

"The Spider's Bite,"
Graduate English Address,

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The Spider's Bite

When I was in middle school, a poisonous spider bit my right hand. I ran to my mom for help—but instead of taking me to a doctor, my mom set my hand on fire.

After wrapping my hand with cotton, then soaking it in wine, and putting a chopstick into my mouth, she ignited the cotton. The flame quickly engulfed my hand. The searing pain made me want to scream, but the chopstick prevented it. All I could do was watch my hand burn - one minute, two minutes –until mom put out the fire.

You see, the part of China I grew up in was a poor preindustrial farming society. When I was born, my village had no cars, no telephones, no electricity, not even running water. And we certainly didn't have modern medical resources. There was no doctor to see about my spider bite.

For those who study biology, you may have grasped the science behind my mom's cure: heat deactivates protein, and the spider's venom is simply a form of protein. It's cool how that folk remedy incorporates basic biochemistry, isn't it? But I am a PhD student in biochemistry at Harvard, I know that better, less painful treatment existed. So I can't help but ask myself, why I didn't receive one at the time?

Fifteen years have passed since that incident. I am happy to report that my hand is still fine. But the question lingers, and I continue to be troubled by the unequal distribution of scientific knowledge throughout the world. We have learned to edit the human genome and unlock many secrets of cancer. We can control neuronal activity with the switch of a light. Each year brings more advances in biomedical research-exciting, transformative accomplishments. Yet, despite the knowledge we have amassed, we haven't been as successful in deploying it where it's needed most. According to the World Bank, twelve percent of the world's population

lives on less than \$2 a day. Malnutrition kills more than 3 million children annually. Three hundred million people are afflicted by malaria. All over the world, poverty, illness, and lack of resources impede the flow of scientific information. In far too many places, people are still essentially trying to cure a spider bite with fire.

While studying at Harvard, I saw how scientific discovery can help others in simple ways. The bird flu pandemic in the 2000s looked to my village like a spell cast by demons. Our folk medicine didn't even have half-measures to offer. What's more, farmers didn't understand that the flu was much more lethal than the common cold. And most were clueless that the virus could transmit across different species.

So, when I realized that simple hygiene practices like separating different sick animal species could contain the spread of the disease, and that I could help make this knowledge available to my village, that was the occasion of my first "Aha" moment as a budding scientist. But it was more than that: it was also a vital inflection point in my own ethical development, my own self-understanding as a member of the global community.

Harvard dares us to dream big, to aspire to change the world. Here on this Commencement Day, we are probably thinking of grand destinations and big adventures that await us. For me, I am thinking of the farmers in my village. My experience reminds me how important it's for researchers to communicate our knowledge to those who need it. Because using the science we already have, we could probably bring my village and thousands like it into the world you and I take for granted every day. And that's an impact every one of us can make!

But the question is, will we make the effort or not?

More than ever before, our society emphasizes science and innovation. But an equally important emphasis should be on distributing the knowledge to where it's needed most. Changing the world doesn't mean everyone has to find the next big thing or become a rocket scientist. It can be as simple as becoming better communicators. It means listening to the problems of people like my mom and the farmers, and passing the knowledge we have to them.

And sometimes, by telling a teenager with a spider bite that instead of burning his hand, he should go see a doctor.