My Search for Ramanujan: How I Learned to Count

Reviewed by Colm Mulcahy

The road to fame in mathematics seems to follow a familiar pattern: Early success as a child, supportive parents and teachers, and flawless performance on examinations, all followed by deeply original research and an enviable publication record. Unmatchable self-confidence and the ability to overcome obstacles are assumed. In fact, for almost everyone who makes it, the road is much bumpier and less direct. Consider two alternatives.

A talented young dreamer from an impoverished background has visions that far outstrip his teachers'. He does poorly on his exams and drops out of college. As a bookkeeper, he scribbles in a notebook, recording insights that he claims to receive from a deity. Among the thousands of extraordinary formulas he seems to pluck out of thin air is this beautifully simple one, which he comes up with as a teenager:

$$\pi = 3 + \cfrac{1^2}{6 + \cfrac{3^2}{6 + \cfrac{5^2}{6 + \cdots}}}.$$

The second talented young man is also a dreamer, but his dreams are of escaping the overbearing expectations of his immigrant parents who have mapped out a career for him as a research mathematician. He rebels, becomes obsessed with cycling, drops out of high school, and tries to take his own life. Later he jokes that he "majored in partying" in college.

The first mathematician is the Indian Srinivasa Ramanujan who had an amazing five-year collaboration with one of England's greatest minds a century ago. The second is Ken Ono, American mathematician and first author of *My Search for Ramanujan* (with Amir D. Aczel, Springer, 2016). The volume chronicles the inspiration Ono found in Ramanujan's story as he struggled to conquer his own insecurities and get back on track academically. He's now a highly respected researcher, mentor, and teacher at Emory University.

Ono takes the Ramanujan story very personally. His mathematician father received a letter from Ramanujan's widow in 1984, when Ono was a teen.
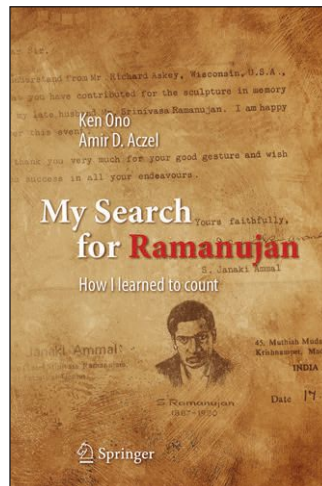
The letter—a thank-you for his father's contribution to the erection of a statue honoring Ramanujan—reduced his normally in-control father to tears. Over time, the son found in Ramanujan's story a way to regain respect from his father: If a college dropout in India could produce original mathematics and inspire generations to follow, maybe there was hope for a high school dropout who as a third-grader had disgraced the family by coming in at the 98th percentile level in a basic math skills exam. "Ken-chan, one in fifty people did better in math," he recalls being rebuked.

It worked. His parents cut him some slack, and—with the help of mentors such as the University of Chicago's Paul Sally—he started to take his studies seriously and graduated. Then Basil Gordon at UCLA tucked Ono under his wing and guided him to complete his doctorate. He finally found his muse, married, and made significant contributions to the very areas of mathematics that Ramanujan had opened.

This book is a remarkable story of self-doubt, struggle, revelation, hard work, and redemption. Ono is at peace with his still-living parents. After Ono received a Presidential Career Award in 2000, his father gave him the letter from Ramanujan's widow, declaring, "I was merely meant to be the keeper of this letter, and I now pass it on to you, its rightful owner. I am so proud of you." Ono was 32—the very age at which Ramanujan's life had ended.

Speaking of his own college difficulties, Ono writes of the time he figured out that his smarter classmates, also struggling, "decided to pool their intellectual resources and form study groups, while I stupidly struggled entirely on my own." It was a turning point for Ono. It emphasizes the main message of his tale, which is that none of us succeeds alone; we all depend on others. ■

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