It was hard to leave for England just a few weeks after the attacks. I tried to focus on my classwork, which had been such a source of excitement for me as an undergraduate, but it was difficult to concentrate with all the news coming out of the United States. Nonetheless, I earned my degree and moved on to my doctoral studies at UC Berkeley, where I found an adviser and a subfield that seemed like a good fit.

I was fascinated by the methods I was using—the data analysis, the programming, the mathematics—but about halfway through grad school, I began to understand that my passion didn't extend to the actual subject matter of astronomy. I increasingly felt a disconnect between the work I was doing in my graduate studies—making maps of the Milky Way's spiral arms—and what I actually cared about: national security policy, the Afghanistan and Iraq wars, the intelligence community, and counterterrorism. How could I focus on something so distant when we had so many problems nearer to home?

One year away from finishing my dissertation, I realized that I wanted to spend my career working on security issues. I considered leaving graduate school without finishing my degree, but it seemed foolish to waste the effort I had already invested, and I didn't want to disappoint my adviser or my family. Also, I didn't have any contacts in national security or counterterrorism, so I thought the best way to get my foot in the door would be through one of a small number of fellowships, which only accepted recent graduates. I worried that my adviser would be upset that I was not following his path, but to my surprise, he supported my decision and wrote strong letters of reference.

So, after completing my Ph.D., I moved on to a fellowship that placed me in a small office at the U.S. Department of Homeland Security, analyzing risks from terrorism, natural disasters, and public health emergencies. I felt confident in my understanding of the math behind the analysis, but other parts of the job had no analog in my scientific education. Bringing dozens of policymakers to consensus on a mathematical methodology, for example, was a significant challenge in persuasion. Luckily, I had help from a team of professionals in my office who had strong communication and leadership skills.

I also had the opportunity to support the Counterterrorism Bureau of the New York City Police Department (NYPD). It was thrilling to see the connection between my analysis and the NYPD's operations, and I eventually transitioned to working directly for the NYPD. Now, I write algorithms to increase patrol effectiveness and design tools that help officers understand crime trends. Issues in policing are on the front pages of U.S. newspapers every day, and I believe that using analytics to help police officers make better-informed decisions is one way to make New York City safer and fairer. These are the real-world problems I dreamed of solving when I was in graduate school.

The map of the galaxy that I made as a grad student hangs on the wall in my office, and I still use the scientific approach. After all, as Isaac Newton's law of universal gravitation shows, the same techniques that help us understand the stars also work down here on Earth.

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Newton and the Big Apple
E. S. Levine

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