

In Memoriam

Roger Wolcott Sperry, 1912–1994

As Thomas Kuhn has discussed, most scientists are restricted in the questions they ask by a general conceptual paradigm. Very few are paradigm breakers. Einstein was one, but only in his early years. In the matter of quantum physics, Einstein became so imprisoned in his own space-time logic that Niels Bohr once said to him, "Stop being logical! Think!" Roger Sperry never stopped breaking paradigms. He broke the first (developed by his own advisor!) in his doctoral dissertation on neuroembryology, did so again in his work on respecification of neural function, again in his seminal research on the split-brain syndrome and functions of the human left and right cerebral hemispheres (for which he received the Nobel Prize), and ended his life on a mission to shatter conceptions of consciousness as either an acausal epiphenomenon or identical to an as-yet-unknown neural equation. His message is the critical one that we are determiners and not victims of ourselves. What are his arguments?

Epiphenomenalism can be ruled out by laws of probability. If mental experiences were without causal effects, irrelevant to and not designed by natural selection, we would be compelled to conclude that the impossibly improbable had occurred by accident and did so more than once (even spiders, by the best scientific evidence, feel pain). What of identity theory? "Are you so confused," Sperry once asked me, "that you cannot distinguish between the equation for the earth's course around the sun and the ellipse itself? If so, then I can see why you imagine that a neural equation for the perception of red would be indistinguishable from the perception itself."

But if mental experiences are not epiphenomena and not identical to neural equations, then what? Dualism? When Sperry revealed his thoughts on the issue (R. W. Sperry, 1969, "A Modified Concept of Consciousness," *Psych. Rev.* 76, 532–36), some were misled to this conclusion (D. Bindra, 1970, "The Problem of Subjective Experience: Puzzlement on Reading R. W. Sperry's 'A modified Concept of Consciousness,' *Psych. Rev.* 77, 581–84), which elicited an immediate denial (R. W. Sperry, 1970, "An Objective Approach to Subjective Experience: Further Explanation of an Hypothesis," *Psych. Rev.* 77, 585–90) and ten years later, another denial (R. W. Sperry, 1980, "Mind-Brain Interaction: Mentalism, Yes; Dualism, No," *Neuroscience* 5, 195–206). Sperry's use of the word *mentalism* caused confusion, for his usage was not the one of classical philosophy.

His world was a thoroughly monistic and physical one that was rich in causally potent emergent functions. Whether the functions are those designed by a human engineer or selected by evolution, they stand at the top of the causal hierarchy in determining and constraining the properties and spatiotemporal behavior of lower-level systems out of which they arise. If we were bamboo flutes, our central reality would be our musicality and

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our philosophy would be “musicalism” as opposed to “bambooism.” For that reason, Sperry used the word *mentalism* to describe his philosophy. The mind, in this philosophy, is an intrinsic aspect of brain processes with a superseding causal position. Our choices, rather than being free of causes (which would be random chaos), are radically determined by the largest causal matrix in the known universe, incorporated into and as the living human brain-mind-self. There is no dualism and no free will in Sperry’s philosophy, but there is mentalism and self-determination.

When some human left hemispheres get overly intellectualized, they fail to be limited by the knowledge of their own finiteness and arrogantly assume that whatever their logic tells them is reality, regardless of a different truth, imposed by evolution for the sake of human life, in their own behavior and emotions. Such left hemispheres spout that we are passive victims of our genes and environment, though not even the most devout propagandist of this view is capable of acting on it. He or she, as much as all others, behaviorally attributes moral responsibility to himself or herself and to others, and experiences the shame, pride, blame, or honoring that comes from this attribution. Evolution decided that it must be so and would be so and is so, because human life would not be possible without it, even when human left hemispheres decide that it cannot be so because they could not understand it if it were. Perhaps Sperry would say, “Stop being so logical! Think!” That we honor Roger Wolcott Sperry, and not his genes and environment, for the breadth, depth, and greatness of his contributions to human understanding gives the last triumph to him.

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With this tribute by Jerre Levy, we commemorate Roger Sperry’s long history of association with *Zygon* and its editors. He was a mentor and colleague to Founding Editor Ralph Wendell Burhoe, whose work he commended as a most promising proposal for understanding religion and science. Sperry contributed to the journal over the years, not only through his articles, but also in the advice that he generously provided. His articles appeared in the following issues: March 1974, March 1979, March 1985, June 1991, and September 1992.