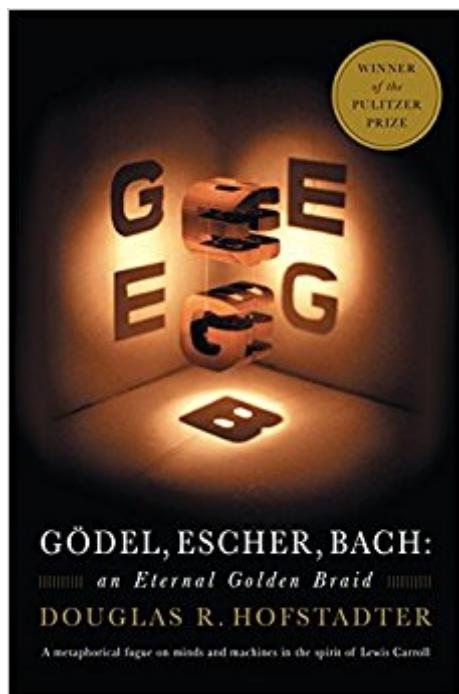## The book was found

GÃ¶del, Escher, Bach: An Eternal Golden Braid

Synopsis

Douglas Hofstadter's book is concerned directly with the nature of "maps" or links between formal systems. However, according to Hofstadter, the formal system that underlies all mental activity transcends the system that supports it. If life can grow out of the formal chemical substrate of the cell, if consciousness can emerge out of a formal system of firing neurons, then so too will computers attain human intelligence. Gödel, Escher, Bach is a wonderful exploration of fascinating ideas at the heart of cognitive science: meaning, reduction, recursion, and much more.

Book Information

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Customer Reviews

Twenty years after it topped the bestseller charts, Douglas R. Hofstadter's Gödel, Escher, Bach: An Eternal Golden Braid is still something of a marvel. Besides being a profound and entertaining meditation on human thought and creativity, this book looks at the surprising points of contact between the music of Bach, the artwork of Escher, and the mathematics of Gödel. It also looks at the prospects for computers and artificial intelligence (AI) for mimicking human thought. For the general reader and the computer techie alike, this book still sets a standard for thinking about the future of computers and their relation to the way we think. Hofstadter's great achievement in Gödel, Escher, Bach was making abstruse mathematical topics (like undecidability, recursion, and 'strange loops') accessible and remarkably entertaining. Borrowing a page from Lewis Carroll (who might well have been a fan of this book), each chapter presents dialogue between the Tortoise and Achilles, as well as other characters who dramatize concepts discussed later in more detail.

Allusions to Bach's music (centering on his Musical Offering) and Escher's continually paradoxical artwork are plentiful here. This more approachable material lets the author delve into serious number theory (concentrating on the ramifications of GÃ¶del's Theorem of Incompleteness) while stopping along the way to ponder the work of a host of other mathematicians, artists, and thinkers. The world has moved on since 1979, of course. The book predicted that computers probably won't ever beat humans in chess, though Deep Blue beat Garry Kasparov in 1997. And the vinyl record, which serves for some of Hofstadter's best analogies, is now left to collectors. Sections on recursion and the graphs of certain functions from physics look tantalizing, like the fractals of recent chaos theory. And AI has moved on, of course, with mixed results. Yet GÃ¶del, Escher, Bach remains a remarkable achievement. Its intellectual range and ability to let us visualize difficult mathematical concepts help make it one of this century's best for anyone who's interested in computers and their potential for real intelligence. --Richard Dragan Topics Covered: J.S. Bach, M.C. Escher, Kurt GÃ¶del: biographical information and work, artificial intelligence (AI) history and theories, strange loops and tangled hierarchies, formal and informal systems, number theory, form in mathematics, figure and ground, consistency, completeness, Euclidean and non-Euclidean geometry, recursive structures, theories of meaning, propositional calculus, typographical number theory, Zen and mathematics, levels of description and computers; theory of mind: neurons, minds and thoughts; undecidability; self-reference and self-representation; Turing test for machine intelligence.

Winner of the Pulitzer Prize, this book applies Godel's seminal contribution to modern mathematics to the study of the human mind and the development of artificial intelligence. --This text refers to an out of print or unavailable edition of this title.

This is an excellent book to edify oneself on myriad subjects-- viz., music, art, and math.My only complaint is with consistency. The author is obviously a highly intelligent individual and shows prowess in teaching and explaining esoteric issues. The problem I have is that this is not always the case. I am absolutely certain if the author was shown some areas of the book and asked if that is the absolute best way he could explain something he would have to answer no. There is just no way he can spend 2-3 pages explaining something with such finesse and clarity that a third grader could understand it and a half a page on something else with none of the privileges normally granted to a largely lay audience with respect to subjects in the book(I'm assuming most of the people who read this book are not math or physics PhDs).He went from expounding a theme or point beautifully to dropping a rather complex and esoteric issue with basically no explanation. I'm not sure if this is

only my sentiment but there are definitely major issues I felt needed to be talked about a little more. As he sort of gave us a bottom-up development of the math and notions he was putting forth, slacking in a few areas is really detrimental to appreciation of the book.Even with that said, though, the book is amazing. If you don't understand 95% of what is going on it might still even be worth reading.

Amazing book. Makes it easy and intuitive to understand some of the greatest discoveries in computing and logic in the last century. It approaches a very difficult to understand problem, of "paradoxes" and "strange loops" and dissects it and analyses it in a way that makes you know where the problem stems from and how to avoid it.The style of the book also makes it interesting, specially with the Caroll-style of dialogues, and the meta-references to it's own structure.

I found this book to be more thought provoking than any of my undergraduate course studies.

Brain candy and food for thought.

This book is an enormously satisfying read. While the author states that bookstores struggle to find a genre for his title, I would argue that it is a book a philosophy of knowledge (wherever one would find that in a local bookstore). Very few authors state their thesis so clearly as Hofstadter and then support it so adroitly. Hofstadter juxtaposes the main themes of the title perfectly so that the reader, who had completely accepted his well-reasoned logic over the last chapter, sees it turned inside-out in the next chapter by some goofy dialogue between the Tortoise and Achilles. And this is done to the reader time and again until the reader understands, both at an intellectual and instinctive level, that mathematics, when applied to the real world (intelligence, in this book), is messy, and will always be.

extremely complex and brilliant work

This volume is a beautifully articulated description of the most basic, yet complex, elements comprising several fields. It establishes a high aesthetic quality in its explanation of commonalities fundamental to the fields of neurophysiology, mathematics, music, and the visual arts. In fact, it is essential not only to the understanding of the "recursive patterns" which enable us to see and understand the world as we know it, but very pragmatically, also to the understanding of the

everyday use of what we now take for granted---among them, communication devices and computer applications. Although this book was not recently written, it remains one of my favorites---it is highly recommended.

The preface is really weak on some parts and self-punishing, but ignoring that the book is very strong if somewhat corny on the dialogues.

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