

Q&A with Rachel Barenbaum

Where did the idea for *A Bend in the Stars* come from?

In 2014, I was reading *Scientific American's* monthly installment of "50, 100 & 150 Years Ago" and learned that in 1914 an eclipse fell over Russia that could have proved Einstein's theory of relativity but because of war and bad weather no scientists were able to mount an expedition and record the event. Even more, the brief noted it was a good thing because in 1914 Einstein's equations were incorrect and a photograph of the eclipse taken then would have likely discredited him. Before I even put the magazine down I knew it was a book idea: What if someone did make it to the eclipse and did manage to take a photograph? Could he have taken Einstein's place in history? I was already a bit obsessed with Russian history and knew it was one of the most fascinating and tumultuous times in the country's history. And I knew that Einstein wasn't working in a vacuum, that there were other scientists working to help him—and beat him. Could I bring that race to life?

Why did you have such an interest in Russia?

My father's family came to the United States from Russia. When they arrived in Philadelphia they stopped speaking Russian and Yiddish and refused to speak anything but English. It never bothered me until I was around ten years old and my parents plastered our house with old family photographs, many of them from Russia. Who were those people carefully dressed in black, staring at the camera? Why did they look so scared? When I asked my grandparents and aunts and uncles, none of them wanted to talk about it beyond mentioning names and what they did in the United States. When I pushed for information about Russia, their answer was always the same: We left for a reason. Let's not talk about it. And I hated that. Now that generation has passed away and I'm left knowing the end, but what I wanted more than anything was to follow it back to the beginning.

What could have been so awful that they'd drop everything they had to come to a country they'd never seen, to learn a language they'd never heard, and to look for work where none of their qualifications would matter? That question has haunted me

for a long time. And it's one I ask often when I read about migrants today doing the same. Can you ever know if leaving is/was the right decision?

Are you a physicist?

No. But I love and respect science—and facts—and find myself frustrated by the common refrain “I don't do numbers.” Why not? I studied philosophy in college because I loved the idea of faith in the human ability to understand and decipher knowledge. Just because a person feels more comfortable reading a book doesn't mean they are not capable of understanding an equation, the meaning of a line of scientific inquiry, or even relativity. Einstein himself wasn't a mathematician—he was a theoretical physicist. He started with ideas and worked with others to code those ideas into equations. His greatest strength, and I might argue his greatest legacy, are those thought experiments that bring complex ideas down to a size and shape that anyone can comprehend.

I wrote about relativity because this concept is powerful and yet understandable on so many levels that I want to encourage everyone to think about it. The universe bends. What does that mean? How does that affect space and time? And how does that change the way we understand our world?

Other than the eclipse, why did you focus on the year 1914?

The turn of the twentieth century is one of my favorite historical periods because I would argue it was the last time ideas were more powerful than fear, when a rash of optimism and faith in our ability to change the world led to inventions, art, and ideas that truly altered history. There was an energy and optimism that hasn't existed since.

But that kind of exuberance brings out the best and the worst in humans. In this case, it led to greed and culminated in World War I, a moment so horrendous most of what was invented or created in those years right before is often overlooked. Today many people talk about the internet as the single invention that has changed our lives, and it has, but I'd argue it's changed our lives by encouraging seclusion—enabling people to stare at a screen, alone, for hours on end, while the inventions in the early twentieth century encouraged inclusion. People could suddenly travel freely to meet and find other people, to work and collaborate. Telephones, radios, newspapers shared ideas widely. All of these booming networks brought us together. And I like that: the

romantic notion that science should bring humanity together. I wish we had more of that today.

Are the characters real people from your family?

No. Save for Einstein, none of the characters are real people. Only Baba is based loosely on someone I knew—my great-aunt. Actually, when I first sat down to write this book I thought she would be the main character. I wrote about two hundred pages before I realized she wasn't the focus—that Miri and Vanya were the center of the story. From that new perspective, the story

gained more energy and a faster pace. I found that being tied to a real person was too heavy. It kept me worried about what was “right,” whereas once I let go of that I could take Miri, her brother, and all the others on far more exciting adventures.

But I want to be clear. While the characters are all fictitious, the history and setting adhere to real life as much as possible. I wanted to drop Miri and Vanya into a world that actually existed because that world, to me, is fascinating, and as they say, “I can't make this stuff up.” So in describing the details and settings, the math and science, I stayed as true to fact as I possibly could.

How much research did you do for *A Bend in the Stars*?

Tons and none. I love this time period and read dozens and dozens of books about czarist Russia, science and philosophy around the 1900s, and the life of Jews living in Russia long before I sat down to write. In addition, growing up around my grandparents and great-aunts gave me a sense of some of the nuances I wanted to add, like the split in the Jewish community between those who wanted to assimilate and those who didn't, and the constant fear of the czar's men. But all of that only gave me a base, a general feeling I could incorporate into the novel. To truly write scenes, I need to see them in my head, and so the bulk of my research involved finding photographs. The best trove I found was in an old *National Geographic* that I purchased on eBay, published in 1914 right before the war started. The issue was devoted entirely to a survey of life in Russia and featured dozens of stunning photographs of Russians from all walks of life.

Two things struck me in particular in this truly spectacular photo essay: 1. The faces of the citizens in the photos were so clear and so gorgeous I could imagine them as real

people, living today. And that made the time period come alive. I could imagine what the teenager staring at me might have been thinking as she stood next to that boy, or the mother as she held her baby. 2. The vast size and diversity of the country. I was blown away by the largely uninhabited, untouched landscapes and just how separated groups of people across the empire were by those expanses. To me it was gorgeous and terrifying and something I wanted to be sure to capture in this book.