

AMERICANS, Swede share Nobel prize in medicine

STOCKHOLM, SWEDEN (AP) —

Two Harvard researchers who showed that sight stimulation in infancy is tied to future vision and a California professor who demonstrated a kind of division of labor in the brain won the 1981 Nobel prize in medicine Friday.



ROGER SPERRY

Canadian-born David Hubel, 55, a naturalized U.S. citizen, and his Swedish colleague at Harvard, Torsten Wiesel, 57, will share the honors and half the \$180,000 equivalent cash award with Dr. Roger Sperry, 68, an American and a California Institute of Technology professor.

The award, announced here by the Karolinska Medical Institute Nobel Assembly, was the first of the 1981 Nobel prizes to be announced.

The 20 years of work by 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 Karolinska assembly said. The Harvard pair found that the visual system's ability to interpret images is developed directly after birth, and that a prerequisite is for the eyes to be exposed to varied visual stimuli.

"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," the committee said. "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."

The two found that a step-by-step process is involved in transmitting information from the eye's retina to the brain, with each step involving columns of nerve cells that receive information, analyze it according to the cell columns' specialties, and then pass the results along for further cell column work.

An important practical result of their research is treatment of children's vision problems with special patterns.

Sperry "has provided us with insight into the inner world of the brain, hitherto almost completely hidden from us," the Nobel committee said.

Sperry demonstrated that the left half of the brain is computer-like in its logical analysis, performing speaking and writing tasks and mathematical calculations. In describing Sperry's findings, the committee said the left hemisphere figures out symbolic relationships, is "the more aggressive, dominant,



DAVID HUBEL



TORSTEN WIESEL

'executive' brain half in control of the central nervous system."

The right hemisphere of the brain was once described by Sperry as "a passive, silent passenger who leaves the driving of behavior mainly to the left hemisphere."

But Sperry showed the right half 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 sound impressions and comprehending music. . . ."

Wiesel went to Johns Hopkins University in Baltimore in 1955, where he and Hubel began their research at the Wilmer Eye Institute. The two left in 1959 for Harvard Medical School, where Wiesel is now chairman of the neurobiology department, a post Hubel held until 1973.

Hubel, born in Windsor, Ontario, graduated from McGill University in Montreal and is Harvard's George Packer Berry professor of neurobiology.

Sperry, from Hartford, Conn., earned a B.A. in English and master's degree in psychology from Ohio's Oberlin College in the 1930s, then went on to Harvard, where his research career started. He earned his doctorate from the University of Chicago.