

A Letter From Sweden

by Daryoush Shiri



Next time you hear “Sweden,” instead of IKEA, ABBA, and Swedish meatballs, think of *Apollo 11*. Here’s why: A firm owned by the Hasselblad family in Gothenburg, Sweden, built the cameras used by *Apollo 11* in its history-making mission. The pictures of the first human to walk on the moon’s surface were captured by a 70-mm Hasselblad camera [1].

Here is another example of Swedish innovation. I used to wonder what was being made in that Svenska Kullagerfabriken (SKF) manufacturing plant beside Highway 401 in Milton, Ontario, which displayed the flags of Sweden and Canada in its parking lot. Well, that is one of many branches that SKF—meaning “Swedish ball bear-

ing factory”—has around the world. The reduction of friction by using a layer of metallic spheres was invented by a Swedish engineer, Sven Wingquist, in 1907. Thereafter, he founded SKF here in Gothenburg [2]; now, you cannot name any form of machinery from around the world that does not use ball bearings.

Swedes are very creative and resourceful people, and this dates back to their long tradition of making the most of what their harsh Nordic climate can offer. If you are not yet as enthused as I am, let me add the invention of powdered milk, the safety seat belt, dynamite, and the discovery of many elements of the periodic table to the list. Also, do not forget Volvo, Sca-

nia, Saab, Ericsson, Husqvarna, Skype, and COMSOL.

I came to Sweden as a postdoctoral researcher, so it was quite natural to explore this country by first observing my new work environment: Chalmers University of Technology. My interview here in 2015 at the Physics Department, which was called *Teknisk Fysik* (*Engineering Physics*), was a very unique and memorable experience. I realized that this is a place where engineers and physicists understand each other. You can speak the language of each party, and you will be understood by both, whether it’s the “tight-binding Hamiltonian” or the “graph incidence matrix of a circuit.” Luckily, I was given an offer and didn’t hesitate to

accept it right away, despite my fears and worries about crossing the Atlantic Ocean and those many “what ifs” a researcher couple may ask.

My first positive impression was learning that all graduate students, staff, and faculty members are entitled to offices of the same quality. There is no evidence of inequality in the distribution of workspaces depending on the rank, seniority, or budget of a research group. All offices have windows, as it is understood that winters are murky and the rest of the seasons are often cloudy.

Even laboratories that, due to unavoidable architectural features, have no access to windows are generously decorated with pictures of trees and flowers. This reduces the sense of being incarcerated in a box during the hours that students and teachers must spend there.

There is a strict set of rules in Sweden called *Arbetsmiljölagen* (*Working Environment Law*) [3] that requires employers to provide healthy and safe working environments for employees of every level. This is a very important factor in keeping the research workforce mentally and physically happy. Each employer has access to an *Arbetsmiljölagen* booklet outlining whom to call should something go wrong.

The Swedish government recommends that part of every public building budget be spent on the arts. Therefore, all department buildings, new or old, are decorated with artwork created by artists from both classical and contemporary disciplines. The same is true when you step into public libraries, hotels, and health centers. Extensive research by Jadwiga Krupinska, a professor of architecture at Royal Technical University in Stockholm, showed that the architecture of a school influences students’ abilities to learn [4]. A pleasing design encourages students and teachers to stay longer and enjoy working and learning more.

Academic Culture

In addition to personal meetings with your immediate manager or research supervisor, there are weekly meetings (or seminars) where a few groups with very similar research interests sit together. One or two members of the group present a 30–45-minute seminar, followed by questions posed by senior professors. This can help students polish a paper before submitting it or increase the quality of a talk before presenting it at an upcoming conference. It forces graduate students and postdoctoral researchers to expand beyond their comfort zones by speak-

ing about their work and exposing their research results to instructive criticism and revitalization.

In every department, group, or division, people gather on a weekly basis for an hour of drinking coffee and enjoying Swedish cookies and cakes that are brought by a volunteer colleague (or according to a periodic list of names). During this Fika Pause (coffee pause), the department head, graduate students, senior professors, young faculty members, and staff all sit together informally and chat socially. This helps you to get to know your colleagues

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better and learn about new departmental rules and decisions.

Every three or four months, the head of the department/division enters your office for a friendly chat about your research and progress. You can show him/her what you are doing or what you have just calculated, and, he/she asks if you have any personal issues, you can discuss whether your housing is okay, if you feel healthy, and so on. Importantly, he/she will ask about your plans after the postdoctoral years, give advice on how to apply for jobs, and even express a willingness to recommend you to companies or other research groups. For an international postdoctoral researcher, this is a very decent and generous act practiced by the head.

In addition to these informal visits, there is an annual evaluation session. You personally meet with the department head, and he/she evaluates your progress based on your research achievements—you are not evaluated only based on the number of your publications. Later, you are told how much your next year’s salary will be raised based on your performance.

Every year, the president of the university invites all employees to complete a questionnaire. The questions cover issues such as racism and sexism at work, your concerns about your office space, your colleagues, your ideas about your immediate manager, and work–life balance, among others. The statistics are published a few months afterward, and there is a review session organized by the division/department head to discuss how issues can be avoided or resolved. This helps decision makers in the university involve everyone in problem solving, as a lack of

feedback makes a system prone to instability and malfunctioning.

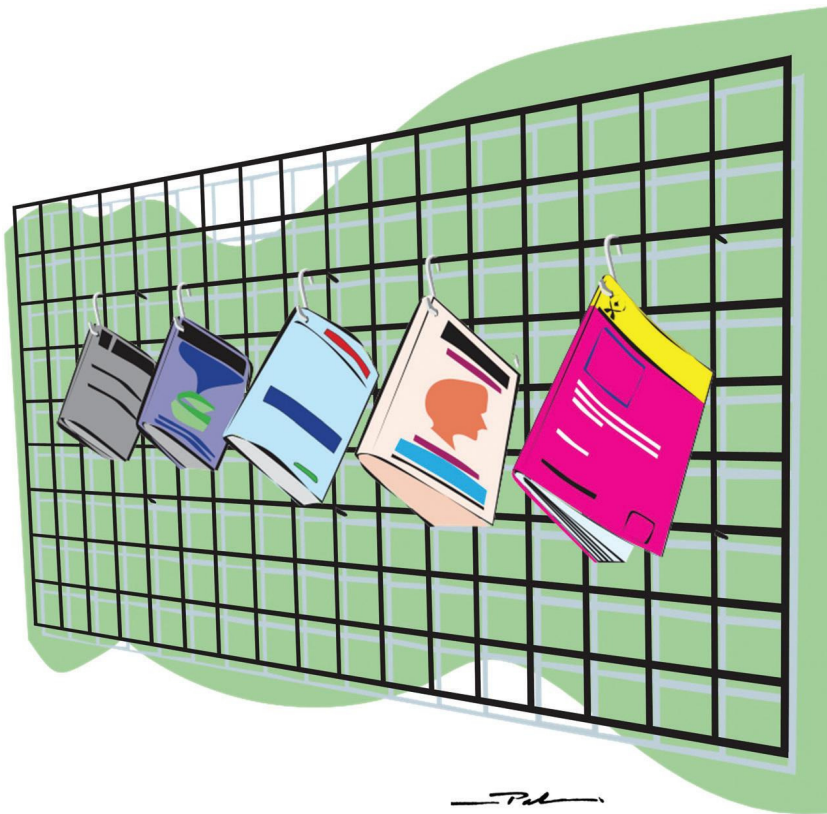
There is a tradition here at the Physics Department whereby everyone receives a newsletter with a nice foreword written by the department chair, who writes an interesting and fun-to-read short article that skillfully relates to a recent issue of interest in the department. It is amazing that a busy physicist with a huge administrative load manages to write a literary article. By reading it, you learn something new about the department or even something related to history, language, or literature that you previously knew

nothing about. The department chair even shares with you which novel he or she has just finished reading. During my employment here at Chalmers, I have witnessed two consecutive department chairs in office who religiously practiced this culture of reaching out, writing, and talking to employees. Every Christmas, all employees receive physics toys, puzzles, and postcards from the chair as gifts. For graduate students and international postdoctoral researchers, these gestures provide a sense of belonging, respect, and appreciation.

The progressive atmosphere I’m describing has time-honoured roots. The culture, attitude, and experience of governing an organization called *university* by Swedes dates back to 1470. Furthermore, the practice of mentoring, housing, and paying a Ph.D. student dates back to 1728, when a poor, young student named Carl von Linné entered Uppsala University. Prof. Olof Celsius hired him, gave him a room at his house, and let him do his research on his vast botanical garden, after realizing von Linné’s struggle with poverty and his genuine passion for learning.

Another cultural practice worth mentioning is that people keep the doors of their offices open all day long. Just enter and ask your question instead of shooting emails around.

When graduate students finish writing their thesis, they submit the PDF file to the university press (after the supervisor’s approval). Then, the university prints and delivers 100 copies of the thesis to the student’s office before his/her defense date. Attendees can receive a free copy during



the defense as a gift or keepsake. The expense of envelopes and postage stamps is covered by the university so that the student can send his/her thesis to anyone around the world, such as future employers or famous investigators in his/her thesis research area. This removes a huge burden and stress from the shoulders of students as they get closer to the defense deadline, especially if they are short of financial support during the last term.

A copy of the thesis is hung on a stand or a special wall designed for such purposes in each department or division. Feel free to take a thesis off the hook, take it home, read it, and return it. Ph.D. students graduate within four years unless they choose to teach, in which case, they have five years to finish. After publishing a few papers, they have this option of graduating as licentiate (Ph.D. sans dissertation) and going into industry. Let me also mention how formal, ceremonial, and majestic the Ph.D. defense sessions are. When I remember my own defense session—which looked like no more than a long weekly meeting—I feel jealous of the students here.

Another academic practice also fascinates me: When an assistant (associate) professor is promoted to associate (full professorship) level, he or she must present a public lecture. He/she will be introduced by the chair of the department, and the public will learn why he/she was promoted and about his/her research interests and achievements. After attending

a student-friendly talk by the promoted faculty member, everyone enjoys coffee, cake, and champagne in his/her honour.

Newly hired faculty members are sent to Swedish-language courses, as they must attain mastery over three years to teach undergraduate courses. Prospective instructors are also offered courses on ethics, methods of supervising and advising graduate students, and pedagogy (teaching skills)—regardless of their academic merits and backgrounds. It is well understood here that being a top-notch researcher with many high-impact papers in your CV does not necessarily make you a top-notch mentor and a teacher. When a supervisor is not happy with a student's performance, there are procedures and rules for handling the situation respectfully and professionally. This involves seeking assistance from senior professors (if applicable) to help the student get out of the research pothole or referring the student to relevant help centers on campus. Faculty members are advised not to handle these cases with ad hoc methods, and they should not allow the criticism to become personal or undermine a student's confidence.

Faculty members respect their students and postdoctoral researchers as colleagues. Every day, you witness small and large research groups walking toward department restaurants for lunch. The lunchtime from 12:00 to 1:00 p.m. is used to enjoy a meal and have a friendly chat between senior professors (or even mem-

bers of the Royal Swedish Academy) and their students. This atmosphere is very helpful in releasing stress from the brain of a student who has been in a clean room since early morning or a frustrated post-doctoral researcher who was trying to get a plot out of simulations.

Almost every department has its own restaurant, and every day at least three types of meals are offered for every taste: meat, fish, and vegetarian. In addition, there are lunchrooms in each department with access to free coffee, tea, and baskets of fruit. Faculty, staff, and graduate students can warm up their lunches in dozens of clean microwave ovens. On some Fridays, a live music concert is performed while everyone is having lunch. Undergraduate students are also provided these benefits with the same quality and quantity, except that they have to pay for their coffee.

In Chalmers, you never feel underappreciated or isolated. Your boss tells you, "Great job!" if you did so, and vice versa. International graduate students are entitled to enroll in Swedish-language courses, and the expense is covered by the supervisors. This helps students find a job here or in Scandinavia in general. Knowing one of the Nordic languages is an advantage when you apply for a job in Scandinavia.

Since an international Ph.D. student (as an employee) pays taxes and contributes to society, he/she is entitled to social benefits, such as employment insurance, which helps him/her get paid by some amount after graduation. This will give the graduated Ph.D. student some time to find a new job. This is immensely helpful and stress relieving, as the student might be worried about his/her visa status, financial status, and so on [5].

Ph.D. students at Chalmers are allowed to take extra courses outside of their research specialty to widen their skill set. Courses in pedagogy, rhetoric, management, or even linguistics are what a Ph.D. student can take to avoid being a one-dimensional person skilled only in a specific research area.

Graduate students can also choose to take a one-year intensive course on pedagogy and education in parallel to their studies. Then, they can apply for high school teacher positions. Due to the shortage of science teachers in Sweden, the government allowed the Ministry of Education to fill the gap by hiring Ph.D. graduates in physics and engineering. Those, like me, who do not have a pedagogy certificate (and Swedish-language certificate) can still

find teaching positions at international (English-speaking) high schools, although with fewer social benefits compared to the former group.

Work-Life Balance

The Swedes' strong work ethic does not translate into spending weekends in the office. You must rest and spend time with your family during the weekend to start the work week with renewed vigor and passion. When your child catches a cold and you have to stay with him or her, simply tell your boss that you are working from home. The working hours for research staff are flexible and based on trust and respect. You must deliver what you have promised, meet deadlines, and keep the quality high.

According to Swedish law, you are entitled to five weeks of paid vacation per year [6]. You are strongly encouraged by your boss to enjoy this vacation to remain healthy and productive. You can transfer a limited number of vacation days to the next year, but it is not recommended. During your vacation, you are fully insured, provided that you inform the head of your division before departure by filling out a vacation form.

Parents can enjoy a long maternity or paternity leave. They can even distribute that time throughout the year as they wish to ease the work-life balance.

During flu season, you are advised to stay at home and get well if you are sick; you should not come to work and spread the virus. There is a one-week vacation during mid-February that is called *sportslöv* (sport holiday). During this week, families venture out and let their kids enjoy winter sports, such as skiing, ice skating, and ice fishing, among others.

If you have winter-induced tiredness (*trötthet*) and seasonal depression, you are entitled to many professional services. The most important thing is that everyone understands you. Alternatively, you can travel to a place with more sunshine. Sweden's proximity to the most important destinations within Europe makes travel easy and affordable. For an international student or a postdoctoral fellow with a Schengen visa, going to conferences and meetings throughout Europe is easy, and it strengthens your CV. If you happen to be an international student in Canada waiting for a clearance check of your U.S. visa application, you'll know what I mean.

Social System and Services

As a postdoctoral researcher, I am paying more or less the same amount of tax I used to pay in Canada. However, it is the Swedish Tax Agency (Skatteverket) who fills out your tax return—not you. The Skatteverket sends you the filled-out form a few weeks before the tax declaration deadline. If there is any difference or change, there are sections for making amendments; otherwise, sign the already filled-out form, and drop it in the mailboxes in front of every social service building. This is one of the moments when you feel that you have been taxed fairly, as the huge and unnecessary stress of filling out the tax return form (and the time it wastes) do not exist. Since it is the university (or in general, your employer) who informs the tax agency about your salary, benefits, deductions, and so on, there is no need to supply the tax agency with loads of paper.

Government public services in Sweden provide assistance in many different languages. This is extremely helpful for recently landed immigrants and those, like me, who work in Sweden temporarily. When I received my SIN card (called *Swedish ID* here), it was accompanied by “Welcome to Sweden” letters in three lan-

guages—Swedish; English; and my mother tongue, Persian—explaining to me the next steps. Even documents such as driver's test booklets are published by the Swedish government in many languages, and they are available to be borrowed from the public libraries.

I also have the option of receiving an English version of my tax return assessment in case I want to submit it to the Canada Revenue Agency. All these of services and documents sent to you are free of charge.

Regarding health care, I am impressed by the fast and patient-friendly technology. A nurse plugs your blood or urine samples into a tabletop analyzer before your eyes. You observe the results being printed, and the doctor looks at them and reports to you right on the spot. In special cases, there may be a delay of a week or so to receive a report back from a hospital laboratory.

If you intend to move to a new place, all you need to do is file a moving report form on the website of the Skatteverket. After 24 hours, your new address is known to every public service agency in Sweden, including health centers; your bank; your credit card provider; and TV, Internet, and phone service providers,

