

GENDER IMBALANCE IN SCIENCE: AWARENESS AND DENIAL

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Being a woman is not a disadvantage anymore...

Until the start of my PhD, I had gone about my studies without ever stopping to give my gender any kind of a thought. It never crossed my mind that being a woman could in any way alter the course of my professional life.

I knew, of course, that “in the past” women had had to fight to obtain equal rights and that a woman thinking of her own career had not been a given until relatively recently. However, in my mind, all of that was sorted out by now and the differences

between men and women had been abolished. Growing up, my mother always worked and loved her job, and I couldn’t help somewhat looking down on stay-at-home mothers. Why on earth, would anyone choose to miss out on learning and putting her skills and intelligence to the test through a challenging job? One could therefore say that I grew up with the right attitude for success; all I believed mattered was performance and ambition. I thought meritocracy ran the world.

During my Bachelor degree in Biology at Imperial College London and again during my Masters degree at the University of Oxford, I was one

of a majority of women studying to become potential scientists. This reinforced my optimistic prejudice: “I live in the 21st century, women can now do whatever they want and succeed at it, as well as men”.

Why are women still in such a minority among the top scientific positions? It was only when I started my PhD in Oxford that I started hearing about the difficulties faced by women trying to make their careers in science. My PhD supervisor, Dr Katja Simon was a young principal investigator and mother of three, and while working under her, she made me aware of

quite a few hicks in my rather naïve assumption that women are completely equal to men in their potential to succeed professionally (Figure 1).

Without ever being discouraged from giving it my best go, I came to understand that there are some very simple facts that make a career not just in science, but in any competitive field, inarguably more difficult for women than men. Those issues, as far as I see it, are all linked to biology. Building a family, which most of us desire at some point in our lives, affects a woman's career more than a man's, and that remains an unchanged fact, despite regulations being put in place forcing men and women to share paternity/maternity leave.

Katja Simon was one of the few women in her position at the Weatherall Institute of Molecular Medicine to already have had children by the time she became a group leader (principal investigator: PI). Most other women PIs, postponed having children in order to first advance in their careers and secure their positions. While, there is no right or wrong, the number and quality of publications being the main determinants of success in securing funding and breaks due to maternity leave(s) inevitably affecting these two factors, maternity breaks can indirectly reduce one's chances of obtaining grants.

Without dwelling too much on numbers, one thing is evident no matter where one looks: women, despite nowadays being in a majority up to the PhD level, become an increasing minority the higher one looks. In other words, there is a severe bottleneck in

the career ladder that results in the loss of women (Figure 2). And one cannot help but wonder, whether this is solely due to a choice made by women to drop out of their scientific careers; or whether external factors make it so increasingly difficult for women to hold on to their positions and/or progress in science that it leads to them feeling compelled to find alternative career choices. Then again, one could also ask: Should we really worry about women being in such a minority in high-ranking academic positions? And, won't this change slowly on its own? Sadly, it does not seem to be changing on its own and as long as the top of the pyramid is a "men's club", the balance isn't likely to be tipped by itself.

I do not imagine anybody arguing against the idea that men and women bring different ways of thinking and skills to problem-solving and that it would actually be to the benefit of all, if women would participate to every level of society, a little more than they do now. I therefore wonder, when there is such a clear discrepancy in the number of women that are going through the higher education system and the number of women holding high ranking positions: why aren't things being "reformatted" to be more inclusive of women?

Towards helping women stay in science: OxFEST, a student society to encourage women in engineering, science and technology (<http://ox-fest.org/about/the-society/>) As a result of long tea-time chats about their experiences as women in

science, Katja Simon and other young scientists at the Weatherall Institute of Molecular Medicine (Figure 3) decided to found a student society for Females in Engineering, Science and Technology, also known as "FEST". The idea was to create a platform where issues faced specifically by women in these areas could be openly discussed, where awareness to these issues would be raised and a platform that women could turn to for help with their careers in the form of mentorship.

This venture was, to say the least, successful. The society, now called Oxford Females in Engineering, Science and Technology "OxFEST", is well established among the recurrent student societies at Oxford University. New members get recruited every year at the Fresher's fair, but members can also sign up at any event they attend, as well as attend events as non-members for a small fee/event.

The type of events held by OxFEST can be subdivided into 3 types of events: 1) the speaker series, for which female scientists from any discipline are invited to talk about their careers and their opinions on the gender imbalance; 2) the CV and other career workshops; and 3) career fairs, which take place over a lunch, at which each participating company has its own table and participants get the chance to talk to company representatives one at a time. Finally, and perhaps most importantly, OxFEST runs a mentorship scheme, for which women scientists are recruited to become mentors for the society's members.

The second year of OxFEST's existence, I was its president and the most important thing at the time was to ensure funds for the society to run on. We therefore approached some companies to attempt to get them to sponsor us. Not surprisingly, it wasn't difficult to agree on such sponsorships and we managed to obtain funds from IBM and GSK. It would seem that not getting enough women applying for jobs in the areas of science, technology and engineering is a rather common problem encountered by companies, which are trying to increase the numbers of women among their employees.

As you can imagine, our male colleagues got to hear a lot about FEST while it was being set in motion. To

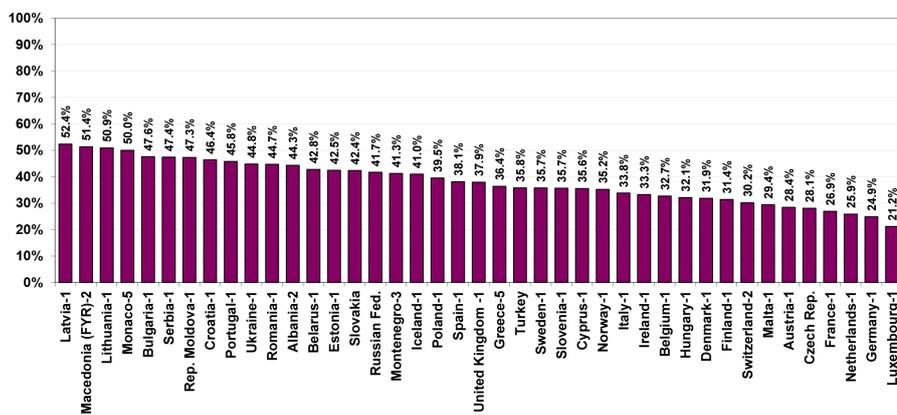


Figure 1. Breakdown of female researchers in Europe. Female researchers as a percentage of total researchers, 2010 or latest available year. (Source: UIS FACT SHEET, DECEMBER 2012, No.23; UIS/FS/2012/23)

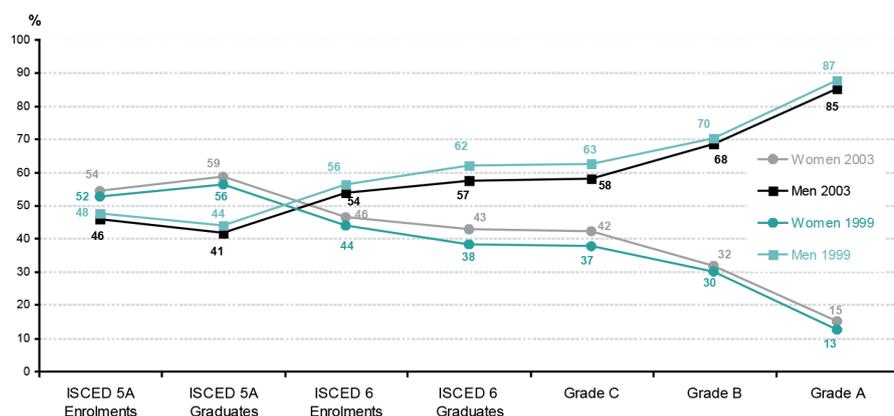


Figure 2. Proportions of men and women at various stages of a typical academic career. EU-25, 1999 and 2003. Original source: European Commission: Eurostat-WIS database 2003. Countries include: Austria, Belgium, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden and the United Kingdom. (Source: Science, Technology and Gender: An International Report. UNESCO 2007.)

start off with, most of them had a little disdain towards this enterprise and thought it rather unnecessary; they labeled us as a bit of a “feminist” group – and needless to say, that is really something one does not want to be known as nowadays. However, as the first events took place, a surprising number of men attended them. Indeed, nothing we did was focused on women, the society was primarily an overall career development platform. Yet, attending these events and hearing about the difficulties women face with balancing family life and work did make these men aware of the current hurdles towards keeping talented women in scientific careers.

Overall, I think we did a wonderful thing starting such a society at the University of Oxford and societies like Ox-FEST exist elsewhere and are becoming more widespread (For similar sites look at: <http://ox-fest.org/resources/> and <http://findingada.com/about/our-mission/>), however this is only the groundwork; for things to start changing -time will certainly help a little- the conditions and the structure of scientific careers need to become more woman-friendly.

Oxford to Copenhagen: from “the gender imbalance in science exists” – to – “there is no problem here” Denmark, alongside the rest of Scandinavia, is known as a country of gender equality and fantastic work-life balance. And, not surprisingly, that was one of the reasons for me to come work in

Denmark and I was not alone at that, as it is often seen that researchers come to Denmark to start a family. It really is a great place for doing academic research: the pay is better than in many other European countries, funding is relatively easy to come by and work-life balance is indeed important for most employers, allowing a greater degree of flexibility for everybody. One would therefore expect, with these lovely work conditions and over-the-top focus on gender equality (<http://forside.kvinfo.dk/>) that the gender imbalance in scientific positions would be nonexistent in Denmark. Well, sadly, that is not the case. The gender imbalance in scientific and academic positions is as prominent in Denmark as in any other European country.

Despite the gender imbalance being overall comparable between Denmark and the UK, there are major differences between these two countries. In Denmark, having a baby during one’s PhD is more than feasible and not having one at the postdoc level is rather unusual. In the UK, either of these instances are hard to come by and I hear from other research institutes in non-Scandinavian European countries that some labs pride themselves of being so hard-working that “no woman has ever been pregnant while working here”. From what I’ve seen so far, the career break required for having a baby seems to be overall much better tolerated in Denmark than in the UK. Therefore, despite it being more acceptable to take such breaks

and family life being highly respected by the work place, something still leads to women leaving science.

Today, working in Copenhagen and discussing gender equality with my female colleagues, I hear from a lot of them that they firmly believe that there are no differences between men and women in terms of their likelihood to succeed in a research/scientific career in Denmark. In fact, they seem rather reluctant to acknowledge the persisting gender inequalities, due to, what I interpret, as a fear of sounding like feminists.

This is an attitude towards the issue of women in science I had not met in the UK. Some women were, of course, not interested in discussing the issue or had no opinions about it; yet in Denmark, it is a more active denial of any problem existing at all. While I agree that aggressive feminism will not serve any good in ensuring a better gender balance in scientific disciplines, denial is not the



Figure 3. The Weatherall Institute of Molecular Medicine, University of Oxford. (Source: <http://www.imm.ox.ac.uk/about>)

way either (see Emma Watson's UN speech: <https://www.youtube.com/watch?v=p-iFl4qhBsE>).

My current supervisor Marja Jäätelä, an extremely successful woman in science, when we first discussed this issue said she couldn't really see the problem anymore. To her, being the only woman among men had sometimes even felt like an advantage; her experience in the world of science was never hindered by her gender. However, about a year ago, she was invited to give a talk about Women in Science and therefore looked up statistics about how many academic positions are held by men and women, and I remember the look of shock on her face when she walked into my office saying: "There actually is a problem!". We then discussed what that could be due to, and none of us could come up with a satisfying explanation. Instead, we got distracted watching funny sketches about a scenario where women hold all the leadership positions (in Danish): "I Hegnet – De lede ledere. Kønskvoter": <https://www.youtube.com/watch?v=dIKVMD-M1xUA> and "I Hegnet – De lede ledere. Løn": <https://www.youtube.com/watch?v=kPKNr6xYDYA>. The fact that we found these sketches so absurd and hilarious highlights that the world is still full of social gender prejudices; and these will probably never disappear and perhaps do not need to dis-

appear for women to stay in science, engineering and technology.

If positive discrimination towards women is likely not the best approach; how, then, can gender balance be achieved? From the speaker series we ran at OXFEST, almost all our speakers mentioned as an essential factor in their professional success their choice of partner. We repeatedly heard how essential having a supportive and available partner, willing to share the responsibility for family duties, is for a woman's professional success. But, besides teaching young women to choose their partners wisely, what else can really be done?

Positive discrimination of women, in terms of having to fulfill certain quota of women in work places and having pools of money to be distributed primarily among women are, as far as I'm aware, the only real attempts to correct the gender imbalance. But, how do these really help? My boyfriend and I have this eternal discussion: while I still can't make up my mind regarding how else the gender imbalance can be restored, he is firmly against such special treatments for women and he posted the following article on my wall: <http://politiken.dk/debat/profiler/mikkelandersson/ECE2177399/skal-kvinder-i-specialklasse/>.

Much to my surprise, quite a number

of friends, like me women scientists, liked this link. It would therefore really seem that this is not the best approach: men will end up having more prejudices of women and never respect those that make it to leadership positions, and women will always wonder whether they made it there because of their gender. I do not have any definite answers, but for a long time I had not really seen this positive discrimination as such a negative thing, as I could see that this was a necessary step to actively tilt the balance so that the balance can then be maintained by itself. In a men's club, how will women otherwise, ever make it in? And, currently, there seems to be some level of negative discrimination of women in science. For example, as you probably all know, whether the exact same grant is authored by "John" or "Jenny" actually makes a big difference. Women simply do not secure as many, nor as large grants, as men do.

To conclude, without closing on the issue, I believe that women need to become as aware as possible of the problem, they need to learn to be more self-confident and for this a mentoring scheme would be extremely beneficial, they need to learn to demand things, demand and expect everything, because deep-down, when a problem comes up, rather than run away from it, we need to ask for what's needed to solve it.