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## The confidence to question

It was almost business as usual when I rose from the audience to ask a question after a research talk. I was nervous, as I often am in these situations. Since the beginning of my career, my brain's fear center in the amygdala has been determined to warn me that no good will come from speaking up. Over the years I've learned to project confidence, even though I still question the validity of my question right up to the moment I start to talk. But I also know a penetrating question can be invaluable. I hope to receive such questions when I give a talk, and I teach my students to lean into them. So, I asked the presenter to put her data slides back up and drilled into them for a couple minutes. I posed an alternative hypothesis; the presenter pushed back. Others had questions, so I sat down. It was a tense but healthy debate, I thought.

But this exchange didn't happen at a scientific meeting. It was at an informational session at my child's elementary school, which is run by my university. The speaker, a colleague in the education department, had presented data showing pupils' math test scores had increased, which the school attributed to their teaching method emphasizing storytelling and group discussion. I had countered that, because the school did not keep statistics on which children were tutored—something that my casual observations suggested was increasingly common—it was impossible to determine whether their teaching method or the tutoring was responsible for the test score gains.

I had hoped I was helping the school and the research group. That's not how they saw it. Within days of the meeting, the principal called me into her office to tell me that my behavior was “a threat to the democratic values of the school.” I was asked to pledge my loyalty to the school's leadership and educational methods. When I refused, I was removed from the school's board of advisers.

My amygdala had been right all along. I felt burning shame. I was also confused: I believed I shared the school's values, so how was my speaking up a threat? I questioned my abilities to advocate for my child and worried this incident would impact him at school. These doubts seeped into my professional life as well. In faculty meetings, I began to monitor how colleagues responded to me and tried to keep my questions as concise as possible. During a meeting about how to navigate diversity concerns, I



**“Speaking up can take an emotional toll—but staying silent would be so much worse.”**

teared up unexpectedly, suddenly overwhelmed with fear about the consequences of speaking up. Was it better to remain silent?

It was unnerving to find myself questioning a hard-won capability that is central to my success as a scientist. In graduate school, I lacked the confidence to ask questions in most public settings, but I greatly admired a student who did so at the end of every seminar. As a postdoc, inspired by brilliant, fearless friends who asked the most devastating questions, I finally mastered my anxieties enough to begin to do so myself. I was commended for my critical eye, which gave me confidence as I started my own laboratory.

Yet what made me good at my job had now made me an unacceptably confrontational mother. My professional and personal roles

seemed to be pushing me in opposite directions, leaving me feeling stuck in the middle.

With some time and support, I realized I needed to master my amygdala again. A school mother I didn't know well confided that she admired what I had said, which added to my confidence that I had done the right thing. When I agonized to a colleague that perhaps I had spoken too stridently, she fiercely defended my right to speak critically.

Slowly, a tide turned in my mind. I have worked hard at generating and asking probing questions, and it's a valuable skill. Yes, speaking up can take an emotional toll—but staying silent would be so much worse. ■

Samantha J. Butler is a professor at the University of California, Los Angeles. Send your career story to [SciCareerEditor@aaaas.org](mailto:SciCareerEditor@aaaas.org).