

## Lessons Learned

*In this issue, JAB continues a series of editorials from highly impactful faculty and researchers on “lessons learned” throughout their careers or lives. The hope is that the rest of us can benefit from their experiences. I would like to thank these individuals for sharing their thoughts with us.*

—Michael Madigan, Editor-in-Chief

To be honest, I am not really sure why the editor-in-chief asked me to write an editorial. In being a professor in occupational health sciences, I am not a hard-core biomechanist, even though I have, indeed, been engaged in studies devoted to such things as exposure assessment in musculoskeletal epidemiology (it took me 10 years to learn how to even say that), motor variability, and muscle activity patterns in different occupations. And my most-cited paper ever is about normalization of surface EMG from the upper trapezius; that is also biomechanics, I guess. But I still wonder how the editor-in-chief tracked me down, calling me a “highly-impactful biomechanics faculty or researcher” in his invitation letter. Anyway, I was flattered, and I have, at least, learned lessons in research for more than 30 years, so I said yes.

With great interest, I have read the lessons-learned editorials by other researchers who also fit in the category of being sufficiently old enough to have learned something worthy of disseminating to those who are not that old. I truly endorse most of the advice like having to keep on being curious and never stop asking about the whys and hows, like the need for several scientific disciplines to join forces if the real important societal questions are to be answered, like welcoming a failure now and then, and like not getting so enthusiastic about thrilling new equipment and software that you forget what questions you pose. In orienteering (you know: finding your way in the woods with a map and a compass), we put that as “a high speed cannot make up for a wrong direction.”

What lessons have I learned that were not already discussed? I decided for one (or rather a “family” of lessons), that is, the crucial importance of being able to both give and take critique. Once, back in the days of old when I was a PhD student, “my” research group was visited by one of the big shots in occupational research. I presented my, then limited, achievements and future plans at a seminar, and this highly respected researcher stared me right in the eyes (at least that is what I felt) and said, “Why are you doing that?” Not by any means in a nice and kind voice but in a this-is-the-most-stupid-thing-I-have-heard-in-a-long-time voice (at least that is what I felt). It took me weeks to regain my good spirits and to rebuild my self-confidence that my ideas were not that bad but that my questions could, of course, be answered (also) using other methods.

So what went wrong? Let us begin with the senior researcher, who was not sufficiently aware of the impression he/she made on youngsters like me who had otherwise only met him/her in the literature. Maybe he/she was just enthusiastic, but expressed that dedication in just the wrong way, sounding like a machine gun. I have to admit that I often get engaged myself at seminars and conferences, and I have to be really considerate about not asking

questions or sharing comments in ways that can be perceived as tough or bitter or this-is-the-most-stupid- . . . . But I sincerely believe that it is the responsibility of every participant (young or old) in any meeting with other researchers (young or old) to behave decently and to be observant on who the recipients are. Are they senior colleagues whom you have known for 30 years, or junior students who, for some reason, may regard you as a guru are therefore very sensitive to what you may say? Trivial but true: Research would not move forward if you cut down fellow scholars to the shoelaces; everybody thrives from getting credit for good work and getting critiqued in ways that encourage progress.

That said, there is also a responsibility on the side of the recipient. Using my example again, I made two mistakes. My first mistake was to have overly respected this researcher, regarding him/her as something beyond a human being; a guru or a hero, just because of his/her impressive scientific production. A disclosure to young researchers: Even professors with 289 scientific papers are ordinary human beings. They like orienteering, good company, and documentaries about the late 1960s. They also have children (well, grandchildren, maybe). And more important: They like being approached by young researchers who are engaged, ask questions, and share opinions. I have never met a senior researcher who did not like to discuss research and who did not appreciate doing that with whoever comes close by. So go ahead, do not be afraid; it is so important to your own future for obvious reasons: inspiration, contacts, and collaboration.

My second mistake was to confuse factual critique regarding my research with criticism of my person. Being sensitive to (what is perceived as) deprecatory comments to your personal character may be a personality trait, but in my experience, it very often occurs among PhD students and young researchers. You get to those positions by being very observant on doing things “as good as ever possible,” or even to perfection. It is very important for you to appear brilliant and smart in the eyes of everybody else to the extent that the “objective” scientific parts of doing a good job may get mixed up with respecting you as a person. But take my point (much easier said than done): Your qualities as a human being are absolutely not related to your ability to calculate neck angles in a Cartesian coordinate system or estimate arm elevation variance components between and within workers. Researchers work in a community where (factual) critique is, for good reasons, a word of honor, so it gets difficult at times to not take some of that critique to your heart. But if you do so, it may get you into a really absurd situation: Because you wish to do a perfect job, you obstruct yourself from doing just that.

I realize that I am running out of words, so let me finish by citing one of my favorite colleagues, even more senior than myself: “You can’t be friends with everybody, but you can be friendly to all.” Good advice for both young and old.

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