

The Story of Maths

A BRIEF REVIEW

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If you want a whirlwind tour of the history of mathematics in four hours, where you will be taken to marvellous sites all around the globe, meet historians of mathematics, mathematicians, curators of museums, descendants of famous mathematicians and also learn some mathematics, then you must see the four-part series called *The Story of Maths*. This series, produced by BBC Four (<http://www.bbc.co.uk/bbcfour>) and presented by Professor Marcus du Sautoy, aired in October 2008. Prof Sautoy is the Charles Simonyi Professor for the Public Understanding of Science, and Professor at the University of Oxford, and is familiar to regular readers of *AtRiA*: his book *Symmetry* was reviewed in the March 2014 issue.

Part I, *The Language of the Universe*, covers the ancient mathematics of Egypt, Babylonia and Greece. Part II covers mathematics from China, India and the Middle East, and is called, predictably, *The Genius of the East*! We return to Europe in Part III (*The Frontiers of Space*) and Part IV (*To Infinity and Beyond*), with brief sojourns to both Russia and America.

The series attempts a general sweep of the history of mathematics from its very beginning to the work of the great French mathematician Alexander Grothendieck. This is an onerous task, because the body of knowledge that needs to be covered is vast, and one must avoid gender and ethnic bias. What impressed me the most is that the series avoids Euro-centrism by giving a decent account of contributions from various parts of the globe. The history of math

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beyond antiquity ends up being the history of mathematicians. While we certainly meet many male mathematicians, the series does take pains to include women mathematicians like Hypatia, Emma Noether and Julia Robinson. I felt disappointed that we did not get to meet Andrew Wiles who proved Fermat's last theorem (which gets a very cursory mention) or Srinivasa Ramanujan. I liked the fact that even while eulogising some of the greats like Descartes, Newton and Gauss, we are not left with any illusions about what they were like as human beings!

A very strong feature of the series is the encounter with historians of mathematics, who share how they use resources to make interpretations. It is fascinating to learn, for example, from Dr Eleanor Robson of Cambridge University, about the intricacies of the Mesopotamian tablets that were actually exercises meant for students of mathematics, and a reinterpretation of what the famous tablet Plimpton 322 reveals about Pythagorean triples! As a student of history it is also thrilling to be handling classical resources (albeit vicariously), like the Rhind papyrus and original manuscripts of great mathematicians.

In terms of mathematics itself, the series gives us a bird's eye view of the most important mathematical ideas from the number system to the Riemann hypothesis. This is done mostly by introducing us to mathematicians and the great problems they were trying to solve. Interspersed

are Marcus's notions of what mathematics is and why he finds it beautiful. I don't know if it was conscious, but the series takes great pains to portray Marcus as a dashing man of the world, who can ride horses, drive fast cars and hold his alcohol. A far cry from the nerdish stereotypical images of mathematicians!

The series really exploits the power of film as a medium. It is exciting to visit contemporary sites and learn about the ancient mathematics that was produced there, to see the Fort of Gwalior where zero is inscribed, to enter Newton's and Leibnitz's homes, and almost meet Grigori Perelman, the eccentric genius who proved the Poincaré conjecture. Graphics have been used in clever and creative ways to explain rather advanced mathematical concepts.

I would strongly recommend the series to all teachers of mathematics. With students of class VII and up, the series can be used in a variety of ways: as a very good introduction to the history of mathematics (with paper and pencil, and frequent breaks for explanations), to motivate students in learning new concepts and to give a flavour of how mathematics is done. Mini projects can be undertaken in various topics using the series as a starting point.

I would also recommend it to anyone intellectually curious, because it shows that mathematics does indeed belong to all human beings, and is a truly universal language.



SHASHIDHAR JAGADEESHAN received his PhD from Syracuse in 1994. He is a teacher of mathematics with a belief that mathematics is a human endeavour; his interest lies in conveying the beauty of mathematics to students and looking for ways of creating environments where children enjoy learning. He may be contacted at jshashidhar@gmail.com