

A 20-year encounter with the imposter syndrome

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ABSTRACT Both in their formative years and later careers, some scientists suffer from something more than occasional self-doubts. There is a more severe affliction that strikes many more than was once realized. Here I reflect on my encounter, in the hope that sharing it can be of some value.

Monitoring Editor

Doug Kellogg
University of California,
Santa Cruz

Received: Jun 11, 2020

Accepted: July 30, 2020

A landmark study 42 years ago presented the results of a survey of 150 highly successful women professionals as regards their self-assessment of confidence. The results were stunning. Many subjects gave responses revealing moderate to intense emotional stress and anxiety as to their qualifications. To characterize this revealed broad experience, the authors coined the term “the imposter syndrome” (Clance and Imes, 1978). It was apt indeed, the first word conveying the haunting sense of being an intruder in the guild, unqualified, and in the game only by some fluke; the second term meaning that the condition was encountered as a constellation of effects, from heart to mind to gut, with fear the signal transduction onto all those centers. This study was a turning point, *inter alia*, in the broadening field of scholarship examining the barriers to women in the workplace.

At the time of the Clance and Imes publication it was not known if this same affliction occurs in men and, if so, with what prevalence, or whether it occurs in some professions more than others. In at least the sciences, it now appears that both females and males encounter it, both as students and as young trainees, although the prevalence is less well known for males. I have no expertise in this field beyond my one experience, which I share here in the hope that it may have some nugget of value for all those who doubt their talent.

Science was not my first love academically. I had no butterfly collection, nor did I conduct explosion-seeking chemistry experiments in the cellar. My favorite subject in high school was Latin, my least favorite was biology. I remember a lecture on vitamins in the latter

course, where we had to memorize what happens when each one is missing or limiting in the diet. We asked the teacher for an explanation for pellagra, scurvy, and so forth (meaning: what do these vitamins do?). He replied, “They are essential.” QED. (But in fairness, this teacher could be better sometimes—for example, he told us why the mouthwash “Listerine” was so named.)

After studying English and Latin in college, I came to biology for a second try and it felt better. I applied to medical school but declined my acceptances and went for a Ph.D. During this time, I do not recall feeling particularly anxious about my abilities, although I had not yet really done anything to reveal their presence or absence. I do recall a few times when I was nervous, but that is not uncommon for graduate students. But one day, I got the first sensation of perhaps something more. It was my Ph.D. qualifying exam in the Department of Zoology at Syracuse University, in 1961. One part was a four-hour written exam in one’s field, the other was a free-for-all with the whole faculty asking about anything under the sun in biology. At one point I was asked to derive the Nernst equation (describing a cell’s membrane resting potential). I replied “OK, but from what?” The faculty member thought I was being evasive, but I was just looking for a little guidance (as when the Scripps–Howard Spelling Bee contestant asks the moderator: “Can you please use that in a sentence?”) I knew one cannot get the Nernst equation from $f = ma$, there is an electrical component (duly named for Michael Faraday). I managed to get through this question and all the others, but it was then I began to wonder if I was playing some charade. Maybe I had been clever but not really grounded. That I had gotten through the oral exam didn’t quiet my sense that I might have “pulled something off” and maybe hadn’t deserved to have passed. That was the moment when a visitor first arrived in my consciousness. It whispered, “You know, Thoru, it’s just possible that you might be a phony.”

During my postdoc this nagging feeling got stronger. I had moved from a very good zoology program at Syracuse to an elite department of cell biology at the Albert Einstein College of Medicine. My work was going well, but all the people around me

DOI:10.1091/mbc.E20-06-0376

Financial interests: The author has no financial interests.

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seemed so much smarter and their research seemed more significant. On one side of the lab I was in, Phillip Coffino, an M.D./Ph.D. student, was measuring the somatic mutation rate of immunoglobulin genes with Matthew Scharff, and on the other side, Ellie Ehrenfeld was isolating the poliovirus RNA replicase in the laboratory of Donald Summers. These were pioneering projects and I was in awe of both them and their science. By the time I left Einstein my case of the imposter syndrome had reached the point where I felt lucky to get an independent position.

Today, I reflect on all this. First, and as conveyed in the original study, was the *certitude* in my assessment of myself. At the time this affliction had me in its maw, no one could have convinced me otherwise. As other victims of this condition have attested, the sense that it is totally true is overwhelming. The second feature of the imposter syndrome, as was also revealed in the study, was that the day was just around the corner when *I would be found out*. This evokes a pattern of paranoia where, on each and every day, one is just waiting for “the truth” to come out.

But then, when I was 40, I got over this thing. It was quite sudden. I was on my way to Caltech to give a seminar and looked out the window over Kansas at the puffed popcorn of white clouds and got a simple idea, a question that should always be asked by any scientist. What if I were wrong? What if I were misinterpreting the data? For the first time, looking out that airplane window, it came to me that the obsession that I was totally incompetent was not supported by the facts, and that a hypothesis that I was at least competent in a “guild-average” sense seemed to be at hand.

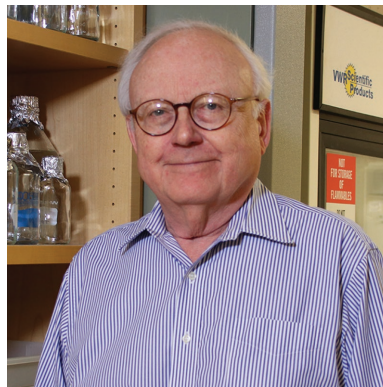
How the imposter syndrome affects females vs. males is still being studied. I do think that when it hits males, we compensate in ways that are different from females. One of the most compelling books in this field describes an intrepid group of women who provided powerful anchors for each other (Daniell, 2008). They were not all suffering from the imposter syndrome, but rather receiving the totality of slings and arrows that professional women face on many fronts. This landscape of inquiry and scholarship is worthy of further investigation as we seek to understand the degrees to which gender differentially influences the aspirations of all those coming up, and to which the imposter syndrome is an infection that may have no host restriction as to gender or ethnicity. The key question now, more than four decades after the landmark study, is whether the imposter syndrome has afflicted all genders and ethnicities to similar or differing degrees, and not only in America and not just in the sciences. This is the total perspective in which this career-inhibitory/destructive phenomenon must be understood, to elevate our ability to mentor, and if possible “vaccinate,” all students and emerging young professionals who suffer from it. Only when we all understand the roots of the phenomenon’s existence in the first place can we do our best to stamp it out.

CONCLUSION

Mentors can be both the diagnostic and healing physicians for this condition. For the students and postdocs reading this, fear not for your promise. If you feel unworthy, talk to your mentors. Do not, as I did, be too quick to accept the hypothesis. It is almost *never* accurately perceived.

And by the way, if any reader of this piece seeks help, or does so for their other reasons, they should be prepared for the possibility of encountering a recovered imposter syndrome victim. We populate the landscape more than you might think. We want not to let it afflict you. We are here to provide help if it does.

MEET THE AUTHOR



The photo is of a slightly shopworn cell biologist, but I prefer the informal look—just “me.” (I have others that make me look like a banker or funeral director.)

Source: University of Massachusetts Medical School.

I joined the American Society for Cell Biology in 1966 as a student. I have served on the ASCB Council as Annual Meeting Program Chair, and Treasurer on the most recent Executive Director Search Committee, and currently as Chair of the Development Committee. I was honored to receive the rarely conferred ASCB Lifetime Achievement Award, but in truth, ASCB has given more to me than vice versa.

I studied zoology at Syracuse University (BS and PhD) and did postdoctoral work in cell biology at the Albert Einstein College of Medicine. I joined the Worcester Foundation for Experimental Biology in 1971 as a staff scientist and was appointed President and Scientific Director in 1985. My research is on the functional organization of the nucleus. In 1997 I coordinated a merger of the Worcester Foundation with the University of Massachusetts Medical School, where I am the Vitold Arnett Professor of Cell Biology in the Department of Biochemistry and Molecular Pharmacology. I also serve as Associate Vice Provost for Research, and as the institution’s Research Integrity Officer. I am a Fellow of ASCB, the American Academy of Arts and Sciences, the American Association for the Advancement of Science, and the American Academy of Microbiology. Outside the lab, my major current interests are the double strands of enhancing pathways in science for minorities and career development initiatives for the next generation.

ACKNOWLEDGMENTS

I thank Jessica Polka, University of California, San Francisco, for encouraging me to write this and for her thoughtful input through several drafts.

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