

## The Interface of Science and Disability: A Personal View

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I am a son, a friend, a colleague, a brother, a supervisor, a husband, a teacher, a father, an engineer, and a scientist. And I happen to be a person with a disability, as I was born missing my right forearm. As each of us, I am a multitude of intertwined identities that help us to relate to others and to ourselves.

On the one hand, some identities are strongly related: the way my family has educated me is now influencing my parenting style. On the other hand (pun intended), other interconnections may be less straightforward and nonetheless deeply rooted. For example, is there any nexus between being a person with a disability and being a scientist?

My personal answer is yes, in at least two ways: First, my disability has given me the self-confidence to develop a problem-solver attitude, and second, it has taught me to look at the person, beyond labels.

Before I explain to you why, let me introduce myself following classical academic manners. I trained as an aerospace and aeronautics engineer, majoring in fluid dynamics. I then transitioned to thermodynamics and dedicated my Ph.D. studies to water behavior and ice formation on superhydrophobic surfaces. I thus started getting more and more interested in materials and recently became an associate professor in the Department of Materials Science at the University of Milano-Bicocca in Italy. My professional motto is “working on interfaces, at the interface”, among surface engineering, materials science, and thermofluids.

So what is the role of disability and the nexus with science here? The first nexus: self-confidence and a problem-solver attitude. Since I was born with one hand only, I obviously adapted to do things in a different way: from crawling to carrying stuff, biking, swimming, typing on a keyboard, and so forth. The good thing is that, despite living in a world designed for people with two hands, I have always found my one-hand alternative solutions. As a kid, I was not aware of it, but later I grew up, looked back, and experienced the pleasant feeling of thinking, “I can do things my own way!”. I developed a problem-solver attitude rather than stopping at oh-no-that-is-impossible. And if you think of science as an exploration of the unknown, you will see that my disability has served as good training for it.

The second nexus is to see the person, beyond labels. In the last decades, the cultural framework of disabilities has experienced a strong shift. From a compassion-based representation, which is sharply criticized by comedian and journalist Stella Young with the sentence “I am not your inspiration”,<sup>1</sup> we have moved to a more recent superhero-centric representation, which is fascinating but also far from everyday life. Is there a third way? Yes, and the answer is in the

person rather than in the disability. Among others, the photographer Christian Tasso and his “15 percent” project helped me to understand it.<sup>2</sup> This number, 15%, or one out of seven, is the striking estimation of people living with some form of disabilities disclosed by the World Health Organization in the World Report on Disability 2011.<sup>3</sup> Tasso portrayed people and occasionally noticed almost-disappointed reactions to some of his photographs: “and where is the disability in this picture?”. Viewers expected disability to be the protagonist, but it is the person, both in Tasso’s photographs and in life. This attitude helps me every day now, as a teacher and scientific group leader, not to judge by labels or biases based on nationality, ethnicity, gender, or physical appearance but to simply look at each person as an individual with whom I happen to share part of my life. I am not saying I am bias-free, but I am at least well aware of biases, which is essential to guide me in my efforts to make my scientific group a comfortable place to be, to study, and to work.

You may wonder if I ever experienced discrimination. I am probably lucky enough to answer “no, I have not”. Only once, in a job interview for an experimental R&D engineer position, I was asked whether my disability would represent a limit to my activities in the lab, as the interviewer said, “You understand, I must be sure that we hire a person that can actually do the job”. Although I understood what the person meant and the question was asked politely, I felt there was something wrong with it. However, it took me a few years to understand which question I would have preferred to be asked: “You are a person with a disability: is there anything that we, as an employer, can help with so that you can effectively do the job?”. I am aware that some lab activities can be more difficult for me. For example, it is hard for me to work using a glovebox. However, we need a perspective change, as proposed by the social model of disability, to recognize that people are disabled by barriers in society, not by their impairment or difference. What I can do or not is mostly set by the environment, and, as such, it is mostly a matter of decisions (e.g., designing the glovebox differently). If we understand this, we can really make a difference in creating inclusive workspaces.

To conclude, for sure I do not want anyone to say I am a scientist *despite* my disability, as if disability is something I

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need to fight against. I would not say either that I have become a scientist *because of* my disability. I can confidently say that disability *helps* me trying to become, every day, a better scientist.

#### ■ NOTE

Carlo Antonini (scientist) and H elo ise Chochois (illustrator) first met in 2019, after the publication of H elo ise’s graphic novel “La Fabrique des corps”, a story on limb deficiencies and prosthetics. Carlo and H elo ise have recently started to collaborate, using scientific illustrations as a language for more effective science dissemination and communication.

Carlo Antonini, University of Milano-Bicocca

#### ■ AUTHOR INFORMATION

Complete contact information is available at:

<https://pubs.acs.org/10.1021/acs.langmuir.2c03250>

#### Notes

Views expressed in this editorial are those of the author and not necessarily the views of the ACS.

#### ■ REFERENCES

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- (2) <https://www.christiantasso.com/quindicipercento>.
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