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On Histories of Scandinavian User-Centred Design

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The concept of ‘Scandinavian design’ has had a strong presence in design history, establishing the Nordic countries’ international reputation for designing sensible and elegant everyday goods since the mid-20th century (Halén and Wickman 2003; Fiell et al. 2017). However, there is another kind of ‘Scandinavian design’ that holds an equally strong conceptual presence in much of contemporary design practice and design research, while being practically invisible in design history. This latter ‘Scandinavian design tradition’ refers to a way of designing, rather than to a certain aesthetic. This collaborative design approach – often with political and democratic aims – emerged in the Nordic countries around the 1970s, bringing designers and non-designers together in the process of designing (Simonsen and Robertson 2013). While ideas and aesthetics of ‘Scandinavian design’ have been critically re-visited in Nordic design history (Fallan 2012), the histories of the ‘Scandinavian design tradition’ as referred to in user-centred and participatory design practices remain largely untold.

Considering the substantial impact that Scandinavian user-centred design continues to have in contemporary collaborative design practices, the absence of attention to its origins in design history is noteworthy. Why is it that user-centred design – with rare exceptions – has not been included in design history? To be fair, this is not only an issue for Nordic design history (Auricchio and Göransdotter 2021). There may of course be several interlinked explanations for these design historical gaps. Let us here consider two probable reasons: Design history has often tended to favour outlooks relating to the meanings, impacts and aesthetics of designed things, rather than how designing itself has changed in terms of methods or meanings. Another possible – and reasonable – explanation could be linked to a lack of design historical source materials. Where would one find archives and publications from which to draw forth histories that go beyond what changed in terms of design outcomes, and that speak to why and how collaborative design methods were actively sought and developed? The efforts made to re-think, and re-shape, what designing could be, through seeking methods for collaborative design have left few written traces explicitly addressing this as design methodology development. In the following, video recordings of public talks and interviews with design practitioners active in Sweden in the 1960s through 1980s form a starting point in the search for histories of Scandinavian designing.

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Bringing ‘users’ into design

Since its emergence some 150 years ago, design has continued to make change through materialising things that alter the ways we behave, think and engage with the world. Simultaneously, how designing itself is done has changed, as have expectations on where design takes place and what its results can be (Valtonen 2020). In Swedish design history, attention to the turn towards user-centred design practices in the 1970s has mainly focused on design results. From the perspectives of ergonomic, inclusive and safety-oriented design (Pagold 2006; Brunnström 2019; Wickman 2018), some of the products designed – coffee pots, hand tools, cutlery, baby carriers – have been included in design historical overviews. Less visible, however, is the radical expansion of design approaches and methods that also re-shaped ideas of designing in terms of the roles and engagements of designers and users.

In Scandinavia of the late 1960s and early 1970s, design explorations sought new ways for designers to engage with non-designers in processes of designing. The search for new methods supporting collaborations between designers and users did of course not spring forth only in the Nordic countries. In the formation of industrial design in the mid-20th-century United States, for example, designers’ attention was directed towards people both in their roles as ‘consumers’ with the intent of addressing needs and wants to design attractive products for increasing sales (Loewy 1951/2002) as well as in their capacities as ‘users’ from ergonomic, social and cognitive perspectives (Dreyfuss 1955/1974). In European contexts of design education (Archer 1976/1979; Maldonado 1958), questions of how designers could or should engage with users of products and environments were an integral part of aims to redesign designing itself as a systematic and methods-based practice, rather than one based on the individual designer’s ideas and aesthetic competencies.

The issue of if and how designers should collaborate with experts from other fields as well as with users became highly present in the UK-based design methods movement. With references to the increasing complexity of design situations, the design methods movement sought to understand and describe ‘the new design methods that have appeared in response to a worldwide dissatisfaction with traditional procedures’ (Jones 1970/1992, xviii). This included finding methods for how designers could work together with non-designers. Indeed, ‘Design Participation’ was the theme for one of the early conferences, held in 1971 (Cross 1972), in the context of developing systematic design methods and design research. The conference presenters debated what it might mean for designers if users were to be invited into processes of designing. Conference coordinator Nigel Cross pointed to the probable blurring of roles between designers and laymen as the design process opened up for the inclusion of ‘ordinary people’:

Many designers view the prospect of user participation in design with some concern, while most laymen probably still see design processes as secretive and mystical. To explore some of the possibilities and problems, the Design Research Society sponsored an international conference on ‘Design Participation’, in September 1971, which brought together a wide range of people whose interests overlap in this area. The result of the changes underway and reported at the conference may well be to blur the current distinctions between ‘designer’ and ‘user’: designing may not always continue to be the exclusive prerogative of professionals.

(Cross 1972, 6)
In the Nordic countries, attention towards such changes in relationships between designers and users, and the associated methodological challenges, can be found already some thirty years earlier. Tensions between designers’ intent and users’ active input (or observed behaviour) were negotiated, practiced and discussed in Sweden’s early 1940s housing reform initiatives (Göransdotter 1999). How people actually lived, and how they engaged with things, furniture and everyday environments could, and should, influence the design of these: but how, and how much? A systematic search for new ways of designing everyday tools and behaviours – from ergonomic kitchen knives to equal parenting practices – together with expert users was present already in the domestic work rationalisation movement propelled by socio-political and feminist aims in the 1940s and 1950s (Göransdotter and Redström 2018). These methodological explorations later came to directly influence methods development in Swedish user-centred design in the 1970s, as to how user studies were set up, documented and approached in design situations that moved beyond what traditional or established design methods at the time could support (Stott 2021). Let us, therefore, take a closer look at contexts of design education and industrial design practice in the late 1960s, from a perspective of changes sought in how, for what and for whom design was done.

**Education and frustration**

Industrial design was a young field in Sweden in the 1960s. Some industrial design offices working on commission for various companies had been set up, with inspiration from American industrial designers like Raymond Loewy or Henry Dreyfuss (Zetterlund 2002; Brunnström 2004). Other industrial designers worked in-house at companies such as porcelain manufacturer Gustafsberg and power tool producer Atlas Copco (Brunnström 2004). However, while industrial design was a budding professional field, no full-fledged industrial design education existed in Sweden at this time. Students interested in industrial design during the 1960s would enrol in the metal course at the craft-oriented school Konstfack in Stockholm, as this also included an orientation towards form-giving in relation to industrial production (industriell formgivning).

The design courses at Konstfack were directed towards teaching skills in crafts-based and artistic techniques (Wickman 1994). Solid foundations for working with form-giving in metal, wood and ceramics were taught, but no training was provided in handling new technologies and materials – such as plastics – nor in working with industrially oriented processes. Though ‘industrial formgiving’ was mentioned in the school’s promotional material for the metal course, it was headed by silversmith masters teaching their craft in a traditional way. Students entering the metal course to study the new and ‘largely unknown field’ of industrial design found the education lacking, as noted by designer Hans Erich who enrolled at Konstfack in 1962:

> [it was] not so much industrial design but more metal craft in general, and silver- and gold-smithing in particular [...] which initially made me feel duped, and a bit disappointed since I came there with the hope of learning to give form to industrially mass-produced objects of all kinds. Instead, I had to endure weeks, if not months, of standing in the workshop banging a hammer on various metals, mainly copper. It wasn’t at all what I had dreamt of and was very far removed from what I wanted to do.

(Erich 2008, 17.00)
Not until the late 1960s did Konstfack gradually begin to introduce specific industrial design strands, adding to existing courses. From 1967, students were offered an elective weekly session in industrial design (Wickman 1994). In the module, design challenges were situated in real-world contexts, introducing team-based work and collective discussions between students and teacher. The contrast between the industrial design sessions and the crafts-based artistic courses was apparent, and further fuelled a critical stance already expressed by several students towards educational frameworks and content. Many were frustrated with a design education seen as out-of-tune with changes in society as well as in the industrial design profession. Designer Maria Benktzon who studied in the textile course at Konstfack in the late 1960s, recalls:

We were assigned to do things that we did not find important. We were supposed to make jewelrery out of mink fur. When there were children with impairments who couldn’t eat [on their own] for example. When we saw that contrast – it was an eye-opener for us.

(Benktzon and Juhlin 2008, 06.56)

The frustration expressed by Konstfack students towards a design education perceived as out of date was not only a Swedish phenomenon. In the late 1960s, design students in Scandinavia made a joint cause of critiquing the traditional craft-oriented design educations and calling for other, more socially responsive, approaches to design that would make designers ‘more relevant to society’ (Robach 2010; Lie 2016). Design students coordinated efforts within the Scandinavian Design Students’ Association. The association ran a series of workshops across the Nordic countries with invited guest lecturers, to collectively explore new ways to go about designing. One such seminar was held in Stockholm during the summer of 1968, focusing on ‘People and the environment’ (Människa och miljö). Several industrial designers were invited to the seminar, but it was the lectures held by American-Austrian designer Victor Papanek that received the most attention both during and after the workshop weeks. In his later publication of Design for the Real World (1971), first published in Swedish as Miljön och miljonerna (1970), Papanek’s message was the same as during the Stockholm seminar: designers must take action on ‘design for need’ which meant addressing matters of sustainability and accessibility rather than designing for increased consumption in liaison with business and industry (Clarke 2021).

The Konstfack seminar in the summer of 1968 became a watershed moment in the views of design for many of the participants. A special issue of the design magazine Form (1968:10) reported on the workshop sessions and the work carried out, and especially highlighted the need for ‘designing for disability’2 as the most relevant area for designers to work within. This special issue of the journal included material that designers could use in study circles to better gain an understanding of the built environment and of disabled persons from an accessibility point of view. Maria Benktzon described how this seminar and its focus on design and accessibility for her ‘became the start of beginning to work in completely other areas’ engaging with work environment issues, ergonomics and in the ‘handicap field’ (Benktzon and Juhlin 2008, 6.56). During their final year of studies, as a direct result of wanting to explore more socially relevant areas of designing, Benktzon and co-student Britt-Marie Persson began working together with external partners in projects on designing environments for
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children with cerebral palsy, and eventually presented a joint degree project on therapeutic toys and training rooms for children with arm prostheses (Benktzon 2009). Benktzon later became one of several industrial designers actively researching and developing user-centred methodologies, establishing ‘inclusive design’ and ergonomics as prominent areas in Swedish industrial design practice.

The turn in Swedish industrial design towards user-centred approaches has been acknowledged in design history as one incorporating ergonomics, especially in contexts of ‘design for disability’ (Wickman 1994; Lindkvist 2003; Brunnström 2004). Some of the products developed in these contexts are regularly included in Swedish design history overviews, then often showcased as notable design objects, awarded prizes or showcased in museums: the SAS coffee pot (1987), the cutlery series for people with hand and arm impairments (1978) or the Gustafsberg bread knife with a slanted handle (1973) (Figure 11.1). The main attention in these historical accounts is placed on the products as examples of function-based, mass-produced design objects embodying a new aesthetic and a new ethos of designing for disabled persons. In these narratives, the development of new methods aimed to support designing for and with users is seldom given much focus. As the historical attention is directed towards specific objects, these tend to be portrayed as having inherent artistic qualities, where for example the cutlery for persons with reduced hand and grip functions can be described as ‘a work of art in plastic’ (Brunnström 2004, 317). The importance of these objects thus becomes expressly linked to their formal qualities, as they are ‘awarded design prizes and are exhibited in design museums around the world, not least because they, besides being ergonomically functional, have had a beautiful form’ (Brunnström 2004, 321).

Figure 11.1 A test model of the 1973 Gustafsberg bread knife in use. Photo provided by Maria Benktzon.
An aim for designers engaging with issues of accessibility was indeed to actively work with aesthetic considerations – visual and formal – to make aids and tools for disabled persons more attractive: ‘One of the reasons to work in this field was to make these things appealing to everyone, since these things looked horrific’ (Benktzon and Juhlin 2008, 28.00). At the core of the user-centred design that began to take shape in Sweden in the 1970s was a search for how to actually work as a designer when the starting point was not initially form or aesthetics. The ambition was not to disregard matters of form, but to shift the starting point of designing from aesthetics to foundational matters and meanings of use. As Maria Benktzon later stated:

It sometimes annoys me [...] that one during the 80s claimed that our generation was not interested in issues of aesthetics and that we had a one-eyed view on function. Aesthetics was the starting point, but we mastered that. Functional demands, on the other hand, we knew nothing about. That is why we threw ourselves over this subject.

(Benktzon quoted in Wickman 1994, 287)

An ambition was to design things that would not only support autonomy for disabled persons but also make products that would appeal to a broader range of consumers – thus also providing revenue for the producers. But the main issue was to figure out how to be able to conduct research and obtain knowledge that would be directly applicable in making design decisions. Initiatives among a young generation of industrial designers, already thoroughly trained in working with formal and material expression, thus became directed towards identifying new methods and processes of designing. How would one practice design if the starting point were to be the needs and conditions of the people who would be using products and environments?

Redirecting design practice

Many young designers entering the field of Swedish industrial design in the late 1960s and early 1970s were driven by an ambition to re-shape the industrial design profession. Designing, to them, ought to be about dealing with issues of real and crucial importance for industry and society alike and not a practice associated with superficial product styling and marketing. However, this did not mean that these designers shunned any commercial or industry connections. On the contrary: the ambition was to establish a new kind of relationship between designers and industry, where commercial and financial considerations were integrated with making substantial societal and work environment-related impact. Industrial designer Bengt Palmgren, a 1972 Konstfack design graduate, frames the Swedish context as one where industrial designers struggled to have the kind of impact they hoped for:

We must know, that industrial design was mainly unknown to industry and society. [...] In these days, in the 70s and 80s, nobody knew what we were talking about; we tried and tried to convince people to be able to do projects. [...] We wanted to do something more. [...] We wanted to do something that was good for people, we wanted to contribute to society, we wanted our profession to be used for something, that people could benefit from it. [...] Industrial design was at that time about visual appearance. [...] It was more or less only about physical
objects. Isolated objects – like in a museum, almost like a piece of art. [...] We came in late, and only in a restricted part of the process. We thought that was horrible. Everything was decided. Our hands were tied.

(Palmgren 2015, 03.23)

This frustration prompted the establishment of several small design offices in the late 1960s, gathering designers aiming for a societally and industrially more engaged industrial design practice. These were, among others, Ergonomidesign and Designgruppen – both started in 1969 – and A&E design, founded one year earlier, which all came to focus on exploring how to systematically include aspects of use, ergonomics and function in designing (Pagold 2006; Wickman 2018). The designers setting up these offices did so from a position of critiquing and wishing to change the professional practices of designers. Shifting towards new design practices included ambitions of altering the relations between designers and production industries, by introducing more extensive and strategic roles for designers earlier on in product development processes. This included arguing for the necessity of redirecting design practice towards engaging with use and users through seeking and developing new design research methods. Working in multidisciplinary collaborations, new methods were brought into designing with the ambition to gather information about and from people in their everyday life contexts. A substantial part of this work entailed figuring out how that even could, and should, be done. Allotting time and money for designers to engage in extensive explorations and user studies was not something that companies commissioning designers in product development work were interested in. A crucial question was therefore how to find funding for the design methodological development work needed?

Researching methods

Much of the development of user-centred design methods in the 1970s was made possible through funding in the form of research grants, in combination with new legislation (Benktzon 2009; Palmgren 2015). The late 1960s and early 1970s was a period when various state-funded bodies were set up to support research. New legislation in the areas of work environment and accessibility and autonomy for disabled people led to an intensified work with supporting research projects in these areas. For designers, this meant that the Swedish Center for Working Life (Arbetslivsinstitutet), the Swedish Handicap Institute (Handikappinstitutet) and Swedish Planning and Rationalization Institute of the Health and Social Sciences (SPRI, Sjukvårdens och Socialvårdens Planerings-och Rationaliseringsinstitut) came to provide project funding for research into areas important for the formation of user-centred designing. This funding gave unprecedented possibilities for extensive research and prototyping of ergonomic and user-oriented methodologies in design work that resonated with designers’ ideas of expanding design practice, compared to what was possible in commercially commissioned projects:

What also was new, totally new in this area, was that design research projects that we actually carried out was funded by official authorities. There were not many, but there was actually a few. [...] So we actually had money to do something which gave us suddenly a totally new freedom that we hadn’t had. As consultants
we were restricted to do what the industry told us to do. But if we had our own money, we could actually start research projects and discover things that we couldn’t do otherwise. And what also happened was that these research results could be offered to the industry and we could by that get a quite another role. We could actually go to the industry and ask them and ask them to do something for us. We became a commissioner, or a client instead of someone just doing what they ask us to do.

(Palmgren 2015, 10.10)

Ergonomidesign was one of the consultancies that repeatedly and successfully applied for research funding for studying ergonomics, accessibility and user involvement in design. Much of this early work came to lay the foundations for user-centred and collaborative design methodologies for decades to come (Benktzon and Juhlin 1981). Henrik Walhforss, one of the Ergonomidesign founders, had in the late 1960s, together with Sven-Eric Juhlin (in-house designer at the porcelain and plastic manufacturer Gustafsberg) secured funding from the newly formed Handicap Institute. This Institute held national responsibility for increasing everyday accessibility and autonomy for disabled persons, not least through providing tools and aids free of charge. This was a crucial part of the legislation, and funding schemes, that directly enabled designers in Sweden to explore new areas and new collaborations in cross-disciplinary settings together with disability organisations, producers and users.

The aim of the project collaboration between Wahlforss, Juhlin and the Handicap Institute was to develop a grip tong that would be produced and provided free of charge, in line with the recent Swedish legislation. In designing the grip tong, the designers worked together with two young men, both wheelchair users, asking them to provide their suggestions for how they would like the tool to work. The result of this user-attentive process resulted in a first version of the grip tong, produced at the Gustafsberg factory (Figure 11.2).

Maria Benktzon came onboard the project when was asked to evaluate the grip tong, as she moved into the shared office space at Ergonomidesign. Her evaluation found that the grip tong was difficult to use for other than young, strong, male users, as it was not at all adapted to persons with smaller hands or limited hand strength.

![Image of the grip tong](https://example.com/grip_tong_image.png)

**Figure 11.2** Prototype and technical drawing of the first iteration of the Gustafsberg grip tong, with the pistol grip, ‘estimated to come into production in 1969–70’. Photo: Form 1968:10.
such as arthritis. Also, the pistol grip solution for opening and closing the tongs was something that certain users, especially ‘elderly women’, reacted strongly against due to its weapon-like design (Benktzon and Juhlin 2008, 13.58).

This early project came to direct attention towards the methodological difficulties of how to work in constellations of designers, experts, producers and users to set up studies of use and users that would be meaningful: ‘This was our first lesson: that one must choose a user group that is broad enough, and not only design for oneself and for likeminded people’ (Benktzon and Juhlin 2008, 12.49). But how was one to go about finding methods that allowed designers and non-designers to envision what the future use could be of something that did not yet exist? Interviewing or asking a few people about what they might prefer tended to give inadequate or biased responses. As Ergonomidesign associate Bengt Palmgren, recalls:

We tried to learn as much as possible from those people who used those objects that we should design. We discovered very quickly that this is very difficult, that it is impossible, to ask a person ‘how do you want your future toothbrush or something... how would a perfect cup of tea be... You can’t get an answer: what would a perfect typewriter be? People can’t answer that kind of question. It is impossible. But we tried to involve them in the development process. This was participative design but we didn’t know that it had a name. We didn’t know that it was that. We did it far before it had a label.

(Palmgren 2015, 07.15)

This shift in designing based on user engagement rather than only on the designer’s intent highlighted the shortcomings in existing design methods and approaches. In the design project of the grip tong, for example, there simply were no previous studies of hand grips or the abilities of persons with hand and arm impairments on which to base the design and development work. To develop a knowledge base for designing, a follow-up project to the grip tong was therefore proposed by Henrik Wahlforss and funded by the Handicap Institute. The aim now, was to explore methods of mapping how persons with impaired hand and arm functions actually could use their hands and arms, and what their needs and wishes for everyday activities were – and to let that work become the foundation for deciding how to continue the design work. This became the Handles and grips project (Handtag - grepp), carried out in 1971–1972, which became foundational for much of the subsequent design work carried out by Ergonomidesign in the following decades and well into the 21st century.

Not only did the project result in a thorough compilation of ergonomic studies focusing on hand and arm movement, grips and limitations from perspectives of everyday situations and actions such as eating, drinking, dressing and so on. It also introduced methods that have become established as fundamental for user-centred design practices such as observations and engagements in context and iterative prototyping with users.

At the core of the project were field studies in which designers engaged with people in their home environments. Rather than conducting formal interviews, the thirty-two persons with limited hand and arm function engaged in the project carried out their everyday activities while designers observed, asked, measured and took photos. Benktzon and Juhlin had made a set of tangible objects such as knobs, rods and other shapes for people to interact with to measure ergonomic limitations and possibilities
of hand and arm movements and grips, but also to directly engage users in discussing and evaluating these from their own experience (Figure 11.3).

The studies resulted in the decision to take the central everyday action of preparing and having meals – cutting bread, using a fork, holding a glass – as starting point for designing a series of eating, drinking and cutting utensils. The designers themselves later described this in a research report:

The basic method in the project is based on interviews and practical tests with test materials, according to the previously applied model (handles/grips). The practical tests could most adequately be described as an experimental
ergonomic development work together with users – the test persons – where functional exploration models (provmodeller) are tested in as realistic a use-situation as possible. It is not enough to only 'look' at or 'feel' a product. It is first when the test is realistic that the evaluation becomes meaningful and yields useful results.

(Benktzon and Juhlin 1981, 7)

Developing a series of cutlery was based on extensive testing of different prototypes of grips, angles and dimensions together with the participants – but this iterative testing sprung from the discontent that users expressed when they were presented with the designers’ first final concept (Figure 11.4):

In the Handles and grip project we came to the conclusion that the cutlery we designed met all the requirements placed on them. But when we tried them in the field, a young arthritic guy said that even if the doctor said that they were good for him, he wouldn’t use them. So, we started over and applied for funding, now also from Folksam yrkesskadestiftelse [an insurance company research foundation targeting work injuries], and made test models with handles in different dimensions and eating parts in different angles. And then you could try which combination worked best. And then one would test-eat. We brought with us ham, potatoes and peas to everyone.


Figure 11.4 User testing with cutlery prototypes in the Handles and grips project. Photo: Form 1973:10.
The work carried out together with disabled persons and with experts in other fields than design – such as work therapy and medicine – in the development of different aids and tools led to the development of methods that have become core to practices of user-centred design. This included user studies and interviews with people in contexts of their everyday life, iterative prototyping with people in situations of use, and mock-ups and prototypes of environments and products:

We discovered that we have to make proposals in the form of models and mock-ups and have the users look at that. In the rear view mirror it sounds very self-evident but it was a huge step forward at that time.

(Palmgren 2015, 9.30)

Through introducing mock-ups that could be tested, evaluated and discussed with people in various situations, focus came to be on how things worked rather than on how they looked. The introduction of mock-ups and iterative prototyping as ways of engaging non-designers in processes of designing was a methodology that, in the late 1970s and early 1980s, also migrated from the realm of industrial product design into the area of design and development of computer software and tools.

Towards participatory design

Turning to participatory design, the core idea is that designers and users should work closely together: design should happen with or by people rather than for people (Simonsen and Robertson 2013). Participatory design in Scandinavia grew out of political and research-based initiatives that strove to include skilled workers and a range of stakeholders in the design of new computer-based work tools (Ehn 1988). The aim to include multiple stakeholders – designers, expert users, producers, managers – extended the idea of user-centred design to include non-designers in making design decisions that also went beyond situations of use. Issues of power relations between designers, producers, management in the organisations investing in computer tools and employees working in these settings were central to the democratic aims of participatory design.

In Norway, Sweden and Denmark participatory design – initially in Sweden called ‘the collective resource approach’ – evolved in close collaboration between researchers, mainly in computer science and sociology, and trade unions in the late 1960s–1980s (Sundblad 2010). In these trade union-led initiatives, methods and processes aimed to bring researchers and skilled professionals together in collaborative processes of designing. Inspiration came from action research applied as a method of supporting workplace democracy while also developing computerised tools. Perhaps it is the fact that participatory design arose in an area – computer and IT development – not traditionally seen as directly pertaining to one where (product) design takes place, that has led to it being more or less invisible in most narratives of Scandinavian design history (Göransdotter 2020). But within the context of the development of computer-based workflows and tools for specific work sites, approaches and methodologies formed that are today highly present in collaborative and participatory design, explicitly referred to as the ‘Scandinavian design tradition’. In the following let us, therefore, take a closer look at how the trade-union politics and the development of computerised
work tools are connected to user-centred design and thus more than relevant for design histories of collaborative designing.

**Union-driven design initiatives**

In a Nordic context, the formation of participatory design practices was directly sparked through initiatives by trade unions. As computer-based technologies and tools began to enter the workplace in the 1970s, trade unions had a strong voice in the design and development of systems and applications. The late sixties had seen legal reforms in the Nordic countries aiming towards industrial democracy, specifically in relation to socio-technical developments. New legislation gave trade unions legal rights and an acknowledged position in influencing any decisions leading to radical changes in the organisation of work. The introduction of computerised work tools clearly fell under this legislation – but as knowledge of computers was far from widespread, the first issue to deal with was how to know what would be possible and plausible to expect from the new tools and technologies.

Between the years 1971 and 1973, the Norwegian Iron and Metal Workers’ Union (NJMF) therefore ran a project aiming to incorporate workers’ knowledge of and perspectives on the introduction and development of computers at work. Kristen Nygaard, a computer science researcher engaged in the NJMF project, has described its starting point in union-led discussion groups in the late 1960s, situated ‘within a broad, democratic movement genuinely representing the interests of the workers’ in which the members ‘came from a wide range of sectors in the society: Job shops, chemical plants, transportation, white-collar work, hotels and restaurants, the public sector.’ (Nygaard 1992). Out of these discussions came the conclusion that there was a lack of knowledge about computer technology ‘based upon the world view of the union members, emphasising solidarity, industrial democracy, safe employment, safe working conditions, decent wages etc’. The decision was then made by the Norwegian Iron and Metal Workers’ Union to initiate a research project aiming to address the need for mutual learning between researchers and workers, bringing in Nygaard as a researcher based at the Norwegian Computing Center to collaborate with four local unions in industries distributed across the country (Nygaard 1992).

Fundamental to the NJMF project were the collaborative ways in which workers and researchers together explored methods of building and sharing knowledge and for doing development work together. On a national level, this influenced the 1975 Data Agreement between the Norwegian Trade Union Congress and the National Federation of Employers, ‘stating the right for the trade unions to be informed and participate in the development and introduction of computer-based system impacting upon their working conditions’ (Nygaard 1992). This new legislation set a non-negotiable framework for which parties could, and should, take part in all decisions regarding significant changes in workplace conditions.

The formal and legal aspects relating to influencing the introduction of new workplace technologies were crucial to the role that trade unions played in the formation of Scandinavian participatory design. Also in Sweden, legislation played a decisive role in catalysing collaborative, union-driven, design initiatives. With the introduction of the Swedish Joint Regulation Act of 1976 (Medbestämmandelagen 1977), the power balance between unions and employers in determining workplace conditions
required new formats for integrating union representation in formal decision-making processes (Ehn 1988, 256–258).

When the new Swedish legislation was set in motion, the question of who should participate in the negotiations of developing computer systems and tools concerning working conditions and workers’ rights was therefore fairly straightforward. What was not a given, though, was how these computerised tools should be set up, or what specific qualities of work they should support. New processes for design and decision-making were needed to handle knowledge sharing as well as decisions in the realm of computers, and the legal conditions postulated that these should be set up in ways that enabled active participation from unions, industry leadership and the computer developers alike.

It is in light of this context that the ‘collective resource approach’ was introduced as a framework for exploring participatory processes for developing new computerised tools, and for strengthening workers’ power and influence in decision-making on strategic levels. While not initially described as ‘design’, but as ‘research’, the methods and processes developed in these projects have eventually become firmly established as fundamental to collaborative designing.

Negotiating power

The UTOPIA project was seminal in the development of collaborative design methods, and is often referred to as emblematic of the ‘Scandinavian design tradition’ in participatory design. It was funded by the Swedish Center for Working Life (Arbetslivscentrum) and ran between 1981 and 1985. The context was the transition from manual layout and typesetting work to the introduction of computerised layout and graphic/visual processing tools in the printing industry. The aim of the project, which engaged researchers in Sweden and Denmark in collaboration with the Nordic Graphic Worker’s Union, was to collectively develop computer-based tools to support skilled work within text and image processing in newspaper publishing. The site for the project was the Swedish national newspaper Aftonbladet in Stockholm, with technology support by the computer supplier Liber/Tips (Ehn 1988, 327f).

The UTOPIA project aimed to bring designers and graphical workers together in developing and designing computerised tools. The design work strove to establish new roles and relationships between designers, users and stakeholders through the very process of proposing what future work situations could be like for newspaper workers and what would count as relevant as ‘skill’ and ‘expertise’ in computer-supported work.

Designing with ‘skilled workers’ had the aim of not only creating qualitatively well-designed tools for professional use but also of excluding non-skilled workers from entering the graphic design or newspaper printing profession (Bjerknes and Bratteteig 1995) and of safeguarding and strengthening union members’ position in work negotiations with industry managers. Within the participatory design projects of the 1970s and 1980s, design researchers actively sided with unions and workers as opposed to management in the context of workplace democracy. Participation, in terms of deliberation aiming to strengthen unions on both a local and a national level, was believed to lead to increased union-level cohesion, in joining forces towards employers in the work-related political and technological developments. This tied into expressly emancipatory ambitions to change the power structures in the workplace.
through opening up the design process as an arena for collaboration, contestation and negotiation. The methods developed therefore aimed to create situations where such negotiations and contestations could be supported in the design process.

**But is it design?**

But how does one design future things, workflows and changing professional relationships in a completely new technological context? This was long before off-the-shelf layout software and personal computers, laser printers and scanners. To probe what future computer-supported graphic work might be like, mock-ups of computers, screens, interfaces and support tools were introduced in the UTOPIA project, from 1982 and onwards (Bødker et al. 1985). These could be made of simple materials like cardboard boxes and hand-written paper labels used to represent and prototype how different computerised tools might be used in various stages of graphic work (Figure 11.5).

What would a workflow between a journalist and a typographer be, when layout suggestions are iterated through using screens, input devices and laser printers? Using mock-ups in early design process explorations could, as the design researchers in UTOPIA explained, ‘encourage active user involvement, unlike traditional specification documents. For better or worse, they actually help users and designers transcend the borders of reality and imagine the impossible.’ (Ehn and Kyng 1991, 172). In the context of transitioning to working with computerised technologies in different areas of industry and the public sector, a new way arose for design to come about. At the time, though, the question was if what was being done was considered to be design at all?

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*A mock-up of a laser printer “reinventing” the old proof machine.*

*Figure 11.5* Mock-up of a laser printer in the UTOPIA project. Photo: Ehn and Kyng 1991.
At the time, in the 1980s, several of the researchers engaged in the UTOPIA project came from the fields of computer science and sociology, and were not considered to be designers – since designers tended to work with giving form to three-dimensional things, not to computers or work processes. In order to envision future work tools and processes, a design space for participatory collaboration must be created. The incorporation of working with mock-ups and iterative prototyping, borrowed from user-centred industrial design, made it possible for designers, users, managers and various stakeholders to share knowledge and negotiate decisions together in designing.

The introduction of mock-ups into the process of collaborative designing to ‘imagine the impossible’ in computer-supported work was a method directly imported into this context from the user-centred design approach developed by industrial designers focusing on ergonomic and inclusive design. Pelle Ehn, one of the researchers within the UTOPIA project, has described how he in the early 1980s came in contact with the work of Ergonomidesign. He was not particularly excited about the products as such, until he learned about the methods applied in designing them: ‘knowing the story of how it had been done changed my understanding of what problem it was there to solve’. (Ehn 2017b, 39.00). Realising that the ergonomic products were the results of new types of user-oriented methodologies involving situated observations and the iterative testing of mock-ups and prototypes together with the people who were going to use them, led to the decision to try out the same methods to support the sharing of tacit knowledge in envisioning futures through design in UTOPIA.

Using mock-ups in the UTOPIA project led to a breakthrough in the collaborative design efforts (Ehn 2017b, 32.33). As long as trying to design future work tools had been based only on blueprints and systems descriptions, it had been difficult to get a real dialogue or joint designing to take off. However, as prototypes and mock-ups were introduced, this promoted collaborative work through hands-on engagement with the mock-ups, in which design researchers, graphic workers and journalists together could enact future situations and actions, as a basis for further explorations and for making joint design decisions (Ehn 2017b, 40.35) This was a way of designing that was based on showing, doing and trying out different possible ideas together, rather than designers proposing a design concept and asking users to evaluate them while the designers observed. Taking this collaborative methodology developed in ergonomic, user-centred product design into the new context of human-computer interactions, the researchers argued that also this indeed was design:

The use of mock-ups described here resembles the way industrial designers use them. However, our focus is on setting up design games for envisionment of the future work process. In contrast to industrial designers, we focus more on the hardware and software functionality of the future artifacts and less on the ergonomic aspects. Industrial designers often make very elaborate aesthetic and ergonomic designs of keyboards, but the display is black, and no functionality is simulated or mocked-up. If these different capabilities could meet in a participative design effort, an even more realistic simulacrum could be created. If the future users also actively participate in the design, the mock-ups may be truly useful and a proper move toward a changed reality. But are mock-ups really professional design artifacts? Yes, they are.

(Ehn and Kyng 1991, 175)
The turn towards participatory design meant that non-designers were either engaged in design work as users who in different ways provided feedback to designers’ processes, or as participants included in the very processes of designing on basis of their expertise (Ehn 2017a). This pushed a reframing of designers’ roles and responsibilities in design from individual artistic form-giver, to collaborative coordinator designing for or with people increasingly viewed as ‘users’ rather than only ‘consumers’ as the relational qualities or differences between designers and non-designers shifted. Compared to user-centred product design, where designers clearly were responsible for designing and users gave input for designers to work with, these roles were increasingly blurred in the participatory design that took shape in contexts of computerisation. Here, as ideals of democratic deliberation and co-determination were strong, designing became a responsibility and activity shared between ‘designers’ and ‘expert users’. Many of the collaborative methods developed thus aimed at overcoming or bridging differences between the roles of ‘designers’ and ‘users’ in regard to expertise, experience, presence and decision-making in the design process acknowledging ‘users’ as experts in processes of design and product development (Lindh-Karlsson and Redström 2016). With time, this has come to expand the ideas of what the field of ‘design’ can encompass, in what kinds of contexts design can take place, as well as notions of who – besides people with a design education – could and should take an active part in practices of designing.

Histories of designing together

The examples in this chapter demonstrate how a shift in design historical outlook, from products to practices of design, sheds light on new aspects relevant to consider in histories of Scandinavian design. The Swedish design histories presented here only scratch the surface of situations and contexts that gave rise to user-centred and participatory design methodologies and approaches. Still, already from these examples, it stands clear that it is not a lack of historical source material that could explain why these narratives have not previously been made present. Rather, the reason that these have remained unseen, is simply that we design historians have been looking for things other than methods, practices and processes when making histories of design. Shifting the outlook towards searching for how and why designing has changed, there are definitely sources and materials to be further explored. Besides video recordings and interviews with designers active in the 1970s and 1980s, several publications from the time also account for much of the research carried by designers out in search of new methods for designing. Indeed, much of the early explorations in developing new user-centred design methods and approaches were published in core design publications already in the 1970s (Benktzon and Juhlin 1973a, 1973b). The fact that these influential shifts in design practice have not entered narratives of Scandinavian design history thus seem to have more to do with a lack of attention to practices and processes of design, than with an actual lack of historical sources. Regarding participatory design, on the other hand, publications are seldom to be found in publications or archives of design, but in contexts labelled as computer science (Bødker et al. 1985) or such. To discern histories of designing, it is necessary both to look for material in other places than those immediately associated with ‘design’, and to be attentive to the mechanisms which called new ways of designing into being.
The re-shaping of designing in 1970s and 1980s Scandinavia was fuelled by socio-political events that resonated with design-internal initiatives striving to redefine the design profession. Developing an experimental and research-driven design methodology was made possible through available research funding for addressing issues of disability and accessibility, work environment and ergonomics. Designers who were successful in obtaining such funding could – independently compared to in commercial projects – dive deep into research projects exploring what an alternative design practice might be, and how designing might be thought and done otherwise. Designers collaborated with activists and organisations working with disability, autonomy and equality, and trade unions engaged in political negotiations of power and influence in the workplace. The explorations of how knowledge and experience from fields external to design could be transformed into methods and approaches for hands-on design practice gradually led to establishing new ideas and definitions of what ‘design’ and ‘designing’ were. In this new understanding of design, collaboration between designers, users and other stakeholders was key to making a strong socio-political impact through design while also strengthening the position of designers in commercial industrial contexts.

Socio-political and financial reforms opened up new design spaces, where the forces calling new ways of designing into being were very different from what had until then been the case. But at the time, in the decades around the 1970s, it was not self-evident that the design research work conducted at Ergonomidesign, or in the UTOPIA project, should even be considered to be ‘design’. As participatory design emerged, it largely did so in areas that – at the time – were not considered to be included in the realm of design at all. Bearing in mind that much of the development of user-centred design methods once took place in contexts considered completely external to design, we might ask ourselves which forces, frameworks and situations that should be relevant to consider as spaces where tomorrow’s design practices are taking shape today?

What design can do, and what can be designed, always stands in relation to what designing is understood to be, in terms of its practices as well as its world views (Redström 2017). Shifts in what design and designing is about have, historically, not only called for developing methods to understand how people go about using or experiencing things. These changes have also brought about different understandings of the subject matter of design, from focusing on giving form to material things towards redesigning the design process itself. Design is not only about making and proposing things that could make a difference to how we live, act and think; it also inherently makes and proposes ways that design itself could be different. This transitional character of design typically is at its most visible in instances where established ways of doing design no longer suffice for handling the situations at hand.

The search for new design methods in late 20th-century Scandinavia took place in contexts where the existing roles and knowledge of designers did not suffice for grappling with the issues at hand. Opening up design spaces where designers and non-designers could share knowledge and experiences required re-thinking what designing could be, and who should be involved in design processes. User-centred and participatory design methods emerged in very specific situations, where dissatisfaction within design – how design was done, what the role of the designer entailed – merged with overarching societal and political concerns and issues.

The methods developed for designing together, many of which today hold a strong presence in designing, are in themselves designed: they are shaped in ways that
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support certain kinds of processes, in order to achieve specific types of results. As user-centred and participatory design today expands to include more-than-human agency and stakeholders, whether algorithms or multi-species entities, the methods and approaches of collaborative, human-centred design seem to become increasingly difficult to apply. But designing together in collaborative constellations is perhaps today more crucial than ever. In light of the impact of design in the escalating climate crisis and matters of global injustices, an awareness of the fact that designing itself is historical needs to be brought to the fore. Without attention to the historicity of designing, foundational ideas and values deeply embedded in methods and approaches might unintentionally work to counteract the re-direction towards just and sustainable futures sought in many emerging practices of designing together (Dilnot 2015). Histories from perspectives of designing can contribute to presenting such core ideas embedded in current design practices, providing conceptual spaces where designing together can be thought, and done, differently.

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Notes

1 My translation – as are all translations to English of Swedish-language publications and interviews in this chapter.
2 In this chapter, terminology related to disabilities and disabled persons largely follows the historical use of terms and concepts when so motivated (in quotes, names of organisations etc.).
3 Ergonomidesign was the name of a company founded by Henrik Wahlfors in 1969 (or 1971, depending on the source quoted), which was an expansion of the firm he had founded in 1965. The Ergonomidesign office came to host the firm Designgruppen. As the two companies increasingly worked together, in 1979 they formally merged into Ergonomi Design Gruppen, which later changed name again to Ergonomidesign. Even later, the company rebranded as Veryday, which in 2016 was incorporated in the McKinsey group.

References

Maria Göransdotter


Form 1968:10. ‘Att leva med handikapp’.


