

(An excerpt from the book review column in Issue 41, No. 2, 2010, of SIGACT NEWS)

Review of¹

Logicomix

Text by Apostolos Doxiadis and Christos Papadimitriou

Art by Alecos Papadatos and Annie di Donna

Published by Bloomsbury, 2009

314 pages, Softcover. Comic Book!

The Paradox of Price:

On Jan 5, 2010 Amazon listed it as \$19.82 new, \$67.81 used

Review by

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Gasarch: Poincare, Hilbert, what did you think of the comic book *Logicomix*?

Poincare: I thought it was great!

Hilbert: I didn't like it!

Gasarch: Do you care to elaborate?

Poincare: It was intuitive! It told the story of Bertrand Russell's failed quest for the rigorous foundations of mathematics in a nice informal way! Framing the story as (a) Bertrand Russell giving a talk about *The Role of Logic in Human Affairs* where he actually talks about his own quest for complete rigor in mathematics, and (b) The creators of *Logicomix* discussing how to convey these ideas to the public, was brilliant! Track (a) reminds us that, in the past, there was a notion that perfect foundations for math and even non-mathematical things like politics, was possible! And Track (b) lets us know what the creators of this were thinking! Track (b) is also a natural example of self-reference!

Hilbert: But all works of mathematics need a firm foundation! This, this, ... comic book is too informal! It didn't define all of their terms! There were even some episodes in the book that didn't happen, like Russell meeting Cantor!

Poincare: How do you know that Russell never met Cantor?

Hilbert: The appendix of *Logicomix* said that the book was not meant to be history and pointed out some of the liberties they took!

Poincare: Then how can you complain? *Logicomix* is what it claims to be! As a logician you should appreciate that! Also, because they take liberties they are allowed to show the reader Cantor, Frege, Godel, and even us! And when I say *show* I mean *show* since this is a comic book! They are taking poetic—uh, ..., no, they are taking *comic license*!

Hilbert: AH- that is ambiguous! Do you mean *Comic* as in funny or *Comic* as in *Comic Book*!

Poincare: You know that I mean *Comic* as in *Comic Book*! It was clear from context!

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Hilbert: And another thing, did they really need to tell us about Russell's personal life including his childhood and his many marriages!

Poincare: Even though it was not mathematics, it was interesting! It also reminds us that he was a real person with real problems!

Hilbert: I also didn't like the allusion that many people working in foundations are crazy! That charge does not really stand up to rigorous scrutiny! Cantor and Godel were not playing with a complete axiom set, but the rest were, at worst, eccentric!

Poincare: We can let the historians debate that one; however, it was worth bringing up!

Hilbert: I did not appreciate the pictures of us on page 145! Surely you didn't like being quoted as saying *Set Theory is a disease from which Mathematics must be cured!* Especially since you have been proven wrong!

Poincare: I found it delightful! And there is still time for Mathematics to recover! See Doren Zeilberger's Opinion 68! (<http://math.rutgers.edu/~zeilberg/OPINIONS.html>) And surely you did not like being quoted as saying, on page 152, *In Mathematics there is no Ignorabimus* (Ignorabimus means *we shall not know*)! You have been proven wrong by Godel and later Cohen! We shall never know if CH is true!

Hilbert: Alas you are right about that! But Set Theory is here to Stay!

Gasarch: Lets wrap this up! I want each of you two name one praise and one criticism of the book! And be brief!

Poincare: *Praise:* the fictional meetings between characters were imaginative and were, of course, new!

Criticism: Since I am a practical man I would have liked to see the uses that Logic were put to later! And more generally the birth of theoretical computer science! This may be quite a lot to do, so what I really want is a sequel! In the sequel perhaps Christos can be in both tracks!

Hilbert: *Praise:* The book took Russell's quest seriously!

Criticism: The book left out ZFC and the debate between Constructivists and the Formalists and the Platonist! This debate also drove some of the work on foundations!

Poincare: How about you Dr. Gasarch? Can you give us a praise and a criticism?

Gasarch: *Praise:* Seeing Christos Papadimitriou as a comic book figure! Seeing him drawn and talking captures him far better than a mere photo can! Possibly better than even a video!

Criticism: I have no criticism of the book, but I will give one of this review! Recall that *The Mathematical Coloring Book* was written in the form of a memoir (*When I first met Paul Erdos . . .*)! Hence the review was in the form of a memoir (*When I first read this book . . .*)! Since *Logicomix* is a comic book, I would have wanted the review to be a comic book! But alas, I have neither the time, money, nor expertise to pull that off! I hope that writing the review as a conversation where every sentence ends with an exclamation point or question mark will suffice!!

Hilbert: Your review is incomplete!

Gasarch: According to Godel that is inevitable (Poincare laughs, Hilbert does not)! Ahem, yes, I always end with an opinion as to who would benefit from the book under review! The reader does not need to know that much math! Knowing *about* math is more important than knowing any

particular math! A bright high school student would benefit from it! However, even someone who has a PhD in logic would benefit from it! It is easy to forget our roots and this book takes us back to them! Back to a world when people thought certainty was possible!