

Diminished By Discrimination We Scarcely See

By Meg Urry

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I came of age when discrimination was a thing of the past, or so I thought. True, there were not many women in my college physics classes, but I figured that was just a matter of time. And although we had all heard horror stories about women being excluded because they were women, those predated the feminist movement of the '60s and the anti-discrimination legislation of the '70s. None of my peers or professors in the early '80s would ever have said out loud, "Women can't do physics as well as men" even though some think it and Harvard University President Larry Summers suggested as much last month.

Still, I can remember a few uncomfortable moments. As a physics grad student 25 years ago at Johns Hopkins University, I once found pictures of naked men on my desk. As one of the few women at professional meetings when I was a grad student, and then a postdoc, the attention I got from male colleagues wasn't always about science. One professor used to address the graduate quantum mechanics class as "gentlemen and Meg." So I knew that my gender identified me. I just didn't think the distinction amounted to discrimination. It wasn't until a few years ago, after I became a tenured professor at one of the world's top universities, that I finally realized it was discrimination all along.

That's the thing: Discrimination isn't a thunderbolt, it isn't an abrupt slap in the face. It's the slow drumbeat of being underappreciated, feeling uncomfortable and encountering roadblocks along the path to success. These subtle distinctions help make women feel out of place.

And some are not so subtle! When I was a young astrophysics postdoc at MIT (and the only female postdoc), one weekly colloquium speaker began his talk about the importance of high resolution in optical imaging with a badly out-of-focus slide. As he sharpened the focus to make his point, a topless woman in a grass skirt on a Hawaiian beach gradually appeared. The male students laughed, while the one other woman in the room shared an appalled look with me before standing up and walking out.

No one ever told this speaker that his choice of slide was inappropriate. I intended to talk to him afterward, but I left the talk after about 20 minutes, having realized that I hadn't heard a word he'd said. Ironically, a few years later the speaker won the Tinsley prize from the American Astronomical Society, named in honor of a brilliant late-20th-century woman astronomer at Yale University.

I loved MIT, but it could be a harsh environment for women 20 years ago. (It's changed a lot!) I remember two professors having a dinner conversation in my presence about the inferiority of women scientists who had been hired because of affirmative action. (When I mentioned this to the man who'd hired me, he hastened to assure me that it didn't apply to me.) My ambition to be an academic was sometimes met with encouragement, but one male professor told me, "Oh, we would never hire you." And discouragement always makes a bigger impression than encouragement.

During my postdoc career, I started wondering why women weren't getting hired into faculty positions. I'd been told, from graduate school on, that I'd have no trouble getting ahead: I was a woman, people would come after me. When they didn't, I subliminally absorbed the idea that I wasn't good enough. But was it possible that all the women getting physics and astronomy degrees from top institutions weren't good enough? I saw precious few being hired into faculty jobs.

For some reason, I hung in there. Maybe it was the strong support from my parents and from the fellow physicist I married, who took on half (and sometimes more than half) the responsibilities of child rearing. He doesn't "help" -- we share. Our two daughters, Amelia (nearly 14) and Sophia (11) carry both our last names, as their middle and last names, but in alternate order. We made it equal, start to finish.

But work was never equal. When I told my thesis adviser I was pregnant, he said, "So, you want to have it all!" I smiled but later thought, Wait a minute, isn't that what all you guys have? Why is it "all" for me and "normal" for you?

Over the years, I saw women in the scientific world treated badly, being marginalized, mistreated, harassed. One woman manager I know was second-guessed, unlike any of the male managers, and when she pointed this out, was told she was depressed and should get professional help. Another told me it had become routine for her to cry while driving home from work. Every woman I know has had her suggestions ignored in a mainly male meeting, only to hear the same idea praised when later raised by a man.

Hey, bad things happen. But feeling out of place over and over again eventually soaks in; it did for me. About a decade ago, frustrated and alienated, I approached the director of my institution to ask about special management training for women: Maybe there were tips that would help me navigate the foreign waters in which I found myself. He didn't seem to understand. I said, "You know, it's like being the red fish in the sea of blue fish -- I want to understand the blue-fish rules." "Oh," he answered. "Maybe it's not your lack of training, Meg, maybe it's just your difficult personality."

After enough of this kind of thing, women feel beaten down and underappreciated, or worse, they feel incapable. That's the most insidious thing. After years of being passed over, ignored, and insulted, we start wondering what we are doing wrong. Maybe if I had made the suggestion differently, it would have been heard. Maybe if I lowered my voice and spoke more slowly, I would get more respect. Maybe -- even though I published many papers, did seminal work in more than one field, brought in big grants, had successful students and postdocs -- maybe I wasn't a good enough scientist.

It was easier to see what was happening to other women than to me. My good friend Anne Kinney (now "Director of the Universe" at NASA -- how's that for a title?) said in an after-dinner speech to a conference on women in astronomy that she'd never had a five-year plan because there were no women five years ahead of her. Her speech was very funny and I laughed a lot, but I didn't think it applied to me, exactly. Weeks later, it dawned on me that I'd never had a five-year plan either -- and for much the same reason.

I watched women around me, especially young women, who were smart and keen to work hard, but who, after a few years in grad school or after a discouraging spell as a postdoc, decided maybe they weren't cut out for science, or maybe they would find a non-academic job, or maybe they'd get married and have a family rather than a research career.

I have no problem with any of these choices. What troubles me, though, is that I rarely saw men making them, especially the choice to stay home with kids. I think some women use "family" as an excuse to leave science when science actually drives them away.

This is a huge loss for our country -- these women PhDs are some of the best scientists we train. We need their talent.

In my field, physics and astronomy, women still make up a small percentage of active scientists - - about 7 percent of physics faculty are female and about 12 percent of astronomers. Those percentages are increasing, but slowly. So I grew up with almost no women professors. When I first heard of Beatrice Tinsley -- who came to the United States in 1964 from New Zealand with a master's in physics, created an entire sub-field of astronomy, finished her thesis under adverse circumstances and by all accounts was an incredible person -- I felt the kind of relief that a child raised by wolves must feel when she first sees a human being.

Physics has fewer women than other scientific disciplines. I think it may be because physics is more hierarchical, more aggressive than other areas. ("Combat physics," a friend of mine calls it.) Physicists act as if they are better and smarter than everyone else. The standard for excellence is to be the best in the world -- and that seems pretty boastful to polite girls raised not to brag.

When I expressed ambition, though, I sometimes got put back down. I suggested I was ready to be tenured -- "Be patient, Meg, it's too early for you." I mentioned I was interested in a high-level national committee -- "Isn't that a bit ambitious, Meg?" I expressed interest in a promotion: "You're not a leader, no one would follow you."

Social scientists like Virginia Valian of Hunter College have developed a lot of evidence showing that women and men are treated and evaluated differently. Yet physicists reject the possibility that scientists are not objective. I learned about the lack of objectivity the hard way -- through experience.

On hiring committees or tenure and promotion committees I served on, we'd evaluate men and women, and somehow the women seldom came out on top. They were "good," even "very good" but the men were always better. Some of this was caused by letters of recommendation. Every woman was always compared to other women, as if every woman scientist is female first and a scientist second. Also, women's letters were somehow more pedestrian -- the candidate "works hard" and she "has a nice personality," "gets along well with others." Once you see the patterns, you realize that these evaluations reflect people's expectations more than reality.

As I got more educated about the abundant social science research, I got more frustrated: The answers were there, if only physicists and astronomers would read the literature. So I made it easier. I organized conferences to talk about these issues. We held that first conference on

Women in Astronomy in 1992 and wrote the Baltimore Charter, a kind of manifesto for change (www.stsci.edu/stsci/meetings/WiA/BaltoCharter.html). In 2003 we organized a second meeting, from which the Pasadena Recommendations have just been produced (www.aas.org/cswa/).

It's been slow, but we've made progress, and we're making a difference. More young women are flocking to science every year. It's a great life, after all, doing something you love, having control of your time, being paid pretty well.

And, however slowly, the barriers women face are being abraded. The American Astronomical Society and American Physical Society, my professional organizations, have been immensely forward thinking. As for me, Yale hired me with tenure four years ago and treats me wonderfully. My science has never been better. I bet some people say I got this job because I'm female. But now that I've been around awhile, I'm finally able to say, confidently, that I'm really great at this job. I'm lucky to be here at Yale, yes, but even more, they are really lucky to have me. The doubt is finally going away.

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