

STRIVING FOR MORE

ACADEMIA

According to the Polish Labor Code, any unacceptable behavior of a sexual nature or related to the gender of an employee, which is intended to humiliate them or violate their dignity, is considered to constitute sexual harassment. While harassment of a physical nature is being increasingly condemned and firmly responded to, discrimination expressed through language or attitudes often goes unnoticed, or does not involve consequences for its perpetrator. The story is no different in the scientific world. Several years ago the Internet exploded over a comment made by Prof. Dario Maestriperi, a neuroscientist at the University of Chicago, complaining about a conference he had attended: “An unusually high concentration of unattractive women. The super model types are completely absent. What is going on? Are unattractive women particularly attracted to neuroscience?” Despite the wave of outrage that ensued, the professor continues to work at the same university and women make up 80% of his department. Ironically, he studies the evolution of human behavior.

Apart from this sort of prejudice, gender discrimination is a significant problem, often resulting from a more or less conscious invocation of stereotypes. The tendency to generalize and form stereotypes is an evolutionary mechanism that was designed to facilitate quick decision-making in emergency situations, when there is no time for careful assessment. This mental mechanism functions to this day and we rely on it more often than we would like to admit. When a male student makes a mistake, the instructor may say, “you are hopeless at math,” but when it happens to a woman, we can usually expect to hear, “women are hopeless at math.” The stereotype that women are not good at STEM subjects (science, technology, engineering, and mathematics) has been around in the scientific world for a very long time. It is so well-entrenched that, even in the early years of education, teachers of these subjects treat girls and boys differently, further widening the gap between them. However, studies show that four-year-olds do not differ in terms of mathematical ability between genders. Such a difference starts to be noticeable only in subsequent years of education.

Perhaps it is this stereotype that is to blame for the decrease in the number of women scientists at the higher stages of a scientific career. They represent 49% of those admitted to universities, but only 3% of professors. Even the word “fellow,” which refers to a post-doctoral position at Anglo-American universities, means “a male friend,” previously “a boy.” The impression is that such positions are actually intended exclusively for men, although they are held by representatives of both genders. The prevalence of men at the higher levels of the hierarchy is ubiquitous, not only in science. Many corporate boards are composed only, or mostly of men, with women constituting a small minority. At Boston Scientific, a company known for its equal opportunity approach, women account for 40% of board members. For comparison, only slightly over 7% of the members of the Polish Academy of Sciences are women. It is worth noting a certain positive trend here, however. As a result of last year’s election, the number of female scientists has increased by nine, which is an unprecedented step forward.

In 2012, a group of researchers led by Prof. Corinne Moss-Racusin studied how scientists assessed the CVs of students of either gender. The very same re-

EQUAL SCIENCE

sume highlighting the very same skills was distributed among scientists, sometimes with a male name at the top, sometimes with a female one. The respondents were asked to assess the student's level of competitiveness, their chances of being hired, how much they were willing to pay them, and how much time they would devote to training them. It turned out that the scientists of both sexes assessed the men much higher than women. In this case the stereotyping was so obvious that it is difficult to believe it was done unconsciously. Another study examined gender discrimination apparent in the reference letters given by supervisors to students upon leaving university. Usually they are crucial in finding a job. It turned out that there was a strong tendency among the supervisors of both sexes to tailor these letters according to the student's gender. The letters emphasize men's achievements and independence, while women are praised for their personal life and soft skills. The reference letters for women were found to contain twice as many statements such as "tries very hard" or "is hard working," but they did not highlight specific accomplishments. What can be done about this? First of all, we have to be aware that these stereotypes exist and that we can unconsciously be guided by them. We should strive for gender balance throughout all of academia. We must publicly highlight the accomplishments of students, regardless of their gender, and assign achievements to specific individuals, rather than to whole teams. If possible, we should conceal the applicant's gender while reviewing applications.

Another area where gender discrimination is apparent is getting published in internationally renowned journals. In the world of science, such publications are the main indicator of a researcher's success. In the Elsevier report *Gender in the Global Research Landscape*, authors of both sexes were compared based on the success of their publications. The results were, unfortunately, not surprising. Although the number of women scientists has increased in all 12 countries studied over the past 12 years, there are clear differences between specializations, as more women are involved in medicine or biotechnology, rather than "hard" sciences, such as physics or math. Women are less often involved in international collaboration, and they travel professionally less frequently. Lastly, the number of citations is the same for authors of both sexes, but women publish fewer papers.

One explanation for the latter was provided by a study published in the journal *Trends in Ecology and Evolution*. Typically a reviewer will know the names of the authors, while he or she remains anonymous. However, when reviewers began to receive anonymous articles, the percentage of papers approved for publication that were written by women increased significantly. This suggests that reviewers are also prone to gender bias. Similarly, editors favor male reviewers. Reviewing publications, especially for prestigious journals, is an important part of an academic career path, so it is another area where it is difficult for women to compete with men. In this case, it is the publishers who can take the initiative and consider hiding the gender of the authors from the reviewers, while also ensuring that their editors take steps to avoid possible unconscious gender stereotyping.

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This paper is based on the *Gender Bias in Academic Publishing* webinar organized by Elsevier Publishing Campus, during which the issues of unconscious gender discrimination in the scientific world were discussed by Joanne Kamens (CEO of Addgene), Nicole Neuman (editor of *Trends in Biochemical Sciences*, IF 12.8) and Kate Hibbert (publisher at Elsevier).

The report *Gender in the Global Research Landscape* is available at www.elsevier.com

The webinar is available at www.publishingcampus.elsevier.com/