

CONTINUUM

THE RIGHT (LEFT) SIDE

James Garner is on TV pitching beef. "Ya heard about the left brain/right brain stuff? The logical left brain understands nutrition, Garner explains, while the emotional right brain "just knows it's good." Puhleeze. Everyone knows that the left hemisphere is rational, logical, and Western, and the right is creative, intuitive, and Eastern. Everyone knows, that is, except the scientists who did the research on which the whole notion of left and right brains is based. To them the idea that the brain's two hemispheres are split into two tidy sections--one the center of creativity, the other of logical thinking--is simplistic and wrongheaded.

Jerre Levy, a brain researcher at the University of Chicago, is perhaps the most prominent of those now trying to undo the "mythology" that has sprung up around right and left brains. "No complex function--music, art, or whatever--can be assigned to one hemisphere or the other," she sputters indignantly. "Any high-level thinking in a normal person involves constant communication between the two sides of the brain."

Levy is funny and articulate, but her message has had as much impact as a newspaper correction rectifying a faulty story. In part, that's because the true tale is complex; and in part, it's because the left/right brain myth has a lot of pizzazz.

Unlike other myths, the left/right brain has its origins in science. In a series of landmark experiments for which he eventually won the Nobel prize, Caltech's Roger Sperry probed the minds of patients who had undergone surgery to sever the corpus callosum, the main fiber bridge linking the brain's two halves. The surgery, a treatment for intractable epilepsy, left the patients seemingly normal. But Sperry and his colleagues showed that things were not so simple. When, for instance, an object was placed in the left hands of blindfolded split-brain patients, they would deny that

the object existed. But if the patients were asked to search through a collection of items for one that resembled the object they were told was in their left hands, they would inevitably make the right decision, even though they would say they were only guessing. What seemed to be happening was that the tactile information (what was in the patients' left hands) had been transmitted to their brains' right hemisphere, which is incapable of verbal expression. But the right halves did process the information nonverbally; thus the easy recognition by the left hemisphere of a similar item.

Sperry's split-brain patients were almost literally of two minds, and those two minds, he discovered, had different specializations. As his findings made their way into popular accounts, the message became as garbled as a secret passed from person to person in the children's game Telephone. In this case, the end message was a vastly exaggerated version of the original: When you worked on your novel, your left hemisphere was busy while the right idled. Switch to a watercolor and the right side takes over while the left slacks off. People were either right-brained (and therefore artistic) or left-brained (and logical). One well-known writer summed up this new gospel in a headline: *Why Ralph Nader Can't Dance*.

In fact, Sperry did find that the left hemisphere is superior in the kind of logic used to prove theorems in geometry. But in the logic of everyday life, where the problem is integrating information and drawing conclusions, the right hemisphere is crucial. In almost all activities, there is constant interplay between the brain's two halves. In language, for example, the left hemisphere understands grammar and syntax, which the right does not. But the right hemisphere is better at understanding intonation and interpreting emotion. Read a story or engage in conversation, and the

brain's halves are both involved in processing information.

The same is true for music and art. Pop psychology assigns both to the right hemisphere. In some musical skills, such as recognizing chords, the right hemisphere is superior. In others, such as distinguishing which of two sounds came first, the left hemisphere is more important. Enjoying or creating music requires integrating both these skills and a myriad of others.

It should really come as no surprise to anyone that the halves of the brain are in constant communication. The corpus callosum is the biggest bridge of nerve fibers in the brain. It is found only in placental mammals, and the smarter the creature, the bigger the connection.

It would, of course, be nice if there were a simple and accurate way to characterize left brains and right brains. But so far there's not, which isn't so surprising considering, as Levy puts it, that "we're trying to understand the most complex piece of matter in the known universe."--*EDWARD DOLNICK*