Prologue

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This prologue is carried by a Design Mailboat. It was originally destined for the opening of the 2012 Design and Displacement conference (organized by the Society for Social Studies of Science and the European Association for Studies of Science and Technology) in Copenhagen, where the exchange was performed. Here the Design Mailboat has been redirected, serving as a prologue to the coming marginal notes on innovation, design, and democracy. Mailboats are message-sized vessels, originally sent from remote islands to reach unknown shores, designed to carry words on the tide from one beach to another, to send questions and receive floating replies. The Design Mailboat is one such word-bearing ship. We have been sending it back and forth between three coasts with a passion for design and its futures. The Design Mailboat has floated from the islands of Orkney (off the northeast coast of Scotland), through the Öresund (between Denmark and Sweden), to Silicon Valley (in California). Silicon Valley is the mythic place of origin of the design of the mouse, the graphical user interface, and the big green button on the photocopier. Öresund is a mythic center of Scandinavian Design, the place of origin of the 'white style,' a home of legendary designers and beautiful functional objects, but maybe also the home of the Thing and its agonistic collectives. The islands of Orkney are a mythic place of origin for wave and tidal renewable energy, and for the design of monumental stone circles, built more than 5,000 years ago. From our various locations as the future archaeologist, the collective designer, and the anthropologist of technoscience, we have been asking one another what "design" is in these far-apart places.

From the Future Archaeologist—Message 1

I write this message to be taken in the ocean currents to that far-off continental coast, to that mythic place of Silicon Valley. You echo in the wireless network wind on my cheeks, from the metal chamfers around my keyboard, in logos that litter my web windows, in the very essence and existence of my mouse.

I know your world by its absent presence in mine. You haunt me. Your home haunts me. Where does Silicon Valley not haunt?

Figure P.1
View over the European Marine Energy Centre, wave energy test site, Orkney. Laura Watts
(CC:BY-NC).

You live in that place where my future is imagined and rolled-out from, rolled over my bones, over my home, my hills, my islands.

I wonder what you imagine my home looks like (for without imagining there can be no design). What do you know of the islands of Orkney, apart from their location above the northeast coast of Scotland, and their shape, the wings of a diving Osprey? My home is mythic, too. A world center for prehistoric stone circles. A world center for marine renewable energy. But what do you know? What of my home affects your thoughts, your imaginings, your designs for the future?

What does the future mean to you? What does it mean to design a future in your world, on your coast?

But who might you reply to, you may wonder.

So let me introduce myself over the Atlantic flow of the Gulf Stream, which separates us.

I am the future archaeologist.

Yes, an archaeologist, of sorts.

Archaeologists reconstruct the past from fragments of found evidence. They make the past from the flotsam and jetsam left behind when people make the world.

I make a *future* from the flotsam and jetsam left behind when people make the world—people like designers, whose choices, whose sociomaterial practices, imaginings, stories, and digital ink, make the world one way and not another.

Maybe you don't see design that way.

I see it as a future-making practice (and Pelle Ehn, a design researcher from Copenhagen and Malmö, would agree with me). Every practice has residues. I just collect those residues from design and paste them together, play with them, try out lots of different ways they go together, and reconstruct them in lots of different ways. If design is a future-making practice, then I reconstruct design futures in lots of different ways. Send me some residues and I'll show you what I mean.

I wish I knew what design is in your world.

Whatever it is, its effects are felt here. Someone, perhaps in an urban, techno-centric place like yours, once designed a broadband wireless network for the islands. But in that designer's world there was no tide, no rising and falling of the sea, no curve of the Earth between wireless antennas. So every time the tide came in, the sea rose and broke the signal. Knowing about tides matters to design here.

Tell me about design in your world, help me understand.

And tell me about you.

Yours, from Orkney,
The future archaeologist

From the Anthropologist of Technoscience—Message 2

Dear future archaeologist,

I was walking on the beach at Pescadero this morning (a rare time out from work— "work hard, play hard" is the program here, but somehow I always seem to implement only the first of those) when I found your message. I had no idea where the islands of Orkney were (before I used Google to find out), but of course I've seen images of those stone circles, and I have a feeling they would be a welcome change from here.

In the twenty years that I've spent here, I've become preoccupied with undoing Silicon Valley—not in the sense of denying its existence or consequence, but in a different sense that sending some messages back and forth might help to articulate. To get started, let me bring in a muse whose voice probably has traveled the distance between us:

A peculiar attitude to history characterizes those who live in the timescape of the technopresent. They (we?) tend to describe everything as new, as revolutionary, as future oriented, as a solution to problems of the past. The arrogance and ignorance of this attitude hardly need comment. … However, if revolutions here are mostly hype, discontinuities and mutated ways of being are not.

Categories abound in technocultural worlds that did not exist before; these categories are the sedimentations of processual relations that matter. (Haraway 2008, 135)

This "peculiar attitude" expressed itself vividly to me one evening around 1995 as I was driving my car down Hillview Avenue in Palo Alto listening to National Public Radio. "The future arrives sooner here," said the Silicon Valley technologist who was being interviewed. His words constituted a place—a "here"—that, in indexically referencing his location in Silicon Valley, performed the existence of that place once again through the naming of it. And in positing a singular, universal future, his words also reiterated a past, in the form of a diffusionist model of change. The anthropologist Johanes Fabian, in *Time and the Other*, describes this as a form of temporal distancing that "involves placing chronologically contemporary and spatially distant peoples along a temporal trajectory, such that the record of humanity across the globe is progressively ordered in historical time" (Fabian 1983, 13). The kind of spatial and temporal distancing enacted in a statement like this is always, in other words, a colonizing move.

Figure P.2
Manifest Destiny, John Gast, 1872. Public domain.

So I hear this statement as reproducing the geographies of center and periphery, and temporalities of development, that in the mid 1990s underwrote Silicon Valley's figuration as central to the future of everywhere. But postcolonial scholarship has taught us that centers and margins are multiple and relative, and futures can be enacted only in what Anna Tsing (2005, 1–2) calls "the sticky materiality of practical encounters … the makeshift links across distance and difference that shape global futures—and ensure their uncertain status." Locally enacted effects are made to travel less through easy flows than through messy translations, and, as Tsing observes, those who claim to be in touch with the universal are notoriously bad at seeing the limits and exclusions of their own knowledge practices. Postcolonial forms of future-making, it follows, require geographies that have less certain centers (see Redfield 2002, 794).

So one way of relocating future-making, I'm thinking, could be an anthropology of those places now enacted as centers of innovation that shows the provincial contingencies and uncertainties of their own futures, as well as the situated practices required to sustain their reproduction as central. How would that fit, I'm wondering, with your project?

Yours from the Valley,
The anthropologist of technoscience

From the Collective Designer—Message 3

dear archaeologist of the future

and anthropologist of techno-science

this morning

during my daily morning bath

by the sound that

out of denmark, sweden, norway

cut scandinavia

together and apart

your beautiful

immutable mobile mailboat

crossed my path

your mailboat intra-actions

your thoughts on design

and care for futures being made

across the (orkney) islands

and the (silicon) valley

fill me with curiosity

and spark my imagination

but also make me want to share

the futures being made

by the waters where i fare

a collective designer (of sorts)

that's what i am

an oxymoron of course

but please bear with me

there is more to come

in contemporary

techno-science lingua franca

the collective designer

is not the omnipotent maker

of isolated objects (of desire)

Figure P.3
The collective designer (part of). Upper left: public domain. Upper right and lower left: Copyright Pelle Ehn; published in *Design at Work*. Lower left: Copyright Pelle Ehn; published in *Design at Work*. Lower right: Copyright Pelle Ehn; published in *Work-Oriented Design of Computer Artifacts* (Erlbaum 1988).

but more a passionate participant

among many

in multiple unfolding

things of design

these socio-material

"collectives of humans and non humans"

are designerly appropriations

of ancient nordic things

political assemblies

rituals and places

making futures

through controversial

"agonistic" "matters of concern"

(maybe as it was once

on the islands of orkney)

the contemporary

scandinavian collective designer

some forty years of age or so

norwegian of origin

focusing on democracy

and worker participation

actively searching

alternative futures

through collaborative

design things

at the time when computers

entered the shop floor

threatening to deskill workers

and tighten managerial control

pioneered at

"kongsberg weapon factory"

(maybe not the most likely place

for an experiment in

democracy and participation)

but here is another paradox

at that time

the collective designer

traveled over the seas

actually made it to the valley

but not as a

controversial design thing

foregrounding trade unions,

class struggle, and democracy

but as object-oriented design

a computer simulation language

with active data objects

that inherit properties

from data classes

rumors have it

that translated into

the programming environment

"smalltalk"

it became part

of technological futures

being made in the valley

a decade later

the scandinavian collective designer

embarked on travels to "utopia"

not another "nowhere"

but the most socio-material interventions

in the controversial "now here"

a nordic design thing addressing

the potential technological destruction

of the typographer and his union

by an alternative design of

"computer tools for skilled workers"

and "collaborative work organization"

this was in the wake

of the mac apple revolution in the valley

and the collective designer

actually traveled there

for technological inspiration

(yes he was there thirty years ago incognito)

the outcome of "utopia"

resembled the mac as object

with mouse and graphical display

but was a different kind of thing

a participatory design thing

a typographer and designer collaboration

prototyping and exploring

alternative socio-material futures

through technological

class-struggle devices

and political actions

of this utopia

"where workers craft new technology"

the international technical press

wrote with appreciation

and much exaggeration

"today scandinavia

tomorrow perhaps

the rest of the world"

paradoxically

they were partly right

thirty years later

this political utopian

future-making practice

still travels the world

but now politically marginalized

translated into a cornerstone

of mainstream neo-liberal

"user-driven innovation"

today the collective designer

still concerned with matters of

democracy and participation

has moved beyond the workplace

and into ongoing evolving

controversial design things

centered around innovative actors

from the outskirts of the city

and the margins of society

what about the peripheries of

your island and your valley?

yours sincerely

out of scandinavia

the collective designer (part of)

From the Anthropologist of Technoscience—Message 4

Dear future archaeologist and collective designer (part of),

In the Valley it's all about invention and newness. So here's a question: What does it mean to think about invention not through the figure of the light bulb (whether it's in the hands of Thomas Edison or floating in a thought balloon over someone's head), but as an effect of generative connection among things not previously associated? And
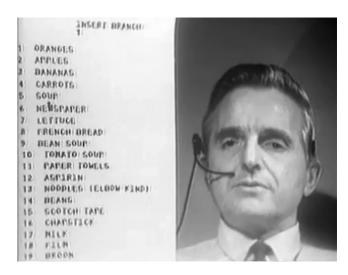

Figure P.4
The moment of invention. Permission granted by SRI International.

to think about newness not as a property, but as a relation? A good strategy is to look for the rhetorical/material practices through which collectives and things are translated as individuals and objects. Within this repertoire, as many of my technoscience studies colleagues have pointed out, the *demonstration* is a pivotal event.

I'm thinking about demos because I just got back (well, in 1998 actually) from an event at Stanford University celebrating the thirtieth anniversary of "The Mother of All Demos." You can watch the original demo yourself online—here's the description:

On December 9, 1968, Douglas C. Engelbart and the group of 17 researchers working with him in the Augmentation Research Center at Stanford Research Institute in Menlo Park, CA, presented a 90-minute live public demonstration of the online system, NLS [standing for oN-Line System], they had been working on since 1962. The public presentation was a session of the Fall Joint Computer Conference held at the Convention Center in San Francisco, and it was attended by about 1,000 computer professionals. … The mouse was only one of many innovations demonstrated that day, including hypertext, object addressing and dynamic file linking, as well as shared-screen collaboration involving two persons at different sites communicating over a network with audio and video interface.

To characterize the demo as pivotal is not to say that its success is guaranteed; on the contrary, the demo system is always a shaky proposition that has to prove itself in and through its enactment, often in the face of a skeptical audience. At this event in 1998, a panel of speakers—specifically, those who worked with Engelbart to stage the event in 1968—are reflecting on the experience—the labors and the thrills—of configuring the system and making it work on the day of the demo. Which makes sense because it was on that day, I'm suggesting, that the assemblage was made into the oN-Line System, not only by its makers but by those who assembled to witness it in the Convention Center. So how, then, is the system demo positioned as coming after the object, rather than as its founding moment? Other speakers at the Stanford celebration 30 years later recall The Demo's effects. Alan Kay, famous as an early visionary of hand-held computing and credited (along with Abraham Lincoln and a number of others) with the edict that the best way to predict the future is to invent it, puts it succinctly: "This demo changed my life. I was never the same afterwards." If we take the demonstration seriously, it shifts the settlement of questions of newness from objects to events, and to the marks that the latter leave on their participants, both human and nonhuman.

Yours from the Valley,
The anthropologist of technoscience

From the Future Archaeologist—Message 5

We three are kin, it seems. Coastal creatures that thrive at the edge, that seek the periphery where infrastructures of power are more fragile, and can be hacked; here at the edge, the undersea fiber-optic sound of Important Emails from the center can be "transduced," as Adrian Mackenzie (2002) or Stefan Helmreich (2007) might say.

Figure P.5
The Ring of Brodgar stone circle, Orkney. Aaron Watson (CC:BY-NC).

Here, at the periphery, there can still be dragons.

After all, those at the center seek the leading edge, the bleeding edge.

If the future has a place, then it is here, at the edge, where things change form, land to water. The future is a seascape.

But it was ever thus.

Archaeologists, such as Mike Parker Pearson, cite the Ring of Brodgar stone circle as the origin for the design of Stonehenge near London (Parker Pearson et al. 2007). Six thousand years at the leading edge of design and technology. Still there with the European Marine Energy Centre, and the world visiting, eager to learn of its wave and tide energy devices, those moving monuments in the sea.

Orkney has a timescape that is not in the technopresent like Silicon Valley, dear anthropologist of technoscience.

Orkney has a timescape that is mixed—diffracted, since we are borrowing from Donna Haraway (1994). Walk with me through the contemporary heritage management of a World Heritage Site, through a farmer's field sown with ancient organic wheat, and hear your footsteps echo over the concrete remains of a forgotten national wind industry.

The poet George Mackay Brown knew it when he wrote: "The Orkney imagination is haunted by time."

What if "The Mother of All Demos" had taken place here at the edge, where the technopresent is diffracted?

Do such demos require a center, a pivot, a fulcrum, around which to spin outward?

My friends at the European Marine Energy Centre, a test site for demo-ing, would say that it can be otherwise.

We three are kin in other ways, too. We are attentive to collaboration at the edge. You, collective designer, speak of democracy and participation. Here in Orkney some call it 'Orkney PLC', a Public Limited Company, not to invoke cold capitalism, but to invoke the warmth of a company, of people working together to pay the bills, of islanders who know that what we talk about when we talk about money is a future.

Orkney PLC has been around for a while, too.

The stone circles were community-building projects, the archaeologist Colin Richards (2004) argues. Each family, each company in the old sense, brought a stone to a place. Not monument-making but Orkney-PLC-making.

We are still haunted by those community-builders. Most islands have a community development trust with wind turbines that turn fierce tear-your-car-door-off-its-hinges weather into a bank balance for the island community. If the British Crown, owners of the sea, would let them, they'd do the same with wave and tide energy. But the sea is not a local resource, like the stones on shore. Step from the farmer's field into the Atlantic Ocean, get your feet wet, and here there be vast, European Union monsters in the deep. Ask any fisherman.

This far from Brussels, this far from Silicon Valley, you have to work hard or you will sail off the edge of the map and no one will notice. The infrastructure of everyday living gets thin here. One big storm and the lights go out, the Internet goes out. An island community knows the length of copper that thins down their data.

Infrastructures are imagined by the center as centralizing forces. It would be cheaper, more efficient, for us all to live in London or Los Angeles or Beijing. Less copper, fewer oil pipelines, reduced leakage from the water system.

But what might centrifugal infrastructure look like? An infrastructure that was designed to force things to the edge, to the periphery? So that it took work for the center to pull it in?

We three should talk.

We three are kin.

From the Collective Designer—Message 6

dear designboat fellow travelers

i get the point from the valley

that demos are

what make the objects travel

but then again

is not "the mother of all demos"

literally the people

political collective things

and publics in the making?

for the scandinavian

collective designer

this public thing by preference

takes the form of prototyping

in "agonistic" "living labs"

as local activities

collaboratively "rehearsing futures"

making and composing

"matters of concern"

maybe these "living labs"

as performed here by the sound

are more like

the "centrifugal infrastructures"

suggested from the island

then central to such "living labs"

as marginalized and designerly

"infrastructuring" intra-actions

are immigrants like jila moradi

and the herrgård's women's association

counseling on violence in the home

bitterly struggling

for recognition by the city

of their modest but beautiful design

and social innovation prototype

a collective of

displaced and resourceful women

producing catering services

for unaccompanied refugee children

a great offer

the city wasted as of now

another controversial thing

of social innovation

is the design and recomposing

of the city buses

from private advertisement planks

to public places and hubs

for musical exchange and reproduction

as appropriated by

"the voice and face of the street"

a movement of youngsters

from the projects

futures are also being prototyped

and value production reassessed

by "free labor" and in commons

in maker spaces like fabriken

situated in an abandoned shipyard building

opening up and collaboratively exploring

the secret workshop of production

drawing together open software,

electronics, bikes, and textile

in do-it-yourself and craft intra-actions

the collective designer

also takes part in "agonistic" things

not always with a happy ending

like in exploring

new forms of governance

and publics in the making

in designing a city social incubator

drawing together

grassroots movements

local social entrepreneurs

ngos and civil servants

venture capital and politicians

collaboratively prototyping

a future thing to implement

a distributed incubator

out there in the projects

where the action and the demos are

but so far business is as usual

hegemonic power opted out

and left the common thing

implementing their own

incubator vision

a central market driven

new jobs generator

infrastructuring and making things

in cultural production

is neither without friction

in creative class struggles

there is marginalization

but also future-making tactics

things countering capital and state

like the small indie team

behind the film productions

"nasty old people" and

"granny's dancing on the table"

that by crowd-financing

through the "pirate bay"

and collaborating

with the public

in the making

made their dream come through

in the margin

in rural places

there are also demos

coming together through

"centrifugal infrastructures"

like "threads"

a mobile sewing circle

patchworking

traditional craft and mobile phones

stitching together

matters of concern

and prototyping

emerging publics in the making

these are but a few examples

for contemplation

of collective design

and marginal futures

as being made at this location

they may raise questions of power

and design agency distribution

across humans and nonhumans

but there should be more to it

than acts of design delegations

because collective design

it seems

becomes in the very making

in everyday intra-actions

in comings together

in controversial

collaborative composing

preferably performed as

things of design

more kin to ancient political assemblies

on the island and around the sound

than to the new speak of innovation

and the modern object of design?

from the sound

your collective designer

(part of)

From the Anthropologist of Technoscience—Message 7

Dear future archaeologist and collective designer (part of),

I'm inspired by our mailboat exchange to think about questions of time, and how it folds into the work of making the problems for which design offers us its solutions. Here are two images to get us started.

On the left we see Brokaw Road, in San Jose, California, in the first wave of European-American settlement of the valley now known for its silicon, but then famously a place of agricultural abundance, called Santa Clara since its colonization. On the right we see the same place just over 100 years later, in roughly the present moment. I'm making a contrast in setting these two images side by side, of course—a contrast between an agrarian past and a (post?)industrial present, materialized in the shady greenness of organic plant life and the bare grayness of concrete. But I'm most taken by the sign that invites us to "Enter Here' through a door that will grant us access to the home of "Excess Solutions" ("E$"), a reseller of surplus electronics equipment. How did it come to be that we have an excess of solutions? What is the process by which innovation creates its problems, first the need for information technologies, now their disposal?

As we know, disposal is not actually about making things go away, but rather their displacement. The recycling of highly toxic e-waste is a globally though asymmetrically distributed industry, and, as Myra Hird reminds us, landfill is far from an inert source

Figure P.6
An excess of solutions (left: public domain; right: Flickr user mightyohm CC:BY-SA).

of environmental destruction; it is always also a blooming site of becoming for other organisms that thrive on what for us is deadly (Hird 2010, 36–39). But in design imaginaries the present is characterized not by its excesses (that's left to the environmentalists), but rather in terms of the lack or emptiness to which innovation is a necessary and urgent response. The mark of a technological society, Andrew Barry (2001, 201) has suggested, is an orientation that privileges change and then figures change as technological innovation. Innovation, in turn, is embedded within a cultural imaginary that posits a world that is always lagging, always in need of being brought up to date through the intercessions of those trained to shape it—a world in need of design.

Postcolonial scholarship in anthropology, in science and technology studies, and in related fields makes it clear that, far from a universal good, the valorization of newness is a local preoccupation of certain actors invested in particular forms of property, within specific regimes of commodity capitalism. A more performative metaphysics of the new makes it evident that, just as translation invariably produces difference, novelty requires imitation or likenesses to familiar forms. Homi Bhabha (1994, 227) directs our attention to the indeterminate spatiality and temporality of the "in-between" as crucial to a postcolonial figuration of difference—an insight that I take to be generative for thinking about objects as well as subjects, and about relations of old and new so central to discourses of design.

So what if we think about the distance between our islands, valleys, and sounds not as the kind of difference that nostalgia makes, or disenchantment, but in terms of the in-between, and as places and material practices of future-making? "We move into the future," Dorothy Smith writes, "as into a building, the walls, floors and roof of

which we put together with one another as we go into it" (1990, 53). This future isn't a temporal period existing somewhere beyond the present, but an effect of discursive and material practices enacted always in the present moment, however much those practices may be haunted by memory or animated by imaginings of things to come. Relocating innovation, as we've explored it together, means putting innovation in its place, in a way that makes evident the multiplicity of places in which different but also potentially related future-making activities occur. (Relocating Innovation is the name of a collaboration among Endre Dányi, Lucy Suchman, and Laura Watts; see http://www.sand14.com/relocatinginnovation/.) This is a strategy that helps us to loosen the grip of unquestioned assumptions regarding what innovation is and where it happens, and to make room for more generative and sustainable forms of future-making.

What does it mean when our dragons turn into machines?

Yours from the Valley,
The anthropologist of technoscience

Figure P.7
The collective designer (part of). Per-Anders Hillgren and Anna Seravalli (CC:BY-NC).

From the Future Archaeologist—Message 8

Collective designer, anthropologist of technoscience (or whoever will intercept this on the predictable lunar tides and Transatlantic currents)…

You speak of dragons turning into machines, anthropologist of technoscience, but which is more mythical, I wonder? I am thinking of Arthur C. Clarke's famous law: any sufficiently advanced technology is indistinguishable from magic. To which I add my own corollary: any magical machine is indistinguishable from advanced technology. Both dragons and magical machines have mythic power, they fly wireless only when severed from their infrastructures, designers, e-waste, and all that keeps them aloft.

Here are the remains of a myth—one perhaps familiar to you, collective designer. It will take you only a few minutes to hike through the cattle and grass, up the hill of Costa Head on the northeast coast of Orkney mainland. There you will look out over the blue sound to the other islands, and on the bog and heather summit you will find a derelict stone shed and a concrete plinth, as though once there were a statue. And you would be right. Here was a monument in 1955. For a while it was a world first in wind energy—a 100-kilowatt wind turbine machine that stood for two years, until the Orkney storms tangled the metal framework. For a while it was the UK's test site for a new renewable energy industry. Now it is a future archaeology. "We blinked," a worried proponent of another new renewable energy test site says. Now it is Denmark that is the home of wind energy.

When I walked up Costa Head, and stood before those cracked stone foundations, I wrote an *in memoriam* and tied it there:

mica encrusted
tomb
to an unknown
turbine

There is no disposal here, only decay. Something mythic, a future renewable energy industry, flew here, for a while, and is now as much heritage as the 5,000-year-old Ring of Brodgar stone circle. Futures are effects of material practices, you say, anthropologist of technoscience. And standing here, in the remains of a future, I agree. Futures leave residues, as I said in my first message. I collect these residues, these fragments, and reconstruct them. Sometimes residues are dispersed. E-waste is just the relocation of archaeological stratigraphy. Machines can be imagined as seascapes, their manufacture from so many parts and materials, and their disposal into different parts, stretched over the sea, from where they are designed to where they decay.

Although drawing on archaeological theory, I am kin to science studies, and I live by the motto "It could be otherwise." I am not interested in reconstructing some nationalistic story of the innovation ownership of wind energy. But I am interested when I talk to the director of the European Marine Energy Centre—the one who did not just say "We blinked" but said it to those who have responsibility for choosing whether to repeat the story for marine energy.

Along with my ethnographic collaborations that remake this past, such as the conversations with the director of EMEC, I collaborated with the poet Alec Finlay and the photographer Alistair Peebles to reconstruct Costa Head online as poetry, as photography, as memorial, as labels tied in the wind (http://skying-blog.blogspot.dk/2011/07/costa-head-orkney.html).

Futures are mythic machines, social and material, designed and made. Reconstructing them is to remember them, to give breath and flame to them. So it can be otherwise. …

The future archaeologist

Figure P.8
View from Costa Head, Orkney, including memorial poem by Laura Watts (CC:BY-NC).

From the Anthropologist of Technoscience—Message 9

Dear collective designer (part of) and future archaeologist

I've left the Valley myself (a purely topographical descriptor for a place transformed into a sprawling cityscape) and moved north to the mountains of British Columbia, so my reports are now retrospective but I hope still timely.

It's perhaps a testimonial to the (re)productive success of Silicon Valley that futures everywhere are now figured (at least by those who imagine themselves as universal future makers) as centers of the IT and media industries, home to an entrepreneurial creative class. Or at least that's the subtext of policy documents, with their apparently unquestioned acceptance of the inevitability of capitalist (rather than post-capitalist) politics. This is a market logic in which proper modes of relation are competitive ones (however much winning might necessitate collaboration), and success in one place requires failures elsewhere.

In Silicon Valley, democracy is taken for granted (as the brand trademarked in 1776 by the United States of America). One consequence is that discussion of the politics of design and innovation are silenced. In this respect, with a few notable exceptions, the Valley is in danger of becoming increasingly marginal (perhaps a good thing?) as it falls behind in the difficult, practical work of crafting durably heterogeneous collectives. The latter requires building long-term relations across the fault lines of social networks. This kind of making is about decentering design, in the sense that designers move outside of their own research-and-development enclosures and in the sense that professional design becomes, if still necessary, not a sufficient practice for future-making.

as ever,
The anthropologist of technoscience

From the Collective Designer—Message 10

dear future archaeologist and anthropologist of technoscience

this is your collective designer

once again by the shore

now contemplating

the gentle lapping of the waves

it is summer in the city

and here up north

those of us that are privileged enough

go to the sea or to the countryside

to enjoy our short summer

with its long light nights

this is also the time to finally get to grips

with some of the books that have piled up

during a hectic working year

this year besides moby dick

god, nature, ocean and the universe

i also grapple with a manuscript

filled with marginal notes

close to my home and heart

exploring design and innovation

as being made by citizens and colleagues

a heterogeneous collective

formerly known as users and designers

now maybe as makers of futures

multiple futures—matters of concern

this manuscript

on future-making practices

localized and peripheral

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by major infrastructures

as well as the mainstream

design and technological innovation

that they challenge

these notes

on designing and the social

on opening production

on emerging publics

on creative class struggles

are the design things

the matters of concern

this immutable mailboat mobile carries

keen to find the shores

of your islands and your valley

do they travel well

do they connect

to design and innovation

to publics in the making

to more democratic futures

being made at your locations?

your collective designer (part of)

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1 Introduction

Pelle Ehn, Elisabet M. Nilsson, and Richard Topgaard

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 strug-
gling 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 partici-
pation 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 maker-
space (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 par-
ticipation 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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I Designing Conditions for the Social

2   Designing Conditions for the Social

Anders Emilson

In recent years, social innovation has been seen as a way to tackle climate change, aging populations, and social exclusion. The U.S. government (SICP 2012), the European Union (Hubert 2011), the Young Foundation, and the Rockefeller Foundation acknowledge social innovation as important. Nicholls and Murdock (2012, 1–2) consider social innovation to be a "sixth wave" of macro-innovation following more technology-based predecessors: the industrial revolution; steam and railways; steel, electricity, and heavy engineering; oil, automobiles, and mass production; and information and telecommunications. Design as a discipline emerged in parallel to these earlier waves of macro-innovations as a response to the need of adapting technological artifacts to human needs, behaviors and measures. Today, design is also one of the creative disciplines that are active in social innovation. In the next two chapters, we look into cases where design methods are applied to create social innovation and into the emerging design discipline known as *design for social innovation*, sometimes referred to as *social design*. Designers are not alone in this field; social innovations can be created by many methods used by such diverse actors as social entrepreneurs, public servants, commercial companies, or activists. Another characteristic of social innovation that will be emphasized is that it often emerges from collaborations between actors from different sectors and disciplines.

One might ask what design methods have to offer in these constellations of diverse actors. Before looking for an answer, let us acknowledge the fact that design has a long history of being involved in shaping the societies we live in. In Europe, the modern movement of the early twentieth century (most strongly symbolized by the German Bauhaus School, with its roots in the British Arts and Crafts movement and social democracy) strove to improve people's living conditions and to build an equal and peaceful world through the use of mass production and a new modernistic design language. In Sweden, designers and architects were involved in articulating the modern welfare state through the means of urban planning, architecture, furniture, and the design of everyday objects according to modernist principles. We all know that many of these well-intentioned designs can be considered failures, most explicitly exemplified with the demolition of the infamous Pruitt-Igoe housing project in St. Louis in 1972.

Pruitt-Igoe, completed in 1955, consisted of 33 rectangular eleven-story apartment buildings. Its design was based on the modernist International Style invented by Le Corbusier, Walter Gropius, and others in the 1920s and the 1930s. In Sweden, about a million apartments were built between 1965 and 1974 following these modernist design principles. The housing situation in Sweden was similar to that in St. Louis: there was a need to replace overcrowded slums with new housing. But soon, as in Pruitt-Igoe, many (though not all) of these new projects became associated with poverty, segregation, and crime. In 1977 the architectural historian Charles Jenks argued that the demolition of Pruitt-Igoe symbolized the failure and death of modernistic architecture (Bristol 1991, 163). Others argued that not all the blame should be put on architectural design alone, and that social and economic factors should be considered. Katharine Bristol claimed that the exaggerated focus on the designers' responsibility in Pruitt-Igoe had diverted attention from the "institutional or structural sources of public housing problems" and had legitimized the architecture profession by "implying that deeply embedded social problems are caused, and therefore solved, by architectural design" (ibid.).

The real lesson to be learned from Pruitt-Igoe, thus, is not about formal design of an object, but that complex societal challenges call for the kind of participatory and cross-disciplinary work that is discussed in the following two chapters. On the other hand, one cannot ignore the fact that problems in many of these modernistic housing areas remain today. At the time of this writing, there have just been week-long riots in several housing areas in various parts of Stockholm. A few years ago there were riots in Malmö. Some of our collaborators live and work in modernistic housing areas, and some of our work targets present-day challenges in these areas—challenges such as social exclusion, unemployment, and the need for renovation. The question, of course, is "Will we make the same mistakes as the well-intentioned designers and social engineers before us?"

A less well known successor to the socially engaged and "democratic design" characterizing the modernist tradition is the Scandinavian Participatory Design tradition that began in the 1970s. But, as the name indicates, this was different than some idealistic designers and architects that considered themselves experts on how people should live and what products they should consume. Instead of designing *for* people, designers within the participatory design tradition involved the people concerned and designed *with* them, starting from their own experiences and desires. Participatory design originates from the social, political, and civil rights movements of the 1960s and the 1970s, when people "demanded an increased say in the decisions that affected many different aspects of their lives" (Robertson and Simonsen 2012, 3). Influenced by these movements, designers began to claim that "if we are to design the futures we wish to live, then those whose futures are affected must actively participate in the design process" (ibid., 5).

This approach fits well with what Mulgan (2012a) considers to be the underlying ethic of collaboration in social innovation: to act *with* rather than *for*. Or, in the words of President José Manuel Barroso of the European Commission: "In a nutshell, social innovation is for the people and with the people." (Barroso 2011, no paging) Designing *with* people is part of a major shift in innovation (Chesbrough 2003; Leadbeater 2008, 2009), going from closed in-house processes to more open and collaborative ones. Murray, Caulier-Grice, and Mulgan (2010, 6) write that innovation itself should be open and social and "welcoming responses from anyone; involving users at every stage as well as experts, bureaucrats and professionals."

To involve and design *with* actors that represent different positions in society is also the basis for Malmö's Living Lab the Neighborhood, which works with participatory design and social innovation in districts in Malmö marked by social exclusion. In our practice (Björgvinsson and Hillgren 2004; Björgvinsson, Ehn, and Hillgren 2010; Hillgren, Seravalli, and Emilson 2011), we put much emphasis on building long-term relationships and on using prototyping as a way to evoke and explore possibilities and dilemmas. Our activities are based on three methodological ideas:

• to set up *collaborative* design processes where diverse stakeholders with complementary skills work side by side and where mutual respect and learning is supported
• to build *long-term relationships* and trust with stakeholders
• to perform early *prototyping* where possibilities are explored in real-life contexts but where potential dilemmas also are highlighted.

Social innovation often demands multiple perspectives (Murray, Caulier-Grice, and Mulgan 2010; den Ouden and Valkenburg 2011), and we collaborate with nongovernmental organizations, municipalities, and private business partners. Over the years, we have worked with associations, small media and design companies, successful ICT companies, public transport and public broadcasting companies, and municipal departments on projects such as using a mobile phone game to explore marginalized neighborhoods, street journalism by youths, and new collaborative tools for city planning. Often we establish relationships with actors separately to explore possibilities related to their respective interests and agendas, getting multiple starting points for potential projects and innovation. At the same time, we also try to see how different interests might be integrated.

Today, when "co-design" and "working *with* people" have become recurring mantras in both social innovation and in design, we know—through 30 years of experience in the participatory design field—that this is not always easy. Conflicting interests, values, or ways of working often threaten to cause projects to collapse, and at times projects are closed down because the different actors do not match with each other as intended. But, we will argue, this is not a reason for giving up; instead it is a reason to

see the matching of people and the creation of constellations as a kind of prototyping process: if one match doesn't work, try another. This could be seen as designing the social conditions of the participatory process and also the core of "infrastructuring" (Björgvinsson, Ehn, and Hillgren 2010)—the building of long-term relationships and the matching of actors with complementary resources.

Concepts such as "infrastructuring," "design things," and "agonism" are both analytical and methodological, and such concepts have been central to our research. They have also been important tools in our work with the creation of social conditions— "networks and relations" (Binder et al. 2011, 157)—in the design process.

By *the social*, we mean the interactions and relations between people who are gathered in a constellation or a design project. By *conditions*, we mean the creation of constellations of actors who take part in a mutual learning process guided by designers using tools such as workshops, scenarios, and prototypes. In this way, we try to explore new challenges for designers that are more about people and networks than about technology and objects. Important issues are how to create trust, how to show respect for the opinions of others, and how to facilitate mutual learning in a constellation. We also want to explore the role of the *social* in networks, creative processes, new business models, and new concepts such as collaborative services and collaborative consumption. At the core is dealing with people with different agendas and values. This has the consequence that the designer needs to have competence in dealing with conflicts, dilemmas, power relations, and politics. While this is nothing new for designers working with participatory design, the challenge with social innovation is the new context in which more heterogeneous actors take part, the "place" is a neighborhood rather than a workplace, and the designed artifact is more likely to be a service, a practice, or an organization than a piece of technology. Let us take a quick look at how design is being applied in the field of social innovation.

The field of social innovation

Social innovation as a field has emerged as existing structures, policies, and tools, both from the market and from the state, have proved inadequate for tackling many of today's social and societal challenges. It is a reaction to the previous dominance of technological and business aspects in innovation policy and practice. Social innovation is also a response to the complexity of present-day societal challenges, such as failing welfare systems, that affect both individuals and society as a whole; therefore, it involves heterogeneous actors across sectors and disciplines. Social innovation can be seen as an umbrella concept covering different ways—such as entrepreneurship, financing, and activism—of responding to social demands and societal challenges.

Social innovation is nothing new—individuals and organizations have always developed new solutions and concepts to address social needs. An early Swedish example of

a social innovation, one that later became a public institution, is Barnavårdscentraler (child-care centers). They were started in 1901 by the föreningen Mjölkdroppen (2013) (Milk Drop Association) to help poor mothers to provide their children with nutritious milk. At the time, 10 percent of newborns died because breastfeeding frequency was low. In the 1940s this support for mothers and children was taken over by public child-care centers. Mjölkdroppen is an example of how a small initiative undertaken by an association develops into a public institution; it also shows the importance of civil society in developing social innovations. Other examples of public institutions that were first developed by civil society, and not by the state or the market, are fire brigades and libraries. This historical role of civil society tends to be forgotten in discussions of social innovation. Often the focus is on stronger actors in the private sector (social entrepreneurs, philanthropists) and in the public sector.

There is no single definition of social innovation, and we have experienced difficulty in communicating the concept. In trying to embrace both the breadth and the main ideas of social innovation, we turn to acknowledged researchers in the field.

Murray, Caulier-Grice, and Mulgan (2010, 3) describe social innovation as "new ideas (products, services and models) that simultaneously meet social needs and create new social relationships or collaborations" and as "innovations that are both good for society *and* enhance society's capacity to act." Phills, Deiglmeier, and Miller (2008, 39) emphasize that social innovation is a way to meet needs that would not be met otherwise and to create value that would otherwise not be created; thus, they define social innovation as "a novel solution to a social problem that is more effective, efficient, sustainable, or just than existing solutions and for which the value created accrues primarily to society as a whole rather than private individuals." "A social innovation," they write, "can be a product, production process, or technology (much like innovation in general), but it can also be a principle, an idea, a piece of legislation, a social movement, an intervention, or some combination of them. Indeed, many of the best recognized social innovations, such as microfinance, are combinations of a number of these elements."

According to Westley and Antadze (2010, 2), "social innovations involve institutional and social system change, they contribute to overall social resilience, and they demand a complex interaction between agency and intent and emergent opportunity." They define social innovation as "a complex process of introducing new products, processes or programs that profoundly change the basic routines, resource and authority flows, or beliefs of the social system in which the innovation occurs. Such successful social innovations have durability and broad impact."

As the definitions above suggest, and as Nicholls and Murdock (2012) show, social innovation exists on different levels: on an incremental level (with a focus on products and services), on an institutional level (with a focus on markets), and on a disruptive level (with a focus on politics and on system change). Hubert (2011, 43) frames social innovation in a *process dimension* (in which new forms of organization and interactions

are developed to respond to social issues) and an *outcome dimension* (in which the meaning of "social" ranges from individual and groups to society as a whole). Hubert (ibid.) describes the outcome dimension through three complementary and interdependent approaches that respond to

social demands that are traditionally not addressed by the market or existing institutions and are directed towards vulnerable groups in society [Approach 1]
societal challenges in which boundaries between "social" and "economic" blurs, and which are directed towards society as a whole [Approach 2]

and

the need to reform society in the direction of a more participative arena where empowerment and learning are sources and outcomes of well-being [Approach 3].

Hubert describes the interdependence between the approaches this way: "[A]n innovation that addresses a social demand (e.g. care of the elderly) contributes to addressing a societal challenge (ageing society) and through its process dimension (e.g. the active engagement of the elderly), it contributes to reshape society in the directions of participation and empowerment." (ibid.)

Howaldt and Schwarz (2010, 21) write that the distinction between social and technical innovation is in the immaterial and intangible structure of social innovations: "The innovation does not occur in the medium of a technical artefact but at the level of social practice." Practice, what people really do, is also fundamental in participatory design (Robertson and Simonsen 2012). Another important characteristic of social innovation, brought up by Murray, Caulier-Grice, and Mulgan (2010, 7), is the role of stakeholder networks. Whereas in business the firm is the main agent of innovation, in social innovation the impetus is more likely to come from a wider network, "perhaps linking some commissioners in public sector, providers in social enterprises, advocates in social movements, and entrepreneurs in business" (ibid.). This insight from social innovation theory fits well with our ambition in the Living Labs of gathering a wider network of heterogeneous actors in order to explore and tackle social and societal challenges.

Our motivations for attaching ourselves to the discourse of social innovation are a belief in democratic principles and an interest in how design can play a part in exploring new possibilities to create a more sustainable, equal, and just world. To be able to reach that goal, we believe, one has to move beyond single solutions in the form of products and services that sustain business as usual or the hegemony of the establishment, and one has to address issues on both an individual level and a systemic level. We believe that the overall objective for social innovation is to reorganize society—to really affect the causes of social problems rather than merely relieve the symptoms, or, in Schulman's (2012, no paging) words, to "shake up the status quo, narrow inequalities, and set new social standards." With that ambition you will get into trouble and experience a lot of painful moments.

Design for social innovation

As has already been mentioned, design has a history of social engagement, from William Morris (1834–1896), socialist artist, designer and leader of the *Arts and Crafts movement*, and Walter Gropius (1883–1969), architect and founder of the *Bauhaus School*, to Victor Papanek (1923–1998), designer and author of *Design for the Real World: Human Ecology and Social Change*. But, as Margolin and Margolin (2002, 24) argue, this has not led to an established "social model" for design. Instead, the "market model" has been dominant, and there has been a lack of research that might "demonstrate what a designer can contribute to human welfare" (ibid., 28). In the last ten years, however, there have been various initiatives to establish a "social model" for design, focusing on how design can contribute to society. Examples include John Thackara's Doors of Perception conferences and blog, Bruce Mau's book *Massive Change* and his Institute Without Boundaries, Cameron Sinclair's non-profit organization Architecture for Humanity, and Emily Pilloton's Project H Design and Design Revolution exhibition.

Also contributing to the development of this "social model" are the designers and design researchers who consider how design methods and tools could support social innovation (Jégou and Manzini 2008; DESIS 2012). Concurrently, design has been recognized as a valid tool by organizations advocating, supporting, and researching social innovation (Murray, Caulier-Grice, and Mulgan 2010; Rockefeller Foundation 2008). In 2011, the Young Foundation hired a "head of social design" to develop a new social design practice as a way to complement their current work (Kimbell 2011). At the Waterloo Institute for Social Innovation and Resilience in Ontario, Frances Westley has begun to explore the concept of social innovation labs, where inspiration from "design labs" plays an important role. Among the other contributors to the emergence of this new design field have been academic design researchers and design practitioners (the latter mainly from service-design companies and from public organizations that support design, like the Design Council in the United Kingdom, or set up their own design led innovation units, like MindLab in Denmark, La 27e Région in France, or the Helsinki design lab in Finland).

At the Politecnico di Milano, Ezio Manzini and François Jégou have led international research projects such as Emerging User Demands for Sustainable Solutions and Creative Communities for Sustainable Lifestyles (SEP 2012). Sustainability was the starting point for those projects, but subsequently the insight that sustainability is not merely a technical issue (new products) but an issue of lifestyles and behavioral changes led to the conclusion that "social innovation could be a powerful driver towards sustainability" (DESIS 2012, no paging). In their book *Collaborative Services: Social Innovation and Design for Sustainability*, Jégou and Manzini (2008) explicitly emphasized the concept of social innovation. Today such research is gathered under the umbrella of the DESIS (Design for Social Innovation and Sustainability) network. Design researchers from this network have identified and collected cases from what they call *creative communities*

around the world. Jégou and Manzini (ibid., 30) define creative communities as "groups of people who cooperatively invent, enhance and manage innovative solutions for new ways of living." Generally, the outcomes are collaborative services that are "social services where final users are actively involved and assume the role of service co-designers and co-producers" (ibid.).

In the United Kingdom, several service design companies, among them Live Work, Engine, and ThinkPublic, began to apply design methods to social and societal challenges in the early 2000s. This occurred in parallel with support from the Design Council, which encouraged the exploration of using design in new social and public contexts through research and demonstration projects. One example was the Design Council's RED research unit, which consisted of professional designers and professionals from disciplines such as policy analysis and social sciences (Design Council 2004). Burns et al. (2006) describe the RED unit's approach, called *transformation design*, as based on involving heterogeneous stakeholders from the beginning through participatory design. In 2007, the RED unit became an enterprise called Participle, which, in turn, became the starting point for the design company InWithFor (which closed in 2012).

The Design Council has also initiated demonstration programs. Two such programs were Designs of the Time (Design Council 2012b) and Public Services by Design (Design Council 2008, 2012a). Furthermore, other public institutions in the United Kingdom have initiated projects involving design companies. For example, Engine (2012) has supported the Kent County Council in designing a new platform for co-creation, Live Work (2012) has created services to support hard-to-reach unemployed people, and ThinkPublic (2012, no paging) has used participatory design to engage "local residents in identifying challenges and co-designing responses to better community health and wellbeing."

In the United States too there is growing interest in design for social innovation; it is among the areas of expertise offered by the design firms IDEO, Continuum, and Frog Design. The typical approach to design for social innovation in the United States refers to projects in developing countries (Brown and Wyatt 2010). However, the DESIS Lab at the New School for Design in New York is working more in a European way; it helps local creative communities to develop collaborative services and sustainable lifestyles (DESIS Lab 2012). In the research program known as Public & Collaborative NYC, the DESIS Lab explores what role design can play in building bridges between city government and people in the creation of social innovation (Staszowski, Brown, and Winter 2013). And Project H Design (2012) is bringing design skills into public education in a rural community.

Strengths and weaknesses of design in social innovation

One sign of how design is evolving in social innovation, Geoff Mulgan (2012b, no paging) argues, is that designers are getting "humbler about what can be achieved, and

about what they need to learn from others" (ibid.). Mulgan was one of the first people from the field of social innovation to cite both the strengths and the weaknesses of design for social innovation. In 2009, the concept of design for social innovation was primarily associated with hype about "design thinking" and with the design-can-solve-everything attitude of many of the world's leading designers. According to Mulgan, the strengths of design for social innovation include visualization techniques, bringing novel insights, working from a user perspective, and fast prototyping. The weaknesses include lack of economical and organizational skills, inability to drive the implementation process, the cost of design consultants who often do not have a long-term commitment to a project, and the fact that designers sometimes ignore evidence and field experiences and tend to "reinvent the wheel" (Mulgan 2009). Mulgan's (2009, 2012b) critique mostly concerns design methods, but several other critical voices have been heard with regard to the ethics, the values, and the political awareness of designers working in unfamiliar contexts (Cottam 2009; Tonkinwise 2010; DiSalvo 2010; Blyth and Kimbell 2011; Schulman 2012).

The big picture

Social innovation is no longer a concern only for grassroots movements or third-sector organizations (non-governmental organizations, associations, non-profit businesses) fighting inequality or addressing global challenges such as climate change. Today, in North America and in Europe, social innovation is also a concern of governments. In the United States, President Barack Obama has created an Office of Social Innovation and Civic Participation in recognition of the idea that "the best solutions to our challenges will be found in communities across the country" (SICP 2012, no paging). Social innovation has also become a priority of the European Union's innovation policy (European Commission 2010).

According to a report titled *Empowering People, Driving Change: Social Innovation in the European Union* (Hubert 2011, 18), the old belief that economic growth alone could provide all the solutions to social problems has been shown to be incorrect, and social innovation can mobilize people's creativity. That report also suggests that a new form of "enabling welfare state" is emerging, and a change of attitude and the involvement of citizens, public authorities, and private organizations will be necessary if new social responses to our social challenges are to be developed.

Hubert's (2011, 35) description of social innovation as a "process of social interactions between individuals to reach certain outcomes" is interesting. She also refers to lessons learned from the EQUAL initiative in Portugal. That project, with its focus on increasing access to employment, is also interesting in relation to our involvement in designing an incubator for social innovation in Malmö (chapter 4) and our work on how a group of women living on public assistance can develop their activities into a

cooperative business (chapter 3). In this chapter, I summarize some of Hubert's (2011) findings, building on the EQUAL project, that are important for an understanding of social innovation processes. These findings have much in common with the ethos of participatory design and with the theme of social conditions in participatory design:

1. Solutions must focus on the beneficiaries and be created with them, preferably by them, and never without them.
2. Focusing on the strengths of individuals and communities rather than on their weaknesses
3. Capitalizing on the diversity of ethnicities, ages, religions, gender, etc. and not just combating discrimination
4. Developing a holistic approach rather than fragmented responses to people's diverse problems
5. Reinforcing and extending partnerships rather than having each organization individually handling its services and its responsibilities
6. Collaborative working and networking as ways to stimulate social innovation

(Hubert 2011, 35)

Design, politics, and some early warnings

Co-creation and collaboration obviously are central to participatory design as well as to social innovation. They are also central to new policies (for example, the British government's "Big Society" vision) that build on citizen involvement and action, using local knowledge and social networks (Coote 2010). The goal is to "devolve power to the lowest possible level" while making "deep cuts in public spending" (ibid., 2). This policy is a huge challenge for designers. The Design Council's Dott Cornwall program has been viewed as a "Big Society laboratory" by Scott Billings (2011, 22), who also asserts that it "is not a version of Big Society where people are left to fend for themselves, but rather one where collaboration is instrumental in addressing social problems in new ways."

Even before the Big Society policy was launched, the social design firm Participle presented a vision of how to design the new welfare state in a manifesto, titled Beveridge 4.0 (Cottam 2008), that emphasizes people's aspirations and their capabilities rather than their needs and advocates involving citizens in collectively designing new responses to societal challenges. When Prime Minister David Cameron presented the Big Society policy, Hilary Cottam (2009), one of the founders of Participle, welcomed it, pointing to the similarities with Participle's agenda, but at the same time showed a political awareness by pointing to "central flaws" in Cameron's argument and criticizing his reluctance to address inequality: "Britain is one of the most unequal societies in the world. Unless we are willing to talk about and address this disparity, neither a re-imagined state nor an army of social entrepreneurs can build Cameron's big society." (Cottam 2009, no paging) Statements of this sort and a willingness to discuss the political contexts and social conditions in which designers are beginning to operate in are

most necessary. Reflecting on the situation in the United Kingdom, where designers create new services according to government policy, Cameron Tonkinwise (2010) has brought up the need for an awareness of political and ethical matters:

Designers are already facilitating social innovations that can replace government services that David Cameron has a mandate to cut the cost of. The rhetoric, as a recent *Economist* article on social innovation made clear, is all about doing services better, but in ways that just happen to also save the government money and, more importantly, withdraw governments irrevocably from such services. (Tonkinwise 2010, no paging)

Simon Blyth and Lucy Kimbell (2011) have also been reflecting on the role of design in relation to the Big Society policy. Emphasizing the importance of how problems are framed and defined and how issues are made public, they argue that design should be viewed as more than problem solving. Asserting that it is important to go beyond the individual (the focus of user-centered design) and to "situate individuals within dynamic social systems" (ibid., 8), they quote the American sociologist C. Wright Mills:

[W]hen in a nation of 50 million employees, 15 million people are unemployed, that is an issue, and we may not hope to find its solution within the range of opportunities open to any one individual. The very structure of opportunities has collapsed. Both the correct statement of the problem and the range of possible solutions require us to consider the economic and political institutions of the society, and not merely the personal situation and character of a scatter of individuals. (Mills, quoted by Blyth and Kimbell 2011, 8)

Blyth and Kimbell argue that the view of the design process as a collaborative and consensual activity should be challenged, and that contestation and difference are important elements of the process—especially in public or community contexts. Sarah Schulman of the design consultancy InWithFor goes further. Drawing on her experiences in the social field, she calls for more ethical outrage in the design community and urges designers to deal with the moral dilemmas that underpin "social design" work. Those "moral dilemmas," she continues, "have informed our value set—a value set that enables us to make decisions about the projects we choose to take on, the people we choose to work with, and the solutions we co-create" (Schulman 2012, no paging).

The importance of values became evident to Schulman when she was working with a government agency whose internal co-design unit was driven more by values of "innovation" and "efficiency" than by questions regarding inequalities. Even if the methods were new, the "ends" were quite the same. "It's not that I don't believe in 'social design' methods—in starting with people, making ideas real, and iterating those ideas over time," Schulman (2012, no paging) writes, "but I believe in them insofar as they shake up the status quo, narrow inequalities, and set new social standards. The danger comes when these new design methods make social services more palatable, more attractive, and thus more difficult to challenge."

All these reflections on social innovation and *design for* social innovation point to the need for more discussion of the conditions and contexts of social design work—more discussion of *what* to design and *with whom* to design, and not only of *how* to design. It also points to the relevance of making a distinction between what Carl DiSalvo (2010, no paging) calls *design for politics* (with its focus on "improving structures and mechanisms that enable governing") and *political design* (which focuses more on revealing and confronting power relations and on identifying "new terms and themes for contestation and new trajectories for action"). These reflections could also be seen as early warnings that, if we aren't alert, all this well-intentioned democratic design may fail and may deliver outcomes that do more harm than good—again.

"Design things" and "infrastructuring": Two approaches to exploring and designing the conditions of the social?

Among the design methods and practices that could be applied to social innovation are ethnographic studies, early and rapid prototyping, and involving diverse stakeholders in the process of co-creation. However, all these approaches must be challenged and explored further in the specific context of the present discussion. In the following two chapters, my colleagues and I will reflect on our own experiences and on the shortcomings of using design to address social and societal challenges. We will not tell success stories about creating new and life-changing public services. Instead we will offer insights, expressed through concepts such as "infrastructuring," "design things," agonism, and governance, that, we argue, could contribute to the discussion regarding social conditions in participatory design processes and to confronting many of the challenges that were touched upon earlier in the chapter. For example, we will argue that it is fruitful to consider the possibility that the concept of "design things," as developed by Ehn (2008), Björgvinsson, Ehn, and Hillgren (2010), and Binder et al. (2011), could work as a space for what DiSalvo (2010) calls "political design," and the possibility that heterogeneous stakeholders could "make decisions about the projects we choose to take on, the people we choose to work with, and the solutions we co-create" (Schulman 2012, no paging).

Chapters 3 and 4 focus on "infrastructuring" and on the creation and the re-creation of "design things," with diverse stakeholders gathering to discuss, challenge, and reveal one another's values, interests, and agendas and to go through a process of reciprocal learning. The larger framework for both chapters is how Living Lab the Neighborhood, by setting up collaborative design processes, could address social and societal challenges and increase society's capacity to act. Here we can see interesting links between the concepts "infrastructuring" and "design things" and the conclusions reached in the final report of the Kommission för ett socialt hållbart Malmö (Commission for a Socially Sustainable Malmö):

• the need of departing from a holistic perspective
• the importance of problem definition and that a wider circle of actors participate in defining problems and setting objectives
• the need of creating "knowledge alliances," which mean "equal collaborations between researchers and stakeholders from for example public administration, associations and trade and industry"
• the need of building an infrastructure of knowledge alliances for social innovation and urban integration (Stigendal and Östergren 2013, 128–134; translated from Swedish)

We will argue that the concepts "infrastructuring" and "design things" could contribute to the exploration of what an "infrastructure of knowledge alliances" could be. To situate our research in the local context, we will discuss infrastructuring and design things in relation to the findings in the final report of the Commission for a Socially Sustainable Malmö and in relation to research by the political scientist Tove Dannestam on "city politics" and "governance" in Malmö. Tove Dannestam and the sociologist Mikael Stigendal have made important contributions to the understanding of Malmö and will therefore be mentioned often.

In chapter 3, titled Designing in the Neighborhood, we analyze a bottom-up initiative, tell the story of a group of women who wish to start a cooperative business, and consider how the women's knowledge and skills could be transformed into services. The case in question reveals shortcomings in existing support structures (that is, in society's capacity to act) and points to the need to develop a function in society that can take a long-term responsibility for supporting initiatives that do not fit into—or that challenge—existing norms and institutions. Consequently, that chapter's main analytical concepts are "infrastructuring," "prototyping," and "friendly hacking" (Jégou et al. 2013). This is along the lines of Stigendal and Östergren's observation (2013, 48) that "there is a need for an infrastructure within the municipality that is able to utilize the innovation power and knowledge within civil society." (Interestingly, just such a long-term support structure was discussed in the "design thing" that was gathered to address the issue of an incubator for social innovation.)

In chapter 4, titled "Connecting with the Powerful Strangers," we analyze the initial process of developing a support structure for social innovation, the so-called incubator for social innovation—a process that was a top-down initiative by the municipality. The objective was to explore how such a support structure could function and, in Stigendal and Östergren's (2013) words, how to build an infrastructure of knowledge alliances concerned with the issue of an incubator for social innovation. That chapter's main analytical focus is on "design things" in relation to the political concepts "governance" and "agonism."

In these two cases, we have discovered potentials for new forms of work and new support structures, but we also have discovered shortcomings in existing systems and the difficulties designers will face when dealing with complex societal challenges. These

two cases point to the need to approach social needs and societal issues from many perspectives, addressing the needs and the desires of individuals and communities and also addressing structural and systemic causes and limitations—the need to work across sectors and disciplines, from the bottom up and from the top down. In these projects, we have experienced both the joy of working with fantastic people and the agony of diving into the social and societal problems of our time.

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