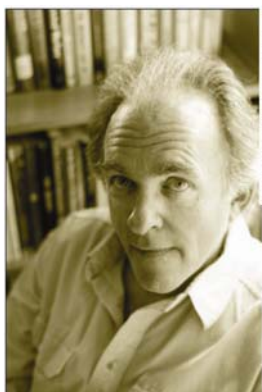


Robert Kanigel



Courtesy: Felix Rust

Robert Kanigel

Robert Kanigel is a biographer of ‘the man who knew infinity’, to borrow from the title of his biography of Srinivasa Ramanujan. Twenty-five years ago when Ramanujan’s 100th birth anniversary was being observed, Kanigel did not know about him until a colleague suggested he write a book on Ramanujan, and then the more he learnt about Ramanujan the more he ‘came under Ramanujan’s spell’. Kanigel’s book, *The Man Who Knew Infinity: A Life of the Genius Ramanujan* was published in 1991. ‘How many Ramanujans...dwell in India today, unknown and unrecognized?’ – Kanigel continues to think – ‘is the single most important question the life of Ramanujan raises.’ To mark Ramanujan’s 125th birth anniversary, Kanigel is visiting India this December and is conducting a science writing workshop for active science journalists and writers. *Current Science* contacted him prior to the workshop to know more about his work and his views on science writing.

Career trajectory...

You are a trained engineer. How did you drift from engineering to writing and science reporting?

No drift; it just happened. I’d been working as an engineer for about three years. It was during the tumultuous 1960s – actually, it was 1970 – and I found myself thinking about all the social chaos that marked that time. I proposed to an ‘underground’ newspaper in Baltimore an essay about these issues, and went ahead and wrote a series of essays. I enjoyed the actual writing so much that I

decided that’s what I wanted to do for a living. I had some savings that allowed me to bridge the gap to a full-time freelance writing career.

Over the years, while much of my writing, whether articles, essays, reviews or books, has been about science, medicine or technology, I have actually written on many different kinds of subjects.

And then you became a Professor at MIT...

I was a full-time freelance writer from 1970 to 1999. On the strength of my books, it’s probably fair to say, I was named professor of science writing at MIT in 1999. I have no advanced degrees. I am now in a one-year transition to retirement from MIT, which will come in July 2012.

Could you briefly tell us about the course you have designed at MIT?

It’s not a course, really, but a whole programme – an intense one-year Master’s degree programme in science writing. The MIT Graduate Program in Science Writing, which celebrates its 10th birthday next March, includes news writing; magazine writing; long form, including a 10,000–12,000 word thesis (though, as always in our programme, written for general readers, not academics); video documentary and a taste of radio; and a summer internship after the end of the academic year. The programme is very selective and students (at least two of whom were Indians) have very diverse backgrounds rooted in arts/humanities/writing on the one hand, and science on the other; there is no one ‘ideal’ mix. Our students work hard during the year, and they do well when they graduate.

You have moved back to Baltimore. What are your plans? Are you continuing to write books/stories?

I am leaving MIT in order to return to full-time writing. I have recently been completing final editorial chores for a (non-science) book, *On an Irish Island*, to be published by Knopf in February 2012; it’s about a tiny Gaelic-speaking island community a few miles off the coast of Ireland that in the early years of

the 20th century attracted a succession of writers and scholars, who inspired a literary outpouring from the island natives. My book is about the clash of cultures between that urban world of great European universities, and the fishing and farming community of the island.

I have just finished a proposal for what I hope will be my next book, a biography of Jane Jacobs, the influential yet wholly uncredentialed American writer whose 1961 book, *The Death and Life of Great American Cities*, turned the urban planning profession upside down and powerfully influenced how people regarded and understood city life.

Meanwhile, my previous book, *Faux Real: Genuine Leather and 200 Years of Inspired Fakes*, which is, broadly, about the development of synthetic materials to replace natural ones like leather and includes a fair bit of chemistry and chemical engineering, is coming out in a Chinese translation in 2013.

I have become wedded to books over the years and don’t expect to do much article or essay writing.

What is your book ‘Apprentice to Genius’ about?

It’s about mentor relationships among elite scientists. This was my first (published) book and it’s about the powerful influence of mentor relationships on the careers of scientists. I used one particular ‘mentor chain’, consisting of four scientific ‘generations’, to tell the story. The science in this case was pharmacology and neuropharmacology, and the mentor chain in question included three Lasker Award winners and one Nobel Prize winner. It came out first in 1986, was reprinted, with a new epilogue, by Johns Hopkins University Press in 1973, and has appeared as well in a couple of foreign translations.

Struggling writers, success and failure...

Do you think writing can be learnt in classrooms? Can a programme on journalism/writing produce a good journalist/writer?

I do think a writer needs to have the sound of his native language deeply in

his ear first; that's the talent part. But a writing or journalism course can indeed hone that talent, teach skills and abet a budding writer's progress faster than otherwise.

Writers (particularly authors of books) are typecast as strugglers with no financial security and are faced with a fear of failing to get wide readership...

Well, I have done both – (1) struggling with no financial security and (2) doing fairly well. The second is better than the first! Both ends of it, obviously, go with the territory of writing books.

Even if writing brings a lot of fame to an author, it does not appear as a lucrative career option to many...

Yes, I believe you are right: Unless one 'breaks out' and scores with a true, if exceedingly rare, best-seller, writing books is not a lucrative career. On the other hand, with persistence and a little talent – and much more persistence – you can make a decent living at it.

You have written many books and articles. Which book have you enjoyed writing the most?

Speaking of my books, it is a terrible cliché but I am afraid I will have to resort to it because it feels absolutely true and right: They are all my children; none is my favourite.

The first book you wrote was never published. Tell us what it was about and why was it never published? Were you not disappointed?

It was about cities and city living, written at a time of much doom-saying, at least in the United States, about the decline of cities.

It was not published because it was not very good, and it was not very good in its very concept as much as in any failures at the sentence and paragraph level. It was a single note, a single register, a single argument, relentlessly pursued without regard to the always-more-interesting ifs, ands, butts, qualifiers and counter-examples.

Yes, I was terribly disappointed. I had worked on it for two and a half years, and it came to nothing. It was a traumatic moment in my life. Enough said.

How difficult is it for an author to switch between writing books and news pieces?

I found it very difficult to switch back and forth between magazine articles and a book project. I suspect it's more difficult yet to switch between daily news and books.

You have had your fair share of fan following, but what about your critics? Did criticism ever hurt you?

One doesn't learn nearly as much from one's successes as from one's failures. I am not one of those authors who chooses not to read his reviews or who scoffs at criticism. I read them all and take what reviewers say to heart, or at least try to consider what they have to say, even if it hurts.

About the man who knew infinity...

It is the 125th birth anniversary of Srinivasa Ramanujan. What significance does it hold for you after having written nearly a 500-page biography on him?

I think we first have to distinguish between Ramanujan the man and mathematician, and Ramanujan as subject of my biography. Ramanujan belongs to India and the world. His life reminds us that mathematics is not just numbers and calculations, but carries its own intellectual sweetness. His life speaks to the nature of genius and what genius needs if it's to flourish.

I was privileged – 'lucky' is actually the better word – to become Ramanujan's biographer. Researching and writing the book was a source of enormous satisfaction for me at the time – and, the truth is, carried me through an otherwise extremely difficult period in my personal life. In the more than 20 years since, as the book has made its way into the world, more and more people have written to me about what it meant to them as Indians, or Indian-Americans, or mathematicians, or simply as readers; this brought me a new, entirely unanticipated kind and degree of satisfaction for which I am very grateful.

As I look ahead to returning to India in December, for the first time since researching the book – I can't, obviously, say it's like coming home, but somehow

it feels that way – all these layered impressions and recollections percolate through my mind.

In your book on Ramanujan, you seem to set the stage using your observations of visiting the places that Ramanujan would have a 100 years before you started researching for the book – the same temple, street, town, etc. So do you report only facts or facts with a tinge of fiction in the book?

There is a two-paragraph sequence on p. 48 of the book, beginning 'As the hot breeze poured through the open windows...' (Box 1) which has haunted me for some years. I have used it in a science writing class devoted to 'the limits of non-fiction', where I question the validity of my own writing. Most students seem to think that, based on the totality of information I had available, I was justified in writing it that way. But I didn't quite know that 'Ramanujan watched' the scene pass by and so continue to be bothered by it. In general, my own responses to, and observations of, the South India I saw before me in 1988 were never the sole basis for my assertion of anything concerning Ramanujan's life. In the writing, I was forever testing what I had read, what I had seen, what I had heard from others against each other, never resorting to fiction, doing my best to assert a fact-based truth. In the 'hot breeze' section quoted previously, I think I didn't quite get it right.

We all know about the great mathematical abilities of Ramanujan. But as someone who has written a biography, what is that one quality of Ramanujan, apart from his mathematical pursuits, that has smitten you?

I supposed I identified most with his desire to simply be left alone to do what he most wanted to do.

Did you visit India for the first time for researching on the book? Could you recall that experience for our readers?

No, I had visited India once before, in 1985 or 1986. I wrote a pair of articles on Indo-US scientific cooperation for a publication of the National Science Foundation – one on immunological approaches to combating tuberculosis, filari-

asis, malaria and other diseases; the other on new approaches to contraception.

The two trips could not have been less alike. In the first I was in the company of other American science writers and well-provided for by the NSF budget. In the Ramanujan trip I was very much on my own and, as we say in the US, 'on my own nickel'. I stayed for the most part at simple hotels, had a wonderful, stimulating time, and was very much taken with the friendliness I encountered all over the South. Saying more would require its own book.

How different was the experience of writing a biography from writing fiction? What are the key ingredients of a biography?

Biography touches the whole of human life, gives the writer a chance to, well, write about the whole of human life – intellectual, historical, emotional, everything. Certainly that is one reason I love the genre. Another is that it automatically gives you the beginnings of a frame for your writing – that is, the 30 or 50 or 70 years of the subject's life.

On the other hand, I should stress that it's only the beginnings of a frame, the first rude structure. Because a dozen biographers could frame their biographies in a dozen different ways, choosing to em-

phasize this or that, even ignore whole aspects or periods or dimensions of their subjects' lives. And those decisions play out at both the macro level, in the book's overall shaping, and at the micro level, in the writing of every paragraph.

Nonfiction literature, as I have written elsewhere, 'does not work like some meteorological instrument whose pen slavishly records every dip and rise in barometric pressure; no writer is obliged to mechanically transpose all of his subject, as if he could, onto the unwilling page'. Certainly that applies to biography. Many people have pointed out that *The Man Who Knew Infinity* is a kind of dual biography, that of G. H. Hardy as well as Ramanujan. It didn't have to be that way. Obviously, Hardy would figure in any biography of Ramanujan, but the biographical pairing that characterizes my book is the result of one author's conscious decision.

Some elements of science writing...

You are going to conduct a two-day workshop in December end in India. How difficult is it for you to touch upon the different aspects of science writing/journalism in just two days?

It's impossible, obviously, to cover any subject in two days; it would be quite an

indictment of the subject, whatever it is, if you could! But I think it is possible to provoke, suggest, and shed new light on familiar topics in new ways, and this I will try to do.

If I may ask you something about news reporting, how do you think one can avoid misreporting under tight deadlines?

By developing a sixth sense for what you don't really know for sure. So that when the time comes to file your story you perhaps realize that you don't really know what you're asserting and so, even if you don't have time for more reporting, you can at least qualify your assertion. Too much in the way of 'probably' and 'the evidence suggests...' and 'this finding may lead to', obviously weakens your writing, makes it seem wishy-washy. But sometimes there's no other way.

How do you think e-publishing is affecting the print industry?

Ten years from now, we'll all know just how e-publishing is affecting print. Right now it's a big muddle, with the poor author stuck in the middle of these huge technological and economic forces.

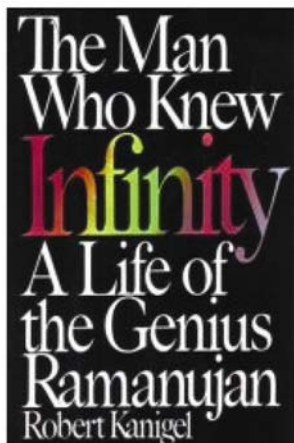
Reading and writing go hand-in-hand. Among the young people reading habit is fading away. What should be done to make them read more?

I don't know whether young people can be made to read more. For me, reading is, and always has been, a pleasure. It should never be made to seem like medicine that tastes awful, but is supposed to be 'good for you'. The pleasure element is absolutely crucial and young people should be encouraged to read whatever they want to read, with the focus always on satisfaction, enjoyment and pleasure, not on obligation. Out of that can grow the good reading habits of a lifetime that their elders worry about fostering.

What is your advice to aspiring science journalists?

Don't try to 'write around' what you don't truly understand; make sure you really get it.

Box 1. An excerpt (from the book, p. 48) that 'haunted' its writer for some years.



'As the hot breeze poured through the open windows of the railway car, Ramanujan watched the South Indian countryside slip by at twenty-five miles an hour. Villages of thatched roofs weathered to a dull barn-gray; intense pink flowers poking out from bushes and trees; palm trees, like exclamation points, punctuating the rice field flatness. From a distance, the men in the fields beside the tracks were little more than brown sticks, their dhotis and turbans white cotton puffs. The women were bright splashes of colour, their orange and red saris set off against the startling green of the rice fields.

'A snapshot might have recorded the scene as a charming bucolic tableau, but Ramanujan saw people everywhere engaged in purposeful activity. Men tending cattle. Women, stooped over in the fields, nursing the crops. Sometimes they worked alone, sometimes together in groups of a dozen or more, baskets perched atop their heads, fetching water from streams. Occasionally, a child with its mother would glance up from the surrounding fields and wave at the train bearing Ramanujan north to Vizagapatnam.'

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