Naming Infinity: A True Story of Religious Mysticism and Mathematical Creativity (Belknap Press)

Loren Graham, Jean-Michel Kantor
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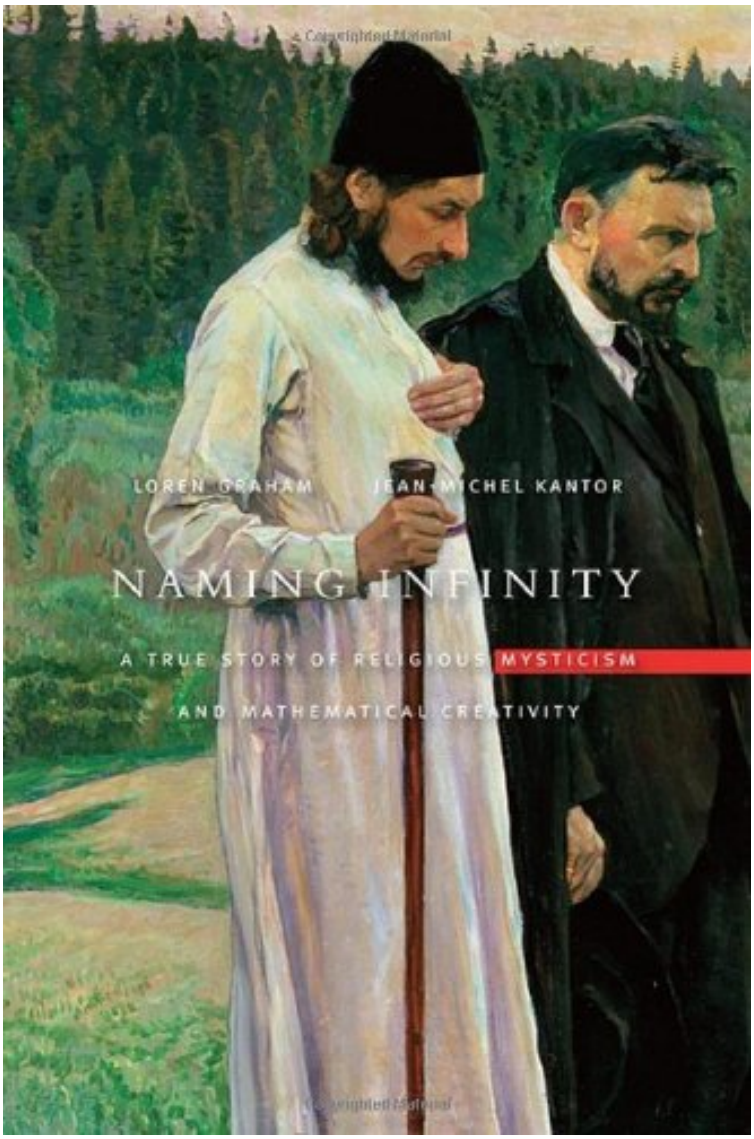

#1032728 in Books imusti 2009-03-31 2009-04-30Original language:EnglishPDF # 1 8.30 x 1.10 x 5.80l, .95 #File Name: 0674032934256 pagesBelknap Press | File size: 33.Mb

Loren Graham, Jean-Michel Kantor : Naming Infinity: A True Story of Religious Mysticism and Mathematical Creativity (Belknap Press) before purchasing it in order to gage whether or not it would be worth my time, and all praised Naming Infinity: A True Story of Religious Mysticism and Mathematical Creativity (Belknap Press):

1 of 1 people found the following review helpful. Below expectationBy bookwormI did not have high expectations of the book after reading the reviews here but still decided to buy one. I am interested in learning about the history of

scientific discoveries in general and the history of mathematics in particular. After reading it, I felt it did not even meet my lowered expectations. There are some life histories and personal stories of a number of mathematicians who made important contributions to set theory. But the link between their personal histories and their mathematical thinking is not clear at all. Though the authors make repeated assertion that the links are there and important, there is simply no substantial evidence or any in-depth analysis in the book to back them up. Those assertions remain hollow throughout the book. I would not say it's a bad book, to me, the personal histories of those individual mathematicians and the historical and political contexts of their lives are worth the reading. But it is unfortunate that the book does a poor job of illuminating the connection between those stories and the mathematical discoveries.1 of 1 people found the following review helpful. Close but no candyBy Alexander Don-DoncowThis book attempts to dwell on a fascinating mathematical challenge, a profound philosophy, a bit of history and a bit of biography. Unfortunately, it succeeds in none.Its historical context is cursory, its mathematical treatise very superficial, its biographical effort incomplete and its understanding of the mystical issues practically nil.Curiously, the cover of the book shows Pavel Florenski and Sergei Bulgakov neither of whom had any significant involvement in the issue and consequently are mentioned only sparsely.But mainly, it fails to explain or even illustrate the connection between the specific mathematical problem and the mystical movement.I got the impression that in choosing these extremely complex subjects, the authors bit a lot more than they could chew and in the end just did not know how to handle them.This book is not a treatise of the subjects but rather a cursory preview; its only redeeming quality is that it may encourage the reader to look further into these fascinating and worthwhile subjects.12 of 13 people found the following review helpful. Exciting Intellectual HistoryBy SwiftyMy abilities in mathematics are decidedly pre-Euclidean. A scientist friend of mine used the visual metaphor of an established tree to explain mathematics: arithmetic, geometry, algebra and trig are the roots, the many developments in modern math are the branches and leaves. The trunk connecting roots and branches and supporting the tree is the calculus. Given this metaphor, I'm still scrambling among the roots for acorns of understanding from the top of the tree, because I never climbed past calculus. This limited my capacity to understand the math concepts Graham and Kantor describe in "Naming Infinity". Other reviewers have commented on the book's lack of equations to demonstrate the math propositions discussed in it. I wish some simple clear definitions of the building blocks of set theory had been available in an appendix. Beyond the few figures which elucidate Cantor's discoveries in the second chapter, and a discussion of the conflict between Platonic and Aristotelian notions of mathematics and how these played out in both the French and Moscow Schools of math in the early XXth century, there are precious few tools to help the untutored reader develop a more profound comprehension of the subtleties of set theory and the mathematical continuum. It's also true that I sometimes wished for the authors to return to topics briefly discussed in earlier chapters: did the religious practices of the Name-Worshippers persist through the post-Stalin era, for example? What was Luzin's life like in his later years, after the discontinuity event of his pardon by Stalin? (Beyond his caustic insult to Kolmogorov, and his lover Bari's suicide after his death, there is precious little here about Luzin's twilight years.)These are minor cavils about a book which illumines an exciting time in European intellectual history. The history (indeed the existence) of the Name-Worshipper sect was unknown to me in Russian culture. The authors are to be thanked for their concise description of this movement's history and its leading exponents. I am very fond of the Silver Age in Russian cultural history--- and of the work of Symbolists like the remarkable Andrei Bely. Bely makes an appearance here, naturally, because he was the son of Nikolai Bugaev, the professor of mathematics at Moscow University who was the teacher of the trio of Russian mathematicians/name-worshippers considered in this book. The influence of the ideas propounded by the Name-Worshippers on Bely was another subject with which I was unfamiliar. Their obsession with "naming" does more to explain the numinous appeal of Bely's difficult works than that author's equally eccentric connection with the anthroposophy of Rudolf Steiner. The excerpts quoted from Bely's "First Encounter" bring to life the cruelly extirpated world of Russia's pre-revolutionary intelligentsia.Finally, this excellent small history vividly describes the lives of the protagonists of the Moscow School of Mathematics, especially those of Egorov, Luzin and Florensky. The film historian Herbert Marshall wrote a book a few decades ago called: "Masters of Soviet Cinema: Crippled Creative Biographies." The second part of that title describes the lives, trials and deaths of these three great Russian mathematicians equally well. So many creative Soviet lives were crippled during those bloodthirsty backstabbing years under Stalinism. Graham and Kantor deepened my understanding of how advanced ideas in modern mathematics were developed by Russian men and women who sometimes bravely, sometimes timidly, sought simply to stay alive and work freely in their chosen field under one of the most despotic regimes in human history. Their lives were all crippled because of the Stalinist meat-grinder, and the creativity of their ideas is made greater by the poignancy their individual life stories present in this fine book.

In 1913, Russian imperial marines stormed an Orthodox monastery at Mt. Athos, Greece, to haul off monks engaged in a dangerously heretical practice known as Name Worshipping. Exiled to remote Russian outposts, the monks and their mystical movement went underground. Ultimately, they came across Russian intellectuals who embraced Name Worshipping—and who would achieve one of the biggest mathematical breakthroughs of the twentieth century, going beyond recent French achievements.Loren Graham and Jean-Michel Kantor take us on an exciting mathematical

mystery tour as they unravel a bizarre tale of political struggles, psychological crises, sexual complexities, and ethical dilemmas. At the core of this book is the contest between French and Russian mathematicians who sought new answers to one of the oldest puzzles in math: the nature of infinity. The French school chased rationalist solutions. The Russian mathematicians, notably Dmitri Egorov and Nikolai Luzin—who founded the famous Moscow School of Mathematics—were inspired by mystical insights attained during Name Worshipping. Their religious practice appears to have opened to them visions into the infinite—and led to the founding of descriptive set theory.The men and women of the leading French and Russian mathematical schools are central characters in this absorbing tale that could not be told until now. Naming Infinity is a poignant human interest story that raises provocative questions about science and religion, intuition and -creativity.

From Booklist*Starred * How did a country wracked by civil war, devastated by famine, and overshadowed by tyranny incubate a major breakthrough in modern mathematics? In the origins of descriptive set theory, Graham and Kantor (both self-described secular rationalists) confront the puzzling cultural dynamics that converted religious mysticism into mathematical insight. The authors particularly probe the surprising way that a religious heresy (Name Worshipping) emboldened the Russian mathematicians who finally surmounted the theoretical difficulties that had overwhelmed earlier pioneers in set theory. Though readers unschooled in higher mathematics may stumble over some concepts (such as denumberable subsets or the hierarchy of alephs), the authors generally succeed in translating principles into a nonspecialist’s vocabulary. Readers thus share in both the perplexities of the French rationalists defeated by the mysteries of infinite sets and the triumphs of the Russian scholars who penetrated those mysteries by deploying strategies strangely similar to devotional practices for naming the Divine. But the authors illuminate more than the psychology of a mathematical revolution; their narrative also exposes the tangle of ideological ambitions and sexual passions that transformed some brilliant researchers into treacherous tools of Soviet inquisitors and doomed others as their victims. A candid and searching analysis, restoring human drama to seemingly sterile formulas. The intellectual drama will attract readers who are interested in mystical religion and the foundations of mathematics. The personal drama will attract readers who are interested in a human tragedy with characters who met their fates with exceptional courage. (Freeman Dyson)At the end of the nineteenth century, three young French mathematicians--Émile Borel, René Baire and Henri Lebesgue--built on the work of Georg Cantor to conceive a new theory of functions that in a few years transformed mathematical analysis. When their work met with skepticism, they began to doubt it and abandoned further investigation. In Russia, under the leadership of Dmitry Egorov, a group of Moscow mathematicians picked up the torch. Animated by a mystical tradition known as Name Worshipping, they found the creativity to name the new objects of the French theory of functions. And they changed the face of the mathematical world. (Bernard Bru, emeritus, University of Paris V)A passionate confluence of mathematical creation and mystical practices is at the center of this extraordinary account of the emergence of set theory in Russia in the early twentieth century. The starkly drawn contrast with mathematical developments in France illuminates the story, and the book is electric with portraits of the great mathematicians involved: the tragic, the unfortunate, the villainous, the truly admirable. The authors offer an account of Infinity that is brief, deft, serious, and accessible to non-mathematicians, and their evocation of the mathematical circles of the period is so intimately written that one feels as if one had lived, worked, and suffered alongside the protagonists. Graham and Kantor have given us an amazing piece of mathematical history. (Barry Mazur, Harvard University)Last week I read one of the most interesting books I've encountered so far this year, Naming Infinity: A True Story of Religious Mysticism and Mathematical Creativity, by Loren Graham and Jean-Michel Kantor, just published by Harvard University Press. I'll be writing more about this book, but in the meantime I wanted to let you know about it. Many books in the science-and-religion conversation tediously cover the same ground. This book comes from a fresh angle--the world of mathematics and the world of "science" are not the same, but they overlap--and it tells a fascinating story. I found it absolutely riveting. And it's encouraging to see two secular scholars doing their best to be scrupulously fair in representing religious thinkers whose worldview is very different from their own. (John Wilson Books Culture 2009-03-10)It is a story of the persistence of intellectual life against the wrecking tide of history. (Jascha Hoffman Nature 2009-04-23)In the early 20th century, mathematicians grappled with the concept of infinity, relying heavily on set theory to prove and define it. The French mathematicians, rationalists not fond of abstraction (particularly abstractions with spiritual overtones), went head-to-head with the Russians, who had always linked mathematics to philosophy, religion and ideology. Name Worshipping played a key role in bringing the two closer together. Graham and Kantor do a beautiful job of fleshing out the key players in this gripping drama--nothing less than a struggle to prove the existence of God. (Susan Salter Reynolds Los Angeles Times 2009-03-22)This absorbing book tells astonishing stories about some of the most important developments in mathematics of the past century...Perhaps the most moving section of the book is that dealing with the famous Moscow School of Mathematics in Soviet times. Its origins are traced to the Lusitania seminar established by Egorov and Luzin (the source of the name "Lusitania" is obscure). The enthusiasm that these teachers inspired in their students is clearly conveyed, as is the atmosphere of intellectual excitement, despite the freezing lecture rooms (the rule that lectures could not take place if the room temperature fell below -5C was ignored)...This is a remarkable book,

illuminating the history of 20th-century mathematics and its practitioners. The stories it tells are important and too little known. It is clearly a labor of love and deserves a wide audience: it is an outstanding portrayal of mathematics as a fundamentally human activity and mathematicians as human beings. (Tony Mann Times Higher Education 2009-04-30)The most unusual book I have read this year. (Alex Beam Boston Globe 2009-06-16)Fifty years ago, C. P. Snow gave a soon-to-be famous lecture on the "Two Cultures" of modern society, the culture of the humanities and the culture of science, and the need to bridge the gap between them. Today we are more likely to hear debates about the alleged gulf between science and religion. Both divides are bridged in this superb book, which takes us from French rationalism at the turn of the 20th century to a thriving center of world-class mathematics in Moscow, where the presiding figures were also devout Russian Orthodox believers of a mystical bent. (John Wilson Christianity Today 2009-07-01)Naming Infinity is a short, accessible book about mathematical imagination...Naming Infinity is a straightforward, kinetic, and seductive read...In describing the life trajectories of their subjects, the authors are unafraid to take sides, show their sympathies, even judge. There is something refreshingly honest in their striving to be fair to their real-life characters without feigned impartiality. This considered generosity and the passion that shows itself in the copious quantities of documentary and anecdotal evidence gathered by Loren Graham in Russia, make the book a fascinating read...Just as a stimulating conversation, even when left incomplete, opens the mind to new ideas, Naming Infinity suggests new ways of thinking about mathematical creativity and intellectual excellence. (Anna Razumnaya theworld.org 2010-01-10)This is not only a readable book, but a most worthwhile one, insofar as it offers a series of anecdotal life-stories of remarkable people, little known save to specialists, together with valuable insights into the Soviet Union of the 1930s. (Robin Milner-Gulland Times Literary Supplement 2010-04-23)As Naming Infinity so sensitively shows, escaping the world we live in, and the exacting parameters of reason, can sometimes lead to surprising results. As powerful as the gift of rationalism may be, there is still more in heaven and earth. (Oren Harman New Republic 2010-08-12)About the AuthorLoren Graham is Professor Emeritus of the History of Science at the Massachusetts Institute of Technology.Jean-Michel Kantor is a mathematician at the Institut de Mathématiques de Jussieu in Paris.