

Daniel Lövheim

Naturvetarna, ingenjörerna och valfrietens samhälle: Rekrytering till teknik och naturvetenskap under svensk efterkrigstid

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In the decades following World War II, the need for engineers and scientists has been articulated at regular intervals, in Sweden and elsewhere in the Western world. Even more so after the launch of the Soviet satellite *Sputnik* in 1957, whereupon large sums were invested in science and technology education in the USA and beyond. In Sweden, as in other countries, it was feared that a shortage of engineers and scientists would lead to reduced economic growth and weaker competitiveness for industry. Thus recruiting more candidates to fill positions in industry became an important goal. In *Naturvetarna, ingenjörerna och valfrietens samhälle*, Daniel Lövheim studies the origins, expansion and the consequences of the political efforts to influence young people to choose technical and scientific education and professions.

The book consists of an introduction (ch. 1) and five chapters (2–6) which mainly proceed chronologically. Lövheim investigates a period of 50 years, beginning with the 1950s, when systematic recruitment efforts coincided with a period of mass education and development of the unitary school system (ch. 2). Between 1950 and 1960, the number of students enrolled in the *gymnasium* doubled. To meet the needs in the labor market, it was expected that more than half of the *gymnasium* students should study natural science or technology. Engineers of all categories were needed, including those trained at

the *gymnasium* level. In fact, to raise the status of and recruitment to the technical training at this level, the technical course was placed side by side with the course in natural science, breaking thus with a hundred-year tradition in the Swedish educational system. However, the technical course did not attract as many students as hoped for, and quite a large number of students from the natural science course transferred to the social science course after a while. The challenge was to steer the students towards technical and scientific education. But how to balance the freedom of choice against national needs? The answer was “positive propaganda” – to motivate and convince the students to opt for technical and scientific education.

In chapters 3 and 4, the plurality of initiatives to influence young people in their choice of education in the 1970s and 1980s are presented and discussed. Students’ attitudes to science and technology were mapped in order to understand why the *gymnasium* reform failed to attract enough candidates to these courses. Some actions were directed at science teaching, such as more laboratory work in school, summer schools for teachers, and the development of new teaching materials – efforts that would attract the students to science studies rather than scaring them off. Participation in international Science Olympiads and Science Fairs would also increase interest in science and technology, as would the science centers, which invited participation from the visitors.

One group which was subject to specific actions, especially in the 1980s, was the girls. A course in technology in primary school was introduced for all pupils to increase interest in the subject and, more specifically, to stimulate them – the girls in particular – to shape identities compatible with employment

in technical fields. Summer courses in practical skills such as welding were offered, as were happenings for women at the museum for science and technology. Parents were targeted in campaigns directed at women and their choice of education and professions, and women technicians and engineers appeared as role models in pamphlets. Interestingly, but not surprisingly, arguments for women's place in science and technology mainly emphasized the needs of society, not the needs of the women as individuals or as a group. Still, women who worked in technical fields should expect improved working conditions, better salary and higher status than in traditional women's work. Thus, choosing technical and scientific work was a way to become equal in society. This pragmatic approach to feminism reminds me of what Laura Puaca called "technocratic feminism" – when national security rhetoric was invoked to argue for women's employment in science and engineering in the post-war era (Laura Puaca, *Searching for Scientific Womanpower*, University of North Carolina Press, 2014).

Efforts continued in the 1990s (ch. 5). Worth noting is the so-called NOT project (*naturvetenskap och teknik*), which introduced a one-year course in mathematics, physics and chemistry to make it possible for students to change educational track. Financial support for people aged 25–48 who wanted to become an engineer was offered as well. The recruitment did increase, but at what cost? Lövheim successfully analyses the problems of steering so many students in the direction of science and mathematics – in fact, even the statistics used to legitimize such actions have been questioned. In Norway, too, education in science and technology was reckoned to be important for the

rebuilding of the country in the post-war years. However, I am surprised to learn the extent to which actions were taken in Sweden. In Lövheim's analysis, the country's cultural self-esteem constitute part of the context. International trends and transnational studies on students' achievements supported such efforts. Nevertheless, the power exertion demonstrated in this book has been criticized, and rightfully so. The main problem, as Lövheim convincingly argues, is the lack of historicity at the political level. The current book adds to the historical awareness of recruitment policy within science and technology in Sweden, and should be read by politicians as well as by historians and science educators.

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