1 Introduction

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Haur du sitt Malmö haur du sitt varden. This was an underdog slogan two decades ago, when the industrial town of Malmö in the south of Sweden was dismantled and its quarter of a million inhabitants were not doing well. Shipyard and plant closures, high unemployment, class and ethnic segregation, crises—no future. In strong colloquial and ironic language, the slogan said "If you have seen Malmö, you have seen the rest of the world." This is the moment when the march toward a more sustainable city started. The bridge to the continent, the new university, the transformation of the deserted harbor into exemplary sustainable architecture and eco-systems and home for a prosperous IT and media industry, successful culture-, design-, and innovation arenas, and a flourishing entrepreneurial creative class.

The international media often depict the city of Malmö less favorably. Sporadic riots in the most vulnerable districts, and numerous gang-related and criminal-network-related killings, form a picture of a violent multi-ethnic segregated town. A perhaps more nuanced scenario is given by the Kommission för ett socialt hållbart Malmö (Commission for a Socially Sustainable Malmö), a group of researchers and practitioners who have been investigating living conditions in the city for two years (Malmökommissionen 2013). They see innovative creativity and the potential in a multicultural city with people from nearly 170 countries, but also deep inequalities, high unemployment, and alienation. The citizens of Malmö have become healthier, and life conditions have improved, but the polarization is increasing. If you live in the low-income and high-unemployment neighborhoods, your life expectancy is five years less than in other parts of the city. The same holds for citizens with shorter versus longer education.

To "close the gap" in health, welfare, and justice, which is fundamental to becoming a socially sustainable city, they suggest a "social investment policy." All of the many suggestions they have come up with to tackle the deep inequalities focus on investments in people that go far beyond a traditional economic growth perspective. They recommend more democratic forms of innovation and governance through citizen participation. They also recommend the building of knowledge alliances between industry and the university, underlining the inclusion of citizens, civil society, and civil servants in those alliances.

This proud but torn city is the context and the main focus of the research on and the experiments in innovation, design, and democracy discussed in this book, and it is where most of the stories told are situated. Furthermore, the interventions conducted and the stories told in the various chapters are very much in line with the mission and vision of the Commission for a Socially Sustainable Malmö and the challenges to which it has pointed.

The authors are all researchers associated with the new university situated in the prosperous Western Harbor area, the turf of the creative class. However, the stories are not primarily about new technology, economic growth, and scalability, but about possible futures for the people who have chosen to engage in changing their conditions. Typically, they are located in the less favored multi-ethnic districts of the city. Whether the designs and innovations concern local services, cultural productions, arenas for public discourse, or technological platforms, the approach is participative, collaborative, and engaging. The starting point is not the search for yet another "killer application," but everyday activities and challenges in people's lives. The main actors are grassroots organizations, non-governmental organizations, and neighborhoods gathering around issues of concern to them. Still, some of the participatory practices, in exemplary ways, travel far and wide through traditional, as well as new, technologies and media.

The stories do not suggest that "if you have seen Malmö, you have seen the rest of the world," but we are convinced that to be able to understand mechanisms behind design and innovation we must situate these practices (Suchman 2002). However, many places in the world face similar challenges. By situating our stories of innovation, design, and democracy, we hope to make them relevant in other places, and we hope that they may travel far and well. *Haur du sitt Malmö haur du sitt varden*.

Values of design and innovation

"Innovation" has become one of the buzzwords of our times, in the public debate as well as in economic and political agendas. Entrepreneurs are being celebrated as if they were rock stars, start-up companies are featured in popular magazines, politicians, executives, and decision makers are forming strategic plans to encourage creative forces and to boost innovation. Less discussed is what actually counts as successful innovation, and how it is being defined and measured. How do things become perceived as "new" and thought of as innovations? Stories that are being framed as "successful" tend, primarily, to be connected to the business world, with a focus on more, faster, larger. Is making it to the market the only thing that really counts?

The discourse about innovation seems, however, to be rather repetitive and uninventive (Suchman et al. 2009). What images of innovation do, in fact, serve as bases for decision makers and policy makers when they formulate standards and legislation

that regulate directions, define boundaries, and set the scene for possible futures? What stories about innovation are being told, and by whom?

Design, the sibling of innovation, has received similar notoriety. Design thinking is today a much-favored management approach (Martin 2009; Nussbaum 2009), just as attractive as the creative class (Florida 2003) was a few years ago. By design, we have the potential to tackle major societal problems and to find solutions to fundamental problems of sustainability and survival (Brown 2009; Mau 2004). But who participates in these design endeavors, and is design only about technological change (Barry 2001)?

Much of the hope associated with design and innovation is certainly directed toward the genius of invention—the creative signature designer and the equally creative and omnipotent entrepreneur turning ideas into successful business—but also toward ordinary people, who, as users or consumers, are increasingly seen as potential co-creators (Pralahad and Krishnan 2008). One inspiration for this perspective is the work put forward by Eric von Hippel and his colleagues in management science (von Hippel 2005; von Hippel et al. 2011). Having observed that user-driven and consumer-driven innovations match, and in some countries even exceed, corresponding corporate R&D investments, they call for a paradigm shift.

There is a genuine call for innovation through user-centered design, and even a belief that innovation is getting democratized. At the same time, inventive as it may seem, this new paradigm is surprisingly traditional and managerial. The main challenge put forward is still how large corporations can harvest users' and consumers' innovations into safe and profitable mass-market products. Certainly, cheap production tools and Internet resources for marketing now make it possible for a young man (in most cases) with brave ideas to become a successful entrepreneur without the backing of a large firm, but is that enough to support the claim that innovation has been democratized?

This book is based on the premise that user-driven design and innovation is an approach with great potential, both for producing value and for democratizing such production. We share the observation that users and consumers already are important producers and creators of value, but we believe that the question of what counts as values and for whom should be opened up. We share the ideal of democratizing innovation, but we do so beyond the liberal ideal of the "free individual that can become anything he wants," thus acknowledging that questions of democracy also are power struggles about distribution of resources and rights in which the voices and values of more peripheral but important groups may remain unheard and may not be taken into account.

Current managerial ideology embraces the crowd as a source of innovation—for example in the form of user-driven innovation, crowdsourcing and crowdfunding, and focus-group testing—with a strong rhetoric of accessibility and participation as keys to democratizing innovation. All this is often, however, done from the perspective of the successful corporation and unaltered market logic, which privileges particular

crowds and particular places as centers of innovation (Suchman 2008). In this book, we challenge this logic of innovation by exploring the potential of interventions and perspectives that demonstrate a repertoire of situated practices of *future-making*—that is, multiple futures imagined and made locally, in heterogeneous communities, and with marginalized publics (Björgvinsson et al. 2010). Hence, we are exploring more inclusive, collective, and public approaches.

Beyond business as usual

This book tells stories about design and innovation that go beyond business as usual and the seemingly dominating perception of what are counted as successful innovations. Alternative moments of inventions are highlighted, and overlooked innovators and entrepreneurs are acknowledged and put in the spotlight. Thus, these stories represent a critical investigation of the prevailing situation, but not primarily as a conceptual critique. Instead, the focus is on exploring alternatives, on the controversies that surface, and on composing together in and around controversial things (Latour 2010; Binder et al. 2011).

The authors are researchers from the School of Arts and Communication and Medea Collaborative Media Initiative at Malmö University, a digital Bauhaus that for at least ten years has been exploring user-driven design and open innovation, typically with a participatory design approach. (See, for example, Ehn 1998, Nilsson and Topgaard 2012; Löwgren and Reimer 2013.)

The chapters represent a wide spectrum of design and innovation processes, which are generating values that are not easy to measure when applying today's scorecards for successful innovation. The stories exemplify how alternative innovative forces, way beyond the general assumption of what entrepreneurs look like, can become a resource that generate societal value, and contribute to sustainable future-making. However, the book is not a collection of success stories. On the contrary, all of them open up controversies.

The cases and stories are collected under four themes, announced by the titles of the book's four parts.

Designing conditions for the social

As has already been mentioned, the idea that design, especially participatory design, can play a major role in innovations in the everyday life of people is gaining more and more momentum. Under the design umbrella, we find both market-driven social entrepreneurs replacing the role of the welfare state and designers participating in bottom-up formations of collaborative services and creative communities. Our stories are of the latter kind, showing capabilities to improve situations, but also problematic situations

and democratic dilemmas. In chapter 3, we meet a group of immigrant women struggling to be seen and respected by the city and the Swedish society when, as a collective, they are developing and performing collaborative services such as caring for refugee children. In chapter 4, we consider the dilemmas encountered when trying to design, from the bottom up, an incubator for social innovation.

Opening production—design and commons

Makerspaces and fabrication laboratories (fab labs) may be seen as ways to democratize innovation and production by extending open-source strategies into the production of, for instance, open hardware. Fab labs are often seen as open-innovation contexts in which lead users can develop innovation that may become commercial solutions from which companies can profit. But they may also be seen as platforms for broader participation and new ways of collaborative engagement in design and innovation, pointing at alternative forms of user-driven production. The three cases discussed in this part of the book range from experiences with setting up and running a heterogeneous makerspace (chapter 6), to a more artistically oriented lab (chapter 7), to the development of the open-hardware movement (chapter 8). A central question reflected upon in the chapters is in what ways the examples point at robust enough alternatives to business as usual and market-driven production and innovation.

Creative class struggles

In today's innovation discourse, creative industries and the creative class are often seen as major driving forces, foregrounding their economic value production and how they can help brand a city (Florida 2003). The chapters in this part of the book focus on participatory cultural production, especially the conditions for small and independent cultural actors. The creative class is analyzed as being far from homogeneous and as characterized by internal class struggles, displaying complex relations between media industry, the state, and cultural workers. More specifically, chapter 10 explores cultural commons as a foundation for independent and participatory film-making, chapter 11 explores the conditions for grassroots journalism, and chapter 12 takes a closer look at how creative industries' managers look at design, participation, and innovation.

Emerging publics

Design and innovation involving users and consumers, by their very nature, become more and more public. Consequently, the production sphere merges with the public sphere, which traditionally has been the main democratic arena. Conditions for participation become not only a production imperative, but also a predicament for a more inclusive democratic society. The stories that are told in this part of the book explore opportunities and dilemmas in the creation of new kinds of public engagement under

these socio-technical conditions. Publics are, with reference to the pragmatist philosopher John Dewey (1927), thought of in the plural and as formed around issues or matters of concern, rather than as crowds to be sourced or counted. The inquiries into such publics, dealing with access to public space and democratic participation, focus on hip-hop youngsters making their music public on the city buses and girls that through skating appropriate the streets and abandoned places of Malmö (chapter 14), sewing circles in rural Sweden where participants embroider mobile-phone text messages and find mundane ways to engage in politics (chapter 15), and activists live-streaming videos of police violence from Tahrir Square in Cairo (chapter 16).

Each of the four parts of the book also features an industry case, which is somewhat different in perspective and style from the other chapters. Two of the industry cases can be described as entrepreneurial reflections on controversial issues encountered when trying to democratize technology. One of these cases involves a small media company enabling citizens to broadcast live video from wherever to whomever (chapter 16); the other is an inside story about controversies associated with making production hardware open to and accessible by the general public (chapter 8). These two cases expose, in different ways, societal and economic forces that are in play when business as usual is challenged by attempts to democratize technology. The third industry case takes a closer look at the creative class as represented by managers in the media and creative industries (chapter 12). What are their perspectives on innovation, participation, and democracy? How deep is their love for democratizing innovation? Part I of the book, the part on design and social innovation, doesn't really have an industry case, but instead has a chapter dealing with the circumstance that the "powerful stranger" from local industry and government, if challenged, has the power to opt out of any collaborative attempt to democratize innovation processes, and thereby independently continue to conduct business as usual (chapter 4).

The book focuses on stories and reflections on practical interventions and doesn't provide a unified theoretical framework for inquiring into design, innovation, and future-making. There are, however, recurring concepts, echoing the prologue, that indicate an orientation, and each of the four parts has an introductory chapter that frames the cases, lays out the issues, and provides some basic concepts for reflecting upon the experiences of innovation, design, and democracy. Quite a few of the basic concepts pertain to multiple themes and multiple chapters. What follows is a short introduction to some of the book's central ideas and references. One such reference is to Scandinavian participatory design, as contemplated by the collective designer (part of) in the prologue. The other major reference is to science and technology studies pondered upon in the prologue by the future archaeologist and the anthropologist of technoscience.

Scandinavian participatory design

Participatory design is a cornerstone of the practice and the theory of the interventions reflected upon by the various authors. For an overview, see the different chapters in *The Routledge Handbook of Participatory Design* (Simonsen and Robertson 2013).

Participatory design started in Scandinavia in the early 1970s as action-research collaborations with local trade unions at the workplace (Sandberg 1976), challenging the use of technology and the management prerogative to define what may count as innovation (Bjerknes et al. 1987; Ehn 1988). Since then, participatory design has been about alternative futures. By being involved in the practice of groups in society, it has, through design practice, endeavored to support democratic changes.

Practically, participatory design started as local knowledge production, typically through collaborative prototyping in struggles about the design, implementation, and use of computers in Scandinavian workplaces (it was then known as the collective resource approach) (Bjerknes et al. 1987). Theoretically, participatory design was done as action-research by appropriating future-workshops methods (Jungk and Müllert 1987), pedagogy-of-the-oppressed tactics (Freire 1970), and object-oriented programming tools (Nygaard and Bergo 1973) into a collaborative prototyping approach. Typically this approach addressed design as "design before use" by involving potential users in the design of their futures (Ehn 2008).

Today, participatory design actions are increasingly taking place beyond the workplace—in public spaces, but also as engagement with non-governmental organizations, grassroots organizations, and other often marginalized groups. This is in line with its democratic tradition, but this new situation also invites researchers and practitioners to re-conceptualize innovation as a form of invention (Barry 1999) and allow them to challenge particular (and often hegemonic) approaches to design and innovation in the corporate workplace.

Local knowledge production and collaborative prototyping are still fundamental to participatory design, but now, typically, this mundane future-making (Suchman et al. 2009) takes place as design in use, not before use, and is often staged to deal constructively with controversies (Mouffe 2000; Latour 2005a).

Science and technology studies

Clearly the book is grounded in values and approaches that have grown out of Scandinavian participatory design, not least the ideas of collaborative prototyping as ways to cross boundaries between different and diverse actors and communities of practice (Lave and Wenger 1991), but there are also clear influences from other fields, especially science and technology studies and feminist techno-science.

The authors make frequent references to Bruno Latour and other actor-network-theory scholars and their suggestions for re-assembling the social as a collective of humans and non-humans (Latour 2005b), to the thing as politics (Latour 2005a), and to a compositionist manifesto that challenges designers to draw things together and work with matters of concern (Latour 2010). The influence of ideas about infrastructuring and about boundary objects as processes and vehicles for design across time and stakeholders, as suggested by Susan Lee Star and colleagues (Star 1989; Star and Ruhleder 1996; Star and Bowker 2002), is also prominent. Several of the chapters have been inspired by the reflections on practice, situated knowledge, and accountability, and on the agency of artifacts and other non-humans, of the feminist techno-science researchers Donna Haraway (1991, 2007) and Lucy Suchman (1987, 2011).

Owing to this theoretical orientation, this book is really not about user-driven design and innovation. In theory and in practice, users are much too often not only taken hostage by neo-liberal capitalism but also patronized by advocates of human-centered design. In social science, it is becoming clear that society is not just social but also material (Latour 2005b). The neglected objects strike back—just think of global environmental crises. With design it might be just the same; we know design cannot be reduced to the shaping of dead objects. But humans should not be reduced to users or to individual subjects living external to objects. The social sciences have had to acknowledge that society is a collective of humans and non-humans. Design may have to do away with both users and objects to remain socially and politically relevant.

Thinking of the interventions discussed in this book as democratic design experiments will shed some light on the work that some of the above-mentioned concepts do.

The ways participation and representation are addressed throughout the book may be viewed as experiments in merging and going beyond political parliaments and scientific laboratories (Latour 2005a). One broad idea that has attracted attention in the field of design research in general, and also in this book, is the re-invention of the ancient Nordic thing (Latour 2005a; Binder et al. 2011).

The etymology of the word 'thing' is of importance to appreciating the re-invention of the thing and to understanding design, innovation, and democracy as acted out between the parliament and the lab. It exposes how the modern understanding of things as objects—entities of matter—was preceded by a more complex socio-material understanding of things as governing assemblies, rituals, and places—an understanding that dealt with matters of concern, with governing of conflicts and controversies, and with the making of decisions. The present-day notion of *design things* (Binder et al. 2011) as explored in this book is inspired by this heterogeneous form of governance and making.

A pragmatic form of the design thing as an experiment in democratic design and innovation is the living lab, a kind of participatory laboratory "in the wild." Living labs come in many shapes, ranging from market-oriented labs for user testing of new

products to long-term engagements between designers and diverse groups of citizens and their concerns.

The living labs in Malmö have been of the latter kind and have had three partly overlapping orientations. One lab focuses on experiments in social innovation in neighborhoods in collaboration with local non-governmental organizations and other citizen groups. Issues of citizen participation and controversies related to governance (Swyngedouw 2005; Stigendal 2011) turn out to be of central importance to these experiments, including the tactics of "friendly hacking" (Jégou et al. 2013). (Experiences from this lab are the basis for the reflections in part I and one of the cases in part IV.)

Another lab explores makerspaces as venues where crafts and do-it-yourself practices may challenge more market-driven production processes. Here, the concept of commons (Ostrom 1990; Bauwens 2006) figures in investigations of the potential for economies of scope based on more open forms of production. (These concepts are developed further in part II.)

The third lab also has an orientation toward exploring commons, but in this case the emphasis is on cultural commons, creative class struggles, and ways in which cultural producers lacking strong corporate backing or state support and financing are marginalized by standardized networks or infrastructures (Star 1991). (Experiences from this lab are the basis for the reflections in part III.)

In all the labs, and throughout the book, issues of innovation, design, and democracy are dealt with as processes and events of thinging and infrastructuring rather than as isolated projects. It is argued that the project frame is too narrow and that long-term relations of trust, which is very far from user-testing in labs, have to be built and maintained. The authors attend to this challenge through experimenting with diverse forms of building trust, thinging, and infrastructuring—beyond simple networking—by, for example, sewing together and cutting apart through patchworking or through rhizomatic collisions.

These thinging or infrastructuring activities do not presuppose consensus among the participating stakeholders, but are inspired by the idea of agonistic democracy (Mouffe 2000), aiming to find ways to turn antagonistic relations into adversarial productive and more democratic interactions and outcomes.

These kinds of collaborations are, however, not activities without risk for the participants, marginalized or not. Here the word 'marginal'—as in mentions of those marginalized by hegemonic infrastructures—should be understood not in an absolute sense but rather as a movement from the periphery, striving to acquire a more legitimate position in intertwined communities of practice (Lave and Wenger 1991). Not all participants have the power to opt out of the thinging and go their own way if their basic interests are threatened, and others may not have resources enough to hang in even if they want to continue collaborating.

This is also a challenge for designers and researchers. There is no *a priori* legitimate center from which activities of thinging and infrastructuring can be viewed, governed,

or made. Consequently, designers and researchers are stakeholders among many, having to find legitimate peripheral participation and accountable positioning (Lave and Wenger 1991; Suchman 2002).

Travel guide to futures?

If you have seen Malmö, you have seen the rest of the world. Taking this more as a question than as a claim, we organized a design thing at the 2012 international Participatory Design Conference in Denmark. This thing included, in addition to the local cases from Malmö and the challenges discussed in this book, similar future-making experiences with, for example, retired teachers at a Beijing university, young street vendors in Bogota, and collaboration between detention officers and inmates in a Danish prison. During the thing, an archipelago of futures was mapped out from these different design and innovation experiences, and the do-it-yourself zine *Travel Guide to the Futures* was constructed, exploring proximities of some futures, and distances of others, as well as connections and resistances between these multiple forms of innovation practice (Ehn et al. 2012).

This archipelago of futures deviates dramatically from the future colonized by the technological frontrunners and the innovation centers of the world, like in the Silicon Valley, reported on in the prologue by the anthropologist of technoscience. In the stories told in this book, there is no single future arriving first and fastest, only multiple, heterogeneous, and controversial futures that are in the making, composed through the networking, the many entanglements, the ongoing thinging and infrastructuring, the patchworking and collision of intersecting rhizomes, and quite mundane design and innovation activities (Suchman 2008).

The stories are not success stories of innovation, design, and democracy. The stance is more inquiring, perhaps even with a dash of Nordic melancholia, but still with hope for more democratic futures in the making. There is no straightforward travel guide to the futures, but there certainly is a claim that these design and innovation activities—emanating from the people in the city of Malmö—should be legitimate parts of an emerging, controversial, and expanding archipelago of futures beyond business as usual, a place worth traveling both to and from.

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