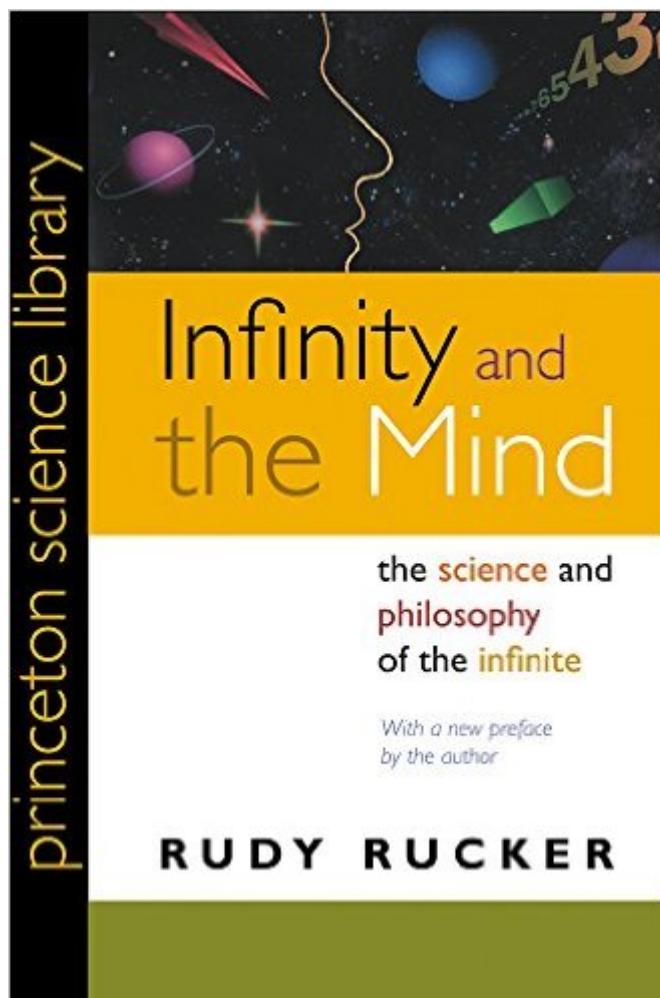


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Infinity And The Mind: The Science And Philosophy Of The Infinite (Princeton Science Library)



Synopsis

In *Infinity and the Mind*, Rudy Rucker leads an excursion to that stretch of the universe he calls the "Mindscape," where he explores infinity in all its forms: potential and actual, mathematical and physical, theological and mundane. Rucker acquaints us with Gödel's rotating universe, in which it is theoretically possible to travel into the past, and explains an interpretation of quantum mechanics in which billions of parallel worlds are produced every microsecond. It is in the realm of infinity, he maintains, that mathematics, science, and logic merge with the fantastic. By closely examining the paradoxes that arise from this merging, we can learn a great deal about the human mind, its powers, and its limitations. Using cartoons, puzzles, and quotations to enliven his text, Rucker guides us through such topics as the paradoxes of set theory, the possibilities of physical infinities, and the results of Gödel's incompleteness theorems. His personal encounters with Gödel the mathematician and philosopher provide a rare glimpse at genius and reveal what very few mathematicians have dared to admit: the transcendent implications of Platonic realism.

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Customer Reviews

I've read a few of Rucker's other nonfiction books (his fiction is another topic entirely), and I think this one is still his best. I bought and read it when it was new and I'm about to buy a replacement copy. The "book description" on this page touches briefly on one of Rucker's key points: "the transcendent implications of Platonic realism." This is well put, and the remarks above correctly relate this point to Rucker's "conversations with Gödel." Gödel was a mathematical Platonist -- that

is, he believed that mathematical objects are real in their own right and that the mind has the power to grasp them directly in some way. Rucker gets this right, unlike some other better-known interpreters of Gödel who have co-opted his famous Theorems in the service of strong AI. Rucker, too, thinks artificial intelligence is possible, but for a different reason which he also here explores: he takes the idealistic/mystic view that everything is conscious in at least a rudimentary [no pun intended] way, and so there's no reason to deny consciousness to computers and robots. Heck, even rocks are conscious -- just not very :-). (I don't know whether Rucker would still defend this idea today or not. At any rate, for interested readers, a more elaborate version of panpsychism is developed and defended in Timothy Sprigge's The Vindication of Absolute Idealism.) These and other speculations are the jewels in a setting of solid exposition. Rucker is powerful in general on the topic of set theory, which he takes to be the mathematician's version of theology. And his discussions are a fine introductory overview of the various sorts of infinity, including but not limited to mathematical infinities.

Rudy Rucker, son of a cleric and mathematics whiz kid, produced this book on 'Infinity and the Mind' years ago, but reading and re-reading it, I continue to get insights and the chance to wrap my mind around strange concepts. 'This book discusses every kind of infinity: potential and actual, mathematical and physical, theological and mundane. Talking about infinity leads to many fascinating paradoxes. By closely examining these paradoxes we learn a great deal about the human mind, its powers, and its limitations.' This book was intended to be accessible by those without graduate-level education in mathematics (i.e., most of us) while still being of interest to those even at the highest levels of mathematical expertise. Even if the goal of infinity is never reached, there is value in the journey. Rucker provides a short overview of the history of 'infinity' thinking; how one thinks about divinity is closely related often, and how one thinks about mathematical and cosmological to-the-point-of-absurdities comes into play here. Quite often infinite thinking becomes circular thinking: Aquinas's Aristotelian thinking demonstrates the circularity in asking if an infinitely powerful God can make an infinitely powerful thing; can he make an unmade thing? (Of course, we must ask the grammatical and logical questions here--does this even make sense?) Rucker explores physical infinities, spatial infinities, numerical infinities, and more. There are infinities of the large (the universe, and beyond?), infinities of the small (what is the smallest number you can think of, then take half, then take half, then take half...).

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