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# Restored Scientific Authority and Orchestrated Deliberation: A Review of the Current Swedish S&T Policies

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## A Major Shift of Course

Not so terribly long ago, Sweden earned a reputation as a pioneer of a socially responsible science policy. When automation radically reshaped the production and working conditions of the engineering industry in the 1960s and 1970s, there was, notwithstanding long-standing political struggles, a wider societal concern for collaborative modes of governance. Supplementing comprehensive corporativist labour market agreements, there arose a wealth of educational and participatory practices assuring workers and a wider set of stakeholders a say on the technoscientific transformation of Swedish society. The very first computer legislation addressing issues of private integrity and electronic surveillance was launched, as well as pro-active initiatives concerned with medical risks linked to displays or 'the domestic digital divide' threatening to leave certain computer illiterate strata lagging behind (Glimell 1989). And soon the keen interest for the work site, nourished a growing interest also for the (outer) environment.

The account of the current state of things outlined in this brief, provides a sharp contrast to this retrospect. Drawing on observations from three case studies (on national science policy generally; the nuclear waste management issue; and a recent public education initiative in biotechnology respectively), it reports how a resurgence of commitment to scientific autonomy has led to the national decline of a politics of socially responsible science. If showcasing anything, Sweden appears no longer home to industrial democracy, but rather a re-purified techno-scientific authority in government: A re-purified authority sitting uncomfortably with the current European level concerns with the public accountability of science and the democratization of expertise (Elam and Glimell 2004).

At first sight, questioning this pattern of development, are the commitments to public participation in the area of nuclear waste management in Sweden. Through fostering educational and deliberative procedures, the involved institutions have succedded in breaking a former stalemate caused by public protest and rejection of waste disposal plans. On closer inspection, however, even in this field only certain aspects of the process have been open for public participation in order to win support for a ready-made technical concept; deliberation is piecemeal and constrained at most, still under the reign of corporatist or technocratic modes of governance (Sundqvist 2004).

## The Remodelling of an Old Mode of Knowledge Production

Gaining momentum in the late 1960s, the idea of something resembling a 'new mode of knowledge production' was penetrating Swedish research policy. Officially, such an idea was to remain valid and cherished until fairly recently, although, already at the beginning of the 1980s it was encountering criticism. This was levelled from two camps: from some within industry, and certain parties within the scientific establishment; but with different motives and complaints towards the growth of 'Swedish Bernalism'.

By the beginning of the 1990s the fate of the piecemeal social engineering associated with so-called sector research policy was sealed through two turns of events. The wider context of change was captured by a manifesto ('A New Start for Sweden') delivered by the newly-installed bourgeois government. The new prime minister Carl Bildt promised to abolish the

so-called wage-earner funds, a controversial redistribution reform. The funds were now to be reallocated, and linked to a fresh vision of the future Swedish society. As the kick-off capital for 'strategic research' initiatives in the selected fields of ICT, new materials science and biotechnology, they would breed a new commitment to advanced knowledge, high-level expertise, entrepreneurship and risk-taking. Universities as well as individual researchers were to be encouraged to enter into new interdisciplinary and trans-institutional arrangements. (Benner 2000:99).

In this north-western European version of the emerging knowledge society, the traditional autonomy of both science and scientists in society was to be reimagined. Seats of learning were to be re-envisioned as potential hubs of regional and national development. Serving that purpose, the established distinction between basic and applied research, a pillar for policies during previous decades, was to be gradually superseded. Free and original research could now be both basic and applied, amalgamated in the hybrid construct of 'strategic research', wherein the highest of academic standards could be pursued in programmes dedicated to long-term economic performance. The Swedish republic of science was to be enticed out of its academic closet, to forget about its old quarrel with Bernalism, and to indulge in a passionate embrace with the Schumpeterian entrepreneur. (Elam & Glimell 2004:6-7)

Institutionalizing this, several new research foundations came into operation in 1994. Instead of a society being science-led from the outside, a new breed of strategic scientists interacting closely with others and with industrialists in particular was to build the world-class research environments delivering the knowledge society. On top of an already substantial initial funding, the new foundations were greatly helped by two favourable circumstances. Having been constructed juridicially with no ties to civil sector red tape or orthodoxy, a fair amount of their assets were invested in the stock exchange which at the time was rocketing. Secondly, they gained an extra significance when soon the social democrats back in power were forced into cutbacks in public spending, including the "regular" governmental funding of research.

However, hardly had the establishment of the foundations put a stop to one controversy, before they gave birth to another one. If not before, the years now following, very clearly demonstrated that the interests having so fiercely taken sides against the former sector research policy, in fact were very different sorts. Being brewed was now another outbreak of conflict, developing into "Sweden's own internal Science War". To be struggling were two versions of how to defend the autonomy and exclusivity of science under growing global competition.

On the one side there was a politics rooted in a reassertion of orthodox patterns of scientific authority. In certain circles, the recurrent argument was made that the governance of science in Swedish society assumed an optimal form during the mid 1950s. A special relationship and style of dialogue between scientists and politicians had then evolved, presented as of having been of great significance for the consolidation of Sweden as a leading industrial nation. A key figure here was Tage Erlander (the social democratic Prime Minister 1946-69), by asserting that powers of national self-determination during eras of rapid scientific and technological change emanates out of scientific authority properly understood and respected. Evoking the Erlander tradition is then arguing for a reaffirmation of the indispensable authority of basic research. There is also a similar particular technological framing of the situation; only that instead of atomic energy and industrial automation, it is now the combined threats and promises of biotechnology and ICT which are claimed to call for uncorrupted scientific management. (Elam&Glimell 2004:11-15; Kasemo 1997; Nybom 2000)

On the other side was the policy now materialising in the wake of the science foundations. Although sharing the same concern for 'the knowledge nation', these two 'layers' of Swedish science policy (Edqvist 2002) clashed. According to the Erlander convictions, science can never be externally governed as fortune favours only the prepared researcher. Instead of planning for breakthroughs in science from the outside, the way to prepare is through a broad commitment in support of self-governing basic research. 'Strategic research' challenged this fundamental view; so when the persistent threat of politicization of science at last had been wiped off, the recent allies in accomplishing that, now themselves for neo-classicists stood out as the new ugly threat of enforced outside control.

But the warriors also needed their theatre of war. It was offered by, or rather cunningly created by, a government commission set up in 1997. Certain spokesmen of an enlarged scientific authority launched a report, *Research 2000*. It instantly came to be read as a political manifesto. Recalling the spirit of Polanyi and other liberal research policy advocates, the investigators declared the urgent need for a radical shift in policy. Reinstall, such was their clear-cut message, free basic research as 'the gold standard' in relation to which all other efforts must be gauged. To counterbalance the ample Foundation funding, government funding to sector research was proposed to be put at the disposal of a new confederation of researcher-controlled science councils. The traditional arrangements for supporting free basic research should extend their institutional coverage further downstream, and interface directly with applied and industrial research, with a minimum of intermediate interference. (Elam & Glimell:20-25)

*Research 2000*, did meet with stern opposition. Notwithstanding that, the report set in motion a reform process reinstalling free basic research at the centre of Swedish research policy. A new commission set up to consider its proposals and add some political common sense to its blunt polemics, adopted substantial parts of its argumentation. As the outcome of the two Commissions, the Swedish Research Council came into existence on the 1st of January 2001. Although not exactly embracing the notion of two purified worlds of science-controlled research and non-science controlled research, with no hybrids in-between, the forms of practices having evolved around the new Council, do not support a neo-liberal research policy so much as a neo-*classic* liberal research policy; mirroring the mission to relaunch collective scientific opinion as a concentrated source of social power. If neo-liberal research policy at the beginning of the 1990s sought to lever Swedish science out into society; neo-classic liberal research policy after 1998, then, has aimed to place the socialization of science in knowledge society under a firm scientific control.

## Learning the Hard Way: Negotiating Nuclear Robustness

During the 1970s the public assessment of nuclear power changed dramatically in most Western nations, from being a technical project with uncontested public support it became thoroughly politicised and criticised. For Sweden this period of increasing activity and antagonism included legislation, a heated public debate and a national referendum (in 1980). Soon, a strong controversy came to the fore, a clash between a narrow technical framing and a new broader political definition. For the first time in Sweden's modern history a high-tech, scientifically-based endeavour became severely challenged by both certain politicians and eloquent spokesmen for the general public.

In the spring of 1980, after the national referendum, people seemed extremely tired of debating energy, nuclear power and nuclear waste issues. The campaign preceding the referendum had evolved into a giant learning process for Swedish citizens. Many people participated in study circles, initiated by the political parties or the People's Campaign Against Nuclear Power. But many politicians had burned their fingers. Hence, in 1979, the bourgeois Government resigned due to internal conflicts on how to proceed. To escape further heated political discussions, a new act was passed by the Parliament in 1984, still in force, stipulating that the owners of the reactors are held responsible for a programme including all research and development required to safely handle and finally dispose of radioactive waste. It required that the programme should be submitted for review every third year to the relevant public authorities. In practice, this act delegated the responsibility of the waste programme to the nuclear industry.

A joint company, SKB (the Sw. nuclear fuel and waste management company). was started, with the commitment of investigating suitable sites for a repository of high-level nuclear waste. It initiated a programme of drillings in several sites. Defined as simply research, the drillings were conducted without dialogue with or even much information to local residents. This strategy turned almost into a disaster for the nuclear industry; in several places, the protests became intense.

Ever since then, issues of stakeholder support and public participation have remained crucial though cumbersome for the establishment of a socially robust solution to the controversial issue of nuclear waste management. To an extent probably unparalleled until the recent public mistrust drama of GMOs, one here had to learn lessons the hard way.

To come to terms with the agonistic patterns propagating, a new strategy built on feasibility studies was launched. Such studies by SKB were defined as a new format for public engagement, including "…investigations in different fields: bedrock, land and environment, transportation and societal impact, as well as compilations of previously made studies and existing knowledge." Gradually new forms and skills of governance were elaborated. In particular in the cases where the involved municipalities have made sincere efforts to create spaces of discussion between experts, politicians and the citizens without taking a stand in advance, these forms have taken on certain deliberative qualities. Still, as being exercised by SKB, the overall strategy has maintained a clear divide between experts and lay people, bridging the gap caused by public resistance through injecting bands of educational elements onto a core of corporatist governance.

Surviving agonistic expression seem not to have altered this. A softening of the solid demarcation between the unflinching hegemony of technical expertise and the pragmatic flexibility or negotiability when it comes to formats of public engagement with non-technical issues, is still lacking. That is not to deny that progress has been made. By and large – and so far, as no decisions on where to actually site the nuclear waste for final disposal as of yet have been made – the constraints of the process have apparently not impeded its appeal. According to opinion polls, SKB has indeed managed to get a high acceptance for a ready-made technical concept, by innovatively allocating its (substantial) information budget to interfoliate feasibility studies with educational and deliberate features. However, far from having discovered anything like a bedrock for harmonious governance, the destructive dichotomy between "absolutely safe disposal" and "worst sites" already haunting decades of nuclear waste discussion, continues to produce false expectations and fragile interfaces between involved parties.

Governance Avant-g(u)ardism the Swedish Way: Science Regulating Itself

While in 1990 reviewing a bill then just announced, a prominant STS scholar outlined a model of research policy as a triangle drama between Government, Industry and Academia. He concluded by predicting that the new twist in the triangle drama during the 1990s might be that, as Swedish science furthers its hybridization with industry, it successively re-purifies its authority in government (Elzinga 1990). There is, according to our account, convincing proof that this is what actually has occurred; to an extent that has radically altered the international bearings of the country. Thus, while the emergent ethical, legal and social aspects of innovative practice within the fields of information-, bio- and nanotechnology today typically tend to hang precariously in-between the worlds of science and politics, in Sweden they are at present instead being treated as firstly new challenges for science in the management of its own self-regulation.

As "..the management of..' in the last sentence implies, self-regulation and re-produced authority sometimes today require pro-active strategies and political innovativeness outside the protected walls of an Ivory Tower. Illustrating this, the new federated Swedish Research Council swiftly took command of the ethical regulation of stem-cell research (Persson and Welin 2001).

Immediately thereafter, the Social Democratic government displayed its confidence in the scientific community to take the lead in its own regulation. Explicitly referring to the public instrument of *Folkbildning*, deeply associated with the democratic development of modern Sweden, it allocated a specific budget to the Research Council for co-ordinating a broad programme to strengthen public knowledge and stimulate debate on 'the New Biology'. Judging by both how this programme so far has been framed and manned, and of which particular parts of the Folkbildning tradition one has chosen to revive, it falls vulnerable to an ill-concealed scientist distrust in the ability of the public to think through biotechnology for themselves. Thus, rather than mainly expanding public knowledge about contemporary science, this New Biology translation of Folkbildning seems to be concerned with correcting it, and to win public greater acceptance of scientific achievements. (Elam 2004:3-10)

Testifying to its readiness to engage in inventions of governance sustaining Science's self-regulation, the Council elaborated the mentioned programme by commissioning two film documentaries broadcasted on Swedish public service television (SVT). After having prepared some rough outlines of a film centering on the new ethical dilemmas and choices already made visible by the application of biotechnology in society, one approached a well-known former STV foreign correspondent. The journalist was to be staged as a public envoy sent out on a 'voyage of discovery' into a brand new territory; seeking recognition as the Swedish people's man on the 'hidden continent' of global biotechnology.

In the film, *Life at Stake*, the practices of folkbildning were transformed into a series of off-screen and on-screen meetings between the film team and a fairly dispersed group of scientists, skilfully blended with several victim testimonies representing the ancient connection 'images of pain as the touchstone of truth". By consolidating a new independant scientific authority in society in the way it brings public sentiment into alignment with such authority, the film did not only promote hope and confidence in science in general. It also as an underlying theme throughout its voyage addressed the question "Who is standing on the

side of Reason and allied with the true promise of biotechnology, and who is to be seen as constituting a corrupting outside influence? By setting himself the task of helping the viewers to distinguish between the two camps, the erstwhile foreign correspondent served in advocacy for the superiority of autonomous scientific decision-making in society. (for more details, Elam 2004: 17-30)

This is only one of many examples of how the current political invention and intervention in the governance of science is being pursued to the advantage of those scientists and research organizations most closely involved in the field. To a higher degree than elsewhere, Swedish scientists are being entrusted with the task of standing guard over the ethical, political and commercial dimensions of their own research practices. In a wider perspective, this fits into a pattern of re-envisaging Sweden as the seat of boundless scientific initiative, rather than of progressive industrial democracy. Building upon but at the same time also going beyond neo-liberalism's vision of Swedish knowledge society as the republic of science enlarged, neo-classic liberal research policy has aimed, and has largely succeeded, at placing this republic in firm control of its own enlargement.

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