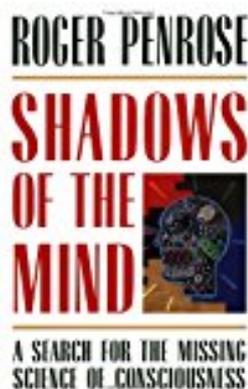


[PDF] Shadows Of The Mind: A Search For The Missing Science Of Consciousness

Roger Penrose - pdf download free book



Books Details:

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Description:

From Library Journal This book asserts that human consciousness is not necessarily intelligible in terms of computational models. The brain's conscious activity essentially transcends the forms or possibilities of computation. Penrose (mathematics, Oxford) illustrates his thesis via mathematical logic, including detailed discussions of Godel's proposition of incompleteness, Turing's machines and computabilities, quantum mechanics, and microbiology. Eventually, Penrose argues that artificial

intelligence and computer-controlled expert systems are capable of assisting local human expertise but will not be able to replace such expertise. Expanding on some of the ideas and concepts proposed in his controversial book, *The Emperor's New Mind* (Oxford Univ. Pr., 1989), Penrose challenges others to reconsider traditional concepts. Some familiarity with mathematical logic or processes will facilitate one's appreciation of this book. Recommended for scholars, specialists, and informed lay readers.

Donald G. Frank, Harvard Univ., Cambridge, Mass.

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From Kirkus Reviews A leading critic of artificial intelligence research returns to the attack, attempting to lay the groundwork for an analysis of the true nature of intelligence. Building on his arguments in *The Emperor's New Mind* (not reviewed), *Penrose* (Mathematics/Oxford) begins by refuting the assertion that true intelligence can be attained--or even adequately simulated--by the strictly computational means to which current computers are ultimately limited. Much of his argument depends closely on the application of Gödel's Undecidability Theorem to Turing machines--deep waters for laypeople, although the fundamentals of his argument are accessible to readers without sophisticated mathematical training. Having disposed of the central tenets of current AI research, Penrose then turns to an even more fundamental question: the actual foundations in modern physics (i.e., relativity and quantum theory) of the phenomenon of consciousness. Here much of his summary depends on fairly complex mathematical reasoning, although the key points are summarized for the general reader who has been willing to follow him so far. Penrose feels that a new physical synthesis, reconciling the paradoxes of quantum theory and bringing them into harmony with Einstein's gravitational theories, is ultimately necessary to explain the noncomputational elements of consciousness and intelligence. He speculates on the possible role of cellular structures called microtubules in creating a quantum phenomenon on a macroscopic scale within the brain, but grants that more research is needed to establish any connection between physical and mental phenomena. His conclusion steps back to a philosophical overview of the subject, paying homage to Plato, among others. A challenging examination of a central problem of modern philosophy, with no final answers but plenty of food for thought. (76 line drawings) (First printing of 50,000; \$50,000 ad/promo) -- *Copyright ©1994, Kirkus Associates, LP. All rights reserved.*

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