

## Book Review: Birth of a Theorem by Cedric Villani

by Manjil Saikia - Saturday, June 06, 2015

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[Cédric Villani](#) is a modern mathematical giant, he has won many coveted prizes in his life as a professional mathematician and is the director of one of France's most prestigious schools of mathematics. I had the pleasure of hearing Prof. Villani speak last year at a conference in the Centre where I am currently studying. The joy for the subject that he is preaching, the knowledge of so many things about mathematics but above all his charismatic personality made a deep impact on that October morning when I heard him speak. So when I got a chance to read the book titled '*Birth of a Theorem: A Mathematical Adventure*' by Prof. Villani, I did not let it skip. I finished the whole book in a return train journey from Trieste to Milan and needless to say I thoroughly enjoyed it.

But this book is slightly different than the other books I have read about mathematics for the general audience. For one, Prof. Villani doesn't explain explicitly what his theorem is all about. If you have a PhD in optimal transport or partial differential equations, then you will understand what he is talking about. But with just a little knowledge of partial differential equations I found it quite difficult to follow the mathematics that was mentioned in the book. But this did not in any way hamper my reading of the book and understanding what the author wants the reader to take away from the book. It is not a book to explain what he does, it is a book to explain how he did what he did. For the theorem mentioned in the title of the book, Prof. Villani won the [Fields Medal](#) in 2010, one of the highest honours any mathematician can ever hope to achieve in his life. So, it is a given that the theorem will be very deep to understand, even for professional mathematicians.

The book was originally written in French, and is a best-seller in that language. The English translation came out earlier this year. The book is written in a style of writing a diary. The author explains his quest for proving a theorem which would mean that he will win the highest honour for any mathematician. Interspersed in between the chapters are personal anecdotes, email exchanges with his collaborator and snippets from the life of other great mathematicians that the author has met or whom he admires. If you are not a mathematician, or even if you have just a high school knowledge of mathematics, there is plenty to take away from this book. It is a journey of triumph and an account of how a brilliant mind works. The book will change a layman's perception of a mathematician. Prof. Villani comes out as a very fun loving man who enjoys music, comics, television and French bread and cheese. The book shows that even the stuff of legends are based on the needs of the mortal beings.

This book is a delight for someone like me who aspires to be a professional mathematician. It gives an account of how hard it might sometimes become to achieve your goal and that a relentless pursuit of perfection is what will motivate you and your work. The book was a breath of fresh air for me, as it is completely different from any other book that I have read. It is not a popular account like that of G. H. Hardy, nor is it a book like that by Stephen Hawking. This book is somewhere in between, where the author motivates his personal account of proving a very important result by not explaining what that result is really about, but by explaining how he obtained it and why he obtained it. This book chronicles a major achievement of the human mind, and should be read in that light.

***Title: Birth of a Theorem (A Mathematical Adventure)***

***Author: Cédric Villani***

***Publisher: The Bodley Head (London)***

***English Translation: Malcolm DeBevoise***

***Price: \$17.77 (Hardcover)***

***Rating: 4.5 out of 5***

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