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Reflection note

Scandinavian IS Research

Origins, evolution, and future¹

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1 Introductory remarks

I am an early and long-term insider, and a long-term outsider to Scandinavian IS research. I hope I can still offer a veracious assessment of the status of the field given my intense contacts and wide social networks in the Nordic scene² as noted below.

I grew up in Finland where I studied by accident computer science in University of Jyväskylä between 1973 and 1978 and received a master’s degree with a major in computer science and management (mostly accounting). I started my doctoral studies (at that time what was called assistantship) during 1978. I received my PhD in Computer science in 1986 though the thesis was in information systems development (Lyytinen, 1986). My intellectual roots and genealogy are however pretty complicated: My PhD mentor was a German who lived in the U.S. (Heinz Klein). The thesis analyzes systems development as social action and is rooted in philosophical arguments of Habermas theory of communicative action. Most similar of the Nordic theses at that time was the thesis of Pelle Ehn (1988) in Umea a few years later. One example of the uniqueness of the Scandinavian tradition is that such doctoral theses would not have been written anywhere else in the world. Only some locations in the U.K., such as LSE, would have offered a conducive climate for similar free-spirited arguments and intellectual explorations. This style served me well as it made me a bit different from others as reflected in my early publications, which I wrote mainly with Göran Goldkuhl and Heinz Klein (Goldkuhl & Lyytinen, 1982; Klein & Lyytinen, 1985; Lyytinen & Klein, 1985; Lyytinen, 1985).
I enjoyed a relatively fast career advancement in Finland and was luckily appointed already in 1987 to a professorship at my alma mater in Jyväskylä. I held the position until I moved to the U.S. in 2001—overall 14 years as a professor and over 20 years as an insider to the Nordic community. During my Scandinavian years I held positions in Stockholm (KTH) between 1981-1982 and in Copenhagen Business School in 1990. I attended/visited many of the other leading universities in varying official roles such as thesis opponent during that period including the universities in Aalborg, Aarhus, NTNU, Oslo, Gothenburg, Stockholm School of Economics, among others. Over the years, I grew to be a full citizen of the Nordic academic community and felt that I was a true member of it. For good reasons, I am proud of its tradition and achievements as it deeply shaped my scholarly journey and created my scholarly identity.

My relationship with the Scandinavian community started during the same year when I started my doctoral studies. I was invited to the first conference on ‘Systemeering’ in Tampere in 1978 which was organized by two Finnish professors Pertti Järvinen and Pentti Kerola (Lyytinen, 2002; Nurminen, 2003). The meeting was organized on a shoestring budget in Tampere to minimize traveling costs within Finland. But to give a Scandinavian flavor to the event it was also attended by Mats Lundeberg and Göran Goldkuhl from Stockholm University. The event was attended by approximately 20 people and we attended all the sessions together. The tradition was common until the mid 80s when the attendance grew to over 50 people and the focus moved to small group interactions and discussions. The first proceedings were published by the Finnish Data Processing Society. The next ones were published by the local organizing universities of Turku, Jyvaskyla, Stockholm, Bergen and so on. I attended most IRIS seminars till the early 1990s except 1983 in Bergen. I was one of the main organizers for the 3rd one in Saarijärvi in 1980. During the 1980s, I saw how the seminar grew and flourished while new research groups from different universities joined the seminar. This lead soon to the creation of the Scandinavian Journal of Information Systems (Müller et al., 2023). The journal was conceived primarily by Lars Mathiassen and his group in Aalborg in the late 1980s and early 1990s where it was also published until the IRIS society took over its management. The plan and idea to start the journal were initially discussed and developed between Lars and myself in one ICIS Reception at the Rainbow Room in Rockefeller Center in NYC.

After moving to the U.S. in the early 2000s, I have attended IRIS 3 times—once in Denmark and twice in Finland. The timing of the event is not optimal as it coincides with AoM meetings and/or AMCIS meetings in the North America. These events, however, have been the highlights of those summers as I have again felt the unique atmosphere and relaxed intellectual exercise that characterizes these events. Therefore,
I am delighted to have the chance to reflect further on the Scandinavian tradition by responding to questions raised by the editors of the status and future of the Scandinavian research tradition. Before addressing those questions, it is important to explain the setting and context that created the ‘Scandinavian school.’

2 Making of the Scandinavian school. Macro factors and micro processes

There are multiple macro level factors that shaped the unique setting and experience of Scandinavian IS research—especially between 1970 and 2000. Geographically, Scandinavia is an odd bird—its landmass is split, but it has been connected through waterways over millennia while it has one of the lowest density of populations. This explains the unique relationship of Scandinavians to nature. By its population, Scandinavia would be around the 60th biggest country in the world c.a. 29 million—about twice the size of Netherlands. Culturally, it has largely a shared language—‘skandinaviska’ which only Norwegians can speak fluently. Finns are here an oddity though through formal education they have traditionally read Swedish relatively fluently while only some also speak it. This feature has disappeared over the last 20-30 years when English has taken its role as lingua Franca in Scandinavia as more and more PhD students and faculty are of non-Scandinavian origins. Because of this cultural and linguistic heritage, Scandinavia shares largely similar cultural beliefs, memes, and lifestyles and a similar economic and political environment. All countries are stable parliamentary democracies, multiparty systems, and void of high ethnic, or political tensions. The region has not experienced internal wars for the last 200 years though the earlier 500 years were a constant war—especially between Sweden and Denmark.

By the 1970s, all Scandinavian countries were highly advanced industrial states and still are some of the most affluent and open societies of the world. Their joint GDP of 1.6 trillion USD places Scandinavia 19th globally as an economic region. Since the 1950s, the countries have run common welfare states, allowed free movement of labor, and engaged in cultural and scientific collaboration through the Nordic Council (Helsinki Treaty, 1962). This setting created beneficial conditions for early computerization and industrial developments in Scandinavia since the 1960s as reflected in the early research on computerization leading to several Scandinavian innovations such as theories of “infology” (Langefors, 1966) and the development of the object oriented Simula programming language (Dahl & Nygaard, 1966).

The macro setting enabling extensive computerization was shaped by several micro-level conditions which have contributed to a strengthened collaboration in infor-
mation systems research. Scandinavian societies have experienced at least 100 years of intense informal exchange across multiple scientific, cultural, and other NGO fields enabled by common agreements and policies such as those enforced by the Nordic Council. Several disciplinary fields including philosophy, sociology, economics, and physics run common journals and related societies which are widely known and respected. Thus, models to create a common form of collaboration were close and could be easily copied to the IS field.

The setting in the early 1970s to engage in research around computerization of organizations and work was relatively unique globally in Scandinavia. All societies were advanced economically and technically and were involved in fast and advanced computerization of administrative processes in industry and commerce (especially in financial services) but also in public administration. The Nordic societies possessed one of the most highly educated and highly paid work forces. The industrial relationships were at the same time stable, created by regulated labor relations where labor unions had an active voice but also a tradition to cooperate with employers (unlike the UK or the US). This enabled experimentation and initiated studies of using computers in ways that promoted not only efficiency but also work satisfaction and novel, autonomous ways of organizing and controlling work processes. Due to the size of the societies, social distances were relatively small and the threshold for industry collaborations across all management levels was low, enabling joint research activity. This promoted pluralistic ways of conducting research including research with labor unions and action research (Bjørn-Andersen & Clemmensen, 2017; Ehn, 1988).

We can thus appreciate how the macro environment of the 1970s and the confluence of micro-conditions created the unique setting for conducting IS research in Scandinavia—thereafter often coined as ‘Scandinavian school’. Müller et al. (2023) summarize well the different readings of this tradition and how it positions the scholar, the study subject, the study goals, and the method in novel and controversial relationships, which Boland (1998) called ironical. Müller at al. characterize the relationships as “an increasing focus on the human and social aspects of IS, for example, technology-enabled organizational change and innovation, and the impact of IS on work practices, individual well-being, and societal development” (p. 2-3) and its “heritage of use- and user-oriented research (Margunn Aanestad)” rooted in a tradition of “emancipatory and egalitarian approaches to (social) science” (p. 7-8). Finally, to quote Marx, IS scholars in other parts of the globe “have only interpreted the world, in various ways,” but in Scandinavia, for IS scholars “the point, however, is to change it.”

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3 Scandinavian school. Impact, relevance and future

Given this setting and the institutions and traditions that the Scandinavian community has created and sustained over the last half century, we can ask how much of this setting and the approaches it fostered still matter and to what extent they continue to offer guidance to the IS research in Scandinavia and beyond. I will provide short answers to each of the questions that the editors have asked me to address.

How has the Scandinavian research tradition impacted the IS discipline?

There are different ways to answer this question. For sure, the tradition has strongly influenced IS research in Scandinavia which at the same time forms an important and sizeable part of the global IS community. Indeed, it has been able to build its own identity, visibility, and institutions that matter as part of the global community. In terms of topics, however, the types of issues of high importance in the 1970s and 1980s for the IS research have either declined in importance, or they have been successfully addressed and become non-issues. For example, systems analysis methods, systems analysis and design, collaboration and computer-supported work, or human-computer interaction as studied and analyzed 20 or 30 years ago have significantly diminished in importance or vanished. The focus on internal work processes and organization so important for Scandinavian scholars has been increasingly replaced with consumer focus and mass scale use of commercial applications and processes. At the same time no new themes or topics that can be clearly attributed to ‘Scandinavian school’ have emerged. If such a trend continues unabated, it will become increasingly challenging to sustain the Scandinavian community as a unique contributor in the future. Finally, there have been contributions to the global IS community by several scholars of Scandinavian origin, who have contributed to the field during their stay in Scandinavia and later in other parts of the world. I am one member of this relatively large group of Scandinavian scholarly diaspora. In this regard, we can also say that Scandinavian contributions have been significant in the global IS community. Several IS scholars of Scandinavian origin have contributed to the field’s intellectual growth as scholars, editors, conference organizers, or in many other roles in AIS.

What lessons can we learn from the Scandinavian research tradition in finding a balance between practical relevance and addressing knowledge gaps in conducting research?
The best way to characterize Scandinavian research is to see it through tensions and the paradoxes it creates. I would characterize these tensions with the following statements: anything goes as long as you argue well and demonstrate the value in practice; always engage in a dialogue in all research undertakings with subjects, other authors, and the community; ethics and emancipation matter no matter which position of ethics you subscribe to; focus on both the social and technical and search for emergent properties and relationships; knowledge is always contextual and pragmatic—therefore approach it with doubt and openness; strive for strong identity in your subject area and the results. Another way of putting what these lessons teach us is that the balance between the practical and the theoretical will be established if we honor these principles. They will not emerge from disciplinary gap spotting and naval gazing by reading what others have written about some topic in the top-level journal.

How can the Scandinavian community contribute to the future direction of the IS field?

As I noted, many of the unique conditions that made Scandinavia a unique place to examine and develop information systems have over the years disappeared or been strongly weakened. At a macro level, the changes in Nordic countries have been relatively small in economy, geography and culture, while the guiding institutions and the political system have changed radically—mostly in ways that weaken possibilities for similar types of cooperation and research so common 30 or 40 years ago. At the micro level, modes of cooperation at Nordic level have decreased, and they are viewed to my understanding to be less important. For example, we can run a thought experiment: would the community be willing to invest and put together a journal like SJIS now and what it would take to accomplish such a task? We can also point out that the conditions for the study of computers and their use in organizational settings, or rather now in all facets of human enterprise are quite different than 30 years ago. We can shortly narrate the shift in these conditions by the following movements:

- internal work organization to external/hybrid/pervasive computer use;
- systems as ‘boxes’ to digital infrastructure and services (often global);
- users and their local needs to consumers and other stakeholders and their latent needs (which can be manipulated);
- methods for design to new tools and practices driven by global technological innovation (e.g., microservices, large language models, digital twins, blockchain just to name a few).
In the new setting, it is difficult to see much need for the well-established Scandinavian IS topics like participatory design, innovative work organizations, systematic method development, theories of different types of IS, and so on.

At the same time, I see in this radical shift new opportunities to strengthen the Scandinavian IS community. Scandinavian scholars have traditionally been good and innovative conceptual thinkers and they have advanced many theoretical positions still in use in the field. In the era of “digital x” (Baiyere et al., 2023), the need for novel ideas and theories of digital are not diminishing but increasing. The challenges are also large and experienced across many fields of management and organization studies. Also, computer science scholars need to take the impacts of computing on organizations and society more seriously as the uncertainty of their effects increases. Uncertainty and ambiguity of how to organize and what the technologies can do or will not do for human enterprises are overall increasing. As we note (Baiyere et al., 2022), the era of pervasive digital technology calls for a new kind of extensive and large-scale experimentation not seen since the dawn of the Industrial Revolution. This gives us a fresh opportunity: Scandinavian scholars share a strong tradition for action research and field studies that follow phenomena and design them through learning by doing. Such skills and capabilities to scale such efforts are now more valuable than ever. Scandinavian societies also operate one of the most advanced and well-developed digital infrastructures and well-functioning public administrations with extensive experience in public-private partnerships. This offers ample opportunities to study the design and evolution of new kinds of digital infrastructures and how to design, develop, and leverage such infrastructures to serve different, often unserved and silenced communities and stakeholders (Hanseth & Lyytinen, 2010; Lyytinen et al., 2017). Similarly, Scandinavian scholars have the advantage of a long tradition of work systems studies in manifold settings. Such studies will become the next frontier in the study of artificial intelligence (AI). As we note in (Baiyere et al., 2022), AI systems will become the frontier of innovation in work systems design as AI technologies need to be integrated as organic parts into socio-technical works systems in ways that improve not only the efficiency of some elements of work, but also the overall effectiveness of the work systems including security, reliability, job satisfaction, and the autonomy of the workers. Implementing scalable and useful AI systems in different work settings will become the next grand challenge of organizing and being nimble and well-organized societies Scandinavian countries and IS scholars should have a decisive edge in contributing to such processes and outcomes.
Notes

1. I would like to thank the editors of the SJIS for offering me this opportunity for reflection on Scandinavian research and Esko Penttinen for organizing IRIS and inviting me to give a keynote at the seminar.

2. The correct word is ‘Nordic’ rather than ‘Scandinavian’ but I use ‘Scandinavian’ here for consistency with the name of the journal. In the text, I will use the terms interchangeably.

3. The first seven conferences were titled as Scandinavian seminars on ‘systemeering,’ a term that Langefors coined in late the 70s but which was never accepted. The term emphasized holistic design of information systems to support organizational work instead of focusing just on software and its engineering (called datalogy). The name was later changed to Information systems Research In Scandinavia (IRIS) to reflect the broader concerns of the community.

Bibliography


