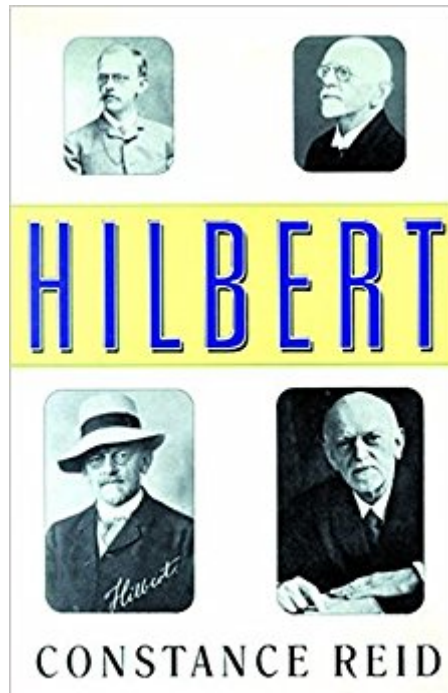




The book was found

Hilbert



Synopsis

"It presents a sensitive portrait of a great human being. It describes accurately and intelligibly on a nontechnical level the world of mathematical ideas in which Hilbert created his masterpieces. And it illuminates the background of German social history against which the drama of Hilbert's life was played. Beyond this, it is a poem in praise of mathematics." -SCIENCE

Book Information

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Customer Reviews

From the reviews: THE BULLETIN OF MATHEMATICS BOOKS "Originally published to great acclaim, both books explore the dramatic scientific history expressed in the lives of these two great scientists and described in the lively, nontechnical writing style of Constance Reid."

If the life of any 20th century mathematician can be said to be a history of mathematics in his time, it is that of David Hilbert. To the enchanted young mathematicians and physicists who flocked to study with him in Gottingen before and between the World Wars, he seemed mathematics personified, the very air around him "scientifically electric". His remarkably prescient proposal in 1900 of twenty-three problems for the coming century set the course of much subsequent mathematics and remains a feat that no scientist in any field has been able to duplicate. When he died, Nature remarked that there was scarcely a mathematician in the world whose work did not derive from that of Hilbert. Constance Reid's classic biography is a moving, nontechnical account of the passionate scientific life of this man - from the early days in Konigsberg, when his revolutionary

work was dismissed as "theology", to the golden years in Göttingen before Hitler came to power and within a few months destroyed the entire Hilbert school. The Copernicus paperback edition makes this book available to new generations of mathematicians who know the name Hilbert, which is everywhere in mathematics, but do not know the man.

This work touches the heart and informs the mind. Maybe the best biography I have read. Hilbert the fascinating mathematician combined with a marvelous writer. Great! Reid connects three themes to the melody of Hilbert's life - the people, the environment and, most of all, the mathematics. Minkowski, Klein, Hurwitz, Weyl, Courant, Born, Siegel, Noether, Sommerfeld and many more are not just mentioned, but come to life. The ambience of Königsberg, Göttingen and the changing German world are carefully done. Best of all, the mathematical ideas that drove Hilbert play the central role in the story. Outstanding explanation of mathematical issues for non mathematicians. Reid provides excerpts from letters. One example is Minkowski writing to Hilbert after his sister's death: "It seems that through a preoccupation with science, we acquire firmer hold on the vicissitudes of life and meet them with greater calm, but in reality we have done no more than find a way to escape from our sorrows." (55) Many of Minkowski's letters are used, providing insight into Hilbert's friendship and a window into Minkowski's life. The mathematics that consumed Hilbert are explained in an accessible way. Reid focuses on the effect on Hilbert and the community, not on the technical problems. For instance, Weyl's reaction as a young student in Göttingen: "Hilbert's optimism, his spiritual passion, his unshakable faith in the supreme value of science, and his firm confidence in the power of reason. . . . Weyl heard the sweet flute of the Pied Piper seducing so many rats to follow him into the deep river of mathematics." (94) Born remembers his arrival in Göttingen and meeting Hilbert and Minkowski: "The conversation of the two friends was an intellectual fireworks display." (95) Hilbert's efforts to connect mathematics and philosophy is an important part of the book. "Just before the war Bertrand Russell, with A. N. Whitehead, had published his Principia Mathematica. Hilbert was convinced that the combination of mathematics, philosophy and logic represented by Russell should play a greater role in science." (144) Reid reproduces several key speeches of Hilbert. She includes enough help to make them accessible to a general audience. One was his speech at his home town, Königsberg in 1930. "Thus it happens that our present culture, insofar as it is concerned with the intellectual understanding and conquest of nature, rests upon mathematics!" (195) Mathematics as Truth. He concludes: "Comte could not find an unsolvable problem lies in the fact that there is no such thing as an unsolvable problem. . . . His last words into the microphone were firm and strong: 'Wir müssen wissen. Wir

werden wissen'. We must know. We will know." (196) Real, deep, complete, overriding faith in mathematical science. Gödel was next. In 1962 Richard Courant gave tribute to Hilbert in Göttingen. "Although mathematics has played an important role for more than two thousand years, it is still subject to changes of fashion and, above all, to departures from tradition. In the present era of the over-active industrialization of science, propaganda, and the explosive manipulation of the social and personal basis of science, I believe we find ourselves in such a period of danger." (220) Five decades have passed. Warning seems accurate. Mathematical formulas play no significant part of this work. However, the philosophical foundation of mathematics, and the connection of mathematics to science and the world does appear. Intriguing and thought provoking!

About as well done and accessible a bio of a top-tier mathematician as one is likely to come across. Ms. Reid manages to convey the flavor of the times as well as the personalities of several other notables with whom David Hilbert either taught or counted among his friends. Lots to chew on here for those with advanced math's in their CV -- especially in the lengthy appended obituary which contains more formalisms than does the body of the work. Not light reading by any means ... but seldom labor intensive either.

Outstanding. Even though the author is not a mathematician, it's clear she took the time to understand Hilbert's mathematical contributions and was able to explain them, in addition to giving great insight into what Hilbert was like as a person.

Great book. Required reading for a graduate math course. Explained Hilbert's life, in a conversational manner. Those with little or no math background may have a tough time.

i almost cried when i got up to the death of minkowski, hilbert's closest friend and a great mathematician in his own right. such is the completely engaging power of constance reid's biography of hilbert. reid did an amazing job integrating the details of professor hilbert's life with the german zeitgeist, all the while providing some exposition of the mathematics for a general audience. as a student and teacher of mathematics, i went into this book expecting to learn more about one of my heroes, the legendary david hilbert, perhaps best known to most for the famous twenty-three hilbert problems. hilbert did research in an impressive number of areas within mathematics, as well as branched out to physics and the philosophy of mathematics. hilbert's

breadth and depth is what gave him the right to influence the course of twentieth century mathematics through the hilbert problems. suffice it to say, hilbert is very important in the mathematical community and i was more than a bit wide-eyed even before reading page one of reid's biography. after turning the last page, i feel like i understand more of the man actually standing on the well-deserved pedestal. my respect for hilbert has only grown knowing of his human flaws and what he has accomplished in spite of them. it should be made explicit that this book is not just for math nerds. any intelligent reader with any interest in mathematics should be able to enjoy and benefit from reading reid's biography. perhaps you've heard of hilbert or the hilbert problems from some newspaper article somewhere and you wondered how mathematicians really lived. if so, that one spark of interest will be rewarded by reid's thorough biography. of particular interest to me was the other side of the professorial life: teaching. research is the most important part of a mathematician's life, but i'm glad that reid even goes into details on hilbert's teaching style. apparently, hilbert didn't sufficiently prepare for lectures and would often get confused while teaching, needing the help of his assistants to get out of trouble. these mishaps were because of hilbert's strong desire to offer the students the most important points of the lessons, and the details would sometimes suffer because of this emphasis. hilbert would also repeat things as much as five times on purpose in order to get students to remember because he didn't have confidence in their abilities. half of his lecture time would also be spent reviewing the material from the previous lecture, again in order to really ingrain the material in the students' minds. i found these pedagogical details quite fascinating. outside of hilbert's life, reid does a fantastic job transporting the reader to germany. the germans have a rich history and complex culture, but many folks can only think of the "n" word when it comes to germany. it's a pet peeve of mine that a large number of people cannot distinguish between "nazi" and "german." at g ttingen university, mathematicians of all backgrounds, and even from different countries, were able to come together and work on mathematics under the leadership of david hilbert. g ttingen was the epicenter of mathematical thought and it was gutted and spiritually destroyed by the nazis in their misguided quest for racial purity. hilbert himself was anti-nazi and it must've torn his heart apart watching the math department suffer such a great downfall because of nazi policies. this human story of political madness turning its sword on the purist of realms should hopefully dispel some negative german stereotypes. it is hoped that the reader will appreciate the tragedy of german identity a little more afterward. those looking for a similar style of biography meshed with some explanations of higher mathematics for a non-specialized audience should also check out benjamin yandell's "the honors class: hilbert's problems and their solvers." yandell covers the hilbert problems in more depth than they are in reid's

book. finally, reid also wrote "courant," a biography of one of hilbert's students. "courant" is regarded as the sequel to "hilbert" and should be read to complete the story. all three of these books are excellent and will immeasurably enrich the curious reader.

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