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Kanstrup, Anne Marie; Sejer Iversen, Ole; Graves Petersen, Marianne

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A Visit to the ‘New Utopia’

Revitalizing Democracy, Emancipation and Quality in Co-operative Design

Ole Sejer Iversen

Department of Information
and Media Studies,
University of Aarhus
Helsingforsgade 14, 8200
Aarhus N, Denmark
oiversen@imv.au.dk

Anne Marie Kanstrup

Department of Communication,
Aalborg University
Kroghstraede 3, 9220 Aalborg
East, Denmark.
amk@hum.aau.dk

Marianne Graves Petersen

Department of Computer Science,
University of Aarhus
Aabogade 34, 8200 Aarhus,
Denmark
mgraves@daimi.au.dk

ABSTRACT

25 years ago co-operative design started out as a result of technological immersion in workplace settings. The co-operative design approach propagated how ideals as democracy, emancipation and quality were essential when designing technology for workplaces. Today, technology is spread into domestic and non-professional practices. Even though time has changed over the past 25 years, this paper argues for a revitalization of the ‘Utopian’ ideals when designing technology for everyday use. By addressing the original ‘Utopian’ ideals in the light of the new challenges for co-operative design, this paper voices the need for democracy, emancipation and quality when designing technology for non-professional use. The paper discusses the ideals in three current design projects.

Author Keywords

Co-operative Design, democracy, emancipation, quality, ideals.

ACM Classification Keywords

H5.m. Information interfaces and presentation (e.g. HCI): Miscellaneous.

INTRODUCTION

25 years ago brave ‘sailors’ sat out for ‘Utopia’ in system development. They attempted to give end users a voice in design of computer supported work places [9]. This journey had a strong impact on following generations of research in Human Computer Interaction. Some researchers adapted

the co-operative design approach [42, 28, 24], others reshaped it to fit local requirements and changing times [5, 36], and later generations romanced about returning to the Utopian ideals [7]. In spite of these efforts, co-operative design has had little impact on the industrial development of IT artifacts *outside* research in Human Computer Interaction and co-operative design. As an example Philips, one of the world’s largest manufacturers of consumer electronics, lately presented the following vision of a future ambient intelligence home on their commercial website:

An ambient intelligence home scenario...

Ellen returns home after a long day’s work. At the front door she is recognized by an intelligent surveillance camera, the door alarm is switched off, and the door unlocks and opens. When she enters the hall the house map indicates that her husband Peter is at an art fair in Paris, and that her daughter Charlotte is in the children’s playroom, where she is playing with an interactive screen. The remote children surveillance service is notified that she is at home, and subsequently the on-line connection is switched off. When she enters the kitchen the family memo frame lights up to indicate that there are new messages. The shopping list that has been composed needs confirmation before it is sent to the supermarket for delivery. There is also a message notifying that the home information system has found new information on the semantic Web about economic holiday cottages with sea sight in Spain. She briefly connects to the playroom to say hello to Charlotte, and her video picture automatically appears on the flat screen that is currently used by Charlotte. Next, she connects to Peter at the art fair in Paris. He shows her through his contact lens camera some of the sculptures he intends to buy, and she confirms his choice. In the mean time she selects one of the displayed menus that indicate what can be prepared with the food that is currently available from the pantry and the refrigerator.... [41].

The Philips scenario strives towards efficiency and automation, eliminating the skills and creativity of human beings, the quality in process and product, which originally provoked the co-operative design journey. In the Philips vision, intelligent menu selection means that there is no

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need to borrow ingredients from the neighbour. Automatic generation of holiday proposals leaves out the value of knowing the sender of the information, and you remotely connect to the interactive screen in the playroom to ‘hug’ your child. In fact, from the Philips scenario, it is not even clear why you want to go home. When we look at the above scenario it makes us ask whether co-operative design has succeeded. Have users and designers co-operated on the development of this vision?

Motivated by the lack of co-operative design values at Philips, and in industry in general, we believe that there is a strong need for revised Utopian values in today’s system development. In this article we introduce the ‘New Utopia’ to determine how the core Utopian ideals of democracy, emancipation and quality have changed according to the spread of information systems in everyday artifacts and everyday lives. By sharing some general concerns in three different research projects, we argue how practitioners can work with the Utopian ideals of democracy, emancipation and quality in current design practice. First we turn to design artifacts to propagate the need for ideals such as democracy, emancipation and quality in system development.

IDEALS AS DESIGN ARTIFACTS

Bertelsen [4] introduces the concept of ‘design artifacts’ as mediating artefacts, which serve as conditions or environment for the entire design process (ibid, p45). Methods such as future workshops, prototyping and scenarios are design artefacts, but also design theory and communication tools used in the design process can be treated as such. Bødker & Iversen [10] further develop the notion of design artefacts by pointing to the fact that some design artefacts – the ‘why artifacts’ and the ‘where-to artifacts’ - can help us move beyond an understanding of the current practice.

- The why artifacts pose questions and reflections to “expectations” and “explanations” for the technology.
- The where-to artifacts “are the imaginative artefacts that help change and recreate the understanding of the human being of the change of the overall activity. These artifacts are “... *the instruments of off-loop reflection that fundamentally change our ways of understanding what we do and why*” [10].

As stressed by Bødker and Iversen ‘why’ and ‘where-to’ artifacts contribute to the development of a co-operative design practice if they are seen in terms of learning. . However, they do not describe the contents of such artifacts. In this article we suggest core ideals from co-operative design to be the content of such design artefacts. We share the same opinion and aim as Bødker and Iversen, that is, to move co-operative design beyond experiences with user involvement, into a reflective professional

practice not only based on first and second levels of learning but “expanding” (cf. [21]) into third and forth levels of learning (crystallized into ‘why’ and ‘where to’ artefacts). In the following paragraph we briefly discuss the utopian ideals of democracy, emancipation and quality.

THE UTOPIAN IDEALS

We see the beginning of Co-operative design as a research field in early systems development projects in Scandinavia. It started with the “first generation projects” such as the NJMF, DUE and DEMOS projects in Norway, Sweden, and Denmark, and followed by “second generation projects” where the most well-known is the Swedish and Danish UTOPIA project. These projects all applied “the collective resource approach” (in short CRA). This implied cooperation with trade-unions in organising the collaboration between users and systems developers. Moreover, the approach was characterised by a number of ideals, which by Ehn and Kyng [17] were summarized as:

- quality of work and products
- democracy at work
- education for local development

In “Work-Oriented Design of Computer Artefacts” Ehn theorizes upon these ideals for instance in reflections on “designing for skill”, “designing for democracy at work” and “emancipatory practice” [18]. We consider these ideals as fundamental for our work with co-operative design and term them in short:

- Emancipation (referring to “education for local development” and Ehn’s reflections on “emancipatory practice”)
- Quality (referring to “quality of work and products” connected to Ehn’s reflections on “designing for skill”)
- Democracy (referring to “democracy at work” and Ehn’s reflections on “designing for democracy at work”)

Emancipation

The Utopian ideals extended the limits of design to encompass the political and moral aspects of human practice as a core value in computer artefact design. The actual use of computer artefacts as just artefacts for production of use-values was no longer a sufficient understanding of the political and moral aspect of (computer supported) human practice. By undertaking the political aspects of design the Utopian approach was interested in how designers could actively participate in the emancipation of the oppressed. According to Ehn [18], through development of social responsible computer artefacts, the conditions for an emancipatory practice are established. Furthermore, a design process and methods

supporting users to emancipatorily transcend the given practice are ways for the political designer to accept the social responsibility of designing artefacts for the future. In Ehn's words emancipatory practice must not only aim at changing the use of artefacts, but also their technical design, the design process and the relation between the design process and the labour process, for which the artefacts are designed. System development becomes in this political sense a discipline of identification with oppressed groups and support of their transcendence in action and reflection.

Quality

One of the other ideals of the Utopia project was that of promoting quality in process and product when introducing new work technologies [16]. One of the means toward this ideal is to design technology and work processes allowing workers to use and develop their skills in their daily work, advocating "the design ideal of computer artefacts as tools augmenting skills rather than replacing them" [18], representing a "product ideal – a tool under complete control of the user" [18]. When introduced this perspective was in opposition to the trend of using new technologies to optimise work processes by eliminating workers, and to redesign the production process through introduction of new technology, driven by ideals of efficiency and optimisation. The quality ideal referred both to quality in the process of using computer artefacts as well as quality in the products produced by the computer supported production process.

Democracy

Democracy was a strong ideal in the Utopia project focusing primarily on "the process of democratization" [18]. This focus contained a concern for "practical constraints and possibilities for democratic design and use of computer artefacts at work" [18]. Trade unions were seen as vehicles for industrial democracy since "a participatory approach to the design process is not sufficient in the context of democratization at work" [19]. The definition of democracy was "freedom". Both "*freedom from* the limits to democratization manifested by the market economy and the power of capital" and "*freedom to* in action and reflection practically formulate and carry out this ideal" [18].

Utopian ideals?

As exemplified in the Philips vision, the ideals in today's vision on future technologies have a tendency to disappearance. There may be several reasons for this loss of ideals; Maybe because they are utopian ideals leaving co-operative design with a touch of innocence? Maybe due to a loss of political issues in co-operative design (if there is indeed such a loss? [2, 3])? Maybe because of new media calling for attention on aesthetics and thus represents a move "from politics to design" [20]? Or maybe just

because of changes in contexts as time goes by. As described by Kyng: "basically because the context needed to make such collective resource approach work a success did not come into being Since the late 1980s our work has concentrated on developing tools and techniques for cooperation in design based on projects addressing the factory, not the national level" [29].

Through the years several reflections have been put forward on whether values like the above are present in co-operative design projects [6], whether they are possible [30], what it takes to make a co-operative design practice [26], and how we revive these ideals in today's world so we do not risk to be "left with just a number of local methods for designing IT systems" [11].

We find that these ideals can play a significant role in today's development practice as they put attention to issues such as equality of rights, power, learning and skill, all heterogeneous elements bringing complexity, difficulties, and more importantly, also value and meaning to the use of technologies in everyday life. In the following we argue that these ideals are indeed still valid, needed and possible, however, not without a new interpretation with respect to the changes and challenges of today's conditions for design. This discussion is followed by case-examples from our own use of utopian ideals in development projects.

CHANGES AND CHALLENGES

In "Co-operative Design – perspectives on 20 years with 'The Scandinavian IT-model'" Bødker et al. [9] describe the changes for co-operative design during the last 20 years from 1980 to 2000. Bødker et al. describe how what is done in a project like the Utopia project can be difficult to carry out in an organization due to power relations, how the growth of standard technology (off-the-shelf products) change possibilities for 'tailoring', how design today is carried out in a wide variety of settings different from work settings, how technology has changed from mainframe systems to being everywhere (pervasive computing, mobile devices etc.), how the role and attitude of management, unions as well as researchers have changed from being focused on politics to focussing on design. We recognize these changes from our own projects, but in order to meet these changes and improve co-operative design for the future, we combine, in the following, these changes to challenges for co-operative design (see also [27]). We present challenges arising from:

- Changes in contexts
- Changes in users
- Changes in technologies

New Contexts

In traditional co-operative design the technologies studied and developed were primarily work-oriented.

Consequently, the design considerations were primarily aimed at work-tasks, workplace and the traditional functionalities of work organization. Co-operative design considered engagement with a quite uniform group of specialized workers. Today design is not only carried out for workplaces. Today we design with people in their everyday life; we deal with technologies that have moved away from industrial plants and offices and into homes, streets and other public spaces. This also means that unions themselves are not instruments to organize participation of users and the functional work-task oriented context. When engaging with people in non-work oriented projects, participation often occupies their spare time, which makes it more important to address the specific roles of the users in the design process (are they “sources of inspiration” [22], designers etc.) as well as privacy issues. The sporadic use of everyday artifacts calls for new means of investigating use and informing design. The traditional role of the computer was to act as a tool for skilled workers, supporting their work and providing quality in work and product. This tool perspective seems to break down when everyday issues like lifestyle, privacy, emotions and aesthetics increasingly affect the way we design and use interactive technologies. The aim of using the computer is not always to solve a specific work-task, and the users are not limited by work constraints in their choice and use of technology.

New Users

The shift from workplace to everyday life also introduces new groups of users as well as new use practices. We cooperate with children, families, disabled, and citizens in general, and as a consequence we need to review our methods to see how they comply when we engage these new groups of people. The driving forces for use and purchase of technologies in everyday life seem to be many, and often personal and very individual; e.g. a desire to be entertained, to show off, to have informal communication with someone, to play, and to communicate. The list is long and diverse, and the challenge is to make these diversities work with us rather than against us and to make them inform each other. Today’s mass production of consumer products, as well as the fact that private companies are increasingly involved in research projects, also put a stronger emphasis on the buying-situation. The reality of the commercial world, as well as the scope of research projects, are tight budgets and quick deadlines, which means that we might only get to know users and use contexts on a “meta-level”. Yet, if we are to move cooperative design into the future, and still respect the ideal of quality in use, we need to deal with the challenge of making the first impression of quality when buying last in the long-term use. We need to develop a better understanding of what ‘use quality’ means in everyday life, and that the meaning of the word ‘quality’ might be very different to different groups of users. Furthermore, the

traditional understanding of an organization or a uniform use context can be contradictory to the fact that very diverse groups often use the same mass produced technologies in the same buildings and spaces. The challenge is to establish ways to mix and deal with different viewpoints and inputs of different user groups as part of the design process.

New Technologies

Design of new computer artefacts and systems has to consider and understand not only existing use-practices and contexts but also existing technologies. We are very rarely designing monolithic systems for controlled environments. Relating design to a variety of changing use contexts and to new users moving from one place and one role to another, blurs the borders between work and pleasure, public and private, and pushes us to consider these constant changes in the dynamic constellation of webs of technology, places, artefacts and humans. The reality we design for is a complex constellation of more or less interconnected and interdependent technologies, consisting of both off-the-shelf and specialised products that are changed and replaced in an ongoing movement between different technological, social and environmental settings. In this design setting, use-practice can be difficult to study and hard to generalize as it takes place in unpredictable and changing environments and can be very different based on individual preference, habit, time, tools at hand, etc. As a result, each individual’s situated interaction seems to be atypical one way or the other. This means that the work-practice as well as the situation-context *can* be described through prototypical descriptions, but that the specific interaction situations are likely to lack some or most of the prototypical aspects that otherwise would form the basis of a consistent, situated HCI design. New use situations are continuously overlapping and mixing with existing ones calling for flexible solutions to meet a web of needs at the same time and in the same place. In this context we need to develop methods to make a more systematic scope of existing technologies, non-prototypical use-situations and local environmental qualities to inform the design.

Technological developments have made it possible to integrate technologies in our everyday environment, and to integrate digital, interactive technologies into physical artefacts and spaces in ways not seen before. “Going beyond the desktop” towards spatial computing raises new challenges for co-operative design. It changes the scales of interaction, - it enforces a move from ‘hands-on’ to ‘living in’, taking the whole body into account. It enforces knowledge about new elements like light, materials, acoustics, interiors, etc. which all affect the interpretation of possible uses of a space. We need to evaluate feedback for all senses. In contrast e.g. tangible computing and traditional approaches still focus on the issues of feedback

at the scale of the hand. In every way, interactive spaces provoke existing limitations of past development projects.

IDEALS IN REALITY

Having argued for the relevance of the utopian values in current design practice, but given the changes and challenges discussed above, we describe in the following how we work with the utopian ideals in this new reality.

In the following we present three case studies as examples both describing the above presented changes and challenges and how we work with the presented core ideals (democracy, emancipation, and quality) within these present cases. It should be noted that the three cases are very different, which is one of the points in our work with the utopian ideals: to give broad examples of how to work with utopian ideals using many and different types of cases. By this we intend to help expand co-operative design by showing to many different types of actors (like those writing the Phillips-scenario, or designers of software for children, or politicians making decisions on national and regional IT-strategies, just to mention some) that co-operative design and utopian ideals are still relevant and can still be used in reality.

Quality in design for everyday life

In the iHome project, which is part of the interactive spaces initiative www.interactivespaces.net, we work on developing visions for future interactive homes, which implies an improved quality of everyday life. We confront this challenge in a number of ways.

First, we focus on redefining design ideals from the workplace towards sensitivity for the nature of everyday lives. Here we are concerned with the blind transfer of ideals from the workplace, to other spheres of life, as it is represented in the Phillips vision, where efficiency of home-life seems to be the dominant ideal. We also find this tendency when Tolmie et al. [43] blindly transfer Mark Weiser's vision on ubiquitous computing onto the home sphere and argue that we should design for unremarkable computing in the household. To provoke this blind transfer we advocate the perspective of remarkable computing as a complementary design ideal for the domestic sphere. Remarkable computing aims for designing for visible possibilities, for learning in use and for new remarkable experiences in the interaction with everyday technology, i.e. what we term aesthetic interaction [40].

Second, we oppose to the strand of research which proposes pleasure as a new design ideal for everyday life. In opposition, we have worked to develop an approach to embrace concrete, situated values in design. We did this by first eliciting the variety of values represented in different households through visits to homes. We next arranged a design workshop where the values of the households were represented and furthered into design proposals. Here we

see how people's values in domestic life reach far beyond pleasure which is often suggested as the response to dealing with technology use in new spheres [23].

Third, it implies developing products, which shape quality of life more generally. A concern with values in the design process is one way of ensuring that the products we design also shape quality of life. However, we also have a more general concern on the tendency of domestic technologies becoming increasingly individualistic. Although a growing number of people live alone we find that design solutions for homes are highly individualistic, cf. the Phillips vision, where mainly social relations among remotely placed people are supported. In line with this, the increasing digitization of domestic materials, e.g. pictures, videos, which as it is now, most commonly reside on a personal computer with little support for collective experiences and negotiation. In response to this we currently work on designing a mediaTable, which supports collective media experiences and negotiation among household members.



Pict 1: Users around the media table in the iHome project.

Along these lines, and closely related to the issue of emancipation, is the problem of technologies, which are increasingly detached from bodily, physical experiences, like the personal computer with which we interact through mouse and keyboard, or by pushing small buttons on remote controls. In opposition to this we work to implement design solutions, which exploit our whole human body – let us interact via gestures and provide new experiences through the interaction itself, as e.g. a gesture-based remote control.

Thus to summarize, designing for life-quality is a matter of:

- Establishing meaning in the environments and technologies we design through a concern for concrete, situated human values in everyday life
- Designing to support social relations, both remotely and indeed also amongst collocated people
- Designing for quality in long-term use process, not only in buying

- Designing for human skills and control, not for automation
- Designing for bodily experiences

Establishing an Emancipatory Practice for Children

In the early years of Co-operative design emancipation was often considered relevant in the relationship between workers and management. Due to the trade unions' persistent work during the past 30 years, the need for emancipation, in this sense, seems faded at least in the Western part of the world. However, when technology merges into everyday life, new minority groups of oppressed people depend on our social responsibility as designers. One of these oppressed groups is children. When designing technology for children, experts such as parents, psychologists or pedagogical researchers are often involved on behalf of the new generations. These experts are used to determine whether an IT system is adequate according to society's expectations towards the development of children's cognitive or social skills. One could argue that children despite of their age do have a legitimate role in the design process of their own future artifacts [13, 14, 15].

In the NetWorking.Kids research project we design future IT-artifacts for children from an emancipatory perspective: Children are experts in their everyday lives. We cannot design future technology for children without involving them (www.networkingkids.dk). By using co-operative design methodology with methods shaped for a young audience, we designed school artifacts with point in the children's existing use of technology [37]. Having made an extensive study on children's domestic life and school practice, it was striking to observe how they had a huge familiarity with literally living with technology (their mobile phones), but this competence was rejected by their teachers. Their phones were seen as a threat rather than a resource in the teaching process. Using the children's practice as a starting point we invited children to co-design new technology by 'performing' a future scenario with their home-made IT mock-ups as transcending instruments. The scenario reflected a desire for 'being taken seriously', being able to produce their own data and being able to make a difference in the world. The design process resulted in a location-based system within which the children could produce, coordinate and search information. Instead of keeping the children within the school environment we co-designed an IT system that made it possible for them to do school assignments outside school campus (for further details see [8]).



Pict.2: 13-years old Peter is evaluating a self made paper mock of a future mobile phone.

To summarize; working with emancipation (in this case designing with children) is a matter of:

- Taking children seriously as design partners in a cooperative design process. Children's practice and their competence with technologies is a fruitful starting point for design.
- Moving beyond dichotomies of good and bad technologies (e.g. the mobiles). Respecting that children in some situations are more familiar with technology than the designers
- Emancipating the children from being trapped within the boundaries of expert expectations of child behaviour. There is more to children's practice than cognitive development.

Democracy in regional development

Democracy was a strong ideal in the Utopia project, focusing on the process and constraints for democratic design and using trade unions as vehicles for industrial democracy. Democracy was tightly connected to the workplace and thus named "industrial democracy" [18]. As technology design and use have spread from workplaces to everyday lives, the issue of democracy has also spread. This means that democracy in relation to development and use of new technology is not just something for the individual workplace to consider or work with. Democracy is a societal issue or responsibility. This also means that the driving vehicle today in the work with democracy related to technology use and design does not reside with trade unions but rather with governments, counties, and municipalities. In Denmark, this is seen through the government's IT strategy. A consequence of one of such IT strategy was the funding of the regional project "The Digital Northern Denmark" (www.detdigitalenordjylland.dk).

The overall goal of The Digital Northern Denmark was to be a national “IT-lighthouse” by exploring the potentials of the network society for all citizens of Northern Denmark. The democratic focus on “all citizens” of Northern Denmark resulted in an aim to establish a “broad” IT lighthouse encouraging private enterprises, educational organisations, communities, and citizens in general to apply for funding and start experiments with Information and Communication Technology. 91 projects received funding and experimented with IT. By working with democracy as an ideal in relation to design and use of IT, it becomes clear that this ideal is often criticised and lost in the competition with “productivity” and “gains” as described by Thoresen [11]. Likewise the democratic perspective in the Digital Northern Denmark has been severely criticized by an engineering tradition calling for high technology experimentation and the development of “new knowledge” and not just the spread of “old knowledge” [12, 32, 33, 34, 35, 39]. This critique is part of an often seen discourse, which equalizes technology with development and efficiency [31]. However, having democracy as an ideal means, among other things, taking users and practices seriously, being able to see the value and development from the user and practice perspective though it might not be the production of “new knowledge” for some (engineers). In other words, this also means acknowledging (as others have done before us, e.g. [38, 44, 45] just to mention a few) that design of technology is not just a matter of engineering but as much a social matter. This means that development of the practice, organization, people, regions, or whoever uses the technology is central if there is to be any value or effect of the design and its implementation. This might be old news, but as seen in the Phillips scenario and the critiques of the Digital Northern Denmark as a project this message has not come through, yet.

In the participatory research of the Digital Northern Denmark we confronted these issues by for example framing the overall theme of the research “learning in the region” to point out a focus on learning as a way to change, improve and empower practices for technology use and development (www.kommunikation.aau.dk/ddn/index_eng.htm). This means broadening up the perspective on learning from mutual learning among researchers and workers to (here) learning in regions. Moving from workplaces to regions or moving from designing for work to design of everyday things also means that user involvement is not something going on inside the factory but indeed, opened up for co-operation with citizens. Research in and suggestions on how to broaden up cooperation have begun (e.g. [22]), though a discussion on the democratic ideals in these methods seems to be relevant and missing. To summarize, working with democracy (here in regional development) is a matter of:

- Taking users and their practices seriously and building development on this basis
- Broadening up the concept of learning from learning in schools or at work to learning in regions
- Working with and doing research in new ways of learning
- Co-operating with citizens and doing research in new ways for co-operation

NEW UTOPIA - NEW IDEALS

In this article we have presented the ideals of democracy, emancipation and quality as central and suggested that they are needed, though in a new form, in today’s cooperative design. Emancipation is no longer a matter of freeing the oppressed worker. Emancipation with respect to the Philips scenario is rather emancipation from alienating technology and from being trapped in front of a screen in most of your domestic activities. Quality in work is now replaced by a concern with quality in life, and democracy is replaced by concerns with consumer power and with establishing new fora for co-operation. We suggest that the industry considers these revitalized co-operative design ideals by moving their focus from the possibilities in IT to values as quality, emancipation and democracy.

While the ideals of quality, emancipation and democracy provide a fruitful starting point, we should continue to identify, mature and reflect on the values we see as ‘why and ‘where-to’ design artefact. Thus, our aim is not to present these ideals as exclusive. The changes and challenges of today’s design context calls for new supplementary ideals in co-operative design. Ethics and aesthetics are two emerging themes. The ideal of ethics is relevant since designers today are not backed up by a trade union. On the contrary, they often work alone or in minor teams using their own code of ethics [1] to make their own reflections and choices on whether they want to develop for productivity increase in organizations, for military use, war-games for children under the age of 16, surveillance facilities for relatives to survey elderly in their homes, just to mention some examples which are of relevance regarding ethics. Similarly Ehn and Malmberg [20] describe an “aesthetic challenge” (cf. also [9]) highlighting “aesthetic craft competence” as central to the design of everyday artefacts. Along these lines we have worked to realise the potential of aesthetics in computing, through providing new experiences in the interaction. We term this initiative aesthetic interaction [40]. Thus the journey does not stop here, but we have set out on a course we find worth following.

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