

BEHAVIOR

Left Brain, Right Brain Science Searches As Entrepreneurs Abound

By Michael Unger

EVER SINCE Nobel Prize-winning psychobiologist Roger W. Sperry first demonstrated that the right and left hemispheres of the human brain have different, sometimes independent functions, other scientists, educators, artists and entrepreneurs have been trying to make practical use of the knowledge.

Some of the scientists who performed the "split-brain" research, however, say that their work is being taken out of context to turn a profit. Management consultants are trying to adapt brain hemisphere theories to train executives to be more creative and productive. And the U. S. Defense Department is using reputable researchers to try to match left-brain and right-brain abilities with certain high-performance jobs such as fighter and helicopter pilots.

But Sperry, whose Nobel Prize was awarded in 1981 for his work in this field, says it is not yet possible to be too specific about what functions each side controls. Beyond certain generalizations, he and other researchers say, there simply are too many variations and permutations of possible brain activities. Sperry said by phone from his Caltech office, "All of this is on the edge of scientific advance, and a lot of this is very controversial."

Psychologist Sally P. Springer, co-author of one of the most popular standard texts on hemispheric brain differences, "Left Brain, Right Brain," says, "This business about intuition and creativity being associated with the right brain is purely speculative. I hate to see this stuff perpetuated." Springer, a psychology professor at the State University at Stony Brook, says, "What scares me is, more and more people are phrasing things in neuropsychological terms and claiming this or that technique should be used."

Among the earliest to reap the financial rewards of the right-brain/left-brain specialization movement was California art teacher Betty Edwards, whose 1979 best seller, "Drawing on the Right Side of the Brain," purported to teach people how to activate the allegedly more artistic right cerebral hemisphere by suppressing the more analytical, logical left. Another writer argued in a "Guide to Whole-Brained Investing" that logical, analytical left-brained behavior can help predict stock market fluctuations.

And for a healthy price, the Whole Brain Corp. of Lake Lure, N. C. says it can activate chief executive officers' more creative, intuitive right brains, and integrate it with their more verbal and calculating left brains. The company claims that its 120-item questionnaire has been scientifically validated. For \$12,000, a two-and-a-half-day conference in creative problem-solving for 20 managers, says Whole Brain operations manager Terry Beck, can teach executives "how to manage a very analytical, mathematical cerebral-left type thinker when he or she has to work with a limbic-right person . . . your typical secretary, a talker, feeler type."

BUT SPERRY says, "We don't know if you can do it, yet. And, further, it does not matter whether these cognitive differences are centered left and right, up and down, front and back. If they work, they work. Surely there are visual people and verbal types, but whether it's associated with left or right doesn't matter. There's individual variation just the way there is in faces and fingerprints, only it's much more refined and intricate because the brain is much more complex."

Nevertheless, some educators are also jumping on the currently fashionable right-brain bandwagon. "Right-brain processes are important techniques that can be systematically measured, taught and used effectively to manage organizations," asserts Weston H. Agor, head of the public administration master's degree program at the University of Texas at El Paso. Agor, author of "Intuitive Management: Integrating Left and Right Brain Management Skills," says that college business and management programs need to be restructured to incorporate right-brain testing and training.

"There's not one shred of hard scientific evidence" that people can selectively train either side of their brains, says Jerre Levy, a biopsychologist at the University of Chicago who worked alongside Sperry at Caltech. "I don't see how you could ever just activate just one side of the brain," she says.

"Both hemispheres are highly engaged in whatever it is you're doing."

It's "pure pop psychology that a person is either 'left-brained' or 'right-brained,' and strictly a myth based on a misinterpretation of the scientific facts to attribute creativity solely to the right hemisphere or to attribute logic solely to the left hemisphere," Levy says. "I do not believe under any conditions that we can legitimately classify people into right or left hemisphere types. When somebody actually produces good art, they are synthesizing the activities and contributions of both sides of the brain into something that is more than the simple sum of the two parts."

Speaking of various attempts to link brain hemisphere dominance with performance skills, Springer of Stony Brook said, "The link is a very weak one. At this point it's doing a real disservice. And it's potentially very dangerous, especially when you're talking about educational programs."

What is known, she says, is that the left hemisphere is dominant for speech, processing sequential information and some analytical and mathematical ability. The right side, Springer and other authorities say, is dominant for three-dimensional spatial skills, facial recognition and some aspects of musical perception. But beyond these basics, there is no hard evidence to support most of the lists of supposed hemispheric abilities that have been devised. And even the basics have to be qualified. For example, she says, many women and left-handed people appear to have speech controlled by both hemispheres to a greater extent than is true with right-handers and males.

"People are eager to understand what the underlying distinctions are and a lot of people are working on it," Springer says, "but there are no clean ways to fit it together yet."

Nevertheless, neuropsychologist Harold Gordon of the University of Pittsburgh and Western Psychiatric Institute believes he may be able to find a better way to select and train Navy pilots, based on left-brain, right-brain abilities.

Armed with \$300,000 grant from Naval Research, Gordon, who is now trying the results of his studies for the also hold true for prospective U.S. and Israeli studies to predict in advance dates will make better pilots based on right-brain abilities. At a training cost of \$800,000 per pilot, such a system would require a lot of money, wear equipment, and potentially gain a significant advantage in the air.

When Gordon studied a group of Force pilots and other flight personnel, he found that combat pilots did better than other pilots or navigators on his tests. Israeli helicopter pilots, on the other hand, favored verbal-sequential skills associated with the left brain. Navigators favored non-verbal-sequential skills. Although many factors determine pilot performance in flight training, Gordon says, lives may depend more on critical decision patterns, spatial orientation and perception usually associated with the right brain.

GORDON'S current subject is a group of 1,000 naval aviation candidates undergoing training at the Pensacola Naval Air Station in 1983. The Air Force and Navy are conducting similar research on pilot candidates. And so are the Soviets. In the past, between two supersonic jet fighters, the pilot with even a slight performance edge could mean the difference between life-and-death outcome. Gordon says this fall.

Lt. Cmdr. Frank Petho, the staff sergeant in charge of the Training Command in Corpus Christi, says that 25 percent to 30 percent of the candidates are "cut." "To the extent that we reduce attrition, we save those costs," Petho points out. "If you can tell us something about a person's aptitude and whether he's going to be a pilot, then that's good. While basing a training decision on a test battery "is not real world," Petho says, "it shows it's useful, then we'd encourage using it." **AM**

