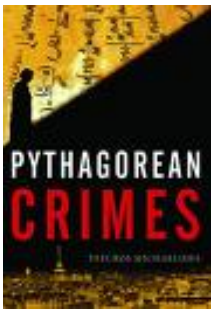
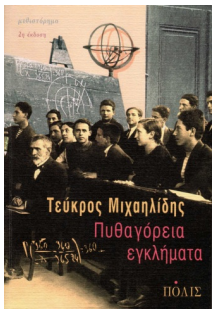
Pythagorean crimes. Tefcros Michaelides, Parmenides, 2008, 272 p., ISBN: 978-1-930972-27-8.

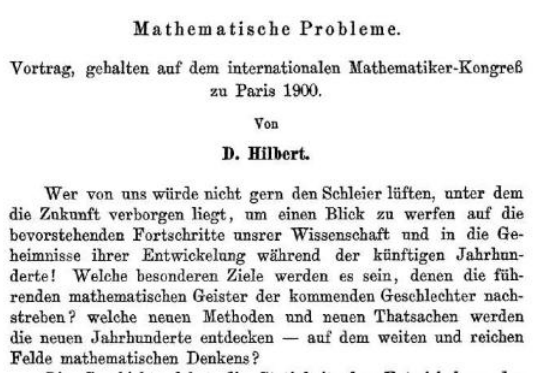




Cover of English and Greek version

This is the English translation of the original novel that was published in Greek in 2006. The author, a mathematics professor at Athens College in Greece, is probably best known in his own country, for having translated several novels of the "popular science / mathematical fiction"-type into Greek (*A Short History of Nearly Everything* (B. Bryson), *The Parrots Theorem* (D. Guedj), *Timescape* (G. Benford), *Mobius Dick* (A. Crumey), and several others). He also published several texts on the influence of mathematics on culture, literature, and society from ancient times to science fiction and from China to the USA. This English translation brought him an international breakthrough.

From the title one might expect a crime thriller, and indeed, the opening chapter starts by introducing the narrator of the story, Michael Igerinos, who is called by the police to come to the home of his best friend, Stefanos Kandartsis, who is found poisoned in his bed. But then, Michael begins an account of his relation with Stefanos, starting with their first encounter at the international congress of mathematics in August 1900 in Paris. Both of these main characters are Greek, and both are mathematicians. Michael is from a rich aristocrat family and studied in Göttingen (in those days the home of Klein, Hilbert, Carathéodory and others) while Stefanos has a much poorer background, and he studied in Paris. It was at that conference that Hilbert formulated his 23 open problems, the mathematical challenges for the 20th century. You may find them on wikipedia, or in much more detail, together with the quest for their solution in the book by Ben H. Yandell: *The honor's class: Hilbert problems and their solvers* (A K Peters, 2003). The second problem about the consistency of an axiomatic system (that got an answer in Gödel's incompleteness theorem, published in 1931) plays a central role (the time-span of the novel is 1900-1931).


Mathematische Probleme.

Vortrag, gehalten auf dem internationalen Mathematiker-Kongreß zu Paris 1900.

Von

D. Hilbert.

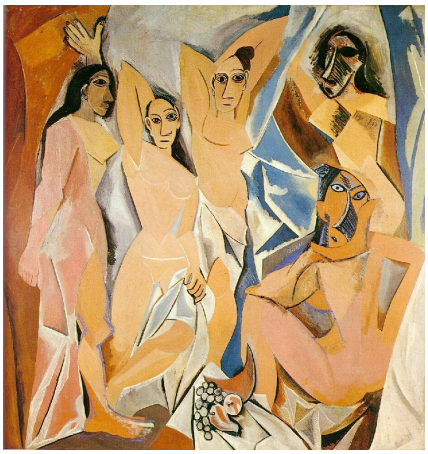
Wer von uns würde nicht gern den Schleier lüften, unter dem die Zukunft verborgen liegt, um einen Blick zu werfen auf die bevorstehenden Fortschritte unsrer Wissenschaft und in die Geheimnisse ihrer Entwickelung während der künftigen Jahrhunderte! Welche besonderen Ziele werden es sein, denen die führenden mathematischen Geister der kommenden Geschlechter nachstreben? welche neuen Methoden und neuen Thatsachen werden die neuen Jahrhunderte entdecken — auf dem weiten und reichen Felde mathematischen Denkens?


Henri de Toulouse-Lautrec

In the early 20th century, Paris was a swinging place-to-be and a center of the Western world. There was the *Exposition Universelle* in 1900, and it attracted many artists, among which the young Pablo Picasso and his *bande* of close friends such as Guillaume Apollinaire, Max Jacob, André Salmon, and also Maurice Princet, who has been called the "mathematician of cubism". Two year earlier, Emile Zola published his *J'accuse* about the Dreyfus case, Sarah Bernhardt performs on stage, and there is of course the infamous night-life that gave Paris its reputation. Henri de Toulouse-Lautrec was hanging out in the mondain *Moulin Rouge* with Jane Avril dancing the *can-can*, Lautrec's posters are all over Paris, and Aristide Bruant's cabaret *Le Mirliton* is living its high days, etc.

So, the novel drifts off for about three quarters of the book into a sketch of society, with a lot of mathematical gossip, the *petites histoires* of mathematics, but also, as the two protagonists discuss mathematics among themselves or explain it to others, the reader is instructed as well.

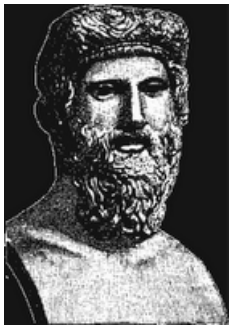
However, the amount of facts, events, theories, and people that are dumped in these 180 pages is somewhat of an overdose. The author knows very well how to tell a story, and it is very well written indeed, but there is just too much of it. For a mathematician, who is more or less familiar with the basics, this may be an interesting read, since the mathematicians are presented as very human, of flesh and blood, with their idiosyncrasies, their physical appearance, their social behaviour, their rivalry and their sharp minds. However, I doubt that, without further reading or help, a non-mathematician can catch all what has been intended. There is a glossary at the end of the book (especially compiled for the English edition) of 40 pages with some 220 entries giving short descriptions of people and facts.



Les Mademoiselles d'Avignon

There is not only the mathematics though, also Pablo Picasso and his gang, who gather in Montmartre places like the *Zut*, and the *Le Lapin Agile* play an important role. With this group they discuss the tiling of the plane and non-euclidean geometry for example. This is related to the representation of form, much to Picasso's interest since he is struggling with his famous painting *Les Mademoiselles d'Avignon*, which was only finished in 1907, but Michael and Stefanos can have a peek at the canvas still hidden against the wall. At the same time, the relations between the members of the group is carefully sketched.

But then the story takes a turn. Michael has to go back to Greece to take care of family affairs after his father died. He marries (more a business agreement with a bilateral open relation), but it gives the author the opportunity to send them on a honey-moon trip to Paris in 1905 where Michael can meet his old friends again. When his wife leaves him to start a relation with Stefanos, Michael buys a prostitute off from a human trafficker, but also she leaves him for Stefanos. Then there is a part on modern Greek history, when both friends have to fight while Greece engages in the first World War: Stefanos in the front line, Michael in the Headquarters. This part seems to be of little interest to the whole story (except perhaps when you are Greek).



Hippasus of Metapontum

And then there is the crime story. Gradually Michael gets more and more discredited for the death of Stefanos and is finally sentenced for murder. However, thanks to an expensive lawyer, he is declared not guilty in appeal and released from prison. But then, there is a final twist to the story...

So, then what has Pythagoras got to do with all this? It is known that the Pythagoreans was more like a sect with strict rules of secrecy and that one of their beliefs was that everything was numbers (i.e., integers). So the problem of squaring the circle was a tedious point to discuss, the diagonal of a square with side 1, being $\sqrt{2}$. In three short interludes, the author briefly tells the story of Hippasus of Metapontum (ca. 500 BC), a disciple of Pythagoras, who had allegedly discovered that $\sqrt{2}$ is irrational, which was considered religious heresy, and the legend says that he was murdered so that he could not disclose his findings because that would mean the end of the whole Pythagorean system, a senseless thing to do since history takes it course anyway. So there is some relation between this novel and *Pythagoras' revenge* by A. Sangalli that was reviewed in the January 2010 issue of this Newsletter (no. 76).

Adhemar Bultheel