What is the difference between *The Name of the Rose* and *The Da Vinci Code*? Leaving the literary abyss aside, naive readers might find many contact points between two of the most successful historical whodunits ever written. But as soon as they try to go further, they find that Umberto Eco’s splendid reconstruction of the labyrinths of scholastic thought turns out to be as important as the murders themselves. By contrast, what underlies the treasure hunt of Professor Robert Langdon is “dust, gloom and nothingness”, to give it a more substantial description than it deserves. In the novel under review, neo-Pythagorean sects searching for a reincarnation of their Master coexist with scholars absorbed in the translation of ancient manuscripts. Nevertheless, the author’s wish to teach and delight makes the story closer to *The Name of the Rose* than to *The Da Vinci Code*.

Arturo Sangalli received a Ph.D. in mathematics from the Université de Montréal and, for twenty years, conducted research in universal algebra. Then he developed an interest in popularization of science that took the form of many contributions to *New Scientist* before the publication of his first book. With a title partially borrowed from Oscar Wilde, *The Importance of Being Fuzzy: And Other*...
Today all is number but for different reasons. As a by-product of the triumph of technology, most of our
routines depend heavily on computer systems, decisions based on statistics, or numerical parameters
designed to encapsulate chaotic realities. Without the never-ending chains of 0s and 1s—for which Hol-
lywood has over and over again shown a weakness—emails, DVDs, and GPS would just disappear. Even
when technology works properly, a measurement mistake may have tragic consequences. A traveler
coming from pre-Socratic Greece could think that ours is a “brave new world” in which all mysteries of
numbers have been revealed. But after the necessary
time to recover from the drastic change, he would
realize that a complete comprehension of irrational
numbers is still far away.

After Cantor’s breakthrough, we know that almost
all numbers are irrational. However, it is extremely
difficult to decide whether a given one is. It is surpris-
ing that mankind had to wait until the middle of the
eighteenth century to have a proof of the irrationality of π, a ubiquitous constant in Greek mathematics. Or
that the values of the zeta function at odd integers
remained virgin territory for more than two hundred
years. It is still more worrying that almost nothing
can be said about numbers that do not admit a simple
representation, for instance as the zeros of a well-
behaved entire function. In a world where numbers
have gained power, we have no definite answer to the
most obvious question: what are they? That is one of
the possible interpretations of Pythagoras’ revenge
to which the title of this book alludes.

Two scholars fantasizing about action outside of
academia each have information that the other
needs. One is a young American mathematician,
Jule Davidson, who secretly envies his sister, who
works freelance as a consultant in computer security.
The closest thing he can afford to her exciting trips
around the world is to solve riddles on the Internet.
Across the ocean, the Oxford fellow Elmer Galway
has not inherited his father’s passion for adventure.
Instead of following his father’s steps as a renowned
archaeologist, Galway devotes the little time not
taken up by the duties of his classical history chair
to help an antiquarian book dealer. The innocent-
looking hobbies of Davidson and Galway will lead
them to a sect that tries to find a scroll explaining
how to recognize the “extraordinarily gifted man”
into whom Pythagoras would have reincarnated.

The only point on which all specialists agree
is that the first man to call himself a philosopher
left no writings, partly for the sake of secrecy and
partly because the zeitgeist promoted oral means of
transmitting knowledge, as Plato would show later in
Phaedrus. But what if Pythagoras had compiled his
fundamental teachings, foreseeing the downfall of
the brotherhood? What if some of his disciples had
felt the need of getting the odd circumstances of
the Master’s death straight? In 1947 a collection of
religious and historical scrolls of huge significance
was discovered in the northwest shore of the Dead
Sea. Fifty years later, a construction worker found
an unknown edition of one of the masterpieces
of Spanish literature while knocking down a wall.
So it would not be a stretch to imagine that the
bowels of a medieval Italian basilica could hide a
manuscript referring to the lost original source.

This is the starting point of a thriller that takes
the reader from suburban Chicago at the end of the
twentieth century to the island of Croton in 445 B.C. None of the ingredients of the plot are
very original: there are indeed thousands of novels
speculating about sects, lost books, or “beautiful
minds”. What is new is how the writer masters a
manifold of registers to produce a sound story in
which culture is not accessory but central. This is
evident from the first chapters, where the suspense
of a computer countdown helps Sangalli to explain
the difficulty of proving that some mathematical
problems have no solution. In the meantime, one
of the characters discovers, during a seductive
conversation with Professor Galway’s assistant,
that the humanities also have their Achilles’ heel:
“books full of lies”, as Cicero called the work of
unscrupulous copyists.

In most cases dialogues allow the author to talk
about science in a very natural manner. For instance,
the reader hardly notices that he is being taught the
basics of philosophy of proof during one of Jule
Davidson's encounters with a member of the sect.
On another occasion, the excuse to introduce the
idea of complexity is a lecture of an internationally
famous problem-solver, who claims to have proven
that randomness is at the heart of mathematics. At
that point, the explanation of the main feature of
Pythagoras’ revenge is transparent even for those
without any scientific background. Sangalli is aware
that it is difficult to provide a satisfactory definition
for randomness. So it is remarkable how he profits
from readers’ probable astonishment at this diffi-
culty to guide them through Kolmogorov’s notion
of complexity and physicists’ attempts to generate
random numbers from atoms.

Mathematicians probably would have appreci-
atied a more detailed discussion of some of the top-
ics treated in Pythagoras’ Revenge. For example,
the story of the unsolvable Fifteen Puzzle, which
in spite of its success was never patented because
it was compulsory to submit a “working model”,
is a great missed metaphor of the meaning of
logical consistency. Also conjectures about normal
numbers, such as the possibility of compressing
Jorge Luis Borges’ Library of Babel in the digits of
π, would have fit in perfectly with the passage in
which Alan Turing and Gregory Chaitin go on stage.
But it does not matter, for what remains after the
end of this page-turner is Sangalli’s impressive
capacity to communicate mathematics. Let us take
this book as a reminder to capitalize on the full
potential of scientific storytelling.