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To infinity and beyond

A new play by Complicite takes inspiration from the story of an odd mathematical couple

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In 1913, a 25-year-old mathematician from Tamil Nadu sailed to England. He journeyed at the behest of a Cambridge professor mesmerised by the display of untutored genius evident in the young Indian's correspondence. Within four years, the visitor had grown so depressed by his isolation that he attempted to throw himself under a train.

Nearly a century on, the story of the collaboration between Srinivasa Ramanujan and GH Hardy is suddenly exciting the interest of storytellers. Last autumn, a play by David Freeman called A First Class Man premiered off Broadway. Coming soon, also from America, is The Indian Clerk, a hefty novel by David Leavitt. There are two films in development (although a green light for one may kill off the other): one based on Robert Kanigel's 1991 biography, The Man Who Knew Infinity; the second an Anglo-Indian venture, to be co-directed by Dev Benegal and none other than Stephen Fry.

Ramanujan's odyssey has also attracted the attention of Complicite, the inventive theatre company renowned for sourcing drama in the unlikeliest places. Recent outings include The Elephant Vanishes, an adaptation of Haruki Murakami's surreal tales of urban dislocation, and Mnemonic, suggested by the Alpine disinterment of a Neolithic corpse. A Disappearing Number, a play inspired by mathematics's odd couple, is their latest contribution.

It's not difficult to see what attracts more conventionally minded storytellers to Ramanujan. When East and West are thinking about each other more watchfully than ever, a tale about cross-cultural number-crunching, with a hint of a homosexual sub-text, catches the light in all sorts of intriguing ways. As Hardy put it in a Harvard lecture in 1935: "I suppose it is difficult for an Englishman and an Indian to understand each other."

For Simon McBurney, Complicite's artistic director, this is more than just a tale of two boffins. He came across Ramanujan's story 11 years ago, when the writer Michael Ondaatje recommended Hardy's memoir, A Mathematician's Apology. Himself the son of a Cambridge professor, McBurney admits to having struggled, as an arty child, with mathematics's authoritarian creed of right and wrong. "I read it and became very excited, because it wasn't just about mathematics, but about the nature of the imagination," he says. "As I began to read more, I discovered that great mathematicians worked through an extraordinary sense of instinct and intuition and, above all, imagination – that mathematics was created, throughout history, by leaps of the imagination." This was the lure. Marooned in Cambridge, Ramanujan was a Brahmin among Christians, a vegetarian

among carnivores, but above all a mathematical fantasist among empiricists.

His all-consuming interest in numbers – and indifference to other subjects – ensured that he left university in Madras without a degree. In the ensuing years, he was married off to a nine-year-old bride, and endured ill health and poverty before finding work at the Madras Port Trust Office. His notebooks eventually came to the attention of the Indian Mathematical Society, and, once it became clear that they had nothing to teach him, Ramanujan was encouraged to write to professors in England. Two Cambridge mathematicians returned his papers without comment. He had better luck with Hardy, whose Ordersof Infinity he had devoured.

"In hall, I found Hardy and Littlewood [another professor] in a state of high excitement," wrote Bertrand Russell after dinner at high table in Trinity, "because they believe they have discovered a second Newton, a Hindu clerk in Madras on £20 a year." A flurry of letters followed in which the Cambridge professor, though staggered by Ramanujan's work on prime numbers, expressed frustration at the Indian's nonchalance with regard to proofs.

"Hardy was brought up on proof," says Marcus du Sautoy, a professor of mathematics at Oxford, whose popular book The Music of the Primes prompted McBurney to invite him aboard as a consultant. "Maths doesn't exist if you don't prove it. Ramanujan was much more interested in making discoveries and not giving justifications. He would make these amazing connections between formulas, and Hardy could see they were right, but couldn't understand how Ramanujan had got there."

Ramanujan believed his proofs were divinely supplied by the family deity, Namagiri. However infuriating this was for Hardy, Namagiri did also intervene in his favour. Ramanujan had been reluctant to sail to England, because, in the Brahmin belief system, it would make him an outcast, but and decreed that he should travel.

Hardy later described Ramanujan's appearance as "the one romantic incident of my life". He didn't necessarily mean that love bloomed in his desert heart. Du Sautoy compares the two of them to "Hillary and Tensing, two explorers striking across this hostile land". McBurney sees in them something of Salieri and Mozart. Their work on prime numbers was finally unproductive, but in the field of partition numbers, they made remarkable breakthroughs, pulled along by Ramanujan's bright-eyed faith. "The partition number of five is the number of different ways I can group five stones," explains Du Sautoy. "There are seven ways to partition them. Hardy believed you could never get a formula for it. Ramanujan felt there should be one. Together, they came up with a ridiculously complicated formula that involves every function of the two millennia we've been doing maths. They made many discoveries, but that was their most stunning piece of proof."

Away from his calculations, Ramanujan suffered. Malnutrition caused by poor vegetarian fare contributed to his depression, as did his failure to win a fellowship. Trinity had already stripped the antiwar Russell of his and, in 1917, were wary of honouring a pacifist Brahmin. After his suicide attempt, illegal at the time and anyway thwarted because the train braked in time, Hardy saw to it that the Indian scholar didn't have to face charges and deposited him in a sanatorium in Matlock.

Ramanujan shivered and pined until Hardy had him moved to Putney. While visiting, by way of small talk Hardy volunteered that his taxi had the very dull number of 1729. "No, Hardy!" Ramanujan responded. "It is a very interesting number. It is the smallest number expressible as the sum of two cubes in two different ways." That was their lingua franca. Soon after Ramanujan's discharge, Hardy urged him to return to India to recuperate. Ramanujan died of an intestinal infection not long after, at the age of 32. Hardy was also prey to the black dog as his powers waned in old age, but his attempt to take his own life failed when he regurgitated an overdose.

In their usual style of discovery through improvisation, Complicite have used the story of the two men's work on partition numbers as a springboard for a wider narrative about emotional, political and cultural partition. "I'm not interested, really, in this story as one particular, specific touching tale," McBurney says, "but in a rather larger metaphorical application of what it implies, of how creativity consumes you – how it's an extraordinarily human activity, this absolute compulsion to understand, but at the same time this compulsion to understand can have tragic consequences."

A Disappearing Number is at the Barbican, EC2, from Wed