

BACKGROUND BOOKS

THE MIND

In an ancient Indian legend illustrating the wisdom of the god Shiva, each of two men, a thinker and an athlete, has his head removed and grafted onto the other's body. The wife of each becomes confused as to which portion of her spouse she should stay with. Shiva, who sensed the importance of consciousness and knew where it lay, told them to go with the head.

Today, readers interested in the mind have a problem not unlike that of the wives. The literature is divided into two camps: There are writers who believe in some form of immaterial mind, and others who think that a material explanation of the brain will finally answer all questions about man's mental life.

Even good surveys of the field, such as **The Natural History of the Mind** (Dutton, 1979, cloth; Penguin, 1981, paper), inevitably take sides. Author Gordon Rattray Taylor leads his audience through the arcane mind-matter debate, with engaging side trips into anthropology and neurophysiology. But ultimately he concludes that "the great adventure of exploring the most complex system we know of in the universe" will justify faith in an immaterial mind.

Some who share this view are scientists. The most ardent dualist in print today may be the 81-year-old neurobiologist Sir John Eccles, whose many works include **The Self and Its Brain: An Argument for Interactionism** (Springer, 1977, cloth; Routledge & Kegan, 1984, paper), in collaboration with philosopher Sir Karl Popper, and **Mind and Brain** (International Cultural Foundation, 1982). Other dualist arguments are presented in the mathematician and philosopher Jacob

Bronowski's **The Identity of Man** (Natural History, 1965, cloth; 1971, paper) and neurosurgeon Wilder Penfield's **The Mystery of the Mind** (Princeton, 1975, cloth & paper).

On the materialist side, the central testament remains philosopher Gilbert Ryle's **The Concept of Mind** (Barnes & Noble, 1949, cloth; Harper, 1983, paper). It was the first modern assault on dualism, whose tenets Ryle attacked with what he concedes is "deliberate abusiveness."

A rather more poetic early work of materialism is anthropologist Loren Eiseley's **The Mind As Nature** (Harper, 1962), which foreshadowed the "identity theory"—the idea that "mind" is simply the sum of what goes on in the central nervous system. More detailed treatments of the emergence of human awareness can be found in Gregory Bateson's **Mind and Nature: A Necessary Unity** (Dutton, 1979, cloth; Bantam, 1979, paper) and Julian Jaynes's **The Origin of Consciousness in the Breakdown of the Bicameral Mind** (Houghton, 1977, cloth; 1982, paper).

The demystification of the mind reached a peak in the branch of psychology that took its name from John B. Watson's **Behaviorism** (People's Institute, 1924, cloth; Norton, 1970, paper). Behavioral psychologists carried Watson's dictum that the study of human action "needs consciousness as little as do the sciences of chemistry and physics" as far as it would go. The idea that all behavior could be explained by responses to pleasure and pain was developed by Harvard's B. F. Skinner into an argument that personal liberty and free will (and thus good and evil) are just illusions. Skinner's **Beyond Freedom and Dignity** (Knopf, 1971, cloth; Ban-

tam, 1972, paper) widened the gulf between the behaviorists and scholars with more "humanist" ideas.

Many of cognitive psychology's contributions to the study of mental operations are outlined in **The Mind's I: Fantasies and Reflections on the Self and Soul** (Basic, 1981, cloth; Bantam, 1982, paper) by Douglas Hofstadter and Daniel Dennet. Jerome Bruner's **In Search of Mind: Essays in Autobiography** (Harper, 1983), offers a broad view of what psychology has been able to determine about such processes as "knowing" and "learning," as well as about improving the intellect.

Herbert Simon lays out the hopes for *machine-made* intelligence in **Sciences of the Artificial** (MIT, 1969, cloth; 2nd ed., 1981, cloth & paper). Joseph Weizenbaum's **Computer Power and Human Reason: From Judgment to Calculation** (W. H. Freeman, 1976, cloth & paper) and Hubert L. Dreyfus's **What Computers Can't Do** (Harper, 1972, cloth; 1979, paper) suggests some of the limits to artificial intelligence (AI).

For those still uncomfortable with terms such as "parallel architecture," Pamela McCorduck's **Machines Who Think** (W. H. Freeman, 1979, cloth; 1981, paper) is a user-friendly history of AI. Those convinced enough by information technology to suspect that the mind indeed may be a mechanism—and a relatively poor one at that—may profit from Hofstadter's exuberant **Gödel, Escher, Bach: An Eternal**

Golden Braid (Basic, 1979, cloth; Random, 1980, paper). His argument, spun out with engaging puzzles, riddles, and dialogues, is that the truly perfect thinking machine would, like man, be far from a creature of cold mathematical logic and precision.

The computer culture, rather than just the computer, is MIT sociologist Sherry Turkle's interest. In **The Second Self: Computers and the Human Spirit** (Simon & Schuster, 1984), she takes a careful look at the rising electronics in-group peopled by "hackers" and members of the AI priesthood. She concludes that the debate about "what computers can or cannot be made to do ignores what is most essential to AI as a culture: building not machines, but a new paradigm for thinking about people, thought, and reality."

The question of whether the mind is a machine may never be answered definitively, and maybe that is just as well. A Yes answer would devalue our sense of humanity; a No would deny our ability to understand ourselves scientifically.

Instead, we may be served best by a paradoxical conclusion: Yes, the mind is a machine; and No, it is not. The study of the mind can be approached profitably in both ways. Though this seems contradictory, there is an oft-quoted aphorism in physics: "The opposite of a shallow truth is a falsehood, but the opposite of a profound truth is often another profound truth."

—Susan Baur

EDITOR'S NOTE: Susan Baur, 44, is a graduate student in psychology at Harvard. Readers may wish to consult books cited in the preceding essays, as well as in WQ's previous articles on *The Brain* (Summer 1982) and *Psychiatry in America* (Autumn 1983).