

Roger Sperry, a Nobel Winner For Brain Studies, Dies at 80

By NICHOLAS WADE

Dr. Roger Wolcott Sperry, an eminent student of the brain and a winner of the Nobel Prize in Physiology or Medicine, died on Sunday in Pasadena, Calif. He was 80 and lived in Pasadena.

The cause of death was a heart attack, following a degenerative neuromuscular disease, said Jay Aller, a spokesman for the California Institute of Technology, where Dr. Sperry was the emeritus Board of Trustees Professor of Psychobiology.

Dr. Sperry was best known for his studies of patients with "split brains," in whom the connection between the two cerebral hemispheres had been severed as part of an operation used in the early 1960's to treat severe epilepsy.

With right and left hemispheres unable to communicate, a patient's left hand would try to pull down the trousers that the right hand was trying to pull up. These experiments passed into folklore with the terms "left-brained" and "right-brained" to describe different mental attributes.

But their real importance was to define the function of the corpus callosum, a thick bundle of some 200 million nerve fibers whose purpose was unknown until Dr. Sperry's experiments showed it served as a channel to pass information between the two hemispheres.

Overturing Orthodoxy

His work in this field also overturned the prevailing orthodoxy that the left hemisphere was the dominant part of the brain. Although the ability for speech is localized in the left hemisphere, Dr. Sperry found that other important cognitive abilities reside in the right hemisphere.

For this work he shared the Nobel Prize in 1981 with Torsten N. Wiesel and David H. Hubel, two Harvard researchers who had made major advances in understanding how the brain is organized for visual perception.

Overturing current orthodoxies was a consistent theme of Dr. Sperry's work as a neurobiologist. Through skillful experiments, he was a great producer of facts about the brain, facts on which the theories of his first two teachers, Paul Weiss and Karl Lashley, were brought to grief.

A former colleague, Viktor Hamburger, said in presenting him a scientific prize in 1979, "I know of nobody else who has disposed of cherished ideas of both his doctoral and his postdoctoral sponsor, both at that time the acknowledged leaders in their fields."

Skillful Experimentalist

The hallmark of Dr. Sperry's work as a scientist was his skill as an experimentalist. "The earlier work was just wonderful," said Norman H. Horowitz, an emeritus professor of biology at Caltech. "He did surgery that no one else could do, and he did it so beautifully and it came out with such clean answers."

In the view of his colleagues, perhaps the most enduring contribution of Dr. Sperry's long career was his work showing that nerves from the brain of the newt and other amphi-

A life devoted to the mechanics of the brain and mysteries of the mind.

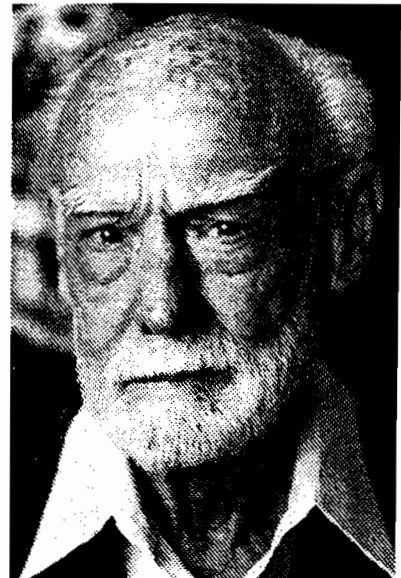
ans would reconnect, when severed, to the same place in the retina despite all efforts to misguide them.

In a series of experiments dating back to the 1940's, he developed the theory that as the embryo is formed the nerves sprouting in the growing brain must be directed to their target tissues by some chemical affinity. The brain's wiring, in other words, is very specific, and particular pathways serve particular functions.

Theorizing on Consciousness

This was in startling contrast to prevailing thought, which held that the brain was a general-purpose machine and that a given function could be learned as well by one bunch of nerves as by another.

Dr. Sperry was shy and retiring. In the 1960's, after his split-brain work,



Bob Paz/California Institute of Technology

Dr. Roger Wolcott Sperry

he turned away from the experimental science in which he had won his fellow biologists' admiration and took up psychology, developing a theory of consciousness that was regarded with some skepticism by professional colleagues. Though they cherished his early experimental work, Dr. Sperry himself said he wished to be remembered for his latter papers propounding his theory of the mind.

Despite a disease that robbed him of mobility, Dr. Sperry remained intellectually active until his last days. Dr. Antonio Puente, a psychologist at the University of North Carolina who was collaborating with him on his last project, said Dr. Sperry was developing a science based on ethical values.

"The message he wanted to leave," Dr. Puente said, "was that a science based on values was the solution to world problems," especially the problem of population control.

Roger Sperry was born in Hartford in 1913 and was educated at Oberlin College, earning a doctorate in zoology at the University of Chicago. He held academic posts at Harvard University and the University of Chicago before joining Caltech in 1954, where he remained until his retirement in 1984.

He is survived by his wife of 45 years, Norma Deupree Sperry of Pasadena; a brother, Russell L. Sperry of Bend, Ore.; a son, Glenn Tad Sperry of Philadelphia; a daughter, Janeth Hope Sperry of Cleveland; and two grandchildren.