Words, words, words

Kissing a biotechnological blarney stone

Elisabeth Malartre

Richard calls Marilyn's normal morning routine "the old gal doing her drugs". She takes antioxidants to keep young; a hormone-replacement pill; a diuretic for high blood pressure; vitamins ("just because"); and a soft gel called Palaver, all with calcium-enriched orange juice. Then she has breakfast and reads the paper, working on the crossword between trips to the bathroom. She rarely answers the phone or goes out before 10:00 a.m., letting her pills do their work.

A bit tedious, perhaps, but she doesn't really mind. Palaver makes it all worthwhile.

"I still don't see why you have to hog the crossword every morning," he grumbles.

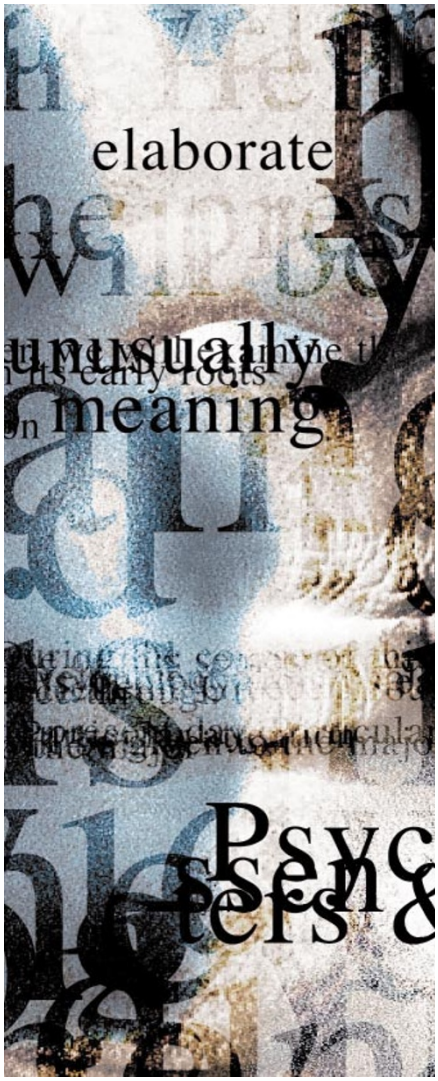
She smiles: "It works like your Viagra, Richard, dear. You have to stimulate the brain to get it to work right."

It was a fortuitous discovery. A graduate student named Anne Cashmore, trying to settle once and for all whether chimpanzees had language capability, was looking at brain organization in detail. While closely examining MRI slices of Broca's area in humans, she discovered a tiny sac-like organ, filled with dense material. Under the scanning electron microscope, it was found to be a heterogeneous population of discrete rod-like organometallic particles, up to a few microns long. Thin EM sections hinted at definite but non-regular internal structure. Only at the highest magnification did their true nature manifest themselves: they were words.

Cashmore wrote up her results, suggesting that the sac functioned like a gall bladder, storing words that were then distributed in a still-mysterious process to other neurons. Every journal turned her paper down. Then someone leaked it to a *New York Times* science stringer. After that, it was headline news. Websites blossomed with her micrographs. Talk shows were in a frenzy. Cashmore's discovery was quickly dubbed the 'word sac' by the media.

The brain-research community immediately denounced it as a hoax: it violated every known precept about brain organization and function. "Chomsky *ad absurdum*," spouted the dean of the field. Cashmore was almost thrown out of graduate school.

But even her staunchest critics were silenced as corroborative results appeared: the size and number of the particles correlated with the age of the person, up to young adulthood. Politicians and others who talk for a living were found to have unusually



JACEY

large sacs, but the sacs of autistic children were empty. There was also a small but statistically significant correlation between the size of the particles and level of educational attainment. People "speaking in tongues" turned out to have gibberish words in their sacs, accessed by emotional storms in the cerebrum. As in the case of the Shroud of Turin, however, true believers rejected this explanation. Finally, Cashmore found that chimpanzees' sacs were quite small, with particles roughly the size of those in three-year-old humans. That resonated with the observations made by early researchers on chimpanzee language, and Cashmore was allowed to complete her thesis.

Even more interesting, perhaps, were the therapeutic ramifications. In an ageing population increasingly at a loss for words, there was suddenly hope. The then-infant Rose Genomics, Inc. contracted with Cashmore's university to investigate the nature of the particles and develop any drug uses. The first crude attempt at a drug for perimenopausal aphasia was basically a slurry of particle material. Ingested or injected, it migrated to Broca's area, the way iodine concentrates in the thyroid. Within a few hours, new particles began to appear in the word sac, more in an active brain.

Those early researchers at Rose Genomics drank purified particles from brain donors, despite the terrible risks of catching viruses and prions. But it worked: the particles migrated to the word sac and were there for retrieval after an hour. Michael Rose himself, then in his fifties, was one of the experimenters. In his testimony before Congress, he said it worked "like packed red blood cells carrying extra oxygen for an athlete. The new words filled in the blanks for me when I talked." Then, at last, a German researcher at Rose Genomics discovered, in a still secret process, how to produce word particles synthetically, and the dam was broken.

The new drug was named Palaver™, and it was a huge instant success, eclipsing even Viagra. Both sexes take Palaver, and most people want it every day. Commercials splashed across screens everywhere trumpeted, "Enhance your speech — speak like a Professor" or, "Vitamins for your vocabulary".

Some of the early claims were not fulfilled. It isn't possible to ascertain a language simply by swallowing the words: you have to comprehend the grammar and sentence structure, then the sac supplies the words. Experiments with Chinese particles resulted in near-psychotic episodes in native English speakers. One man reported "a meaningless shower of sounds whenever I opened my mouth".

What you can do, however, is concoct designer vocabularies; or add a few grandiose words to your customary parlance. PalaverPlus™ can temporarily enhance a mundane vocabulary, "like a built-in thesaurus", although substitution mayhap leads to malapropisms or inappropriate selections.

So, every morning Marilyn takes her soft gel and waits for an hour, doing a crossword to warm up, priming the pump, so to speak. Meantime, the particles race to her brain, filling up the sac with all those lovely, formerly elusive, quanta of meaning. ■

Elisabeth Malartre is an environmental consultant and science writer, based in Orange County, California.