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Beautiful Minds

By **NATE SILVER**

THE BOY WHO LOVED MATH

The Improbable Life of Paul Erdos

By Deborah Heiligman

Illustrated by LeUyen Pham

48 pp. Roaring Brook Press. \$17.99. (Picture book; ages 3 to 8)

When I was a kid, I could multiply two-digit numbers in my head. Take 48 and 54, for example. (The answer is 2,592.) I would visualize the numbers as though I were solving the problem in longhand. And I would almost always get the answer right. It's a feat of concentration I find almost impossible today. There are just too many adult distractions: the flight I haven't booked, the laundry I haven't done, the out-of-town visitors I haven't arranged for. Multiplication — isn't there an app for that?

ON A BEAM OF LIGHT

A Story of Albert Einstein

By Jennifer Berne

Illustrated by Vladimir Radunsky

56 pp. Chronicle Books. \$17.99. (Picture book; ages 6 to 9)

Indeed, many mathematicians are renowned for making their most profound discoveries early in their lifetimes. But there are exceptional cases, like the Hungarian Paul Erdos. Erdos was productive well into his 80s (he died while attending a mathematics conference in 1996). He was the co-author of so many papers that mathematicians refer to something called the Erdos Number, which works like the game Six Degrees of Kevin Bacon, but with academic citations. (My Erdos Number, for instance, is 4: I once wrote a

paper with the Columbia statistician Andrew Gelman, who wrote a paper with Radford Neal, who wrote one with Persi Diaconis, who wrote one with Erdos.)

And yet, Erdos concentrated on areas, like number theory, that are often associated with prodigies, developing proofs that were known for their comparative simplicity. Now Erdos is the hero of Deborah Heiligman's energetic new children's book, "The Boy Who Loved Math." It should make excellent reading for nerds of all ages.

The book is not a mathematics primer. Heiligman includes a straightforward discussion about how prime numbers work, and there are LeUyen Pham's precise and playful illustrations, which are full of hidden mathematical

allusions and puzzles. But Heiligman focuses on Erdos's personal story. She describes Erdos as a child who was bored in school on his best days and who acted out on his worst ones. (He would eventually be home-schooled.) And she portrays Erdos as an adult who would never entirely grow up. Erdos, in Heiligman's telling, never learned how to cook, do laundry or pay his bills — anything that might distract him from his math. He was essentially homeless for much of his life, traveling between conferences and friends' spare bedrooms.

Heiligman has been influenced (as she acknowledges) by Paul Hoffman's 1998 book, "The Man Who Loved Only Numbers: The Story of Paul Erdos and the Search for Mathematical Truth." But she resists the conclusion implied by Hoffman's title. "Numbers *and* people were his best friends," she writes of Erdos. She also avoids some subjects that would be inappropriate for young readers. Heiligman does not mention that Erdos never married (and was probably celibate). She notes that Erdos had a predilection for drinking "lots and lots of coffee," but not that he also took amphetamines for much of his life.

Nonetheless, the book celebrates Erdos's eccentricities. There is no hint of scolding for Erdos's insubordination in school — nor any judgment cast against him for his intense interest in mathematics. "He didn't like rules in life, but he liked rules in numbers," Heiligman writes, sympathetically.

Albert Einstein's Erdos Number is 2 (both he and Erdos wrote papers with the German mathematician Ernst Straus). And as Jennifer Berne's "On a Beam of Light" reminds us, the two men had much else in common. Einstein was a difficult child ("Little Albert was so different; was there something wrong?") who "didn't want to be like the other students." Instead, he was prone to daydreaming, imagining himself on a beam of light rocketing through space.

Perhaps appropriately, "On a Beam of Light" has a daydreamy feel. The prose isn't as wry as Heiligman's, and the illustrations (beautifully done by Vladimir Radunsky) are more whimsical. It's more emphatically a children's book. But it has the same basic frog-into-prince premise. Einstein's awkward childhood is followed by a prolific adulthood. His disdain for rules — Einstein hated wearing socks! He ate ice cream whenever he wanted! — enables him to retain his childlike imagination and perceive the universe's secrets.

Together, the books constitute something of an It Gets Better Project for mathematically precocious children, offering the same sort of affirmation that

is now being given to gay and lesbian adolescents. Left unsaid is how Erdos and Einstein might have grown up differently had they been children today. Would young Einstein be characterized as belonging somewhere on the autism spectrum? Would Erdos have been given a diagnosis of A.D.H.D.?

Berne applies the label most people associate with Einstein: “genius.” She seems to feel that genius relieves Einstein of the ordinary burdens of adulthood, as if he were Peter Pan with a pocket protector. “For the first time in his life,” Berne writes, “people started to say, ‘Albert is a genius!’ Now Albert could spend all his days doing what he loved — imagining, wondering, figuring and thinking.”

One slight problem is that the very exclusivity of the genius club might make it difficult for young readers of “On a Beam of Light” to empathize with Berne’s Einstein. If you’re a genius, you can eat as much ice cream (and do as much math) as you like. But you probably aren’t one — so then what?

It’s easier to feel a kinship with Heiligman’s Erdos. Although Heiligman conspicuously avoids assigning labels to Erdos, he’s basically a bit of a nerd. But that old cafeteria put-down is undergoing a transformation. More and more, it is applied to — and used by — people who take an intense interest in a particular subject, and who do so with pride. Few of us might be Erdos or Einstein, but we can all aspire to be nerds.

Nate Silver is the author of “The Signal and the Noise: Why So Many Predictions Fail — but Some Don’t.” He writes the FiveThirtyEight blog for NYTimes.com.