

Research on sight, brain honored

Three share 1981 Nobel Prize in medicine

The 1981 Nobel Prize in Medicine or Physiology is being shared by two Harvard investigators and a researcher from the California Institute of Technology.

Half of the \$100,000 prize will be shared by David H. Hubel, MD, and Torsten N. Wiesel, MD, both of Harvard, for their studies showing that the stimulation of sight in infancy is tied to future vision.

The other half of the award goes to Roger W. Sperry, PhD, whose work at Caltech demonstrated that the left and right sides of the brain perform different functions.

THE KAROLINSKA Assembly, which selects the Nobel winners, said in announcing the award that the 20 years of work by Dr. Hubel and Wiesel "represent a breakthrough in research into the ability

of the brain to interpret the code of the impulse message from the eyes." The two physicians found that the ability of the visual system to interpret images is developed directly after birth, and that a prerequisite is for the eyes to be exposed to varied visual stimuli. A practical result of their research is treatment of children's vision problems with special patterns.

The Karolinska Assembly said, "It is only a slight exaggeration to say that what we see today, in other words, how we perceive the visual world around us, depends on the visual experiences we had during the first stages of our lives. If those are dull and distorted — for example through errors in the lens system of the eye — it may lead to permanent impairment of the brain's ability to analyze visual impressions."

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The Harvard physicians found that a step by step process transmits impulses from the retina to the brain, with each step involving columns of nerve cells that receive and analyze information and transmit it to other nerve cells.

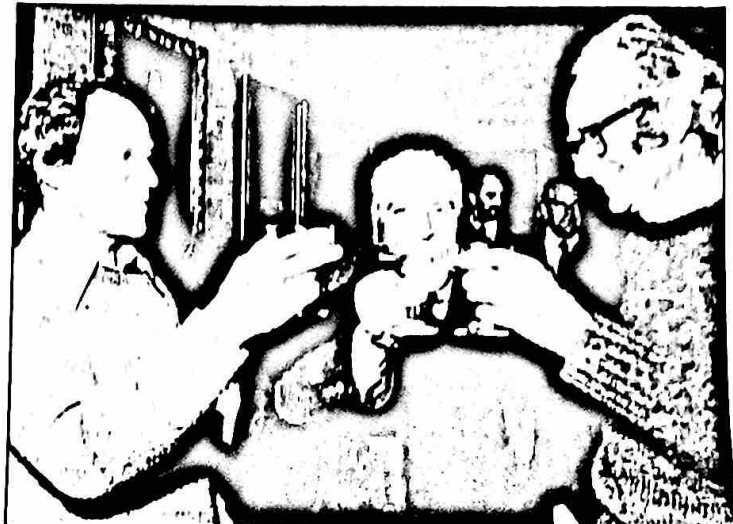
DR. SPERRY'S brain research, the assembly said, "has provided us with insight into the inner world of the brain, hitherto almost completely hidden from us."

Dr. Sperry's work has shown that the left side of the brain performs logical

sound impressions and comprehending music."

In describing Dr. Sperry's findings, the committee said the left hemisphere clarifies symbolic relationships and is "the more aggressive, dominant executive brain half in control of the central nervous system."

The major clinical application for Dr. Sperry's research has been in surgical separation of brain halves in humans suffering from some types of epilepsy, with each half of the brain receiving



Celebrations were in order for the three men who shared this year's Nobel Prize in Medicine or Physiology. In the top photo, MDs Torsten Wiesel (left) and David Hubel (right) share a toast with a 1980 co-winner of the award, Baruj Bonacerraf, MD, who also is a Harvard colleague of this year's winners. In the photo at right, Roger Sperry, PhD, describes his award-winning work at the California Institute of Technology.



analysis in computer-like fashion, and does speaking and writing tasks and mathematical calculations. The right hemisphere, as Dr. Sperry once described it, is a "passive, silent passenger who leaves the driving of behavior mainly to the left hemisphere."

Dr. Sperry's research, however, showed that the right hemisphere is "clearly superior in many respects, such as concrete thinking, spatial consciousness, and complex relationships. . . . Moreover, it is the leader when it comes to interpreting

retraining.

DR. WIESEL is the son of a Swedish psychiatrist and received his MD from the Karolinska Institute in Stockholm. He has been in the United States since 1955, and has worked with Dr. Hubel since that time.

Dr. Hubel, born in Windsor, Ont., received his medical degree from McGill U. in Montreal, Can. He and Dr. Wiesel began working together at the Johns Hopkins Neurological Institute in 1955. They both moved to Harvard Medical School in 1959. Dr. Wiesel is chairman of the neurobiology department. Dr. Hubel is former chairman of the department and now is Harvard's George Packard Berry professor of neurobiology.

Dr. Sperry, born in Hartford, Conn., received his doctorate in zoology at the U. of Chicago and has done research at Harvard at the Yerkes Laboratory of Primate Biology in Atlanta. He has been at Caltech since 1954.

what to write for

Proceedings of AMA-sponsored Sixth Western Hemisphere Nutrition Congress are now available. Copies of *Nutrition in the 1980s: Constraints on Our Knowledge*, are \$40 each from Alan R. Liss Inc., 150 Fifth Ave., New York, N.Y. 10011.