Finding Fibonacci: The Quest to Rediscover the Forgotten Mathematical Genius Who Changed the World

by Keith Devlin

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The Man of Numbers: Fibonacci's Arithmetic Revolution

by Keith Devlin

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REVIEWED BY MARK CAUSAPIN

Finding Fibonacci is Keith Devlin's detailed narration of how he researched and wrote his earlier 2011 book *The Man of Numbers*, which tells the story of the mathematical contributions of Leonardo of Pisa, famously called Fibonacci. *Finding Fibonacci* includes Devlin's adventures in Italy, his quest for manuscripts, and an extra chapter on the influence of Leonardo's book *Liber Abbaci* on modern finance. This book could be described as a personal travel and reflection journal with much of the material about Leonardo of Pisa extracted from the author's earlier work. The materials and details about Leonardo are actually contained in the first book, which has been much cited and mentioned throughout this second one. These two books could have possibly been combined into a single and more concise exposition. Aside from the short chapter on modern finance and the appendix on how to read the chapters of *Liber Abbaci*, no new material about Leonardo is contained in *Finding Fibonacci*. Readers may

find the first book more informative if they are interested in learning about the life and work of this twelfth-century mathematician.

Although written in a very engaging and readable manner, these books contain some errors that readers need to be aware of. Devlin succumbs to historical presentism, viewing the mathematical practices of the past through the same lens as those of modern specialized university research mathematicians. Up until the early nineteenth century, the value of mathematics in Western European society was based mostly on its applications – whether in the natural sciences or business. Being a mathematician was not a specialized profession; in fact, many mathematicians were theologians, lawyers, philosophers, or “natural philosophers.” For the most part, studying mathematics for its own sake was not an ultimate goal. The *Oxford Handbook of the History of Mathematics* may be a good resource for studying this topic. Devlin writes that Leonardo knew that people were not interested in abstract problems and therefore “dressed up” abstractions by writing concrete and realistic ones. This hypothesis on Leonardo's motivations – that he actually wanted to focus on pure mathematics and not necessarily to promulgate a better arithmetical system for business – is difficult to justify because of the lack of primary sources and the known general role of mathematics in society at that point in history.

Devlin also posits that Europe's “inexorable rise to world domination in trade and finance” was because of the Hindu-Arabic numeral system. It is highly unlikely that a change in the arithmetical system alone caused this economic growth. It might be insightful to note that until the sixteenth century, computation on boards with unmarked tokens or pebbles was common, and conflict over abacus use versus the new calculational algorithms continued until as late as the seventeenth century. It took time for societies to adopt these new practices, and it cannot be assumed that they singlehandedly caused this rise in trade and finance.

The whiggish tone of these books is unmistakable. Yet, they are “fun” and easy reads. Despite weaknesses, both these books, but much more so *The Man of Numbers*, will be interesting for mathematicians and mathematics educators. Readers might also enjoy learning about the research process required to write a such a historical book. Ultimately, the two books together give a “rough” view of how our numeration practices evolved and how modern mathematics was greatly influenced by the efforts of Leonardo of Pisa.

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