

## **Brains organized to grab languages**

All normal people can speak one or more languages. This is amazing, really, when you consider that speaking a language is much more complicated than most things we do, and we can do it at a very early age. More amazing still is the fact that, after childhood when most of us are struggling to learn a few halting phrases in a new language, some adults can continue to learn new languages with comparative ease. I call these people exceptional language learners (ELLS) and I believe we can benefit by studying them.

In this column, I will focus on people who are born with brains organized in a way that boosts their language-learning ability. In future columns I plan to describe other types of ELLs.

One of my favorite researchers is Loraine Obler, City University of New York Distinguished Professor of Speech and Hearing Sciences. For several years, Obler was privileged to attend Grand Rounds with renowned behavioral neurologist Norman Geschwind at Boston's Aphasia Research Center. Geschwind had noticed that the fetal development of the brain can follow different courses. The most common course is for the left hemisphere to become slightly larger than the right and for the person to be right-handed. But in a minority of people, who apparently receive more than the usual prenatal dose of hormones, particularly testosterone, the left and right hemispheres develop more equally. Geschwind used the term "anomalous hemispheric dominance" (AD) to describe this syndrome.

Most people with AD are indistinguishable from the rest of the population, although among them there are greater-than-average rates of non-right-handedness, developmental learning disorders, immune system disorders, light skin or hair color, and twinning. There may be additional conditions such as mental illness, migraine headaches, or homosexuality. Taken together, these "associations" are sometimes called the "Geschwind cluster." AD is partly hereditary, so the associations can show up

either in the AD person or in members of his or her family. Geschwind discovered that a small number of AD people have unusual abilities. He and his collaborator Galaburda studied people who had unusual talents in the realms of architecture, art, athletics, engineering, mathematics, and metalsmithy.

Because Geschwind died suddenly, he and Galaburda never got around to investigating unusual talent for second-language learning. Obler continued the work in that direction. She and her collaborators advertised for talented language learners and consulted with professional colleagues. They selected one subject for intensive study: "CJ," a young man of average intelligence who was raised in a monolingual environment in the U.S.

CJ first found success with foreign languages at the age of 15 in a high school French class. With a sense of difference due to his homosexuality and no aptitude for sports, CJ "chose to be distinctive" in languages. In high school he also studied German, and a semester each of Spanish and Latin. In college he majored in French, spending his junior year abroad in France with a brief visit to Germany. After college, CJ got a government job in Morocco and learned Moroccan Arabic "with unusual ease relative to his peers." His quickness at learning languages is reflected in the report that in subsequent years, during brief visits to Spain and Italy, he "picked up" both Spanish and Italian in a "matter of weeks." As a 29-year-old adult, CJ could boast native-like proficiency in French, German, Spanish, Italian, and Arabic.

The description of CJ is tantalizing. If CJ could learn languages easily, is there not hope for us all? Who can resist the thought of "picking up" Spanish or Italian in a matter of weeks while on holiday in Spain or Italy? The search was on for CJ's secret.

### **Five more ADELLs**

Following publication of CJ's case, other researchers (myself among them) produced descriptions of anomalously dominant exceptional language learners (ADELLs), with the result that biographical details are known about five more

ADELLs in addition to CJ. When studied, “AB” was a 23-year-old Canadian woman, a native English speaker who could pass as a native speaker of French and was also fluent in Italian and German. “XY” was a 31-year old Canadian man, a native English speaker who could pass as a native speaker of both French and Spanish and was also extremely fluent in German. “Julie” was a British woman who married an Egyptian man at age 21, moved to Egypt, and in 2½ years developed nativelylike proficiency in Egyptian Arabic.

My own research described “Mr. Empathy,” a 43-year-old English-speaking New Zealander who is fluent also in French, Italian, and Japanese. Mr. Empathy started studying Japanese at age 36, took to it very well, and has since spent his life digging himself deeper into Japanese culture. I also studied “Mr. Vigor,” a 38-year-old American who is fluent in Spanish, French, Mandarin Chinese, and Japanese as well as his native English. Mr. Vigor, who lives in Japan, is now learning Thai and Hungarian and is working on systematizing his method of learning languages.

Although this group of six ADELLs is not a valid statistical sample, we cannot help noticing the traits they exhibited. All six reported personal immune disorders; four are left-handed, as is the father of a fifth; four reported unusual coloring such as light skin, early baldness and gray hair; two reported that they are homosexuals; and as a group they reported a variety of developmental skills and deficiencies (such as poor spatial relations abilities).

### **What can we learn from ADELLs?**

Geschwind and Galaburda commented that it is useful for a society, although not always for AD people themselves, if extraordinary abilities crop up from time to time. Certainly, in human societies, adroit language learners have been important in smoothing the encounters of people who speak different languages. Note, however, that being an ADELL is a potential state. If an ADELL never hears a foreign language, no one will ever know he or she was an ADELL.

As far as I know, there have been no really

successful efforts to understand how the brains of ADELLs work to produce their extraordinary abilities. Whatever happens is not revealed by present research techniques. We are, after all, talking about subtle differences in performance. How ADELL brains work differently from typical brains remains an open question — a very interesting one, I think — to challenge future neuropsychologists of language.

My guess is that the unusual ability of ADELLs is related to their mental processes of attention and recall. We all know old people who tell the same stories again and again. Something in their minds guides them into familiar channels. To a lesser degree, that happens to all of us as we mature from babies to children to adults, and this focusing of mental processes is efficient and necessary. It is a factor in fixing a language in our brains by focusing on familiar possibilities and excluding wider ones. ADELLs, however, seem to retain their youthful openness to new form-meaning combinations. They may also have neural patterns that give them power in processing language sounds and in entering mental states appropriate to new languages.

Ordinary people can benefit from noticing how ADELLs go about learning a language. I plan to discuss the habits and strategies of ADELLs in a later column.

I have described ADELLs at some length not only because they are interesting in themselves, but also because their existence forces us to broaden our views of language learning. There are more things going on in our brains than we, the proprietors, are aware of. And more things than science has so far discovered.

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This series of columns is an attempt to reconcile language teachers, theorists and bureaucrats. Readers are invited to send e-mail to [mrchilds@tokai.or.jp](mailto:mrchilds@tokai.or.jp) or letters to The Daily Yomiuri. The column will return on July 6.

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