

witnessed Hitler's ravages in Europe. Edward Teller, a Hungarian Jew who had lived through the 1918 Hungarian Revolution, was as hostile to Communists as he was to Nazis.

Rhodes draws few conclusions about the subsequent arms race, but he pointedly cites the question Bohr asked when he arrived in Los Alamos in 1943: "Is it really big enough?" Big enough, that is, according to Rhodes, "to challenge mankind to find its way beyond man-made death to a world more open and more humane."

**THE SOCIETY OF MIND**

by Marvin Minsky  
Simon & Schuster, 1987  
339 pp. \$19.95

How does the human mind work? How can that lump of individually unthinking cells that we call the brain possibly contain intelligence?

Minsky, a noted artificial-intelligence researcher, has spent much of his life trying to duplicate human thought processes in machines. His work clearly informs his answers to questions about the mystery of mind.

Like a computer, he says, the mind is built of "mindless stuff, from parts that are much smaller and simpler than anything we'd consider smart." Dubbing these particles or miniprocesses "agents," Minsky uses them as the basic mental units in his model of the brain. Alone, each agent can perform only one simple task. Together in "societies," agents produce intelligence—acts of thinking, decision-making, remembering.

Minsky's book is itself a society: groups of one-page essays on topics ranging from the learning process to language skills. Do we have one self or many? Minsky contends that "we construct the myth that *we're* inside ourselves." "What is consciousness? It is a series of "great machines . . . countless processes of which we're never much aware." Memories? "Fragments of our former states of mind," invoked by an agent or agents associated with those former experiences.

Above all, Minsky wants to lay to rest mankind's age-old belief in souls, spirits, the spark of genius. A human being's value, he believes, lies in his or her "vast, constructed crust"—the complex interplay of mental agents. People may not even have a monopoly on self-awareness. Machines designed to keep good records of their activities are, says Minsky, "potentially capable of far more consciousness than we are."