and (3) it was possible (not likely, but still possible) that the patient's recovery in Greek had been spontaneous, while her poor Latin recovery had not.

In reply to the third statement the patient asked another colleague who taught classics (Keith Dickson, PhD, Classics Dept, Wheaton College, Norton, Mass) to perform a simple experiment, in which the patient was given ten Greek and ten Latin words, all ones she could not remember. During the next week the patient studied the Latin words and not the Greek ones; after the one-week period she was administered a quiz. The result of the quiz was obvious; she correctly identified all ten Latin words, but was still mystified by the ten Greek words. Therefore, the patient could have relearned Latin rather than Greek; her recovery in Greek was even more clearly not simply spontaneous.

COMMENT

This case supports the concept that speech therapy is of value. The value of speech therapy has been widely investigated. Many clinical neurologists believe that some spontaneous improvement is often attributed to speech therapy, and that was indeed the author's experience, since some Latin words (mainly nouns) returned to her without effort. It was not, however, enough to be considered knowing Latin.

The two most important medical articles concerning aphasic therapy, are by Lincoln et al¹ and Wentz et al.²

Lincoln et al concluded that therapy does very little for aphasic patients. (Most neurologists, compared with speech pathologists, have already believed this for a long time; see *Harrison's Principles of Internal Medicine*,³ which asserts that "speech therapy is of questionable value but

should be tried. At least it is of value in improving the morale of the patient.")

The article by Wentz et al strongly disagreed with the conclusions of the article by Lincoln et al, and is, I believe, much more carefully researched, using many more subjects who were helped for a much longer period of time. Furthermore, several different types of therapists were used (including some volunteers who worked better with the patients than did some professionals).

One of the problems with the article by Lincoln et al was that the patients had therapy only a few hours a week, for half a year, in the first year after their strokes. I would like you physicians to consider an equivalent experiment. If we were trying to find out whether ordinary 6-year-old children could learn to read, and the investigator spent a couple of hours each week with a 6-year-old child for half a year, and, furthermore, his test was to ask the child to write a page criticizing *King Lear*, do you think we would know whether normal children could learn to read, ie, should we have schools? English is a rich and complicated language, and many aphasics (like myself) will need thousands, not hundreds, of hours before improvement will be clear to normal speakers of English. Volunteers, therefore, seem to be extremely useful. An example of this is the New Haven, Conn, Volunteer Stroke Rehabilitation Program Inc.

Literature concerning aphasic volunteers is not common, perhaps, since most books on aphasia are written for and by speech pathologists. For example, *Adult Aphasia*,⁴ which is generally careful and scholarly, has a last chapter titled "Family Therapy." That chapter, however, is not really what it sounds like; it is mainly a description of the psychological problems the aphasic's family is likely to face. On the other hand, I would like to mention that my family (three daughters in high school) helped me very much to relearn English, as did many colleagues who also volunteered. Of course, the most useful "textbook" concerning neighbors as therapists, even though it is a badly written ("Tinseltown" style) biography, is *Pat and Roald*,⁵ which was the most important document in persuading the British government to establish the "volunteer scheme" to help aphasics.

In addition, it is also quite possible that the therapists used by Lincoln et al were not good teachers. (I fired my

first speech pathologist because she made me miserable; my second therapist did help, mainly by suggesting ways to try relearning words at home.)

Spontaneous improvement seems to be agreed on by all articles; however, different authors feel that the spontaneity returns after 2, 3, or 6 months, or one or two years. I, however, am still improving (both in Greek and English) nine years after my accident. After my first year after the stroke, in which I improved the most strikingly, perhaps partly by spontaneous recovery, I still could not read or write, ie, I was literally an illiterate professor. After three years, I finally was able to read a complete adult book, but I feel that I relearned the largest amount of English vocabulary in my sixth year, when I wrote and sold a murder mystery and finished the scholarly book about Plato that I had started before my accident. I do not believe that my improvement that year was spontaneous; I feel that it came from my time for writing: it was my sabbatical year. This year (the ninth) has also been excellent; nevertheless, I still cannot multiply or divide and do not want to relearn it, since I bought a calculator after my stroke. Many other aphasics have written me letters with very similar anecdotes, which seems, to me, to indicate that at least some people may improve from working or from long periods of therapy, not simply from the early healing of the injured brain.

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