

Aarhus School of Architecture // Design School Kolding // Royal Danish Academy

Material Matters in Co-designing

Eriksen, Mette Agger

Publication date:
2012

Document Version:
Peer reviewed version

Document License:
Unspecified

[Link to publication](#)

Citation for pulished version (APA):
Eriksen, M. A. (2012). *Material Matters in Co-designing: Formatting & Staging with Participating Materials in Co-design Projects, Events & Situations.*

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal ?

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

METTE AGGER ERIKSEN

MATERIAL MATTERS IN CO-DESIGNING

*Formatting & Staging with
Participating Materials in Co-design
Projects, Events & Situations*

This could be a format



MALMÖ UNIVERSITY

METTE AGGER ERIKSEN

MATERIAL MATTERS IN CO-DESIGNING

*Formatting & Staging with
Participating Materials in Co-design
Projects, Events & Situations*



MALMÖ UNIVERSITY

**THIS IS
REMATERIALIZED**

**WILL THIS
MAKE YOU ACT?**

The thesis you are holding in your hands is the final rematerialization of vivid dialogues and interactions between people and materials. To mention only a few of them: Me / my laptops / my lovely family / my supervisors / my many notebooks / differently coloured pens / 5 mm foam board / my previous publications / piles of books / Donald Schön's work / Bruno Latour's work / my many colleagues / many, often cut-out prints-outs / Lucy Suchman's work / disposable cups / my pocket camera / boxes and bags of diverse working materials / work by Tine Damsholt et al. / elephant snot / materializations from the many projects I have been involved in / work by participatory design researchers / hobby knives and scissors / Richard Schechner's work / my great (graphic designer) sister / tape / emails / Etienne Wenger's work / different summer houses / K3 / my daily bike-rides / work by Elisabeth Shove et al. / my 'blog-book' / DKDS / the PhD and Service design networks I have been engaged in in Sweden and Denmark / DAIMI / Victor Turner's work / wooden miniature dolls / post-its / attended conferences / co-design event agendas / printers / etc. etc. etc.

a/ 'Grounded Imagination' conference workshop (2003) / WorkSpace / Appendix 01
b/ 'Design Dialogues - Workshop 1' (2009) / Appendix 07 / **Exemplar 05**
c/ Kick-off partner workshop (2008) / DAIM / Appendix 05 / **Exemplar 03**
d/ Per:form co-design event (2006) / XLab / Appendix 04 / **Exemplar 04**
e/ Service Project Landscape event (2008) / Teaching / Appendix 07 / **Exemplar 01**







f/



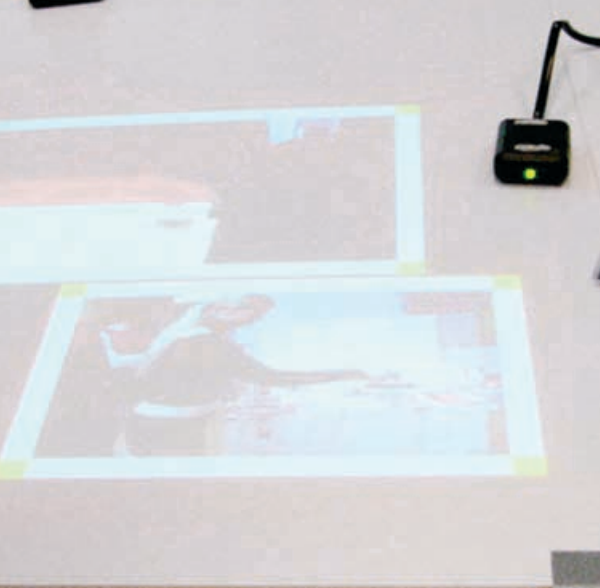
g/



h/

f/ Ball from 'Playful Interaction' vision video (2003) / WorkSpace / Appendix 01
g/ CoWall or Tangible Archive at K3 (2004) / Atelier / Appendix 02
h/ 'Assembly' workshop (2004) / PalCom / Appendix 03 / **Discussed in Chapter 9**
i/ CoWall or Tangible Archive at K3 (2004) / Atelier / Appendix 02





l/



k/



l/



m/

j/ Project de-briefing situation with 'The Game Table' (2004) / Atelier / Appendix 02
k/ Rehab Future Lab co-design event (2005) / PalCom / Appendix 03 / **Exemplar 02**
l/ Future Architects' Lab event (2002) / WorkSpace / Appendix 01 / **Exemplar 06**
m/ Closure of waste-handling stakeholder workshop (2008) / DAIM / Appendix 05
n/ Demonstrator-demo at 2nd EU review (2006) / PalCom / Appendix 03



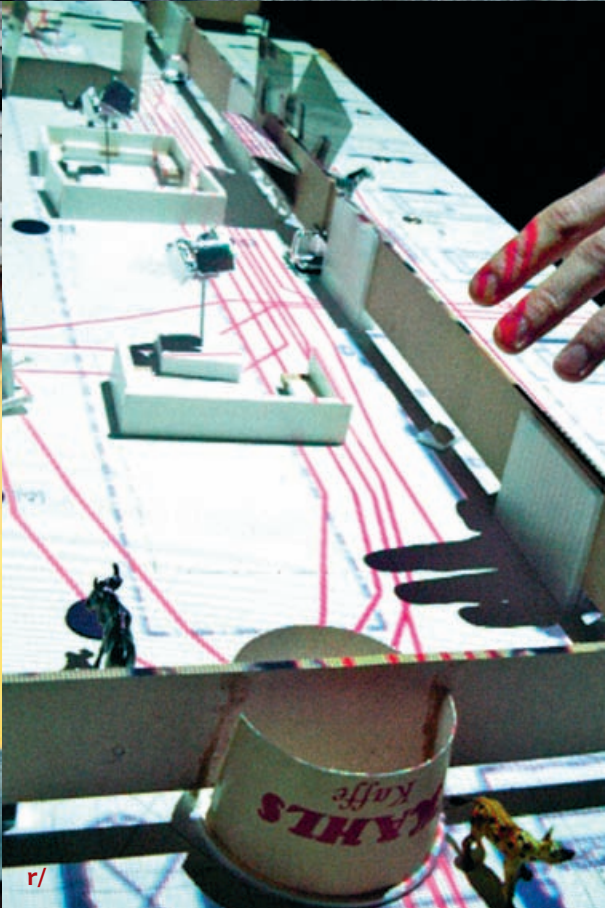
o/ 'Beginnings' workshop with 'project landscapes' (2006) / XLab / Appendix 04
 p/ 'Grounded Imagination' conference workshop (2003) / WorkSpace / Appendix 01
 q/ 'Semi-Public Places' project with 'mixed-media model' (2003) / Atelier / Appendix 02
 r/'Semi-Public Places' project with 'mixed-media model' (2003) / Atelier / Appendix 02



p/



q/



r/

Doctoral dissertation in Interaction Design
Dissertation series: New Media, Public Spheres, and Forms of Expression
Faculty: Culture and Society
Dept.: School of Arts and Communication – K3
Malmö University

© Copyright Mette Agger Eriksen, 2012

Design: Trine Agger Eriksen

Layout: Trine Agger Eriksen, Sofie Ellebæk

Illustrations: Mette Agger Eriksen

Backcover photo: Lone Eriksen

Photos: Mette Agger Eriksen, Colleagues/stakeholders in the projects/events unless stated otherwise

Fonts: Parsons Green, Kunststoff by e-Types, Playtype.com

Print: Holmbergs, Malmö 2012

Printing partly funded by: The Crafoord Foundation

The following institutions have co-financed and/or co-hosted this work:

Danish Centre for Design Research (DCDR) / The Danish Design School, Denmark

Computer Science Department (DAIMI), Aarhus University, Denmark

Blekinge Institute of Technology, Sweden

The Swedish Faculty for Design Research and Research Education, Sweden

ISBN: 978-91-7104-432-7

METTE AGGER ERIKSEN

MATERIAL MATTERS IN CO-DESIGNING

*Formatting & Staging with
Participating Materials in Co-design
Projects, Events & Situations*

Information about public defence and electronic version

For information about the time and place for the public defence
and an electronic version of the dissertation:

<http://hdl.handle.net/2043/13674>

Acknowledgements

Thanks...

/ To my lovely Lars for the life and family we have built together all while developing this work. I really appreciate your tremendous patience and funny ways of twisting everyday situations. You pushed and assisted me to finish it and you made me laugh during the tough times. / To my two wonderful sons, Tue and Eske, for your great patience too. I appreciate your straightforward way of asking “Mom, when are you finished with that PhD?” You both have the ability to drag me into playing and into building funny waste robots and giving great hugs. / To my dear sister, Trine, for continual understanding along the way and especially for your great work on the layout of this thesis. Also to Peter and Lily, for letting her follow me all the way. / To my dear parents, Rigmor and Steen, and parents-in-law, Karen and Jesper, for your continual great back-up support. It has been a tremendous help. / To my strong grandma Ruth, for, in the middle of it all, reminding me which ‘things’ are important: Good health...and Scrabble! / To my dear friends, for (hopefully) still being there. I have thought of you often.

/ To my main supervisor, Pelle Ehn, for your unending great support, always fruitful feedback and for encouraging me to research in my co-designerly ways. / To my additional supervisor, Thomas Binder, for inspiring discussions, collaborations and your provocative and constructive feedback along the way.

/ To Peter Krogh and Preben Mogensen for inviting me into the world of participatory (IT) design research (in the WorkSpace project). / To Monika Büscher for your ways of introducing me to academic publishing, and for collaboratively exploring how to materially merge designerly and ethnomethodological ways of working with ‘Grounding Imagination’. / To my other colleagues in the WorkSpace project, for being open to my suggestions of how to collaborate: Michael Christensen, Peter Ørbæk, Kaj Grøn­bæk, Jannie F. Kristensen, Dan Shapiro, Martin Ludvigsen, Christian Grosen Rasmussen, the landscape architects and several others.

/ To my colleagues in the Atelier-project as well as in the Creative Environments at K3 / Malmö University, for letting me into your inspiring communities: In Malmö; Pelle Ehn, Thomas Binder, Jörn Messeter, Per Linde, Janna Lindström, Peter Warren, Simon Niedenthal, Lone Malm­borg, Bo Petterson. Across Europe: Ina Wagner, Andreas Rumpfhuber, Giulio Iacucci, Giorgio De Michelis, Kari Kuutti and several others. Also to all the students who engaged in the project.

/To my colleagues in the Palcom-project, for challenging me to try to understand your various professional (material) practices. In Malmö: Jonas Löwgren, Thomas Sokoler, Per Linde, Stefan Olofsson, Jörn Messeter. In Århus: Morten Kyng, Preben Mogensen, Margit Kristensen, Jesper Honig Spring, Peter Andersen, Ole Lehrmann Madsen, Gunnar Kramp, Jørgen Rasmussen. Across Europe: Dominic Greenwood, Patrizia Marti, Antonio Rizzo, Giulio Toccafondi, Paul Luff, Christian Heath and many others. Also to the staff and patients at the Handsurgery Rehabilitation Dept.

/ To my colleagues in the Xlab-project, Thomas Binder, Eva Brandt and Johan Redström, for (y)our ways of exploring how to understand and speak about the importance of a program in experimental design research. Also to Mads Quistgård, and the participants during our three main workshops/experiments.

/ To my colleagues in the DAIM-project, for your openness to invite materials and investigate new co-designing practices: Thomas Binder, Eva Brandt, Joachim Halse, Trine Paludan, Maria Foverskov, Marie Aakjær, Signe Yndigegn, Liz Sanders, Ellen Christiansen, Brendon Clark, Katja Øder, Mikkel Jespersen, Mikkel Ask Rasmussen, Dan Boding Jensen and several others. Also to the many waste handling professionals participating in the series of co-design events.

/ To all the students, mainly at K3 and ITU, who throughout the years have been open to my suggested ways of working with materials as co-designers.

/ To the research group at The Danish Design School (DKDS) for inviting me into your diverse, inspiring (co-) design research environment.

/ To my fellow PhD scholars at K3, DKDS and D!, for fruitful discussions and for sharing practical and joyful frustrations and issues of being a PhD scholar. Especially: Per Linde, Per-Anders Hillgren, Erling Björgvinsson, Kristina Lindström, Åsa Ståhl, Anders Emilsson (all at K3), Flemming Tvede, Anne Louise Bang, Bo Westerlund and Kirsikka Vaajakallio.

/ To the following for financing and hosting parts of my PhD studies: The European Commission, IST 6th framework programme (2004-2007) / Danish Centre of Design Research (DCDR) (2006-2009) / The Danish Design School (2008-2010) / The Swedish Faculty for Design Research and Research Education (D!) (2007-2010) / Malmö University, K3 (2004-2010/2012). / Blekinge Tekniska Högskola, Sweden (2004-2010) / To The Crafoord Foundation for financing the printing of this thesis. / To e-Types, Playtype for letting me use your fonts.

/ To the following for asking challenging and clarifying questions, commenting, coaching, editing, proofreading, photographing and/or layouting endeavors during the last months of the closing part of the thesis: Christin Illeborg, Iben Posniak, Marie Juul Pedersen, Charlotte Kjeldsen Krarup, Shelly Rosenberg, Lone Eriksen, Lior Zilberstein, Marie Aakjær, Anders Bach Petersen and Sofie Ellebæk for following me all the way.

Table of Contents

Foreword: Program /

- p. 24 **Research Program /**
 - p. 31 **This Thesis Aims at 'Drawing Together'**
 - p. 32 **My Engagement in Multidisciplinary Co-design
Research Environments & Projects**
 - p. 35 **Motivation for Focus on Co-design Events & Situations**
 - p. 37 **Reader's / Use Guide**
-

Positions & Approaches (P&A) /

My Co-design Researcher Positions & Approaches

- p. 46 **Introduction / Positioning this thesis**
 - p. 47 **Modes of Design Inquiry & 'Material' of a One-designer**
 - p. 51 **Co-designing...and Interaction design / Industrial design /
Service design / Co-creation / Participatory design**
 - p. 65 **A Participatory, Yet Materially Interventionistic Approach**
 - p. 70 **A Programmatic/Experimental Approach**
 - p. 77 **A Designerly Way of Theorizing & Drawing Together Approach**
-

- p. 84 **Exemplar 01 / Service Project Landscape**
 - p. 94 **Exemplar 02 / Rehab Future Lab**
-

Part A /

From Designing to Co-designing Practices & Situations

- p.104 **Introduction /**
 - p.110 **Chapter 1 / Dissecting and Reformulating Donald Schön's
Sentences**
 - p.126 **Chapter 2 / Participatory Design, Communities of Practice
& Materiality**
 - p.144 **Chapter 3 / Plans & Co-design Situations**
 - p.154 **Part A / Summary**
-

- p.156 **Exemplar 03 / Kick-off**
 - p.166 **Exemplar 04 / Per:form**
-

Part B /

Participating Materials – Formatting Co-designing

- p.178 **Introduction /**
- p.192 **Chapter 4 / A Broad View of Materiality – Co-designing as Relating**

p.205	Chapter 5 / Delegated Roles of Various Participating Materials in Co-design Events & Situations
p.233	Chapter 6 / Formatting Processes of Materializing & Rematerializing
p.254	Part B / Summary

p.256	Exemplar 05 / Design Dialogues
p.268	Exemplar 06 / Future Architects' Lab

Part C /

Materially Staging Performing in Co-designing

p.278	Introduction /
p.295	Chapter 7 / Co-design Research & Performance Studies
p.311	Chapter 8 / Co-designing as Performative Processes
p.326	Chapter 9 / Rematerializing for Aftermath
p.335	Part C / Summary

Part D /

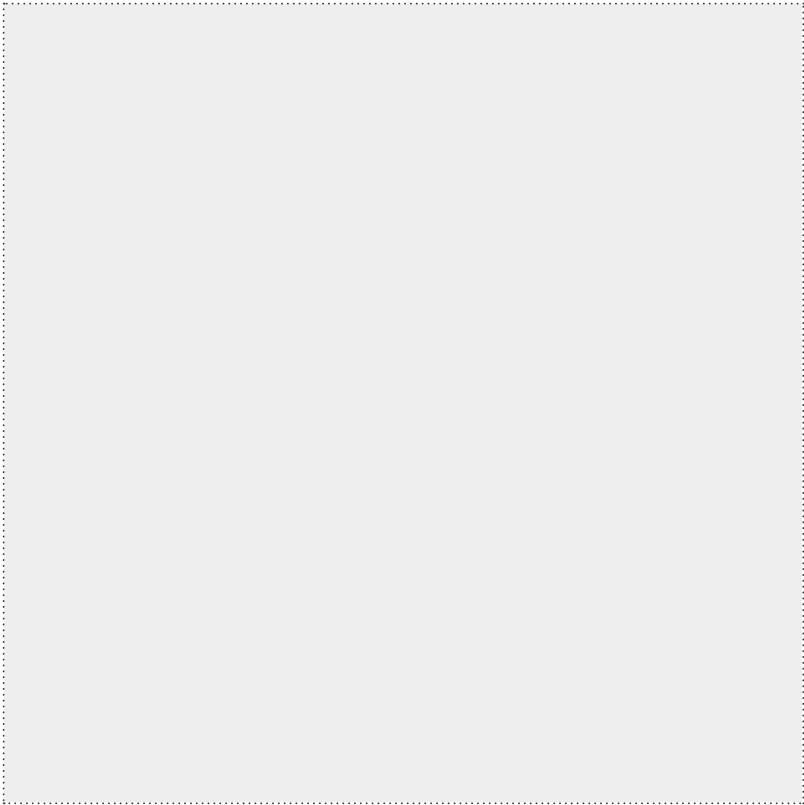
Drawing Material Matters Together

p.340	Introduction /
p.342	Chapter 10 / Emerging Material Landscape of Co-designing
p.376	Chapter 11 / Guided Tour through the Emerging Material Landscape of Co-designing
p.384	Chapter 12 / 11 Challenges with Material Matters in Co-designing

p.409	<i>Forwards: Reprogram /</i>
--------------	-------------------------------------

Appendices, References, My List of Publications /

p.416	Appendices
p.417	01 / Co-design project/ WorkSpace
p.420	02 / Co-design project/ Atelier
p.422	03 / Co-design project/ PalCom
p.425	04 / Co-design project/ XLab
p.429	05 / Co-design project/ DAIM
p.433	06 / Co-design workshop series/ Design Dialogues
p.436	07 / Co-design Teaching
p.439	08 / Co-design project characteristics
p.441	09 / On my data, tracing and sharing concerns and challenges
p.442	10 / Examples of PhD program drifts
p.446	References
p.455	My List of Publications



This could be
a format





Foreword: Program

Foreword: Research Program¹

Drawing together issues and challenges for understanding and staging co-designing

Throughout the last ten years, I have been engaging with hundreds of people and materials in many unique and complex co-design projects, events and situations. Sometimes it was fun, sometimes challenging, sometimes tense, sometimes refreshing – but always thought provoking and inspiring. I surely have experienced that...

Material Matters in Co-designing

What /

Participation in design is broadening, and today,² there is a movement from designing to co-designing practices and situations. While the two are in many ways related, the little co- makes them different organizational and socio-material practices.³ Understanding and applying a co-designing practice entails a move away from a focus on methods and pre-designed proposals towards an acknowledgement of participating materials and formatting co-designing in the situation and network where people and materials meet, align and make each other act. In many ways this calls for additional material (broadly understood) of the co-designer.⁴ This in turn necessitates a different understanding of processes from something that can be efficiently managed to materially staging performative co-designing, e.g. in the co-design situation during a co-design event.⁵

The present research program aims at understanding and staging materiality in practices of co-designing, and at proposing central materials (broadly understood) of the co-designer. Partly in opposition to the 'classic' design field of industrial design, the program/thesis intends to contribute

.....

¹ A 'Program' is a way of framing a project or research area, both briefly emphasizing what to explore and how to explore it. It is common in Scandinavian architecture and design practices, from where I originally brought the practice. Yet, during my PhD studies, the practice of working with a research program intertwining with doing practical experiments has been further developed – this is one of my three main approaches behind this research. Based on many different versions, this is the final research program formulation (further in – Positions & Approaches (P&A) / Appendix 10).

² ...with a need for more sustainable ways of living and interacting (sustainable is understood as environmental, social and economical).

³ This first concern of mine is mainly addressed in P&A / Part A / Part D

⁴ This second concern of mine is mainly addressed in P&A / Part B / Part D

⁵ This third concern of mine is mainly addressed in P&A / Chapter 3 / Part C / Part D

to the (co-) design fields of interaction design and especially participatory design, but also to co-creation and service design.

Emphasising co-designing, the program focuses on the situated practices of collaborative doing and materializing rather than the final designs or 'products'. Additionally, it focuses on a broad understanding of materiality in this co-designing.

Practically, co-designing typically happens in multidisciplinary, distributed and thus complex projects, where people – and invited materials – only physically meet occasionally, at quite explicitly staged co-design events. In co-design situations at such events, stakeholders get shared project experiences, a lot of negotiations take place and mediating materialized and rematerialized outputs are made. Quite explicit situated staging and formatting of these processes make up integral and important parts of co-designing practices. With a broad focus on materiality, the present program explores performative structures and the assemblage of materials with different delegated roles participating in staging and formatting co-designing.

How /

This program, Material Matters in Co-designing, has been explored through my teaching engagement, five different participatory design research projects and other co-design workshop series, as well as a mixture of mainly the three following practice-based approaches: participatory yet interventionistic; experimental and programmatic; and designerly ways of theorizing and drawing together. With this bricolage of research approaches, I also aim at illustrating and proposing a way for designers to engage in (co-) design research.

Drawing together as questions

Finally phrased as two questions, this program thesis asks:

How does material matter in co-designing?

What are the materials of the co-designer?

Drawing together as programmatic statements

More specifically, in answering the above questions and summarizing my main concluding suggestions,⁶ the program explores and draws together a number of views, issues, concerns and challenges about co-designing, which can be presented as a series of final programmatic statements:

Part D /
Chapters 10, 12

Mostly discussed in

Part A / From Designing to Co-designing Practices & Situations

First – Recognizing that designing and co-designing are different (organizational and socio-material) practices...matters

Recognizing that the role of designers largely changes from mainly designing forms and proposals for others, to (co-)designing formats for staging co-designing with others...matters

Understanding how a complex, continually transforming assemblage of materials (e.g. including talk as material) participates in situated co-designing...matters

Viewing co-designing largely as reflective conversations with the materials of the co-design situation...matters

In addition to co-design events, focusing also on quite explicitly staged co-design situations...matters

Mostly discussed in

Part B / Participating Material – Formatting Co-designing

Broadly seeing materiality and materials – like people – as participating, relating and acting in co-design networks, projects, events and situations...matters

Acknowledging that formatting is an essential part of staging co-designing...matters

When formatting, acknowledging how the invited materials in the material assemblage have ‘delegated roles’ when participating in the co-design situation (e.g. as agendas, content materials, formats, guides and the physical location)...matters

Recognizing that the negotiation of meanings, especially of participating content materials, takes place among stakeholders in the situation...matters

.....

⁶ My main concluding suggestions for understanding and staging co-designing are these statements, discussed throughout the text and drawn together especially in Part D.

These statements have developed and been reformulated throughout the PhD studies.

* These statements (with a star) are only addressed a few times throughout the text.

Acknowledging that quite explicitly staged processes of materializing – and also rematerializing – are important situations in co-designing...matters

*Acknowledging that tangible materials can be used for collaboratively exploring and capturing programmatic issues, focuses, questions and concerns of a co-design project...matters**

*Viewing the spatial environments of a co-design event as stages affecting the collaborative performing...matters**

Mostly discussed in

Part C / Materially Staging Performing in Co-designing

Acknowledging that people as well as materials continuously perform (frontstage & backstage) in co-designing, and that a special kind of performing take place at staged co-design events...matters

Accepting that choices of invited materials can be distributed among (designers as) co-design event organizers and other stakeholders, both before, during and after events...matters

Viewing a series of situated co-design events as (time-space) sequences of proto-performance – actual performance – aftermath...matters

*Understanding how (material) staging and formatting is crucial for establishing a shared, situated, explorative frame of co-designing...matters**

*Acknowledging that the overall encompassing project frame, as a research-, teaching- or implementation-frame, influences the material practice in the situation...matters**

Acknowledging that every staged co-design event and situation has its warm-up and cooldown...matters

Understanding how negotiated materialized and rematerialized outputs, often become traces, memories, actors in the aftermath archives of an event...also matters

I repeat: Material Matters in Co-designing...

With my about ten years of experiences in co-designing, I am fully aware that my above program (as text, questions and statements) is complex, but materiality and co-designing is complex. This program build upon reflections on these experiences, particularly the six Exemplars⁷ included.

.....

⁷ 'Exemplar' is roughly another word for a real-world case or rather a detailed account of an event that has taken place. From my collection of examples of engaging in co-designing I have selected six experiments or co-design events, included as Exemplars, highlighting what I propose as important qualities, issues and challenges of staging and formatting co-designing (Readers/Use Guide / Appendix 09).

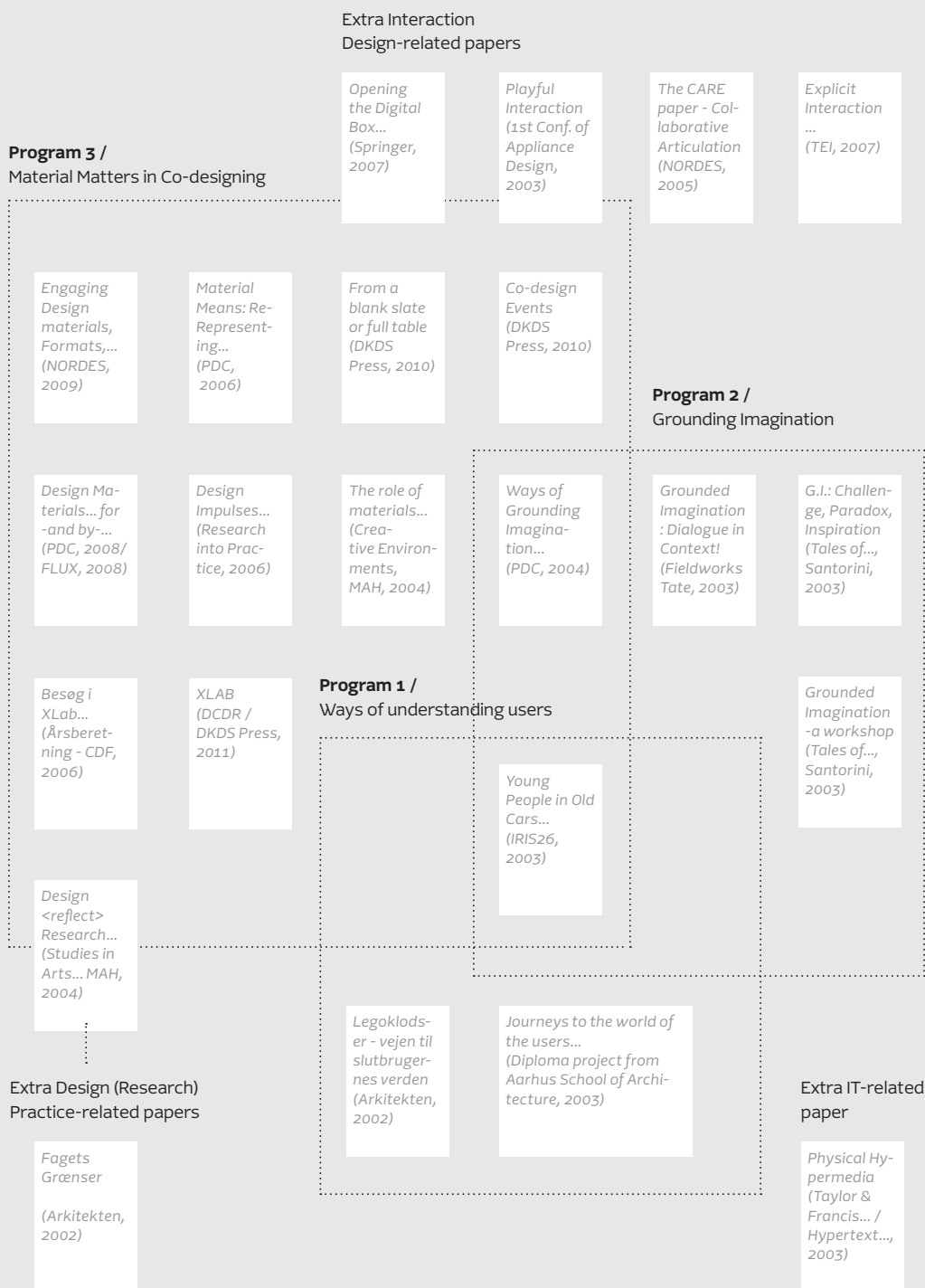


Figure 1 / Mapping of my journey with programs 1, 2 and especially 3 (Rematerialized with this thesis) – filled out with published papers. The papers correspond with 'My List of Publications' (on the last pages of the thesis).

Drawing together with my publications

Publishing has been an important part of exploring and (partly) stabilizing my program. In my publications, often co-authored, I have discussed and addressed insights, challenges and issues from various experiments and experiences in co-designing practice. Figure 1 illustrates how the various publications focus on or ‘fill out’ the three different (but surely overlapping) research programs that I have worked with in the last ten years, namely *Ways of understanding users* (Program 1); *Grounding Imagination* (Program 2) and *Material Matters in Co-designing* (Program 3). The contents of the present thesis center on Program 3, although they build upon and overlap with Program 1 and 2. Program 1 and 2 were not explicitly formulated as programs in written text (this has been done recently); yet, in retrospect, these sketched programs clearly frame my early research interests.

Some explanations tied to Figure 1

This whole thesis can be seen as a – at least temporary – closure of Program 3, *Material Matters in Co-designing*. As I show in Appendix 10, I have sought to approach my program in many different ways throughout the research process. My first attempt was made during the first months of my PhD project, when I was seeking to position my research interests. Based on images of previous experiences of engaging in co-designing, I formulated a researcher’s statement entitled *The role of materials...for knowledge sharing and design work*, presented in a report about ongoing research at that time in the Creative Environments studio at K3/Malmö University (in the middle of Program 3, Figure 1) (Eriksen, 2004b)⁸.

Before this and throughout my studies, I had been engaged in publishing more or less within my main areas of research interest. Program 1 captures my initial research interests in practical user-centered design (mainly by and for architects), presented and drawn together in my diploma-work, *Journeys to the world of the users...*⁹ (vertical box in Program 1 – Figure 1). Program 2 was developed while I participated in the Workspace project, influenced by my close collaboration with ethnomethodologist, Monika Büscher and other design researchers and computer scientists. The concepts of first *Grounded Imagination* and later *Grounding Imagination*, which entitle and are discussed in several of the papers, were co-developed based on shared practical experiences with acknowledging and practically addressing the gaps between fieldwork and design work, (four of the papers in Program 2 –Figure 1) (Bücher & Agger Eriksen, 2003a / Agger Eriksen and Bücher, 2003b / Bücher et al., 2003c / Bücher et al., 2004).

⁸ The references in this section correspond with ‘My List of Publications’ / not all are also included in the list of References.

⁹ Briefly described in Positions & Approaches (P&A) / ‘Modes of Inquiry’.

In Figure 1, I have placed the co-authored paper *Young People in Old Cars – Challenges for Cooperative Design* (Kristensen et al., 2003) in the middle of the three programs, as a way of positioning all programs within the field of participatory design, because this has been and still is a central part of all my research.

On the last pages of this thesis, in *Forwards: Reprogram*, intertwined with describing possible future work, I tentatively sketch and formulate my new research program (no. 4), based on the many experiences I have gained during my PhD studies and while making this thesis.



Part D / Chapter 10 /
Landscape overview

Part D / Chapter 10 /
Landscape no. N

Figure 2/ The 'Emerging Material Landscape of Co-designing' is one of the three ways I 'draw things together' in my concluding Part D / 'Drawing Material Matters Together'.

This Thesis Aims at 'Drawing Together'

For understanding and staging co-designing

P&A Above, I have been using the phrase 'drawing together', which is inspired by Bruno Latour's work about 'drawing things together'. This is a central phrase and approach to him, and in 2008 he recommended and encouraged designers to engage in using our designerly skills for 'drawing things together' in understanding the complex networks of today instead of simplifying and pulling things/networks apart (Latour, 1986/2008).

Part D In this thesis, I aim to understand co-designing networks. While I was not familiar with Latour's work when I started my PhD studies, drawing together and capturing issues and matters of concern rather than making simplified clear-cut factual conclusions is nonetheless what I have been doing all along. The final program, two questions, programmatic statements and mapping with publications outlined above illustrate different ways of drawing together, and presenting what I intend to do throughout this thesis, perhaps most explicitly in the last Part D / Drawing Material Matters Together.

Intertwining Exemplars of co-design events

All Exemplars In (co-) design research there is not one established 'right' way of communicating and sharing practical experiences or cases or Exemplars, so they are integral parts of the argument. It is challenging, but fruitful too, because it leaves open a possibility for developing this together with the main research issues and arguments. In this thesis I have chosen to position the Exemplars in between the main Parts (A, B, C) and then intertwine them in the exploration of theories and discussions throughout the text. The aim is that they then are integrated in the arguments for *Material Matters in Co-designing*.

My Engagement in Multidisciplinary, Co-design Research Environments and Projects

Lists of specifics and a few details

Researching co-designing networks and practices in a designerly way, cannot, in my view, be done without engaging with others. Before and throughout my PhD studies, I have been privileged to work in five different participatory design and IT research environments in Denmark and Sweden. In these work environments, I have also been privileged to engage in five multidisciplinary, participatory or co-design research projects. Additionally, I have been engaged in other related workshop series and in teaching interaction (co-) designing practices. From participating in these diverse co-design projects and activities I have gained great practical experiences of working in and (co-) staging co-designing.¹⁰

Appendices 01-05

The following list includes the participatory design and IT research environments I have been and still am engaged in:

- 1/ DAIMI / The Computer Science Department / Aarhus University, Denmark (2001-2003 & 2004 & 2006).
- 2/ The Design Institute / Aarhus School of Architecture (AAA), Denmark (2001-2003). This was closely intertwined with DAIMI at the time I was there.
- 3/ Arts & Communication / K3 / Malmö University, Sweden (2003 –). Here I was in the Creative Environments research unit and also connected to the Interactive Institute, Space-studio in Malmö in 2003-2004). After this at K3.
- 4/ The Danish Centre of Design Research (DCDR), situated at the former Royal Danish Academy of Fine Arts and Architecture (KA), Denmark (2006).
- 5/ The Co-design Cluster / former The Danish Design School, Denmark (2008-2010) – I was there through connection to (DCDR).

¹⁰ Some of these experiences are included as Exemplars. Exemplar 06 happened during the WorkSpace project, before my PhD project officially started, but it is included because I still find it relevant in relation to my research interests / Program.

While working in these different research environments, I was engaged in the following co-design projects¹¹ and activities, presented roughly in chronological order:

- Appendix 01
Exemplar 06 *WorkSpace* was an EU-funded ‘disappearing computer’ project, running from January 2001 to December 2003 (I was engaged with the core team, on and off from August 2001 to June 2003). The main collaborators with and for whom we were designing were Scottish landscape architects, and the project was coordinated by Preben Mogensen from the Computer Science Department at Aarhus University in Denmark.
- Appendix 01 Running partly parallel with the *WorkSpace* project, Monika Büscher and I initiated and staged a cross-European ‘Creativity 2n’ workshop series, running from September 2002 to June 2003, and concluding with a hands-on *Grounded Imagination* conference workshop (as the title indicates, this work played an important role in the focusing of my Program 2 in Figure 1.
- Appendix 02 *Atelier (Architecture and Technology for Inspirational Learning Environments)* was also an EU-funded ‘disappearing computer’-project, running from December 2001 to May 2004 (I was engaged in it from June 2003 to May 2004). Swedish interaction design master students and Austrian architecture students participated in the project, and it was coordinated by Pelle Ehn from K3 at Malmö University in Sweden.
- Appendix 03
Exemplar 02 *PalCom (Palpable Computing)* was an EU-funded IT research consortium and project, running from January 2004 to December 2007 (I was engaged in it in 2004 and 2006). It was carried out in collaboration with stakeholders from five main sites, including Danish emergency situation staff and Swedish hand-surgery rehabilitation staff and patients, and coordinated by Morten Kyng and Preben Mogensen from the Computer Science Department at Aarhus University in Denmark.¹²
- Appendix 04
Exemplar 04 *XLab* was a meta-project focusing on programmatic experimental design research, running from January 2006 to January 2007 (I was engaged in this whole project). The project was carried out in collaboration with other Danish design PhD scholars, coordinated by Thomas Binder, and took place at the Danish Centre for Design Research in Copenhagen in Denmark.
- Appendix 05
Exemplar 03 *DAIM (Design-Anthropological Innovation Model)* was a Danish EBST user-driven innovation design/anthropological-project, taking place from April 2008 to February 2010 (I was engaged on and off in the whole project). The project was carried out in collaboration with many professionals from different public waste-handling organizations as well as everyday people, and was coordinated by Thomas Binder from the Co-design cluster at The Danish Design School in Copenhagen in Denmark.

.....

¹¹ For similarities, differences and characteristics especially of the different co-design projects – Appendix 08.

¹² My PhD studies have been partly financed by this project.

Design Dialogues, was taking place from February 2009 to March 2009 (I was engaged in all workshops mainly as an observer). It was an intense 3 x workshop series related to the re-building, movement and merger of one university department with two other departments in a shared building at a university in Sweden. It was initiated by the management of the university and coordinated and hosted by a unit at the university along with architects from a Malmö architectural studio.

Appendix 06
Exemplar 05

Lastly, *Teaching* co-design practices, has happened within longer and shorter student-projects/courses, but to me continually throughout the PhD project.

Appendix 07
Exemplar 01

Motivation for Focus on Co-design Events & Situations

The six Exemplars are co-design events

In my exploration and analysis of *Co-designing* and *Material Matters*, I have decided to focus primarily on workshops or co-design events, and, even more specifically, on the situations of co-designing that occur within these events. In the following section I explain this choice.

HOW is challenging with different stakeholders

Appendices 01-05

Co-designing is a complex and by no means an easy process. Actually, one of the main factors motivating me to write this thesis was my own experience from different participatory/co-design projects, demonstrating with all clarity HOW challenging co-designing can be in practice. Co-designing requires engaging a highly diverse and multidisciplinary team of co-designers/stakeholders, all of whom are generally busy people with tight deadlines, often located within different organizational structures, schooled in different professional practices, working in different countries or organizations and with different interests/stakes in what and how (materially) to carry out the project.

Chapter 2

Co-design events tie together

In all the projects I have participated in, intense events (e.g. meetings, sessions, workshops, seminars, etc.), typically lasting between half a day and three days, were central in the processes of creating and maintaining engagement, alignment and shared ownership in the project. Along with email-correspondences, blog-posts, shared documentation, and work in the local organization, these often quite explicitly planned and prepared events were, and generally are, where most of the stakeholders meet to explore and negotiate collaboratively, where tangible materials are largely participating in shared experimental and explorative co-designing and where shared project experiences are gained; hence, my choice to focus on co-design events. This choice is further supported by Eva Brandt's recommendations to focus on a series of events in participatory 'event-driven' collaboration and development processes (Brandt, 2001).

Chapter 2

Co-design situations – during co-design events. Events are important, yet as it is my intention to understand and propose HOW to (materially) stage co-designing at co-design events, I have also found a need for closely

studying situated actions during such events (Suchman, 1987/2007). As I will discuss in Chapter 1, this approach is inspired by Donald Schön’s understanding of *Designing as a reflective conversation with the materials of the co-design situation* (Schön, 1983/1992). Chapter 1

In other words, I focus on situations rather than only people or events, because co-designing does not only happen among people or at a co-design event, but in and out of the particular situations in which these people move during an event; hence the focus on quite explicitly staged *co-design situations* during co-design events. Thus, a main focus of this thesis is to explore HOW material matters in and around co-design projects, co-design events and situations.¹³ Part A, Chapter 3
Part B
Part C

The six chosen Exemplars are co-design events

From the different co-design projects and workshop series listed above, I have gathered a large and diverse collection of practical examples of co-designing, the six Exemplars in this thesis are selected from this collection.¹⁴ These Exemplars are all considered co-design events, and have all happened as a part of a series of events in these longer co-design projects. Appendices 01-07
All Exemplars

They are selected to show a diversity of sites, content and approaches, and to highlight more generic issues and concerns related to *Material Matters in Co-designing*. In the following Reader’s/Use Guide I present brief descriptions of and arguments for choosing the six Exemplars.

.....

¹³ Of course, I am aware that this focus partly leaves out other important elements of co-design projects; for example the correspondences, power-conflicts and decisions made in-between these often well-planned co-design events. On the other hand, with my discussions and suggestion for acknowledging processes of rematerializing and rematerialized outputs of event, in a material perspective, I partly address this (Chapters 6, 9).

¹⁴ Some of the collection is captured in the images on the very first pages of this thesis.

Reader's / Use Guide

Suggested ways of navigating this thesis

As with any topic, the analysis of *Material Matters in Co-designing*, can be approached and received in various ways. In the following pages, I present an overview of how I have chosen to structure and format the contents, providing suggestions of ways for navigating this (rematerialized) thesis.

Different entry points

- All Exemplars The six Exemplars, selected from the co-design projects and workshop series I have engaged in, share concrete unique examples of how co-designing practically has been and can be staged and formatted. They also capture more generic issues or concerns, addressed when they are intertwined in the discussions in Parts A, B, C as well as in Part D where they are all drawn together.
- The different in-between-pages saying ‘This could be a format’ are intended to engage you, the reader, in questioning and considering what *materials* and their delegated roles are in co-designing.
- Chapter 10 – The *Emerging Material Landscape of Co-designing* (Chapter 10), is a catalogue-like collection of ‘materials of the co-designer’, intended to be read in fragments. With threads to the Exemplars, theories and discussions in Positions & Approaches (P&A) and Parts A, B, C, this summarizes my main discussions and suggestions for understanding and staging co-designing.
- Chapter 11 – The *Guided Tour through the Emerging Material Landscape of Co-designing* (Chapter 11), gives one example of how to possibly apply the landscape in future co-designing practices.
- Chapter 12 – The *11 Challenges with Material Matters in Co-designing* (Chapter 12), also drawing together the Exemplars, theories and discussions in the foregoing chapters, in a condensed format capture my main concerns about current (co-) designing practices and the main concluding suggestions for how to approach these in different ways.
- Lastly, throughout the text, in the margin and at the bottom of some pages, there are cross-references within the thesis intended to assist in drawing together the different chapters and Exemplars. A reference to a ‘circle’ resembles the number in the small red circle in the specified Exemplar.

The linear structure

Positions & Approaches (P&A)

Here, I position this thesis in relation to contemporary design research and explain the three main approaches of my own research. (This can be skipped if only interested in *Material Matters*.) To clarify my views of design practice, P&A starts with examples of my material design backgrounds as designerly experimental modes of inquiry. I then place this work in relation to interaction design, industrial design, service design, co-creation and especially participatory design. With this, I seek to show how practices of designing *for* are different from co-designing *with*, and I introduce the argument that in addition to classic design skills, other core ‘material(s)’ of the co-designer are needed. I then present the three main research approaches making up the methodology of my work, including what I call:

- A Participatory, Yet Materially Interventionistic Approach
- A Programmatic/Experimental Approach
- A Designerly Way of Theorizing and Drawing Together Approach

P&A

Exemplar 01 / Service Project Landscape

From my Teaching, this Exemplar shows selected events from a five-week service design course with interaction design undergraduate students, focusing on explorations with their shared ‘project landscape’. It is chosen because it relates my work to both interaction and service design, because it addresses a topic of sustainability, because it exemplifies ‘3D landscaping’ as a hands-on way of drawing complex issues together and because it among other issues quite clearly displays roles of event organizers and materials in co-designing. (Mainly discussed in Part A)

Exemplar 01
Appendix 07

Exemplar 02 / Rehab Future Lab

From the PalCom project, this Exemplar shows the first half-day of a ‘Future Laboratory’ among researchers and staff at a hand surgery rehabilitation department. It is chosen because it relates my work to mixed-media IT-and-interaction-design-research, because it deals with the topic of healthcare and technology and because it among other issues is an example with which I can question and challenge using ‘pre-designed’ (classic industrial design) proposals in co-designing. (Mainly discussed in Part A)

Exemplar 02
Appendix 03

Part A / From Designing to Co-designing Practices and Situations

With an example of my previous ‘one-designer practice’, I start to argue how designing and co-designing are related but different situated, socio-material and organizational practices, and, consequently, how the roles and materials of designers and co-designers are also different.

Part A /
Introduction

In Chapter 1, I discuss similarities and differences among these practices through an analysis of Donald Schön’s phrase *Designing as Reflective Conversation with the Materials of the Design Situation*. Using Exemplar 01, I then identify four specific characteristics of co-designing that cannot be explained with Schön alone. One of these characteristics is the importance of participation in co-designing practices.

Chapter 1

- Chapter 2 In Chapter 2, I address how the relationship between participation and materiality has been researched and discussed thoroughly within the field of participatory design. I also position this work in relation to concepts and ideas such as ‘communities of practice / participation and reification, laboratory and event-driven views of co-design processes, methods and techniques, staging and facilitation, as well as views on representations, language design games, boundary objects and design things’.
- Chapter 3 In Chapter 3, building on Donald Schön’s focus on the design situation, Lucy Suchman’s work on ‘plans and situated actions’, as well as insights from the
- Appendix 05 DAIM project, I conclude this Part A by recommending a focus on the quite explicitly staged ‘co-design situation’ at co-design events, and start to show how plans materially and spatially intertwine in staging co-designing.

Exemplar 03 / Kick-off

- Exemplar 03 From the DAIM project, this Exemplar shows the first full-day co-design event among the different project-partners, during which they collaboratively start exploring the topics of the project. It is chosen because it relates my work to practically doing design-anthropological research and consultancy, because it, through addressing waste-handling, explores dealing with sustainability issues in complex systems, and because it among other issues emphasizes roles of participating materials in processes of materializing in co-designing (Mainly discussed in Part B).
- Appendix 05

Exemplar 04 / Per:form

- Exemplar 04 From the X:Lab project, this Exemplar shows an extreme, mostly in silence full-day co-design event among seven design researchers of exploring relationships among a program and experiments around ‘collaborative decision making’. It is chosen because it relates my work to an understanding of and approaches for doing experimental and programmatic (co-) design-research, because it captures an example of very hands-on working with meta-design topics and because it among other issues is an example of how I have aimed for interventionistic ways of staging and formatting co-designing. (Mainly discussed in Part B)
- Appendix 04

Part B / Participating Materials – Formatting Co-designing

- Part B / Introduction Here, rather than focusing on methods and techniques and a simple view of materiality as affordances ‘in’ objects and artefacts, I start to show and argue how materials are participating and how their *meanings are negotiated* in the co-design situation. With perspectives by recent material culture studies researchers, I suggest viewing materiality in co-designing as a relationship among skills, the available or ‘invited’ (having) materials and doing – in other words, co-designing as *materializing*.
- Chapter 4 In Chapter 4, building upon the previous introduction and chapters, here I finally establish my broad view of materiality. With the view of co-designing as relating, I introduce Bruno Latour’s / Actor Network Theory (ANT) arguments that both humans (people) and non-humans (materials, broadly understood) continually make each other act in co-designing. From Latour’s work, more specifically I relate to his concepts of non-hu-

man and ‘human intermediaries and actors/mediators’, ‘delegated roles’, ‘transporting and transforming’, ‘traces’, as well as his views of processes as ‘circulating references’. Lastly this is further connected to Lucy Suchman’s views on plans and relating in situated actions.

In Chapter 5, to better understand the complex assemblage of materials participating in co-design events and situations, with Latour’s concept, I dissect and propose different ‘delegated roles’ to these quite generic non-humans actors in co-designing. The discussed delegated materials often participating in (*staging and formatting*) co-designing are: *agendas* as ‘delegated time & topic keepers’; *physical formats* as ‘delegated coach assistants’; guides as ‘delegated instructors’, *content materials* as ‘delegated playmates’ / including *pre-designed proposals* as ‘delegated advocates’. Furthermore, spatial location is also acknowledged as important in the material assemblage of a co-design event. Chapter 5

In Chapter 6, I emphasize *formatting* as an integral part of staging co-designing. Connecting the views presented in the previous chapters, from different angles I discuss the *formatting* of processes of both *materializing* and what I suggest calling *rematerializing*. From these processes, I discuss the important roles of what is *materialized* and *rematerialized*. I especially discuss the relationship between and merging of *physical formats* (‘delegated coach assistants’) and *content materials* (‘delegated playmates’). Chapter 6

Exemplar 05 / Design Dialogues

From the Design Dialogue workshop series, this Exemplar shows a quick series of three co-design events hosted as ‘design dialogues’ among staff and students influenced by the movement of a university department. It is chosen because it is not from within a research project but has a short re-building implementation deadline, because it relates to one example of current architectural practices of stakeholder design dialogues, because it captures a time-wise intense series of events, and because it among other issues displays how materials move in and out of and connect events. (Mainly discussed in Part C) Exemplar 05
Appendix 06

Exemplar 06 / Future Architects’ Lab

From the WorkSpace project, this Exemplar shows a two-days full-scale ‘Future Laboratory’ event in which four landscape architects with new technologies rehearse their possible future practices six years later. It is chosen because it relates my work to current and future architectural practices, because it focuses on IT-and-interaction-co-designing-research topics such as ‘disappearing computers’ and ‘augmented reality’, because it relates to practices of co-designing through explorative prototyping and rehearsing of futures with demonstrators, and because it among other issues displays the (possible) intertwining of spatial locations in co-designing. (Mainly discussed in Part C) Exemplar 06
Appendix 04

Part C / Materially Staging Performing in Co-designing

With Erving Goffman’s classic ideas of interaction, initially in this Part C, I establish a view of co-designing as performing, mainly with a focus Part C / Introduction

on his concepts ‘frontstage’ and ‘backstage’. Yet, I also emphasize that a special performing occurs at quite explicitly staged co-design events. Further, with Goffman and Richard Schechner’s views of ‘restored behaviours’, I acknowledge why and how materials invited to a co-design event can cause conflicts. Lastly, with examples of ‘roleplaying’, ‘imagining’ and ‘rehearsing’, I reemphasize that materially *staging* and *formatting* is setting the scene for a different way of performing in co-designing.

Chapter 7 In Chapter 7, I acknowledge and build upon the work of various (co-) design researchers who have applied performative perspectives for understanding (co-) designing. Then, relying especially on Richard Schechner and Victor and Edie Turner, I relate co-design to other concepts and views within performance studies, including co-design events as performances, ‘ritual and play’, ‘liminal phases of ritual performances/events’, ‘overall encompassing and other (especially explorative) frames’ of projects and performances/events, as well as views on materiality with a special focus on ‘props’ and formats as ‘scores’.

Chapter 8 In Chapter 8, following the authors in Chapter 7, I too propose viewing co-designing and co-design events with Richard Schechner’s views of performance processes as time-space sequences of ‘proto-performance’ – ‘performance’ – ‘aftermath’. Additionally, I emphasize the *collaborative warm-up – actual (liminal, workshop/rehearsal) performance – collaborative cooldown* of co-design events. With my focus on the quite explicitly staged *co-design situations*, I also propose that they roughly have a *situation warm-up – actual performance – cooldown sequence*. Lastly, I discuss situations of performing with family resemblances – particularly plenum presentations and group-work situations.

Chapter 9 In Chapter 9, I return to the suggestion made in Chapter 6, to view formatting of processes of *rematerializing* as important in co-designing, combined with a focus on the co-design event aftermath. Here, I argue that the (non-human) *rematerialized* outputs feeding into the ‘event archives’ are likely to play important mediating roles onwards in the project and in the co-design network, because these materials help refresh ‘memories’ of what happened. Hinting at my future work, this chapter concludes with two new examples from the PalCom project, in which the *formats* of *rematerializing* were co-designed by the stakeholders during the co-design events.

Part D / Drawing Material Matters Together

Rather than providing definite answers and clear-cut definitions, the intention of the whole thesis and particularly of this concluding Part D is to draw together the main views, insights, concerns and challenges related to my overall program, *Material Matters in Co-designing*. With cross-references to my Research Program, the six Exemplars, other examples and the various theories I have related to, the three chapters of this Part D include my three ways of ‘filling out’ this program.

These three ways draw together this work as a visualized, somewhat open-ended, materiality- and performativity-oriented catalogue of an *Emerging*

<i>Material Landscape of Co-designing</i> (Chapter 10), a <i>Guided tour</i> through this landscape (Chapter 11) and as a series of 11 <i>challenges</i> (Chapter 12) all concerning <i>Material Matters in Co-designing</i> . (These three chapters are further described in the ‘Different entry points’ section above.) Together, these can be considered as my main suggestions for core ‘materials’ of the co-designer.	Chapters 10 Chapters 11 Chapters 12
Forwards: Reprogram Lastly, intertwined with perspectives of how this work could influence different current practices, I briefly sketch my next research Program (no. 4) and desirable and possible future work.	Forewards: Reprogram
Appendices 01-10 These mainly include additional information to the Exemplars (Appendices 01-07), characteristics of the co-design projects I have engaged in (Appendix 08) and on my approaches (Appendices 09, 10).	Appendices 01 - 10



This could
be a format





*Positions &
Approaches
(P&A)*

My Co-design Researcher Positions & Approaches (P&A)

Introduction / Positioning this thesis

I am an inseparable part of this work. (Therefore, I have chosen to write in the first person throughout this thesis). Being a co-design researcher, in addition to the various theories I relate to, my perspectives and positions also build upon my various practical experiences and background. Thus, in addition to the main issue of materiality in co-designing, this thesis also resembles the approximate ten-year journey I have made from being trained as an industrial designer at an architecture school, to being a co-design researcher.

In this Positions & Approaches (P&A), first, to reveal some of my underlying views of practices of designing, I revisit different examples showing main modes of inquiry and classic design skills from my design background and journey of becoming a designer.

Second, to position this thesis, *co-designing* is related to the following (co-) design fields, to which this thesis is mainly intending to contribute: Interaction design, industrial design, service design, co-creation and participatory design.

Third, to clarify my research approach, I explain and exemplify the three main approaches that together compose the bricolage methodology of my PhD project and of making this thesis. This is a proposal too for others trained as designers and then engaging in (co-) design research. The three approaches intertwined throughout the project are:

- A participatory, yet materially interventionistic approach
- A programmatic/experimental approach
- A designerly way of theorizing and drawing together approach

Modes of Design Inquiry & ‘Material’ of a One-Designer

Examples from my material, visual, experimental, user-centered, publishing, etc. architectural design background

Following is a story of some of my material and professional journeys, skills and background of becoming a designer. The aim of sharing this is to unfold my maybe sometimes unstated assumptions throughout the text about what I mean by being a ‘one- designer’ and to acknowledge the materially explorative and experimental designerly modes of inquiry taught (and learned-by-doing) at the architecture school where I was studying.¹⁵ However, the conclusion of this section is meant to also show how little of the ‘material’ of the co-designer was taught while I was studying.

The following letters match the letters on the image in Figure 3

a/ Prior to my architectural studies, I studied at a daily art folk school, and through hands-on experimentation learned a variety of classic artistic techniques like drawing, painting, doing graphics, sculpturing and photographing as well as more conceptual ‘art’.

Then, in the Indian summer of 1996, I started my architectural studies. From day one, I knew I would not be building houses, but I stayed as I found the hands-on, experimental, diagrammatic and project-based ways of working and learning, quite interesting.

b/ My first projects and years were all about understanding and exploring cores of architecture – scale, proportions, light, statics, drawing plans and sections, etc. We did this by creating tiles in plaster with different surfaces, and then by building various models around these to experiment with getting the desired light setting. This and many other exercises and projects

¹⁵ The School of Architecture in Aarhus (AAA) in Denmark. After two years of basic architectural studies, I specialized for two years in industrial design, and after a period with internship, studies abroad and a pause while engaging in the WorkSpace project (Appendix 01), I graduated from the small department called ‘Communication Design’ (September 1996 – January 2003).



Figure 3/ a-h/ My suitcase highlighting glimpses of the repertoire of visualizing, materializing, experimenting, listening and publishing skills I have built up while training to become an architect specializing as an industrial and communication designer.

staged by my tutors, gave me diverse experiences of designing (architectural proposals) by experimenting and working with different physical materials.

c/ ‘All-inclusive design’ was influencing architecture teaching at the time, so in a two-day workshop all second year students in smaller teams were to experience an existing building – for example while being blind-folded and in a wheelchair. Afterwards, we story-boarded our experiences and designed a quick proposal for a building based on these insights. Here my focus on the importance of understanding the use situation of different people (not just myself) was initially evoked.

d/ During my third and fourth year, I specialized in what my tutor at the time called ‘Hard core industrial design’. Mostly sketching and working in a human scale 1:1 with quickly-made models or mock-ups, on my own, I continually tried to put myself in the shoes of the people who were going to use what I was set to design. Once we got the brief to design a ‘video-phone’. Against the norm, I was working in a team with one classmate, and all our dialogues and questioning of adding yet another device to the home, made us challenge the brief and instead again through sketching and modeling designed a ‘Personal Home Communicator’ (included are parts of the high-fidelity model with a remote hard-button-interface and a rolled paper with four different use situations). (It was rewarded a bronze medal at the LG Electronics Design Competition 1999 in Seoul, Korea.) In the semester focusing on transportation design, the brief said: Design a Postal Car. I did.¹⁶ Yet, it was still not my call to design yet another mass-produced product, so luckily...

e/ Finally, as a designer I had an “Aha! Experience”. In the early days of user-centered design, in the spring of 2000, I was invited to a Nordic four-day hands-on workshop in Finland called ‘Designing for User Experience’. Even though it was challenging, it was extremely inspiring to base our design concepts on probe-based field studies with real people – in my case 10-year old girls – and to work in a multidisciplinary team of designers. This became a turning point in my approach to design and my understanding of being a designer. In retrospect, it was my spring board of becoming a co-design researcher and with that a practitioner staging co-designing.

f/ My internship was with Bang & Olufsen Telecom in Denmark (fall 2000), where I (for the last time) mainly applied my core industrial design skills (desktop research, a bit of fieldwork, sketching and modeling in different materials). Building upon the ‘Personal Home Communicator’ and a vision in the company, in quite close collaboration with engineers and interface designers from the company, I designed a conceptual model of a leather-bound ‘BeoBook’ (interaction-wise envisioned much like a double version of today’s iPad). This work-experience revealed good insights into development processes in a design/engineer-driven company, but I returned to Finland to further specialize in user experience design (spring 2001).

.....

¹⁶ This process and example is further discussed in Part A / Introduction.

g/ Back in Denmark, after a pause while participating in the WorkSpace project, my diploma work was entitled 'Journeys to the World of the Users...'. It was an opportunity for me to gather, communicate and suggest various ways of assisting architects in easily engaging 'users' in their early design processes. During the project, parts of the work were discussed and explored with architects from a large Danish architectural company. The large suitcase was filled at the final presentation, and here the little suitcase held the following, designed during that project: a 'map of methods' with the dimensions 'in lab <> in context' and 'abstract <> concrete'; a proposed iterative loop-journey-process emphasizing planning, preparing, the actual 'journey in the world of the users' and memories; bags with proposed participating materials, a deck of question-cards and a 'Focusboard' (on the far right, a plexi-glass surface with holes and additional pieces and clips to place in the holes).¹⁷ This was designed to assist architects in modeling their planning and preparing for engaging people in their work. With this kind of design-work I started realizing the need for designing formats assisting in staging dialogues and co-designing...

h/ Additionally, while studying, I missed reflectively reading and writing about what I was learning and doing, and I discovered others were too (at that time it was not a very strong part of the curriculum). We established a group across years of study and specializations, and our discussions became a series of booklets called 'FORUM'. Six editions were published, before we merged with a similar group at the Royal Academy of Architecture in Copenhagen and continued with the series (KÅRK) for and by architectural students and others who were interested. For me, this fruitful collaboration ended with making a special edition of the Danish architectural magazine 'ARKITEKTEN'. Translated, the title is 'X – The Creative Zone'. (My two first/oldest papers in my List of Publications were published in this magazine.)

To summarize, I have shared highlights from my journey and background of being a student becoming a 'one-designer' with designerly and experimental modes of inquiry, moving into user-centred design and initial experiences with reflective writing. Yet, as I will further emphasize in the introduction of Part A, the aim of sharing this journey is also to show that most of the core 'materials' of the co-designer and co-design researcher, which I explore and propose in this thesis, was not a part of this background and training. And, with my knowledge mainly of several Scandinavian design schools, still are not core parts of the curriculum there. With today's complex challenges, I strongly suggest it should be.

Back to my journey: After this, my journey continued into interaction design, participatory design research and into slowly my becoming a co-design researcher.¹⁸

.....

¹⁷ Afterwards, this was used the most – and as it was engaged at an event in the PalCom project (Appendix 03), it is discussed in the Part C / Introduction.

¹⁸ This journey is also captured in the Foreword: Program in Figure 1 including my (so far) three main research programs. Figure 3egh of this journey roughly resemble Program 1.

Co-designing... and...

Interaction design / Industrial design / Service design / Co-creation / Participatory design

In the following series of sections, I will present my understanding of *co-designing* in relation to other design-related fields, terms, concepts and approaches, including interaction design, industrial design, service design, co-creation and participatory design. The purpose is to position this work partly in opposition to ‘classic’ design fields such as industrial design designing *for* others, and in relation to the fields that also explore and argue for co-designing *with* others. With this foundation for moving from designing to co-designing, this thesis particularly relates to and aims at contributing to participatory design and other fields applying participatory design approaches.

Co-designing... and Interaction design

This thesis is written within the field of interaction design (IXD) at K3 / Malmö University. This taken into consideration, it might seem striking to the outsider how relatively little I will relate my work to computers, mobile phones, ‘digital artefacts’, and the ‘digital’ as design material. However, at K3, IxD is viewed as a highly multidisciplinary field and practice, also incorporating humanistic traditions and participatory approaches, thus having a focus on co-designing highly relevant to the field of interaction design.

In the following section, I will introduce and briefly discuss some of the most mainstream literature on interaction design, some relating to the issue of co-designing. I will discuss how I largely view the ‘methods’ in the field as designing *for* others.

Interaction design has grown out of and is related to various branches of IT and computer-related research areas, including but not limited to: human-computer interaction (HCI) (e.g. Winograd, 1986/1996), information systems (e.g. Löwgren & Stolterman, 2004) and augmented reality, pervasive computing, tangible computing, which all build upon ubiquitous computing (e.g. Weiser, 1991).

Generally, in interaction design, ‘the digital’ is (still) considered as the main ‘material’ being designed. This is captured in *Thoughtful Interaction design*, in which the authors describe the process of interaction design as one of

‘shaping digital artefacts’ (Löwgren & Stolterman, 2004:Preface). As a way of talking about IxD, their main concept of ‘use qualities’ does provide a useful way of relating and characterizing interaction designs and digital artefacts.

In addition to a focusing on the digital, as Ramia Mazé has argued, one of the main characteristics that distinguish interaction design from e.g. industrial design is ‘occupying time’ (Mazé, 2007). In her view, it does not make sense to speak of or (co-) design interactions, or services or organizational changes, which I get to below, without considering flows of time. Furthermore, and as a part of understanding (the digital in) these flows of time, a sound understanding of the use situations and ‘users’ is also recognized as essential within IxD. Related to this, Paul Dourish’s *Where the Action Is*, introducing a focus on ‘embodied interaction’ is a very influential reference in the field (Dourish, 2001). Finally, Malcolm McCullough, author of *Digital Grounds*, a work that seeks to relate architecture and interaction design, has also emphasized the importance of understanding the contexts in which interaction is situated (McCullough, 2005).

Chapter 5

In the IT-research projects I have been engaged in, our research related to tangible and ubiquitous computing, and we were partly ‘shaping digital artefacts’, to use Löwgren and Stolterman’s terms. Yet, rather than viewing what comes out of our IT/interaction process as a product (e.g. a new software application), as widely recognized in participatory design (PD), we viewed our work as intertwining in and changing the socio-technical and socio-material situated actions in the field we were working with (e.g. Suchman, 1987/2007). In all these projects, in different ways, we also applied PD approaches. It is these PD approaches I mainly focused on while engaging in each of the projects, and focus on in this thesis, which is why I will not particularly relate to these other computing-related fields or branches throughout the thesis.

Appendices 01, 02, 03

Exemplars 02, 06

Chapters 2, 3, 4, 8

Ways of designing in interaction design

Bill Moggridge’s book, *Designing Interactions*, and Dan Saffer’s book, *Designing for Interactions – creating innovative applications and devices*, both present examples of different IxD application areas, methods and techniques, including sketching and prototyping (Moggridge, 2007 / Saffer, 2010). Similarly, Bill Buxton’s *Sketching User Experiences* also nicely illustrates practical ways of working in IxD (Buxton, 2007). Surely extending the understanding of sketching, he does not simply refer to drawing on white paper, but as the others, also to wireframing, storyboarding (to capture interaction over time), (lo-fi and hi-fi) prototyping, roleplaying and experience prototyping (e.g. also Buchenau and Fulton, 2000).

However, unlike the two others, Buxton does not just exemplify and describe the various methods and techniques, but critically discusses them, claiming that ‘sketches are social things’ (ibid:153). Likewise, despite a chapter entitled ‘Methods and Techniques’, Löwgren and Stolterman also argue that methods cannot do the job on their own, but are highly situated and dependent on the skills of the designer applying them (Löwgren and Stolterman, 2004:63,100).

Many of these ‘methods’ are also used in participatory design (research) projects with users and various stakeholders, and as shown in some of the Exemplars, in the IT-projects we were prototyping and roleplaying.¹⁹ Most of the books just mentioned include outlines of design processes and roles of designers, and they all emphasize a focus on user experiences in interactions. Löwgren and Stolterman, also include a short repetition of Pelle Ehn’s key points about participatory design practices (Ehn, 1988).

However, I would argue that most literature on IxD tends to view IxD as a field and practice of designing – not co-designing. This is despite the general recognition of the field’s multidisciplinary character and the necessity for a user-centered focus. Several authors do recognize that different people with different interests are engaged in the design process, and that sketches and prototypes – if not introduced in the right way – can lead to lengthy arguments and conflict (e.g. Saffer, 2010:176). Similarly, as I will address in Chapter 5, in my experience there is a tremendous difference between one person or a small group of designer(s) pre-designing sketches and prototypes and showing these to others, and sketching together.

Yet, none of them discuss in detail how the multidisciplinary character of IxD makes it a very different practice from classic designing. It is obvious that a design team with stakeholders placed all across Europe will work according to different practices from a core team working together on a daily basis in the same studio. Such gaps in conventional literature on IxD make it necessary to look elsewhere for literature that can better illuminate participatory processes of interaction design.

Summary / Co-designing... and interaction design

I acknowledge the importance of the emphasis on ‘digital artefacts’, ‘the digital as the main design material’ and understanding of ‘users’ and the use situation in mainstream literature on interaction design, but, inspired by Suchman and others, I maintain the importance of understanding the digital as situated within particular socio-material use situations over time. While mainstream literature on interaction design generally recognizes IxD as a user-centred and multidisciplinary field, I argue that much of this literature tends to consider interaction design as a practice of designing *for* others, rather than a practice of co-designing *with* others.²⁰

.....

¹⁹ Yet, partly related to Buxton, Löwgren and Stolterman, with my suggestion to view materials as participating in designing and co-designing, I generally oppose the focus on ‘methods’ also within IxD (e.g. see Chapter 2, Part B / Introduction).

²⁰ In many ways the field of interaction design (IxD) has developed out of, in extension to, as a corner of, in parallel with, as a mix of, or as one of the parts of the other different fields and approaches discussed in this section: industrial design, service design, co-creation and participatory design. So in the following section when I explore these, I intend to explore IxD.

Co-designing... and Industrial design

– from designing for to co-designing with

As mentioned in the Foreword: Program, the little *co-* in front of designer and designing makes a big difference, denoting a shift from the act of designing for to co-designing with. In this section, I seek to illustrate the difference by relating industrial design – understood as a practice of designing *for* others – to the practice of co-designing *with* others.

Foreword: Program

Generally, industrial design (ID) can be characterized as the practice of developing products for the marketplace and for producers and users. ID products are often highly specialized, ergonomically and semantically well considered, and developed with a user-centered focus (e.g. Norman, 1998). Often industrial designers work in teams with experts from other disciplines, e.g. engineers. Jamie Wallace has interestingly studied how transforming design artefacts play an important part in how ID products are developed among a team of mainly industrial designers and engineers and managers at a design bureau (Wallace, 2010). At the same time, his studies show, despite the user-centered focus, that ID (still) can be characterized as a practice where designers, for example from a brief, design proposals *for* producers and users. Thus, in ID, as in many other ‘classic’ design practices, designing *for* is (still) the most common practice.

The change from designing for to co-designing with

Generally, this thesis addresses the change from designing *for* to co-designing *with*. Generally, different stakeholders outside the core project team can basically be involved in two very different ways. They can be invited to test or comment on proposals made by the core design team, or they can be brought in as co-designers taking active parts in developing and exploring possible futures. For many at least Scandinavian design consultancies, (still) the former approach is predominant, as Wallace’s studies partly showed. They are working for a client and are driven by delivery deadlines. The team members divide tasks among themselves, and sometimes on-the-fly meetings within the team are used to coordinate activities and quickly brainstorm for solutions. Meetings with the client are used to present and eventually get feedback on proposals. When the consultancies prepare for meetings with the client, focus is on how to present the deliverables in a convincing way, providing arguments for the chosen proposal. The proposals or deliverables are largely what drives the process and becomes the focal point during meetings.

In contrast, in the DAIM project, with a main pilot project on waste handling, the commission was to make a broad inquiry into new possibilities of innovation. The participatory approach of that project was deliberately to not be working for the client but to be working with various stakeholders (for example different professionals from waste handling organizations and industries). Throughout the project many stakeholders were actively involved (some throughout the whole project, others during shorter intense mini-projects), largely through participation in a series of co-de-

Appendix 05

sign events, at which focuses were on collaboratively identifying core issues and rehearsing possible futures.²¹

This topic has been explored by many others, including GK VanPatter (design thinker and co-founder of the company Humantific and the NYC-based network NextD). In his talks, blog-posts and various visualized publications, VanPatter identifies four different types of design processes – Design 1.0, 2.0, 3.0 and 4.0 (Vanpatter, 2009):

Design 1.0, VanPatten refers to as ‘Traditional Design’, characterized as being driven by briefs, and form and aesthetics, with a few client stakeholders and a small design team, working in what VanPatten calls a ‘hidden magical process’.

Design 2.0, he calls ‘Product / Service design’, characterized as driven by a ‘product and service frame’ and observation of human behaviours, with different client stakeholders and a multidisciplinary team, working in what he calls ‘externalized processes’, where the approach is more visualized.

Design 3.0 denotes ‘Organizational Transformation Design’, also characterized as driven by observation of human behaviour and what he calls ‘Participatory Co-creation’, with a multidisciplinary team emphasizing internal collaboration skills and closely collaborating with different organizations, working in what he calls parallel ‘adaptable externalized processes’ with divisions of content and processes to encompass high organizational and systemic complexity.

Finally, Design 4.0 refers to ‘Social Transformation Design’, in many ways similar to Design 3.0, but engaging more complex networks of organizations and other stakeholders, and dealing with highly complex issues going across organizational interests, for example, at a societal and environmental level (ibid).

The term ‘Transformation Design’ was coined by the influential research group and do-tank RED (within the British Design Council) in order to capture their ways of applying user-centered, service, design approaches to redesign public services (e.g. captured in: Burns et al., 2006).

This is of course a pretty rough distinction, but I think it provides a clear and useful overview of where designers have been, are and can/could be. VanPatter (2009) claims that (industrial) design students are still mainly trained in what he calls Design 1.0 and Design 2.0.²² As I discuss below, I do not fully agree that service design is 2.0, but generally if designers want to play a role in staging organizational and social change/transformation, then VanPatter claims, and I agree, that it takes other skills than these.

.....

²¹ This paragraph is modified from the following publication: (Brandt & Eriksen, 2010a). Also related to: (Eriksen, 2008) (Eriksen, 2009a)

²² Which I also recognize at some of the Scandinavian design schools with which I am familiar.

He emphasizes practices of ‘SenseMaking’ – which has clear parallels to Bosse Westerlund’s description of the skill of practicing an attitude of: Paying Attention! (Westerlund, 2009). Empathy is extremely essential here. Diverse sketching, prototyping, visualizing and materializing skills are also still viewed as extremely important (e.g. Buxton, 2007). And as I will argue throughout this thesis, as core ‘materials’ of the co-designer, I will add: So are skills of ‘drawing together’, and building upon participatory design tradition skills of staging and formatting – with delegated participating materials – enabling the whole team to engage in co-designing practices.

Chapter 2

P&A – later

Part A, B, C

Summary / Co-designing... and industrial design – from designing for to co-designing with

I have now characterized the field of industrial design as a field of designing *for* others. Based on previous experiences and general knowledge of the field of industrial design, as well as references to GK VanPatter’s mapping of different current branches of design, I have sought to explain how designing *for* others and co-designing *with* others call for different design skills – and, as I will argue in more depth later, can be considered as different design practices (e.g. materially).

Co-designing... and Service design

With my focus on co-designing practices, this thesis also relates to the field of service design (SD). In the following section, I will briefly position my views of this relatively new field with sustainable and holistic approaches of co-designing, discuss how this field, in my experience, can add important holistic focuses and approaches to interaction design (IXD) and participatory design (PD),²³ and position this work in relation to current popular books and research in the field. Additionally, I will argue that some of the practical ways of working and perspectives of SD I views as important ‘materials’ of the co-designer.

P&A – later

While GK VanPatter positions SD as a quite classic design discipline (2.0 – see above), I would argue that this depends very much on how it is carried out. More specifically, I argue that it depends on whether services are designed *for* or co-designed *with* various stakeholders. Both practices seem to take place today. If designers (often based on initial field studies) design the whole service *for* others (providers and users), then I argue that the providers (at the front desk) have no engagement in or ownership of the proposed solutions/the available touchpoints, and they might not have any backstage support in their organization or network either.

Yet, as services are not finished products when leaving the hands of the designers, but rather can be seen as continually ‘lived’ by people (users

.....

²³ The holistic focus in many ways resembles what I call skills of ‘drawing together’. See Foreword: Program / P&A – later on my third research approach / Part D.

and providers) over time, others within the field of SD already address the need for co-designing services *with* relevant stakeholders (This view partly overlaps with Holmlid, 2009). It is the main focus at the ServDes 2012 conference entitled 'Co-creating Services'²⁴. Thus, if services are viewed and co-created or co-designed as parts of larger organizational, social, sustainable, economical systems, SD cannot be understood simply in terms of classic design, but, in my view, as clearly merging with what VanPatter calls transformation design.²⁵

Service design is a field generally with a sustainable and holistic focus

As the first company calling itself a 'service design' consultancy, as told in an interview, LiveWork was founded in 2001 in opposition to designers who would "just" repeatedly produce more and more products (tangible as well as intangible) for the consumer market (Moggridge, 2007). Several of the founders previously worked as industrial designers, and they felt a need for more sustainable and holistic design views and approaches – captured in their concept of Service Thinking, which they continually apply to a variety of domains (Livework, 2012).²⁶

Generally, SD is about holistic solutions and the creation of value (not only economical and market-driven), and in this perspective it can, in many ways, be viewed as a new (design) mindset for change. It is a mindset that interferes with existing social, organizational, and economic structures and as such the field of SD has a very inter-disciplinary foundation and practice (e.g. Stickdorn and Schneider, 2010:28). It is a field that acknowledges how designing happens in a complex world, as interestingly described by John Thackara's *In the Bubble* (Thackara, 2006); a field that focuses on 'drawing together'.

Service design adds practical ways of working

SD, IxD and PD largely apply a user/people-oriented approach through probes, anthropological observations and contextual interviews (Stickdorn and Schneider, 2010: e.g. 108, 156, 168, 172, 178). Prototyping and role-playing interactions and experiences are also integral parts of these fields (ibid:e.g. 192, 208). Likewise sketching interacts by working with scenarios and storyboards; but also working with more detailed 'customer journeys' or 'user journeys' and the much more detailed and leveled 'ser-

.....

²⁴ The international Service Design Network (sdn) hosted the first European conference on service design in Amsterdam, Holland in November 2008 (sdn – www.service-design-network.org). The first academic conference on service design and (design-related) service innovation (now called 'ServDes') took place in 2009 in Oslo, Norway. The third ServDes 2012 will take place in Espoo, Finland and has the title 'Co-Creating Services'. Service design researchers are also organized in this online network: www.servicedesignresearch.com

²⁵ It is this last view I argue for and emphasize when discussing and teaching service co-designing perspectives and approaches. My focuses of combining holistic SD practical ways of working with sustainable and social innovation intensions have, to a large degree, developed thanks to close collaboration with Anders Emilson at K3 / Malmö University.

²⁶ While an industrial design student I surely had similar thoughts around that time too – see above (section on 'Modes of inquiry').

vice blueprints' very common in SD, adds to the focus on the use situation in IxD (ibid:e.g. 184, 186, 158, 204), Dan Saffer speaks about how 'service journeys' are composed of series of 'moments', in which interaction typically involves a complex network of people, environment(s), object(s) and process(es) (Saffer, 2007:176) – all considered as service 'touchpoints'.

Also, related to architectural practices, in my view, a very important approach in and addition from SD, is working with various types of 'mappings' (2D and 3D), 'service ecologies', again typically drawing together a mixture of people, things, environments and processes or activities (Moggridge, 2007:414) (Stickdorn and Schneider, 2010:150, 176, 210). Practically, these can be used for identification of current and new relations and possible 'gaps' and potentials where design initiatives might make a difference (e.g. 1508).

Lastly, within IxD there is a major focus on (end) user experiences, at a conceptual level sometimes naively assuming that the systems behind the interface are just working smoothly. Here, SD suggests paying equal attention both to the so called 'frontstage' and 'backstage' of a service (e.g. 1508:70 / Stickdorn and Schneider, 2010 :41).²⁷ In brief, a focus on the 'frontstage' captures all the touchpoints (people, things, places, signage, etc.) that the end-users are in contact with, but an exploration of the 'backstage' and all the people/actors, their different roles and relations, the places and things/tools the service providers use to interact and provide services over time can also reveal surprising and innovative solutions.

Exemplar 01 partly includes such examples

Service design research is a relatively new field

Yet, as Blomkvist et al. argues, it did not start with LiveWork in 2001 (Blomkvist et al. 2010). In their survey of SD research, these authors argue that Italian design researcher Ezio Manzini and others were publishing about SD already in the early 1990s (Manzini, 1993 / summarized in: Pacenti & Sangiorgi, 2010). Supported by research in other fields, these authors were highlighting and positioning SD in relation to other design fields, such as IxD where many researchers came from. Again, one topic here was the shared interest in user experiences (e.g. later summarized in: Holmlid, 2007). Research would also relate SD to sustainable strategies on product-service-systems (PSS) basically viewing products not as isolated entities, but as a part of larger systems of complex service networks (e.g. Morelli, 2002/2003), and to work on sustainability viewed as social relations and transformations captured in concepts like 'collaborative services' and 'collaborative consumption' (Burns et al, 2006 / Jégou & Manzini, 2008 / Botsman & Rogers, 2010 / Meroni & Sangiorgi, 2011).

While much of this research is still highly relevant, it is not yet really recognized in the collection on recent books on SD – for example: In *Designing Interactions* and *Designing for Interactions* (1st Edition) there are

.....

²⁷ The phrases of 'frontstage' and 'backstage' were initially captured by Erving Goffman in 1959 as a way of describing everyday interaction – further discussed in Part C / Introduction.

chapters entitled ‘Service design’ (Moggridge, 2007 / Saffer, 2007); *Designing Services with Innovative Methods* (Miettinen & Koivisto, 2009); *Service design* (in Danish) (Bechmann, 2010); and *This is Service design Thinking* (Stickdorn and Schneider, 2010). Yet, in line with Blomkvist et al.’s review also of the early research on SD, and my own critique of Moggridge and Safer above, I too would argue that these books are largely uncritical, focusing on case-sharing, practical method/tools-collections²⁸ and e.g. interview-based manifesto-like positioning.

However, from 2008-2009 there has been a shift in academic publications on SD, Blomkvist et al. argue; ‘from justifying service design to research on service design’ (Blomkvist et al. 2010:309). Looking ahead they see two main directions of SD research: One, a widening of the scope of SD to include ideas and practices from marketing, leadership and engineering; and challenging assumptions and further appropriating methods within the field. Two, to support more academic rigor in SD research, they argue that the many existing SD case studies must be further elaborated in order to contribute new knowledge to the field (ibid:315). As mentioned previously, my intention with the analysis and reflections of all the Exemplars (even though they have not all be called service design) is precisely to contribute to the development of the field of service design – particularly to co-creating services or, in other words, to ‘service co-designing’.

Exemplar 01

Summary – Co-designing... and service design

Service design in many ways presents a new design mindset and practice, capturing holistic and sustainable views of today’s complex networks of products, places, people/different actors, processes and activities intervening in practice over time. Because of this complexity, and because services not are finished ‘products’ when leaving the designer but ‘lived’ in practice, as others within the field are starting to emphasize, in this section, I have argued for service co-designing. Practically, I have also emphasized working with ‘user journeys’, mappings and equal focus on the front- and backstage in the process of co-designing, as fruitful additions to common ways of working in interactive design and participatory design.

Thus, onwards when I mention service design, it is not with the view that a small team of designers designs a service *for* providers and users, but that services are co-designed with various stakeholders throughout the process.

.....

²⁸ As a very interdisciplinary field, ‘methods’ have been borrowed from other fields such as marketing, product design, graphic design, interaction design, social design, strategic management, design ethnography, etc. (Stickdorn and Schneider, 2010).

Co-designing... and/or Co-creation

While GK VanPatter uses ‘Participatory Co-creation’, and others, e.g. within service design, use the term co-creation, inspired by participatory design (PD), I use the terms co-design and co-designing. These terms do overlap, but they have different origins and are interpreted quite differently. Therefore, before I get to PD, in this section I present my views of co-design and co-designing in relation to different views of co-creation.

Many others work with and suggest ways to look at co-design and co-creation. One example is Sanders and Stappers’ paper *Co-creation and the new landscape of design* (Sanders & Stappers, 2008). They illustrate the “current landscape of human-centred design research as practiced in the design and development of products and services” with a figure (ibid:2):

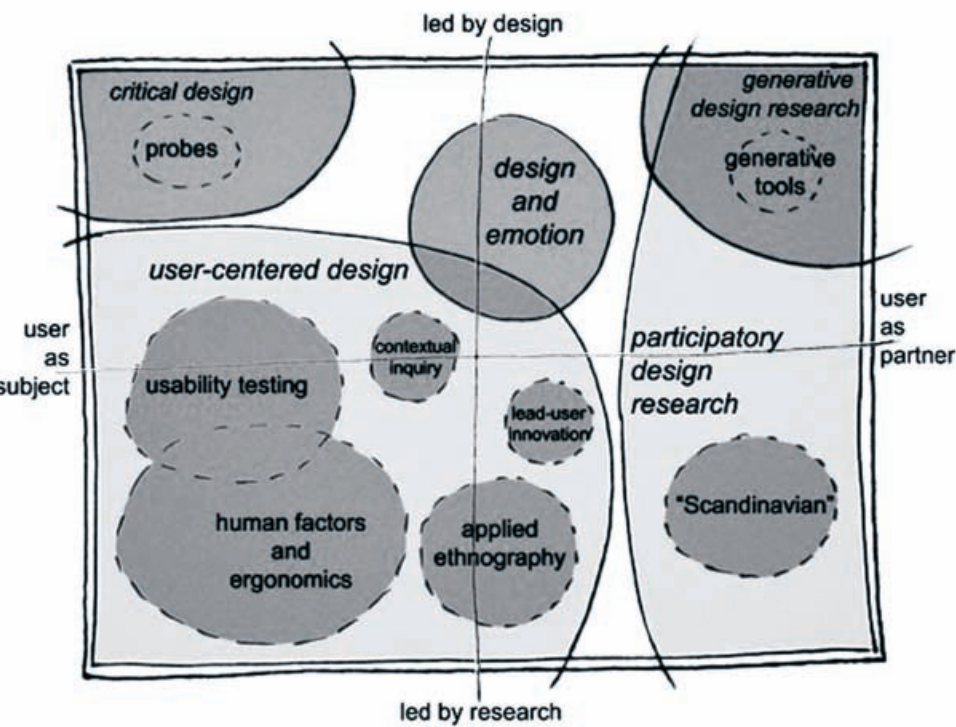


Figure 4/ Illustration of co-creation and the new landscape of design by Sanders & Stappers (2008). / Reprinted with permission by Liz Sanders.

Tied to this landscape, Sanders and Stappers argue that co-creation and co-design have been growing in the area of participatory design research. They acknowledge that today the terms *co-design* and *co-creation* are often confused and/or treated as synonyms. In their online survey behind making the illustration, they have found co-creation broadly applied both from physi-

cal to metaphysical and material to spiritual issues. Further, more practically, they have also found different opinions about who should be involved, when, in what role, etc. To be clear, they 'take *co-creation* to refer to any act of collective creativity, i.e., creativity that is shared by two or more people. (...) and *co-design* to indicate collective creativity as it is applied across the whole span of a design process...' (ibid:6). In opposition to others considering co-design as collective creativity among a team of designers, they propose to view co-design broadly capturing creative processes in which designers and people not trained in design continually collaborate (ibid:6).

Of course, illustrations like this one are highly subjective, expressing the particular interests and positions of their creators.²⁹ Yet, the diagram does capture several issues relevant to the present argument. The vertical dichotomy between 'user as subject' and 'user as partner,' for example, relates to the discussion above of designing *for* and *with*. Similarly, their view of co-design as involving more than two people – usually designers and others not trained in design working together – across the whole span of a design process also corresponds well with my views of *co-designing*.

The term *co-creation* is quite new

Chapter 2

Emerging from the business world around the millennium, in comparison with the term *co-design* arising with the field of cooperative/participatory design in the late 1970s/1980s. Thus, in addition to the two horizontal dimensions in Sanders and Stappers' diagram, 'led by research' and 'led by design', this can be said to add a third dimension, namely 'led by business'. The phrase *co-creation* was first used and coined by, management and business strategy thinkers, C.K. Prahalad and V. Ramaswamy in their article *Co-Opting Customer Experience* (2000). In particular, their influential books and articles, such as the article *The Co-Creation Connection* and the book *The Future of Competition* seem to have contributed to establishing the term and spreading it in business strategy literature as well as in some business practices (Pralhad & Ramaswamy, 2002/2004).³⁰ Prahalad's political influence in business management seems to have had great influence on the spread of co-creation or co-design outside e.g. PD research environments – which I, of course, approve of with an interest in proposing co-designing approaches.

However, I would argue that his publications do present several limitations as regards their relevance to understanding and staging co-designing. The *Co-Creation Connection* (2002), for instance, contains a lot of business cases integrated with some overall recommendations about how to change from values of companies to values of consumers, including dia-

.....

²⁹ Inherent in the Figure 4, for instance, I read an interest on the part of Sanders and Stappers in positioning their own work around 'generative design research' within the 'participatory design area'.

³⁰ In May 2008, the magazine *Business Week* reviewed Prahalad's recent book 'The New Age of Innovation: driving cocreated value through global networks', saying that the book was 'laying out a new landscape of business driven by consumer co-creation and service customization' (Pralhad & Krishnan, 2008 / *Businessweek*).

logue, access, risk reduction and transparency. But these four suggestions only very briefly address the complexities of practice, including how businesses need to quite dramatically change to establish co-creation or co-designing practices. In other words, the article does not really discuss how these processes of change can be implemented. Here participatory design (PD) continues to fill a gap, a point which I extend further below.

In Denmark, my understanding of co-creation as a shift from designing *for* to designing *with* is echoed by the Danish Design Association (DDA), which states that ‘co-creation changes the game of innovation from designing for people to designing *with* people’ (DDA – copenhagencreation). In August 2009, DDA hosted a two-day seminar called ‘Copenhagen Co-Creation’, inviting international experts as well as interested professionals with the intention to collaboratively create a ‘Copenhagen CoCreation Manifesto’. In the end, the event did not result in one manifesto, but a series of four manifestos, reflecting internal disagreements and conflicts among participants. One group would see co-creation as a method, which could be applied now and then; while the other saw co-creation as an approach.

The understanding of co-creation as an approach – as processes of continual collaboration with shared ownership of the co-designed outputs – in line with Sanders and Stappers’ description and how I above described co-designing *with*, has clear similarities with my own views on co-design, or rather co-designing as an approach. In other words, I understand a co-designing approach as a process where everyone – ‘users’ of course included – can and should continually participate in and contribute to the co-designing, because the co-designed products, systems, environments and services then have a much better chance to fit the practices they will eventually transform.

As I see it, co-design is not (yet) particularly led by business, but is still mainly led by research and views of ‘users as partner’, to use Sanders and Stappers’ terms. As mentioned, the term *co-design* has been used in participatory design research for a long time, but was further established with the journal *CoDesign*, with a first volume published in 2005.³¹

Summary / Co-designing... and/or co-creation

In this section I have sought to relate co-designing with different (research, business and methodological) views of co-creation. In my view, co-design

.....

³¹ With this journal, the terms co-design and co-creation merge – as expressed in the full title of the journal: ‘CoDesign – International Journal of CoCreation in Design and the Arts’. As stated on its website, the aims of the journal are ‘to report new research and scholarship in principles, procedures and techniques relevant to collaboration in design and research; collaborative design issues; and to stimulate ideas and provoke widespread discussion with a forward-looking perspective’. CoDesign is concerned with research in any design domain concerned specifically with the nature of collaboration design. In this, the journal seeks to include different types of design, encompassing collaborative, co-operative, concurrent, human-centred, participatory, socio-technical and community design among others. (Last checked 31. January 2012 – see: <http://www.tandf.co.uk/journals/titles/15710882.as>)

– and especially co-designing – is best understood as denoting an overall approach of processes of continual collaboration as commonly understood in participatory design. Also, since the terms co-design and co-designing emphasize ‘design’ as a part of this practice, as the title of this thesis indicates, rather than using the term co-creation, I have deliberately chosen to explore co-designing.

Co-designing... and Participatory design

To me, co-designing is simply another word for participatory design, and I consider my work to be closely related to the research field of participatory design (PD). Participatory design started in the 1970s, with value-based political and ethical reasons and design-oriented intensions of co-designing with people.

Chapter 2 In Chapter 2, I thoroughly relate to and discuss research in PD. And, later in this chapter I show how I have practically applied a participatory approach in my research. Therefore, in the following section I only briefly relate some of the previous subsections to PD, to conclude this positioning in relation to different (co-) design fields, combined with a repetition of my motivation for engaging in the issue of understanding and staging co-designing.

Part B / Introduction The popularity of terms such as ‘user-friendly’, ‘user-centered’, ‘lead-users’, ‘user-driven’ and ‘co-creation’ indicates that today participation in development and innovation processes is widely acknowledged as important, not only within but also outside research environments. Still PD is understood and applied in very different ways. In my view, as emphasized in the subsections above on co-designing with and on co-designing and co-creation, PD or co-designing is best understood as an approach rather than a method.

Chapter 2

I am aware that my argument for co-designing with, can be criticized for being quite general, idealistic and easy. However, I am fully aware that co-designing is not an easy process. Actually, one of the main factors motivating me to write this thesis was my own experience from different participatory/co-design projects, demonstrating with all clarity how challenging co-designing can be in practice. Co-designing requires engaging a highly diverse and multidisciplinary team of co-designers, all of whom are generally busy people with tight deadlines, and often located within different organizational structures, schooled in different professional practices and working in different countries (as was the case in most of the co-design projects in which I have been engaged).

Appendices
01, 02, 03, 04, 05

Initially, PD approaches were mainly applied in work settings where new technologies were being implemented, but the approach is now widely applied (Proceedings of the Participatory Design conferences 2008/2010). Of course, the specific domain influences how PD can be practically applied, but in this thesis I do not particularly discuss the importance of

Chapter 2

different domains, as I am exploring and aiming at contributing to more generally understanding and staging a PD approach or co-designing processes across different application domains.

Summary / Co-designing... and participatory design

As just mentioned, I return and relate to co-design / Participatory design (PD) research throughout the thesis, and with a focus on materiality and practices of co-designing, I further position my work as closely related to PD in Chapter 3³². Therefore, for now I leave it here, and continue with the bricolage of my three approaches composing the methodology of my PhD project. The first approach is exactly a participatory, yet materially interventionistic approach.

.....

³² for a historical positioning of PD, also see Chapter 2.

A Participatory, Yet Materially Interventionistic Approach

The first of my three main research approaches

Foreword: Program

To practically explore Material Matters in Co-designing, obviously I have been highly dependent on collaboration and exploration with other people or stakeholders (e.g. ‘users’). This thesis would not have been possible if I had not been engaged in at least some of the multidisciplinary co-design projects and workshop series described in the Foreword: Program.³³ This work is closely related to and intending to contribute to the field of participatory design (PD). In this section, to show what I mean by a participatory research approach, I will mainly exemplify how I have been engaging in such projects.

In the bricolage of my three main research approaches, this first approach mainly focuses on engaging in PD projects as a part of doing co-design research and on (staging co-designing by) making ‘material interventions’ in such practices, an approach I surely recommend to co-design researchers.

My multidisciplinary participatory design approach

Appendices
01, 02, 03, 04, 05

This thesis is about co-designing; and co-designing is another way of saying a participatory design approach (e.g. Greenbaum & Kyng, 1991 / Halse et al., 2010 / Binder et al. 2011).³⁴ A participatory approach has been characteristic of all the co-design projects I have been involved in, but of course depending on the specific project and of the environments in which it happened, practically this was applied quite differently. With these various experiences, practically PD perspectives and approaches have been central in my work and is largely what this thesis is about. In the following section discusses my positions of engagement of ‘users’ and other stakeholders and my various roles:

³³ Various details about each participatory design (research) project and workshop series in Appendices 01-07. All the co-design projects were coordinated from main participatory research environments in Scandinavia.

³⁴ On co-design / participatory design as an approach (and not a method) see sections above about co-designing with, service design, co-creation and participatory design. / Further on PD research – see Chapter 2 / Part B / Introduction.

Participation of ‘users’ has not been a must to me, yet within PD, engagement with ‘users’ is typically in focus. Of course, as PD research projects, close collaborations among designers (with different professional backgrounds) and ‘users’ have been an integral part of all the projects I have engaged in. Yet, engaging with ‘users’ has not been a must to me when exploring co-designing throughout the PhD project. The main reason is that my initial practical experiences of engaging in continually staging co-designing in the WorkSpace-project (2001-2003), is that it quickly became clear to me, that there are many similar challenges between establishing engaging dialogues with ‘users’ and with colleagues or project members of different professions – for example when distributed in different countries and institutions. Therefore, a multidisciplinary group of co-designers (sometimes also ‘users’ with expertise of the relevant real-world practice) has been my focus (also in the selection of Exemplars).³⁵

Appendices
01, 02, 03, 04, 05

Appendix 01

My various roles in the different co-design projects, as a practice-oriented co-design researcher, have mainly been:

- doing some detailed conceptual and prototype design work (with my industrial and interaction designer skills);
- doing some fieldwork;
- co-planning and co-organizing before and during co-design events;
- materially (co-) intervening the co-designing processes of the co-design project teams;
- observing;
- documenting what happened at co-design events.
- and co-) analysing, (co-) theorizing and (co-) communicating experiences, insights, issues, concerns and challenges.

Appendix 09

My participation in the different co-design networks, projects, events and situations, has typically meant having most or several of these roles at the same time. I relate much more to PD in Chapter 2, so I leave this for now.

Chapter 2

My intertwined materially interventionistic approach

Working with interventions is an integrated part of participatory action research (e.g. Whyte, 1991 / Brandt, 2004). For example, with references back to Bauhaus traditions, applying an exploratory, interventionistic approach, can also be viewed as an integral part of being a designer, because (co-) designing new products, services and platforms almost naturally means proposing new practices (e.g. Albert, 1968) (Margolin & Buchanan, 1995 / Brandt et al. 2011). Related to participatory IT research or systems development, Preben Mogensen (1991) has also suggested ‘provotyping’, which through our collaboration has inspired my approach too.

.....

³⁵ If glancing through the six Exemplars, only half have ‘users’ actively engaged in co-designing during the reported co-design event (Exemplars 02, 05, 06). Thus, one of my criteria for choosing exemplary co-design events and situations has been that different stakeholders with different interests have been engaged; sometimes these were ‘users’. / Foreword: Program / Reader’s / Use Guide

Before participating in the different co-design projects, I had not studied action research and participatory action research theoretically, but I have continually learned from the skilled design-oriented action researchers with whom I have been fortunate to collaborate. In retrospect, my ways of working in some ways relate to participatory action research. However, as I do not theoretically relate to this field, to rather emphasize my design-erly ways of researching, I still prefer to phrase this part of my approach as a ‘Participatory yet materially interventionistic approach’.

Appendix 02 **Ideas of material-methodological interventions were, from the beginning, parts of my PhD studies.** Largely with my design background, initially I had intensions of practically working with what I called ‘material-methodological interventions’, when participating in and co-organizing co-designing in the co-design projects. This was also further inspired by insights of the Atelier-project. In 2004, from the many experiments with students, among other issues, we concluded the Atelier-project by acknowledging that (at least in teaching) ‘technology interventions’ do not do the job on their own, but have to be combined – or staged – with what we called ‘methodological interventions’ (Binder et al. 2007), since I have often found this to be the same in other projects and co-design situations too.

Appendix 03 In 2004, when engaged in the PalCom co-design project, my decision to apply a materially interventionistic approach mainly drove me to try to suggest engaging different physical materials in co-design situations during the large Plenary Meetings for all PalCom project members. As a characteristic also for that project, unless when we were exploring prototypes and discussing field studies, we were mainly talking and writing about core issues. My connection to the managing team of Palcom was to be one of the few responsible for the work-package called ‘Training’ intended to emphasize, encourage and foster interdisciplinary collaboration – or co-designing – mainly among the multidisciplinary stakeholders in the project (researchers and business representatives). As this on official paper really was everyone’s responsibility – and then nobody’s responsibility – and as I was not engaged in making all of the agendas and plans for the large Plenary Meetings, what I ended up doing in collaboration with a few others was additional activities to the main agenda of these meetings.

Appendix 07
Chapter 9 /
extra example Frustratingly, my work (or interventions) became extra maybe funny activities of ‘getting to know each other’, instead of really being an integral part of how we were co-designing from the beginning of that project. Thus, practically at that time I focused on exploring materially staging collaboration in my teaching. Later, when I changed roles in the PalCom project (as one of the few responsible for the ‘Toolbox Exploratoriums’), my project roles and research interests could luckily merge more fruitfully. Appendices 04, 05 Likewise, in the following projects I was engaged in XLab and DAIM.

Appendices 01, 02, 03 **If not prototypes, talk, writing and paper or digital written documents were the main ‘materials’ engaged at co-design events.** As just described, this was my initial experiences from Workspace, Atelier and PalCom co-design projects. Everyone could speak (English), so in a sense

it was an easy way to engage in the multidisciplinary teams. Talk is an important ‘material’ also in co-designing, as I will broadly discuss with reference to Donald Schön (1983).

Chapter 1

However, this often frustrated me, because with my design background and with inspiration by various other PD/design-oriented researchers, I did not consider only speaking about e.g. qualities and core issues enough; visualizing or materializing should also in my views be integral parts of co-design practice (e.g. Sanders, 1999 / Gaver, 1999).

Chapter 2

Thus, throughout the PhD project – of course while still listening to others – (when allowed) I have (co)intervened by inviting selected physical materials into the co-design situations, often as a part of co-staging and formatting co-designing. At times it has been challenging, because this at least to some of the participants included new ways of collaborating, co-designing and working, which made them uncomfortable. Yet, with my experiences, it is an unavoidable and inherent premise of co-designing, and my intentions have been that stakeholders then were (starting to be) co-designing with these, so talk would not be the only ‘material’ in the situation.

Chapter 1
Part B

Further, in retrospect, the challenges I sometimes ran into when staging with hands-on materials, were partly due to different (often unspoken) ideas about what tangible materials, visualizing and materializing can be used for in participatory (IT)-research projects. It has been and continually is being researched and acknowledged that tangible prototypes and mock-ups are very important tangible materials in most co-design projects– e.g. as parts of prototyping through roleplaying and rehearsing possible futures. I fully acknowledge this too, and have included two exemplars capturing such practices. Still, a couple of years into my PhD project I decided to practically intervene and (co-) stage hands-on ways of co-designing to broaden perspectives about what physical materials can be used for within PD – beyond prototypes. Throughout the PhD project it has thus been my materially interventionistic intension to add to, explore and experiment with other ways of collaboratively engaging materials in co-design projects, events and situations. Clearly related to design games (Ehn, 1988 / Brandt, 2006), working with landscaping of issues and interests is the main example explored.

Part C / Introduction

Exemplars 02, 06

Exemplars 01, 03, 04

Summary / A participatory, yet materially interventionistic approach

In the bricolage of my three main research approaches, the first just described I call ‘A participatory, yet materially interventionistic approach’. In the writing of this thesis, my designer-material-interventionistic approach is in many ways still with me, but otherwise this approach has mainly been intertwined in my practical ways of working and participating in the co-design projects.

In this section, largely with examples from my work, I have explained why and to some extent how I have engaged in these participatory projects with a designerly and materially interventionistic approach, for example when (co-) staging co-designing at co-design events. As described,

one of my intensions has been to extend the multidisciplinary understanding and acknowledgement of what tangible materials can be used for in co-designing, other than as prototypes.

This approach I suggest for other co-design researchers.

A Programmatic / Experimental Approach

The second of my three main research approaches

With my background in architecture, I brought a practice of working with a program combined with (interventionistic) experimental modes of inquiry into (participatory) co-design research. In the bricolage of three main approaches, this approach mainly focuses on working with a 'program' and 'experiments' as a part of co-design research, an approach I surely recommend to designers engaging in (co-) design research.

I started this dissertation with my final 'Research Program' capturing the main questions and statements that are explored throughout this thesis. However, in this section, mainly related to arguments from the XLab project, I will exemplify how my research program has been reframed many times during the PhD studies, as I learned from and asked many new questions with my practical experiments and with different theoretical perspectives. In my work 'experiments' are Exemplars of co-design events and situations.

Foreword: Program

Appendix 04

An 'open' (co-) design research program

Largely building upon views established in the XLab project (further below), to me, a (co-) design research program states an attitude and position, captures core issues, intensions and approaches, while still being 'open', as we call it on the XLab team. By an 'open' program we mean that it should be open for explorations, surprises and new insights (Brandt et al. 2011: 37). Practically, in my experience, a program can be a quite brief but somewhat explicit description and/or visualization of the position with reasons and of the overall approach of experimenting with this position and the identified issues. Of course, a program should not continue to be so 'open' that the focus is dramatically changed. At some point the main focus should more or less 'stabilize', so ideas, experiments and reflections so to speak give it flesh and blood and in that way help strengthen the contributions of the program.³⁶

³⁶ During my PhD project, I reformulated as I learned from the collaboration and experiments during the co-design projects (with other people and materials), as well as from literature studies and positioning in relation to related works and examples. I have typically done this every six months to a year when I was updating my Study-plan, writing a paper or making a presentation (selected examples in Appendix 10).

It is not a research question or hypothesis-driven approach, but quite unconsciously I used phrases such as ‘initial hypothesis’ and four ‘current main research questions’ in my first PhD Study Plans, and in the Foreword: Program I also include two final questions that I am addressing in this thesis. Yet, I have not really been working with one strong research question or with one strong thesis from the beginning of the PhD, which I was hoping to be able to answer or prove by the end of the project or in the concluding chapter of this thesis. Instead, from my background in architectural practice I brought the practice of working with a ‘program’ into my PhD studies.

Builds upon my architectural background

An old paper handout, from my time of studying industrial design³⁷, included the following description of what a program is: ‘Originating from Greek the word ‘program’ means to announce or notice in writing or to describe in advance... Further it said that *‘the program should specify and delimit the topic... phrase the problem formulation... specify priorities and constraints of the focus... and plans for how to work...’*. Most of this is still essential also in this co-design research context. Yet, reading this now, to me it also sounds much like guidelines for making a more well-known project- or problem-formulation or -description, common in most both student and professional projects.

At the architecture school, after doing some initial research, as students we typically had to make a written and visualized ‘program’, which was commented and accepted by the tutor or examiners, and which worked as a project framing and plan, but stayed as initially described throughout the rest of the project. Of course, in the final presentation I could argue if and why I had decided to do something different from what I had initially programmed and planned, but the characteristic of being announced in advance is still dominant at least at design and architecture schools in Denmark. Architectural practice and experimental design research are related but different practices; so as I have been surprised and gained new insights from experimenting, my PhD research program has been modified, reframed, reformulated and announced many times and in various formats throughout the PhD project.

This approach relates to research-through-design

In Christopher Frayling’s by now well-recognized definitions and framework of doing ‘practice-led research’ in art and design, he proposes three different types or models of doing design research (Frayling, 1993). He named them... research into art and design... research through art and design...and...research for art and design. If categorized, this thesis captures research-*through*-design, as it includes practical design work or experiments as examples or Exemplars intertwining in making my arguments. Various others e.g. related to interaction design research, have also argued for this practice of practical work as central for generating knowledge

.....

³⁷ At the industrial design department at Aarhus School of Architecture (1998-2000).

(e.g. Zimmerman et al, 2007 / Löwgren, 2007 / Fällman, 2007). With these various authors, I too emphasize that design work is (and should be) integral in (co-) design research. However, I do not usually use the tag ‘practice-led’ to characterize my work because this (still) often is combined with an artistic and a research question-approach; thus I prefer the phrase ‘Programmatic/experimental approach’.

This approach relates to exploring a ‘design space’

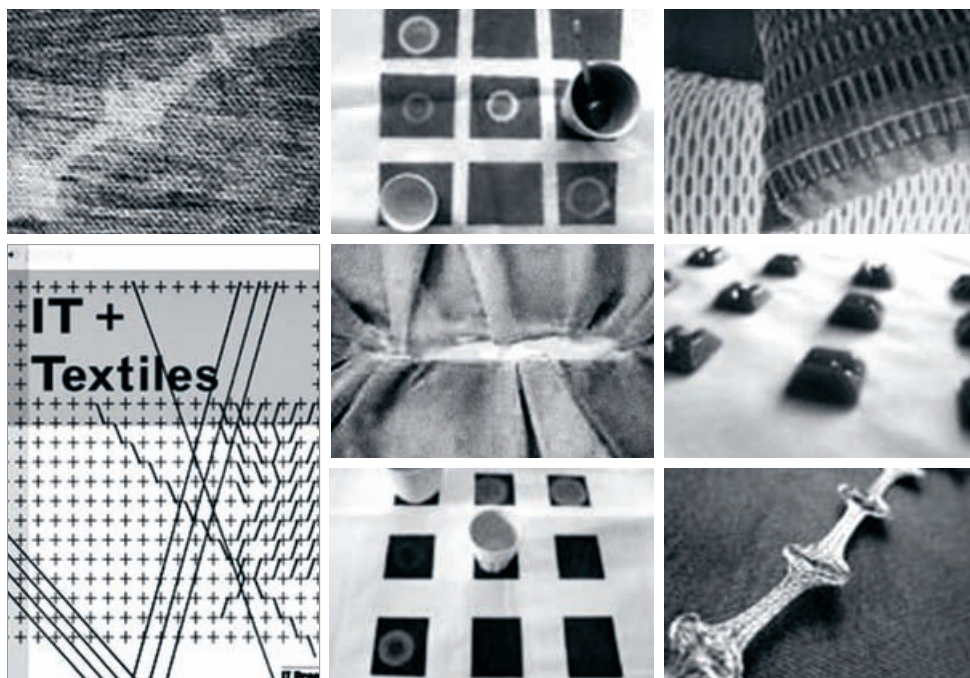
Chris Heape and Bosse Westerlund emphasize a somewhat similar approach – the approach of exploring a design space (Heape, 2007 / Westerlund, 2009). By a design space Westerlund means: *‘A tool for thought, a conceptual model, that can be used both for designing and for understanding design processes’* (ibid:128). To Westerlund in one way a design space should be understood as ‘all the possible design proposals’ that people in a particular context find meaningful. In another way, he views a design space as extremely complex, as something that cannot be fully described and that is understood also through doing design work.

One of his practical arguments or recommendations for working with an explorative design space approach is to focus on aims rather than goals when exploring a design space in the fuzzy front end of an innovation projects. From his many experiences of also being engaged in participatory, innovation and (IT) research projects, he found that in the projects where they too quickly set the goals of what to deliver, the motivation to really explore the design space for the purpose of discovering new grounds and insights was not as strong, as in the projects where they initially focused on setting the aims or intentions of the project. These descriptions of a design space (e.g. that it is conceptual and complex and both for designing and understanding) surely overlap with my view of a ‘program’ and of an explorative and experimental programmatic approach.

Still, instead of using the term ‘design space’ I continue to use ‘program’ and ‘programmatic/experimental approach’, because to me a program captures a clearer positioning, a positioning that can assist in evaluating which proposals and examples are more relevant than others – thus to me a program does not include ‘all possible solutions’. In other words, a program could be viewed as a positioning within a design space of all possible proposals.

Programs and experiments in interaction design research

Lars Hallnäs and Johan Redström (2006) have suggested working with programs and experiments in interaction design research. They describe a program this way: *‘A design program can be seen as a description of design intension on a rather general level, where we state some position regarding our basic approach and ways of looking at the designed thing. ...’* (ibid:150) ...and they argue that design programs *‘provide a framework, supporting the design process both of doing and evaluating...’* (ibid:152). Summarized, to them, a program both includes descriptions of WHY and WHAT the focus is and of HOW to practically explore it. These views were based on their engagement with the design research program ‘IT + Textiles’ (Figure 5).



IT + Textiles

'IT+Textiles' was a three-year design research program (2002-2005) led by Interactive Institute and Newmad Technologies in Sweden, where traditional textile design meets and, at least to some extent, falls in love with computational technology.

It is the ambition of the IT+Textiles research program to investigate this new design space and the need for aesthetics of, and design methods for, the use of new textiles and computational technology as design materials.

The research combines perspectives from fashion, textile and interaction design to find new approaches to the design of computational things. Experimental design methods are used as a starting point to broaden our understanding of textiles and information technology as design material. (...)

Figure 5/ The first paragraphs of the program-formulation about the 'IT + Textiles' design research program, from the Interactive Institute. The images (= exemplary experiments) were added along the way from the different projects exploring this program. (downloaded 15.07.2010 from: <http://www.tii.se/projects/ittextiles>)

This example of a short text about intensions of falling in love, and about practical approaches of how to explore this, combined with images of core exemplary experiments from different projects giving flesh and blood to what is said in words has practically inspired me in working with my 'open' design research program.

XLab – further capturing program/experiment dialectics

During the XLab-project³⁸ we developed a working diagram to help understand, visualize and talk about the dialectic relationship between an open program and experiments in design research, with design work at its core (Brandt et al, 2011 / Brandt and Binder, 2007) (Figure 6a). By ‘working diagram’ we meant, that it is intended to be appropriated to suit the specific (co-) design (research) project. I have modified the XLab diagram to better match my work (Figure 6b). They look like this:

Appendix 04
Exemplar 04

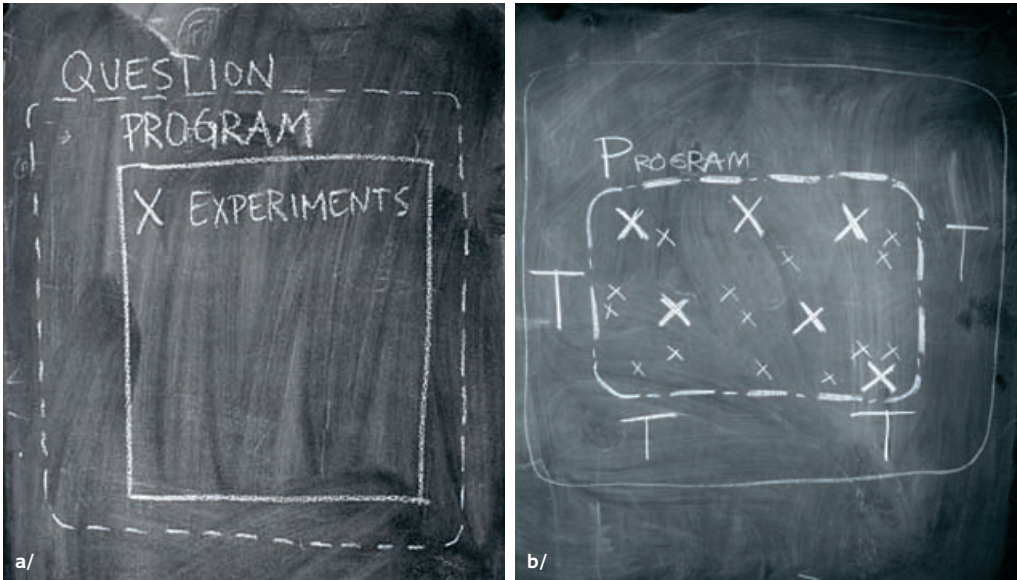


Figure 6/ a/ The XLab working diagram about doing design research – capturing relationships among a Program, practical Experiments (X) and a larger shared Question. (re-printed from Brandt et al, 2011:24). **b/** My modification of the XLab working diagram – capturing my PhD process with a program largely shaped by Experiments (X) and Theoretical perspectives and related works (T).

A bit technically, on the diagrams and their differences (in Figure 6).

Initially, the visualizations above should be viewed as principle illustrative ‘working diagrams’. Starting from the inside outwards, similarly they both capture the idea that there is a relation between a more or less explicitly described Program (P) and the concrete eXperiments (X) or design work done to explore it (The program is marked by a full inner line in Figure ?a, and as a dashed inner line in Figure ?b, and in both diagrams ‘X’ is used to mark an ‘eXperiment’). In my PhD project, I consider an eXperiment as an example of a Co-design event or situations, which I have been engaged in. In both diagrams, symbolically when a program/project is started and initially formulated, there is perhaps no or only a few

.....

³⁸ Johan Redström was also largely engaged in the XLab project, and our collaborative work was largely inspired by and built upon his previous experiences with the IT+Textiles program.

experiments (from previous work), but throughout the exploration of the program more and more experiments (X) are added. These build upon or complement each other (Xs in the same or different area), while they metaphorically help practically explore, challenge, expand and go into details with different areas of the framing Program.

It is mainly the outer parts of the diagrams that differ. In the XLab diagram the Program (P) is positioned within a larger ‘Question’, which can be viewed as a larger research question, also addressed by others (e.g. by a larger research community). In my case this could be the large question – or rather issue or concern – of exploring materiality in co-designing – which many others are doing too. Yet, as I mentioned, strong questions have not been the driving force of my work, so in my modification, this outer part has been changed to rather emphasize Theoretical perspectives and related works (T). The reason for doing this is to match my work. In addition to the practical often surprising experiments, which surely have influenced my understanding of my program along the way. To me it also has been different theoretical perspectives that (especially towards the end) have challenged my program, and also have made me re-formulate my program while writing this thesis.

Forewords:
Reprogram

In the book XLab summarizing this work, we also speak about ‘stabilization’ and ‘drift’ in the dialectic relationship between experiments and programs. In brief, as new insights are gained with experiments they can make a program drift some, while they also as exemplary examples are parts of stabilizing or ‘filling out’ the program. When a program has stabilized and reached ‘closure’, one or a few exemplary experiments are very likely to be the foundation of the drift towards formulating a new (re-search) program (Brandt et al., 2011:37-49).

Foreword: Program
Figure 1

Experiments and program drifts during my PhD studies

To be clear, my PhD program and research interests did not come out of the blue. It builds upon and has drifted from my previous experiences and initial research interests. This I captured in the Foreword: Program, with my so far three main research programs filled out or stabilized with my publications (almost all including reflections on and with practical experiments of co-designing). This is one way I have been working with my program.

Various examples in
Appendix 10

Practically, throughout the PhD project, I have also been working with my program in writing, in diagrams or two-dimensional visualizations, as series of statements and as three-dimensional materializations. I have often found it challenging to get the half to one page written formulation ‘right’ about my research interests, concerns, points and positions, whereas this mixture of different ways of capturing my program has been fruitful for me.³⁹

.....
³⁹ Very practically, throughout the years, to continually catch my eye, the most current programmatic framings of my work, often intertwined with images from core experiments, have also been hanging on the walls or standing on the table of my daily workplace.

There is not one right way of capturing a research program, as the various examples included in Appendix 10 show. Yet, in my experience, when it is somehow formulated, visualized, materialized and/or rematerialized, it can be used actively to validate and prioritize different experiments, issues, concerns and concepts. My PhD program has drifted some (e.g. from a main focus on grounding imagination to first material means and then material matters) and then it has slowly stabilized with the experiments made to explore it. In Appendix 10 there is one description of a core programmatic drift.

Appendix 10

In other words, my PhD program (no. 3), *Material Matters in Co-designing*, has not been stable and stayed as ‘announced in advance’ throughout the PhD project. It has been ‘open’ and drifted some also within the program of key focuses and concerns, provoked by my experiments and by theoretical perspectives and related works.

The research program with programmatic statements starting this thesis is the last version of many re-framings of my program. This last version has a different character from the previous versions, because it does not focus on HOW to be exploring this program, but captures the key arguments I make with this program. Now, with this thesis, this program (no. 3) / *Material Matters in Co-designing* is ‘filled’, it has finally ‘stabilized’ and ‘rematerialized’. Further, building upon this, on the last pages of this thesis I tentatively formulate my next research program (no. 4) and possible future work.

Foreword: Program /
Figure 1

Forwards: Reprogram

Summary / A programmatic/experimental approach

In the bricolage of my three main approaches, this second one just described I call ‘A programmatic/experimental approach’. Building upon my background in architecture and our work in the XLab meta-project on program/experiment dialectics, in this section I have related this to a research-through-design and a design space-approach. Lastly, with reference to central examples of my program-materializations in Appendix 10, I have also explained and exemplified what I mean by and how I practically have applied this approach, an approach I surely recommend to both design and co-design researchers.

Appendix 10

A Designerly Way of Theorizing & Drawing Together Approach

The third of my three main research approaches

As an architect I was trained in designing and making proposals for buildings, public planning and industrial products, not in daily reading and making written arguments and knowledge contributions. This is a practice I have slowly learned while being a research assistant and then a PhD student becoming a co-design researcher.

Design and co-design research in many ways overlap. They are very interdisciplinary yet relatively new research fields, building upon and with connections to many branches of design and other research fields. Therefore, there is also great variety in ways of theorizing in these research fields. Various recent books aim at grasping synergies and practices – for example: (Simonsen et al., 2010 / Brandt et al., 2011 / Koskinen et al., 2011/2008).

In my bricolage of three main research approaches, this third and last, primarily inspired by Bruno Latour (1986/2005), focuses on a designerly way of theorizing by ‘drawing things together’ and tracing and sharing ‘matters of concern’. An approach I also surely recommend to designers moving into (co-) design research.

Theorizing in a designerly way to me includes several points

Firstly, combining the three main approaches (among which this is one) should all be seen as a part of this designerly way of theorizing approach. The main reason is that the practical co-design work and learning-by-doing I have engaged in of course has affected the kind of data gathered, which then has affected the kind of analysis, arguments and theoretical contributions I have been able to make with these Exemplars (data).⁴⁰ This relates to the following:

Secondly, when practical co-design work is at the core of the practical (co-) design research, as many others argue too, reflecting upon and with ex-

.....

⁴⁰ On my data and collection of data – Appendix 09.

emplary design work should be at the core of reflecting and theorizing too (see second approach).

Thirdly, as an architect specialized as a designer, who over the years has become a co-design researcher doing qualitative research, I brought with me a practice of ‘shopping’ among others’ work for inspiration and arguments and combining these in new ways.⁴¹ With this background, and also greatly inspired by my many differently talented colleagues in the various co-design projects, throughout the years in a designerly way I have ‘shopped’ or borrowed a bit here, some there to make my way of theorizing.

Quite common in the (co-) design fields and research, of course, there are pros and cons of ‘shopping’ theoretically. Relating to a theoretical perspective shopped from another field can assist in understanding and reflecting-on-action, to use Donald Schön’s phrase (1983), to reveal new views of and with a (co-) design example. On the other hand, also as a (co-) design researcher it is of course important to respect and understand the origin of the shopped argument or theoretical concept. Further, it should also be acknowledged that when transferred from one field into this new co-design context, theories (or these ‘materials of theorizing’) are transformed too.

Chapter 1

Fourthly, from day one of the PhD project, it has been a deliberate choice not only to understand the practices I have been involved in, but also to contribute to coming practices of staging co-design projects, events and situations. In my first ‘Study Plan’ tentatively I called this ‘an operational thesis’. It is a challenging merge, but it has continued to be my intension, and it is captured in the following phrase used throughout the thesis: ‘for both understanding and staging co-designing’. This also relates to the following.

Lastly, intertwined with the style of writing, how knowledge is visually or materially communicated, is also a central part of a designerly way of theorizing (e.g. within the possibilities and constraints of this book format).⁴²

A co-design dissertation relating to various theoretical fields

In this research/exploration of my program, and in this thesis, I explore the Exemplars and other examples with a mix of ‘shopped’ theoretical perspectives and concepts. I will emphasize that it has never been my intension to make a theoretical contribution e.g. to the fields of actor-network theory (ANT) nor organizational learning communities nor material culture studies (MCS) nor performance studies (PS), but mainly to the fields I relate to co-designing earlier in this Positions & Approaches. This is an interaction design, service design and participatory design or co-design dissertation with a special focus on materiality.

Chapters 4, 5
Chapter 2
Part B / Introduction
Part C

.....

⁴¹ In my ‘program’ from 2006, I described architects’ and designers’ ways of working like this: ‘...various media and formats are used to ‘shop’ for inspiration and arguments for the ongoing work. You could say that designers make a more or less explicit collage of inputs around their project. (...)’ – see front-page in Appendix 10.

⁴² This is briefly extended in Appendix 09.

Chapter 4 In a way, to use Latour's concepts, what I have done is to add MCS / ANT / PS perspectives as actors, or mediators, stirring my views of what roles various materials have been playing when participating in the unique exemplary situations of co-designing I am studying. Likewise the many other references used in this thesis have played similar roles.

Chapter 1 **Some of the authors I relate to relate to or use the phrase 'design'.** For example: One of the main examples in Donald Schön's books (1983/1987) is a detailed analysis of architectural design practice. In *Communities of Practice*, Etienne Wenger (1998) also devotes his long epilogue to 'design'

Chapter 2 for learning in communities of practice. More recently, with his views on 'matters of concern' and wishes of 'drawing things together', Bruno Latour (2008) has also started to relate and voice his work and concerns to (parts of) the design community.⁴³ It is largely Latour's suggestions (for example related to design) that have inspired my designerly ways of theorizing.

Relating to Bruno Latour's 'drawing things together' and 'matters of concern'

As just mentioned, recently Bruno Latour has voiced his concerns to design and designers, for example in his Cornwall-talk to the Design History Society in September 2008, captured in the paper *A Cautious Prometheus? A Few Steps Toward a Philosophy of Design (with Special Attention to Peter Sloterdijk)* (Latour, 2008). After addressing various other issues, in this talk/paper he ends by asking designers, with their (our) well-established drawing skills and powerful visual vocabulary, to not continue to only draw (modernist) matters of fact (as things in utopian (Auto CAD) spaces), but to use these skills to develop what he calls 'means for drawing things together – gods, non humans and mortals included' to capture what he calls 'matters of concern' (ibid:13).

Stepping back a bit, one of the many cornerstones of Bruno Latour's intensive work on research practices, has for long been arguments of not aiming for constructing scientific facts, but through detailed ethno-methodological studies and a continually open-minded process, to aim for 'drawing things together' for tracing and sharing 'matters of concern' (Latour, 2005:e.g.87-120 / Latour, 1986).

I have not been familiar with these suggested ways of researching and theorizing from the beginning of my PhD studies, but it is largely what I have been doing and aiming to do all along, without using these phrases. Yet, as I became familiar with Latour's suggestions, they have inspired both my
briefly in Appendix 09 designerly ways of theorizing and the way this thesis is structured.

Why and what are 'matters of concern'?

'Matters of fact have always been matters of concern', as facts are not objective but constructed too, Latour repeats and argues in his Cornwall-talk/paper (Latour, 2008:13). At an overall level, his emphasis on and argument for 'matters of concern' is based on the view that his sociological

.....

⁴³ Bruno Latour's broad view on materiality is mainly explored in Chapter 5.

colleagues have failed to explain anything with the ‘social’ as a predefined filter and with their practice of deconstructing and subtracting reality for the purpose of purifying academic concepts (instead he argues that it is the social that has to be explained and reassembled to be understood with examples of reality) (Latour, 2005:97).⁴⁴

Additionally, behind his arguments for matters of concern are various other (political) research interests or concerns. For example: getting past what he has phrased scientific ‘blackboxing’, bringing the sciences ‘into democracy’ and public, and as parts of this wishing for science to be voicing critique through highlighting worries and issues of care rather than pretending to be objective. again are what he suggests calling ‘matters of concern’ (e.g. Latour, 1999/2004).

In other words, to Latour ‘matters of concern’ means not to make (scientific) claims derived from predefined filters, academic concepts and perspectives e.g. like the ‘social as the tie’ – but rather should be derived from tracing associations in the richness of data. He continually suggests doing this with a focus on observed (and I add – and experienced) associations of mediating actors (human and non-humans) making others act. He acknowledges that inquiries of ‘matters of concern’ can go on and on as more and more associations of mediators can be traced. Still, rather than deciding in advance which ‘furniture’ or filters to apply, practically tracing matters of concern is also about feeding off what he calls ‘uncertainties’ or underlying assumptions, which Latour himself is doing in his book *Reassembling the Social* (Latour, 2005:e.g.115).⁴⁵

Chapter 4

Latour asks designers for ‘means for drawing things together’, but he is clearly not asking or advocating for another CAD software program/tool, but he is raising the following question to designers: “Where are the visualization tools that allow the contradictory and controversial nature of matters of concern to be represented?” (Latour, 2008:13). (He mentions himself, the verb ‘to represent’ what he considers ‘in the largest sense, to include artistic, scientific and political representation techniques’).⁴⁶

Anyway, Latour is asking for means or tools (ibid:13), and I neither think one ‘mean’ or one ‘tool’ on its own can do this complex open-ended job of

.....

⁴⁴ What is further discussed in opposition to a subject-object dicotomy – Part B / Introduction, Chapter 4.

⁴⁵ In ‘Reassembling the Social’, aimed at introducing ANT and challenging current practices of other sociologists, he is challenging and feeding off the uncertainty of (established, taken-for-granted practices of many sociologists) of organizing people in stable categorized groups. Here he instead shows how we are parts of unstable complex networks in which there are ‘only group formations’. Another example of an uncertainty Latour and ANT want to overcome is the (by many – taken-for-granted) academic practice of simplifying relations between people and things as superior subjects and objects. Here he also shows and argues how ‘Objects Too Have Agency’ and thus how non-humans can make others act too in complex unstable networks (Latour, 2005:63-86). / further in Chapter 4

⁴⁶ On (not using) the phrase ‘representations’ in (co-)design work – Chapter 2.

Exemplars 01, 03, 04
Appendix 09

tracing and sharing relations and concerns; it takes an ecology or assemblage of means or matters and materials. During the co-design work of this qualitative research, I have not explicitly been aiming to design what Latour is asking for, but I have (co-) developed and (co-) explored various ways of collaboratively and individually materializing, visualizing and capturing issues of interest – or concerns.

Lastly, matters of facts and concerns are communicated very differently. Many years of emphasis on visually communicating (quantitative) research results as ‘objective’ facts as %, ‘pie charts’ and charts of bars, have established a wide acceptance, also in the general public, that the knowledge these generic formats illustrate is valid and ‘true’. Yet, with his observations and arguments that facts are constructed too, Latour is obviously challenging this.

Part B / Introduction

As many of the other authors I relate to also argue, to share and communicate matters of concern, Latour also continually emphasizes describing the real world as it is. Likewise, material culture studies-researcher Daniel Miller (2005) also emphasizes the importance of doing detailed anthropological studies and stories as a part of theorizing. Thus, both with roots in anthropology, despite their different fields, the approaches they suggest clearly relate, while they still have different ways and focuses for doing this – yet, generally they suggest sharing detailed accounts. As I have often been actively participating in the co-design situations, I was also studying, I have not (only) been doing detailed anthropological (observation) studies, but both their suggestions have inspired my selection of content for the Exemplars.⁴⁷

Summary / A designerly way of theorizing and drawing together approach

In the bricolage of my three main research approaches, this third just described I call ‘A designerly way of theorizing and drawing together approach’, an approach I surely recommend to both design and co-design researchers.

Part D

As my concluding Part D / ‘Drawing Material Matters Together’ indicates, methodologically Bruno Latour’s suggestions of tracing mediators, drawing together and making public my matters of concern, particularly has inspired my designerly ways of theorizing. My way of sharing and communicating issues, concerns and challenges in Part D are not how Latour does it, so again in my designerly way I have appropriated his suggestions to fit my work. Yet, the practice of sharing matters of concern nicely captures what I have been intending to do all along throughout my PhD studies: to share and highlight central issues or concerns and challenges to consider when both aiming for understanding and staging co-designing (materially).

Appendix 09

.....

⁴⁷ In the Exemplars, with Miller’s suggestions I have attempted to share a rich picture of what actually happened at the co-design events; while I agree with Latour’s recommendations at the same time have focused on sharing what I have traced as the mediating human and non-human actors.
Further see Reader’s / Use Guide / Part B / Introduction / Chapter 4.

Summary / Positions & Approaches (P&A)

In this Positions & Approaches, first, to reveal my underlying views of designing, with examples from my journey of learning and experimenting with design inquiries, I have exemplified core materials of (industrial) one-designer practices. Yet, I have also strongly emphasized that this is not all the ‘material’ needed when engaging in co-designing.

Second, to position this thesis, I have related it and my overall understanding of co-designing as an approach to the following (co-) design fields, terms and concepts – especially to the latter: Interaction design, industrial design, service design, co-creation and participatory design, fields which this work mainly is intending to contribute to. Overall I have suggested to view co-designing *with* others as a different practice from what I, mainly with reference to GK VanPatter, called more classic design-practices of designing *for* others e.g. industrial design and partly interaction design.⁴⁸ Service Design is described as an emerging field emphasizing sustainable and holistic perspectives and practical ways of working, which I have suggested as fruitful additions to interaction design and a participatory design approach.

Third, to clarify my research approach, I have explained and exemplified the three main approaches composing my methodology of the PhD studies and of making this thesis. They are called:

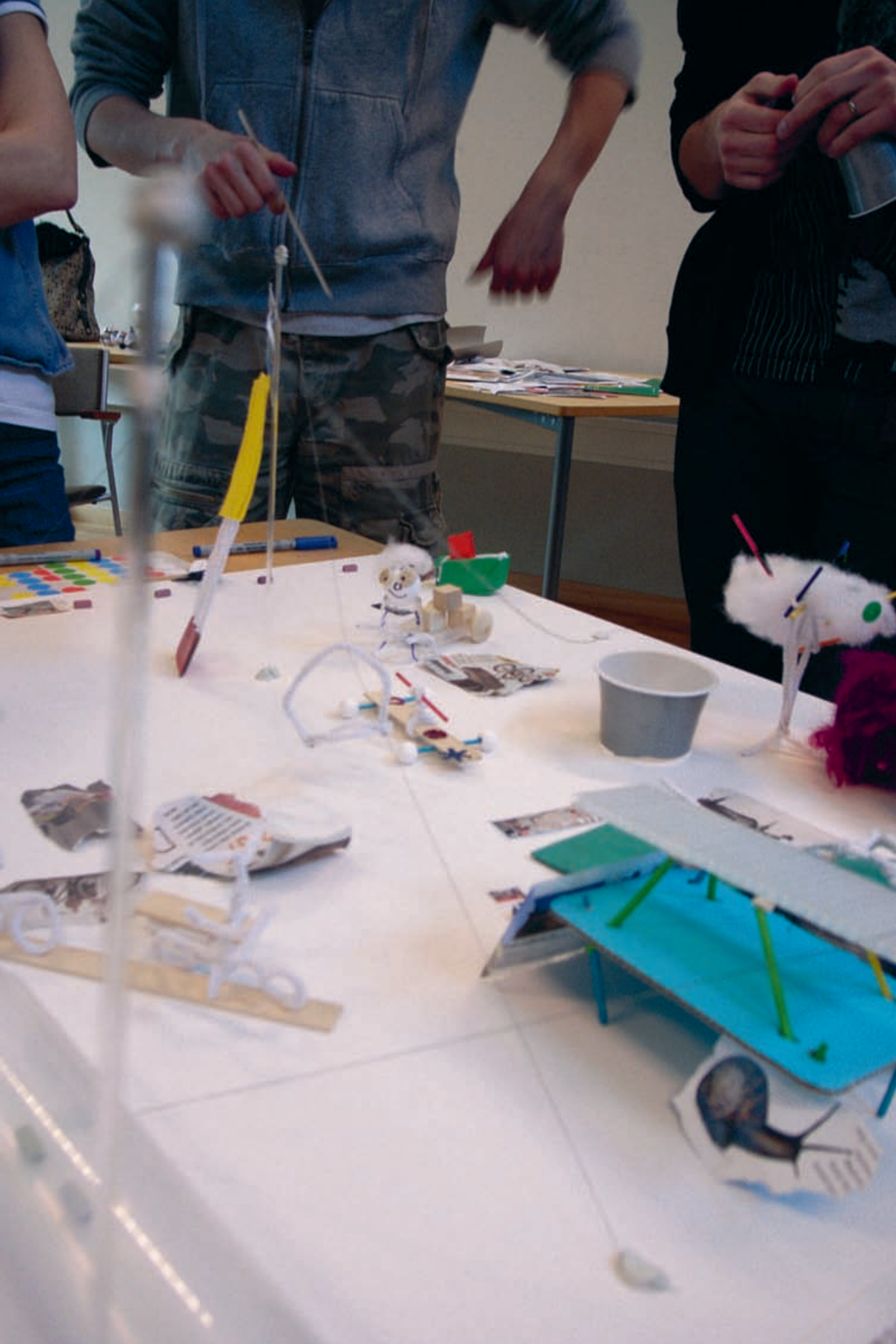
- A participatory, yet materially interventionistic approach
- A programmatic/experimental approach
- A designerly way of theorizing and drawing together approach

Separately or the bricolage of all three approaches, of course appropriated, I recommend for other designers engaging in (co-) design research.

With these positions and approaches, now I proceed to the many issues, concerns, challenges and contents of exploring this thesis/program of *Material Matters in Co-designing*.

.....

⁴⁸ This is much further elaborated in Part A.



01

Service Project Landscape –from Teaching

Co-design series	Teaching (Appendix 07)
Student Course/Project Title	Service Design – Sustainable Person Transportation (in Malmö)
Time & Year	April 2009 / 5-weeks, 7.5p (full time for the students)
Participants at events	11-15 2. year Interaction design BA-students / A colleague and I as teachers
Timing in Project	Mainly Day 1 & Day 18
Location	Classroom 'Lär 13' at K3 / Malmö University / Sweden
Event organizers	A colleague and I as the two main teachers on the course
My Roles	Co-teacher e.g. as lecturer, organizer of the student's co-designing, tutor, examiner, co-design research-observant
Ways of documentation	Camera for still images or video , personal notebook, tangible materials used were kept, digital copies of documents and presentations

Course content & agenda

Week 14

Day 1

On the first day we introduce and discuss the project assignment...All teams will be working with the same overall theme but with different areas of it. Each team will focus on their area, but at collaborative presentations and sessions synchronize with the others to end with one overall solution.

The theoretical introduction to services and service design will be related to sustainable development and social innovation. You will also get a more practical orientation about design methodology and material for service design. We do a shared mapping and with that you organize in four teams and choose the area you wish to continue working with.

To get more familiar with services, this first week you are to analyse an existing service relevant to the project, by describing its main parts: actors, 'touchpoints', 'backstage/frontstage', etc. and how it works through different 'customer journeys'.
... After this you start your field research ...

Monday 30/3 9.15-12 / Lär 13

Introduction to the course and assignment

Service design – what and how? / by teachers

13-14.45 / Lär 13

Service design – shared mapping exercise 01 02 03 04 05

..... 06

Day 2-17

Week 16

Day 18

Friday 17/4 9.15-14.30 / Lär 14

9:15-12 07

Mid-way Presentation (35 min pr. group – 20 min. presentation + 15 min. feedback).

Every team presents: Your project framing*; the customer journey you plan to focus on; your new mapping – possibly in relation to the shared mapping**; 2-3 different concepts including sketches of different touchpoints, which you find important to detail further.

* ...

****The mapping should both include different actors, places, objects, etc – all elements that are relevant for your service design proposal to become sustainable (and collaborative) over time. To argue for the layout of your mapping, include key insights from analysis of existing services, your fieldwork and user research and ‘live’ experiments.**

13-14:30 08

Synchronizing between teams for example by continuous work with the shared mapping – including the ‘backstage’ systems.

At the end of the day we decide what you continue working with. 09 10 11 12

Selected sections from project brief-handout, translated from Swedish.

The brief also included sections on service design and product service systems (PSS), the assignment, main literature and details of the 5-week schedule.

Introduction

We are in a classroom on the very first day of a Service Design-course. In the morning, after briefly going through the project brief, assisted by slide-shows with lots of examples, my colleague and I have shared our views of the field of service design and suggestions for ways of working with service design perspectives for interaction designers.

During lunch we rearrange the classroom from the lecture setting to one table in the middle with a white foamboard on it and tables along the edge of the room. On some I place various tangible materials partly connected to the project topic.

Now after lunch, finally it is time for the 11 present students to collaboratively get their first shared grip of their coming project around 'Sustainable Person Transportation'.

Day 1

01

Introduction to mapping as landscape

Assisted by a few guiding slides, I briefly introduce the students to the idea of working with three-dimensional 'Project Landscapes'. First I show a slide with practical guidelines, then one with a quite open-ended list of issues to possibly include (below), and when I get to the slide with the timetable of the afternoon, they are already starting. I say:

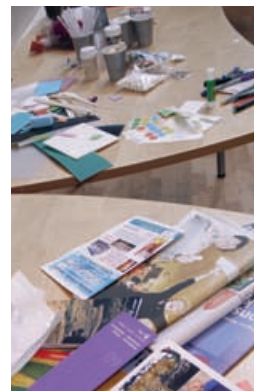
"...You have 45 minutes to make your shared project landscape within this board, and you can use what you want from the buffet or other materials you find..."

EXERCISE

Format / Topics & Procedure

In random – The landscape is build by for example giving 2D/3D form to the following parts of the project...

- Different types of transportation tools and systems
- Different central places and situations
- Other key objects in the network
- Different Participants/actors/stakeholders
- The core topics of the project e.g. Sustainable
- Relations between different parts...
- Visions of the project
- Expected goals of the project
- Challenges of the project



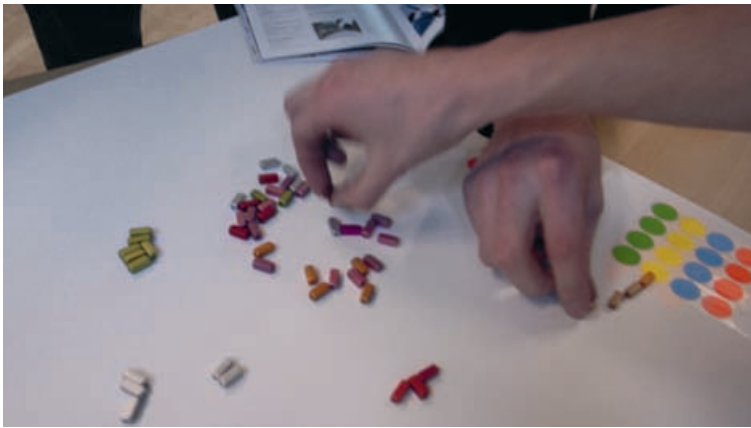
02

The students start in different ways

Initially some students gather around the white foam-board, one with a transportation-related magazine. Others go directly to the buffet and start making...

The 'buffet of materials'

E.g. includes local transportation-related magazines and brochures and a variety of other tangible materials to possible manipulate and include in their shared project landscape.



03

The first content and moves

The first materials on the board are metallic square buttons and round stickers, both in different colors. While sorting them, the buttons are first agreed to mean different kinds of transportation (cars, buses, etc.) but this is later changed...



04

Highlights from the process of collaboratively building the first 'Shared Project Landscape'

1/ The board is only white for a very short time.

2/ Starting with the small metal buttons as different means of transportation. **3/** But the scale is quickly changed when the train, tracks and 'central station' enters. This has been made by a couple of the students starting by the buffet. **4/** Yet in another scale, a wooden stick is placed as a bike-riding road accompanied by images and pipe-cleaner models of different kinds of bikes – made and cut out by several students. Images of buses are added too. **5/** The metal buttons are then agreed to be cars, parked on the edge of

town, or bus-like boats sailing on the canals around the centre of Malmö. They are re-arranged.

There is continuous talking and movement between the emerging landscape and the buffet. Once I interrupt and ask:

"...When we transport ourselves, we very often also bring different things with us – What would you for example do if you were bringing a lot of things to the beach in a summer day?"

– this fosters new discussion and e.g. a Chrstiania-like bike is produced and added. **6/** Other students are creating a corner with images of parcour and skateboarding and a model of a Segway. **7/** Some work individually for a while e.g. one guy with an interest in working with underground (and under the table) speedy 'sucking systems'. Another adds trees to capture a wish for more nature in town. **8/** Yet others have fun going up into the air with a aerial ropeway. **9/** Payment, ticketing and awareness of schedules of

>

- > public transportation are also discussed and added as cut-out images around the central station.

About 45 minutes have passed and we all gather around the landscape. Everyone are satisfied with the contents and no one wants to add more.



05

We change perspective

I now introduce a stack of white card-board cards, and ask the students to write and name different focuses of possible group themes and place the cards in the landscape. These are agreed upon in about 5 minutes. I say:

"...Some of these themes are a bit blue-sky. Remember you should be able to experiment with your service in Malmö during the coming 5 weeks..."

Then, on new pieces of paper, each student adds two name-tags by the two preferred topics, one tag is removed again, some move, and four groups of students are created around four of the themes.

Day 1 ends with decisions of four overall themes and groups

The four selected overall themes related to 'Sustainable Transportation' for four groups are:

- Buses
- Router + the overall system
- Cycling roads/person-driven - not motor-driven
- Alternative means of transportation (for the group not present)

These are written down together with the students in each group, for us tutors to remember. A few students take images to document the landscape, before all quickly leave the room. We clean up.



Day 2-17

06

During the first weeks

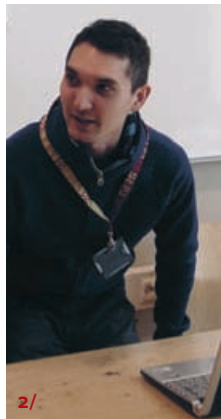
The students collaboratively explore current journeys and analyse existing services in their groups, do fieldwork and get in contact with stakeholders relevant to their chosen themes. They also attend a lecture on product-service-systems, participate in a seminar on course readings on service design and collaborative services, re-focus, meet with us teachers for tutoring and work in their groups.

Day 18

07

Morning: All groups present their current focuses and 2-3 possible service concepts

Which are based on their fieldwork and analysis of where the largest 'gaps' are in the existing services. Presentations were all quite text-based, so...



08

Afternoon: Roleplaying to start detailing their service concepts as 'touchpoints'

During lunch, as teachers we decide to add a situation of roleplaying, to push the students from mainly talking about to experiencing the services they are planning to co-design. They get really far in 1/2 hour. We e.g. see three of the four services captured by:



1/ chairs lined up to imitate a bus and the 'busdriver' in the front wearing a tag about his level of training and his coach on one of the seats.

2/ an office-setting for reporting and (luckily) picking up stolen bikes, tracked with RFID-technology in the bike by P-guards walking around the streets.

3/ two white 'walking-sticks' being lend out as alternative means of transportation, paid through the monthly transportation-card.

Synchronizing with the landscape

The intension of this afternoon is to synchronize the four group projects and decide which ways to proceed. Since Day 1, the landscape has almost been untouched in the corner of the classroom.

As a part of relating their work, I say that it is time to collaboratively rearrange and update the shared landscape/mapping to match and synchronize the group's current focuses and service concepts. Some help unpack the buffet, and again the students start working in different ways – in and across their teams.



1/



2/

10

In 20 minutes the landscape is collaboratively cleaned up and rearranged to match current service concepts

1/ Some start cleaning up by moving materials next to the white board e.g. about the themes that none of the groups are working on.

2/ Partly in parallel, all teams also continue the work they started with the roleplaying – now working with their service concept in a different scale.

3/ The 'router' team for example co-design a payment and ticketing machine by combining a new cup and re-used images from the landscape. This is placed in the landscape next to the 'Central Station'.

>



3/

> **4/** The 'bus' team makes buses and trams, houses for the drivers to meet and red-yellow-green signs marking the individual level of training.



5/ As it is a large problem in Malmö, the bike-team has decided to focus on a service of finding and fixing stolen bikes – they make the physical spaces needed such as an office to meet customers, a repair-workshop and storage space.

6/ 7/ 8/ The team working with borrowing alternative means of transportation and other equipment – like chairs and blankets in the park, build various examples and a couple of lending/leaving-stations.

9/ 10/ 11/ Working across the teams they for example agree to remove the underground, on water and in the air systems, but draw many cycling roads and make more parking lots on the edge of town.

12/ The students slowly stop changing and adding more, and we gather around the landscape and take a new look at it.



Taking a new look at the landscape, I say:

"In the last 5 minutes you have left, I would like you all to consider both the frontstage and backstage of your service a bit more.

This is for your service to be sustainable and work over time"

Synchronizing service concepts

When all teams have added the key small scale 'touch-points' of their service in between each others, and when everyone are satisfied with how the landscape match their current work, I remind them again to consider the backstage of their services and how they could imagine fruitful collaboration between their services.

With the knowledge of each other's focuses, looking at the landscape several overlaps are quickly identified. As interaction designers the students have a strong focus on the frontstage user experience, but as we explain this is closely tied to how the backstage of the service works.

I say:

"As we have talked about, your different services are all parts of a larger system for sustainable transportation – so now also consider how your services overlap..."

Fragments from the discussion, assisted by pointing to specific places in the landscape:

"We all need to collaborate about our multi-card, and it could for example be used for borrowing your alternative means of transportation..."

"We also need a way to move things between the different lending/leaving stations..."

"For moving things you can borrow our trucks for transporting the stolen bikes, and we have a repair shop and storage spaces too that you can use..."

Adding different stakeholders

As the last thing that day, I ask the students to write and add two backstage-stakeholders on separate post-it notes, which we would like them to consider in their coming work. There is a bit of talking in some of the groups and either collaboratively or individually different notes with generic titles of central stakeholders are added in the landscape too.



(image is reconstructed)

Afterwards...

During the remaining two weeks of the student project, we met for tutoring, some teams continued to meet with relevant local stakeholders and some groups continued to coordinate how their services could overlap and be fruitfully related. We also arranged a third shared session of updating the landscape – this time it only took about 5 minutes before the groups were satisfied.

Their final service concepts were presented also to an additional examiner – mainly through slide shows – at the Final Presentations on 30. April 2009.

Similar courses have been offered every spring since this, also on topic of sustainable transportation and once on the topic of 'food & collaborative consumption'.

As teachers our views are, that services over time largely are 'lived' by the people who provide them, and thus are not 'finished' when leaving the hands of designers, so practically more and more emphasis has been put on teaching how to be engaging relevant stakeholders in the students' co-design processes

This Exemplar 01 is mainly intertwined in the thesis in the following places:

P&A

Part A / Chapters 1, 2, 3

Part B / Introduction / Chapters 4,5

Part C / Chapters 7, 8, 9

Part D / Chapters 10, 12



02

Rehab Future Lab –from PalCom

Co-design Project	PalCom (Appendix 03)
Malmö site/collaborators	Staff at handsurgery rehabilitation Dept. / University Hospital / Sweden
Time & Year	5.-6. Sept. 2005 / Day 1: 13:00-17:00 (Day 2: 9:00-15:00 = not included)
Participants at events	Two interaction design researchers from local university / one physio-therapist, one occupational therapist and the manager of Dept. / three other PalCom researchers from three universities (new to the context), I (on leave so participating only for the Day 1 afternoon)
Timing in Project	1 3/4 year out of 4 years
Location	Handsurgery rehabilitation Dept. 4th floor / exercise / meeting room and meeting room down the hall (Day 1)
Event organizers	Four interaction design researchers from local university involved in PalCom / Project manager and PhD student stage the event
My Roles	Mainly observant / documenting
Ways of documentation	Still image camera, personal notebook, digital copies of documents used before, during and after the event e.g. a report of insights.

Email with Goals and Agenda

>> xx <xx@xx.xx>
>> 29-08-2005
>> Subject: Future Lab on Surgical Rehabilitation

Hi ...

GOALS:

The current status of wp10 on surgical rehabilitation is that a detailed design exists for a thin slice of functionality in a particular use situation at the rehabilitation ward. This design will be developed into a vertical prototype by the end of November and it is not anticipated to change significantly during prototyping. Moreover, a general design theme of explicit interaction has been developed, certain technical directions have been set, and a number of other use situations in and outside the rehabilitation ward have been identified. Based on the design theme and the technical directions, initial concept sketches have been developed for the broader range of use situations.

(...)

- Hence, the primary goal of the Future Lab is to start filling some of the blanks on the knowledge map: ideas, insights, suggestions concerning concept design and detailed design in the broader range of use situations, possibly new use situations, and so on. The first day is mainly oriented towards assessment and incremental improvement of the vertical prototype and related ideas at the clinic. The second day is more open for design space exploration in use situations outside the hospital.

- A complementary goal of the Future Lab is to explore the relation between the design theme of explicit interaction and palpable computing in general. The intention is to move towards contributions to the Palcom Conceptual Framework and to provide the medical staff from the rehabilitation ward with some insights into the scientific motivations behind our work.

(...)

PROGRAM:

Monday, Sept 5, at rehabilitation ward.

(...)

Day 1

13:00

Introduction to the rehabilitation ward and the hand surgery clinic. (...)

01

Introduction to design starting points, including explicit interaction, CAREphones and near-field communication. Introduction to the first use situation at the rehab ward: Recording a consultation. The specific considerations of the situation are presented, as well as the scenario and the props. The participants are then divided into two cross-disciplinary groups.

02

14:00

Work on the first use situation at the rehab ward: Recording a consultation.

03

Each group works in parallel as follows:

- The group role-plays the situation according to the standard scenario. Medical staff members play medical staff members, Swedish researchers play patients. Other group members serve as observers. Lo-fi props (desk lamps, foam models, etc) are used. Role-play in Swedish, translation afterwards.

- The experience is assessed in group discussion. How did it feel for therapist, for patients? What were they thinking during role-play? Anything missing? Anything that could be done better?

- The group discusses modifications and improvements to the scenario and the props.

- The suggested modifications are assessed in new rounds of role-play (if time permits).

- The groups come together and summarize their respective findings (...)

- The knowledge out comes are recorded in a jointly visible form. (...)

15:30

Coffee Break

16.00

Work on the second use situation: Patient-to-patient. Mode of working as above.

03

04

05

06

16.30

Plenum wrap-up.

07

.....
Fragments from email sent beforehand by local project manager to everyone in the PalCom project.
'Program' here means 'Agenda'.
.....

96 Exemplar 02

Introduction

We are in the room often used for gymnastic exercises with patients at the rehabilitation ward, but today booked for our 'Future Application Laboratory' (FAL).

The handsurgery rehabilitation department is one of the smaller out of five official use-sites in the PalCom project. Currently in the project, FAL's are happening in all these use-sites.

Fred and Ann, today in their normal clothes, are the physiotherapist and occupational therapist mostly engaged with the researchers from the local university in the PalCom project. Their manager is here too.

The event has been collaboratively prepared over a longer period of time mainly among the small team of local researchers. Today, two researchers stage the event, but other colleagues at the university have been involved in preparing the two scenarios and two versions of hard-foam low-fi mock-ups.

Building upon fieldwork and previous experiments with the staff, together this is two versions of a proposal for a new application/demonstrator (still without technology) suggested to be integrated in their future practice and interaction with and among the patients. Today, these are intended to be explored collaboratively.

01

Tour of the Ward

The researchers new to this environment start with a quick tour.

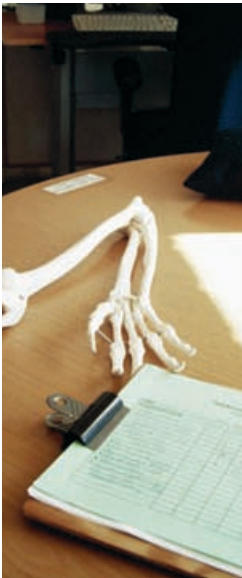
A year before this event, fieldwork at the rehabilitation ward was shared in a collection of 'Fieldcards'. The images and texts here are selected from the collection to show the spatial and material context of the event.



ActivityRoom_Rehab.dept.
Lots of different activities takes place in this room, where a variety of tools and equipment can support the patients in their training. The space includes special sections such as a woodworkshop, a kitchen, a weight-lifting area, an area with machines called 'work-simulators', a cooling space and 6 tables for patients and staff to meet. Apart from the sections the room is also full of moveable tools to encourage training of strength, moveability, sensability, etc. Patients especially consult occupational therapists but also physiotherapists in here, but every week there are also patients with individual training-programmes. Some are in the bed-unit for a whole week to fully focus on their training, some join the Group Training sessions every Monday and



Patient Coffee Breaks, 4.floor
In the hallway in the Rehabilitation department next to the Activity Room, this space is used for patients and some staff to have a coffee break inbetween training activities. It is organised by a staff member, and is mainly used for Patients who are in the Activity Room for longer periods of time or who attend the Group Training sessions. The occation is often used for patients and staff members to informally share experiences and tips about different ways and tools to solve everyday challenges, which now trouble the patients.





02

We start in plenum with introductions

Behind closed doors in the small exercise room, the physiotherapist welcome us with a few stories about current practices here. Next, e.g. with reference to the previously emailed agenda –available in print– the local project manager repeats the goals and plans for the coming two days. With the hard-foam, turnable mock-ups and the lamp (imitating live video-recorder) he also demonstrates some of the intended functionalities of this current proposal for palpable 'explicit interaction' devices. This is to be explore further today. It is the first time some of the people see these mock-up, so some questions are passed and answered, but soon we split up in two groups.

03

Group 1 stays – with one of the hard-foam mock-ups

In this group they are the local project manager, the physiotherapist, an industrial design PhD student and a sociologist from two different partner-universities. They rearrange the room, and as it says in the agenda, when roleplaying scenarios, the staff – here the physiotherapist – 'plays' himself, while the one from the Malmö team 'plays' a patient. The others (and I) observe.



Group 2 goes to a staff meeting-room down the hall – with the other hard-foam mock-up

In this group, again seated behind closed doors, we are the occupational therapist, the rehab unit manager, an interaction design PhD student from the local team (situation organizer), a software designer from the PalCom managing team (and I also here mainly as an extra observant).

Assisted by the agenda, the PhD student repeats what to do. The occupational therapist also explains how she daily meets many patients for 15 minute consultancies, e.g. to check the status of recovery, slightly modify the patient's personal training program, etc.

She also tells, how she every Friday morning with the 'training group' is hosting informal coffee break around the small table in the hallway. Mainly with the rich collection of non-digital objects at the ward, she also organizes short sessions of sharing tips, stories and good ideas of coping with everyday life when mainly with one functioning hand.



Both groups have print-outs of two scenarios

The local team preparing the event has pre-designed two detailed scenarios matching the intended use of both versions of the hard-foam mock-ups.

The first scenario explored is called 'Recording a consultation' (what Group 1 is mainly roleplaying in 03).

In Group 2, the PhD student hands out a paper-copy of the scenarios to everyone.

Before exploring both the scenarios through role-playing, as we read through it, in detail he explains the intended uses.

The second scenario is called 'Patient-to-Patient' (what Group 2 is exploring in 03 and 05).

SITUATION : Patients viewing and sharing media

Due to their injuries patients often must find ways to cope with problematic situations of everyday life, most often including supportive tools. The occupational therapists have a good overview of tools and solutions, but patients are creative and can come up with their own solutions. Producing, documenting and sharing solutions can be a way for patients to engage in rehabilitation.

SETTING: Activity room at the rehabilitation ward



OBJECTIVE: For patients to be able to view and share media in semi-large groups in a way that supports a shared understanding of what's going on.

MAIN ACTIONS: Retrieve files, display media, share media files.

ARTEFACTS/TOOLS/DEVICES: Large display, cell phones, docking station for remote control & "bowl".

SCENARIO: Jennifer is a member of the work-training group and visits the clinic for the weekly session. She is now at the coffee table, enjoying a break from training and some small talk with fellow patients and the occupational therapist in charge of the work-training group. As the discussion concerns everyday situations, she comes to think of a video recording she made at home where she is using the pen holding tool she bought recently. She has the video clip in her phone.

On the table, there is a remote control with a pocket for inserting a CAREphone. The remote control operates video playback on the wall display with clearly marked buttons for play, pause, fast-forward, rewind, etc. There is also a bowl on the table for sharing video.

Jennifer browses on her phone to the video clip about the pen holding tool, then puts the phone in the remote control to claim the wall display. The video clip appears on the wall display. The remote control starts to emit a softly pulsating green light to indicate that it is connected and ready to use. When Jennifer pushes the play button on the remote, the video starts playing on the wall display and the remote turns to a steady green light. She can use the remote to pause and rewind the movie as desired, and also to navigate the files on her phone, when she explains the pen holding tool to her fellow patients and the occupational therapist.

Roleplaying use in Group 2

While roleplaying the 'Patient-to-Patient' scenario, the occupational therapist is 'playing' herself, now pretending to be at the coffee break around the small table in the hallway informally sharing tips for everyday challenges with only one hand. She is pretending to be with the training group. The three others around the table pretend to be the hand-surgery patients.



The situation soon changes to questions and discussion

With the pretend-to-be hard-foam personal digital devices, the shared devices on the table in which to place and share media and an imagined connected wall-display; the intended interaction and practice are different from today.

The occupational therapist reflects upon what she has just experienced, and many questions, challenges and issues about the interactions are raised and discussed. Fragments from the discussion where the following is roughly said:

1/ Occupational therapist: "This is interesting – but maybe it should not be during the coffee break where the patients relax? (...) Could I maybe add my comments during or after the playback (...)?"

2/ IT researcher: "When picking up a media from someone, I also have to place the phone – when can I take it away?"

3/ Occupational therapist: "Could I also share media and tips with other things – like my pen?"

1/ 3/ IT researcher: "By who (...) and how will the media be produced? (...) When sharing do I have to leave my phone there?"

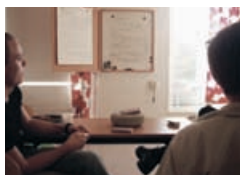
4/ PhD student: "We have not really considered all this yet (...)"



06

Issues discussed are annotated on paper

Everyone make their own notes of questions and issues e.g. on the paper-scenarios, and a few shared issues are captured by the PhD student.



07

Back in plenum – Day 1 ends with brief discussion and shared summary

Some of the main issues are e.g.:

- what if the phone rings in the middle of this?
> the phone transforms so no incoming calls.
- visual feedback on the display seems important.
- maybe different for staff and patient?
- remember patients have to do everything with an injured hand.

Issues are listed on paper by the project manager, to easily bring to the university for Day 2.

Afterwards...

Day 1 has ended, some go home, some go out for dinner. Everyone, except me and one other researcher, meets the following day at the university to continue working with related and new scenarios and issues e.g. related to the overall concept of 'explicit interaction' (Day 2).

Further, based on the issues and feedback at the FAL, and partly in collaboration with another technical partner, the small local team of researchers make a technically functioning and physically re-designed 'vertical' prototype for the use situation of 'recording a consultation'.

It is demoed with 4-5 other larger demonstrators for other use-sites at the 2nd PalCom Review (March 2006).

As told by the physiotherapist present at the review, it s corresponding with the needs of the staff at the ward, while reviewers (unfortunately) found it less relevant to the main focus on palpable open software architecture in the PalCom project (Appendix 03).



This Exemplar 02 is mainly intertwined in the thesis in the following places:

P&A

Part A / Introduction / Chapters 2, 3

Part B / Introduction / Chapters 5, 6

Part C / Introduction / Chapter 9

Part D / Chapters 10, 12

List of Material Participant	Invited by	Role(s)
1/		
2/		
3/		
4/		
5/		
6/		
7/		
8/		
9/		
10/		
11/		
12/		
13/		
14/		
15/		
16/		
17/		
18/		
19/		
20/		
21/		
22/		

This could
be a format

Part

A

*From Designing to
Co-designing
Practices & Situations*

From Designing to Co-designing Practices & Situations

Introduction

Initially – from my program I repeat: *First, recognizing that designing and co-designing are different (organizational and socio-material) practices... matters*

In this Part A, I will be exemplifying and exploring these differences. Generally, ‘design’ can be phrased as largely capturing practices of understanding current practices and making proposals for desirable future ones. ‘-ing’ at the end of the word, captures my emphasis on the processes of action and doing rather than on the outcomes. In this Part A/ Introduction, I will start to exemplify and show how this designerly way of doing is quite different, whether there is a ‘Co’ in front of ‘designing’ or not. Then, throughout the rest of Part A, I will go into more depth about how I understand co-designing practices and situations, partly in comparison with how I understand designing practices.

The main authors I refer to in this Part A Donald Schön (Chapter 1), several different participatory design researchers and Etienne Wenger (Chapter 2) and Lucy Suchman (Chapter 3) are clearly related to one another in their concepts. Yet, each implies slightly different perspectives for understanding co-designing practices and situations. Important in relation to the overall topic of this thesis, but with different words, they all argue that materiality is an integral part of practice and situations of practice – so in addition to the above this is also an integral thread throughout Part A.

Chapter 1
Chapter 2
Chapter 3

The main examples discussed in this Part A are:

Exemplar 01 / Service Project Landscape

Exemplar 02 / Rehab Future Lab

Part A / Introduction, An example of individually designing a postal car-proposal as an industrial design student

Designing and co-designing – Two different examples and practices

The research in this thesis largely builds upon practical designing and co-designing experiences, so in the following I will use two different examples to initially show how I have experienced and how I view designing and co-designing as two different practices:

Example of designing / my one-designer 'postal car' proposal

While a student of industrial design, in the fall of 1999 throughout a whole semester, I was to individually design a proposal for a 'postal car'. Everyone in the class got the same initial brief for this assignment, but twenty different proposals were presented on the last day. I had my individual process of developing my proposal. During this process, I at set times had to make mid-way presentations and was in dialogue with my tutor and sometimes more informally with other classmates. But otherwise I had limited interaction with a few postal-professionals. I was alone with the various materials I was working with and that is what got me to my proposal.

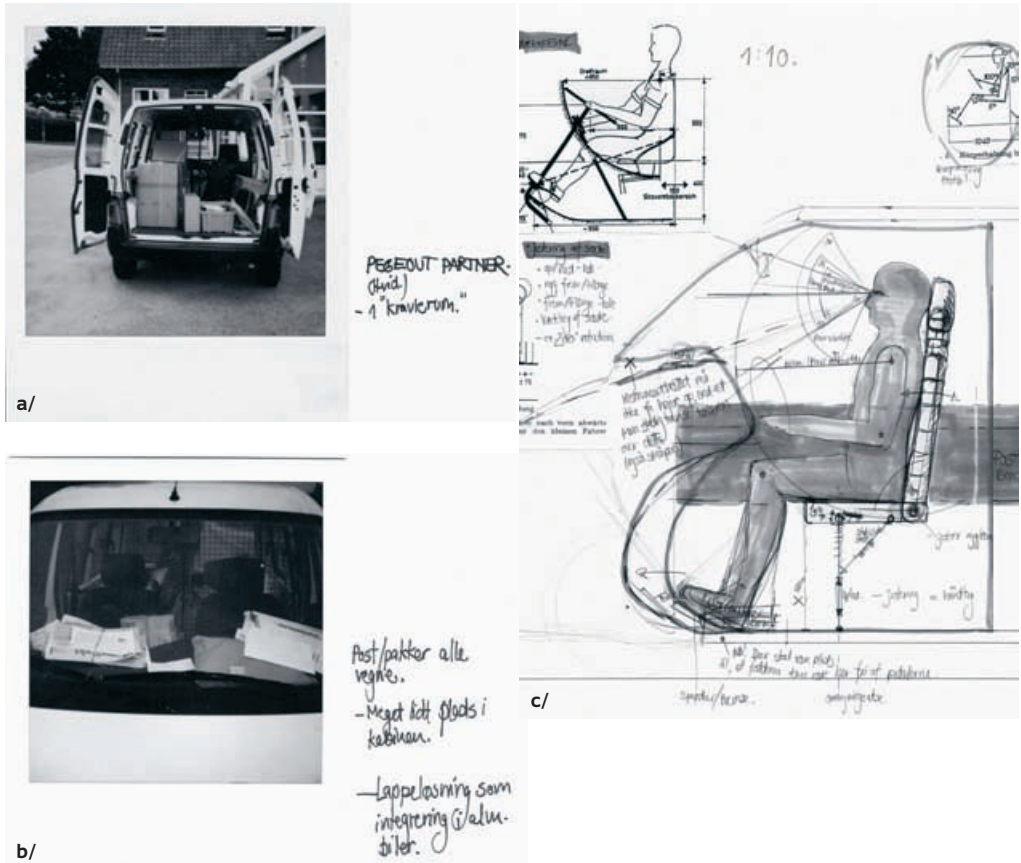


Figure 7/ a-c/ A few selected materials from my logbook during a project of individually designing a proposal for a postal car (as a 4th year industrial design student – 1999). ➤

a/ b/ The project started with some desktop research and a whole day of following a postal woman working from 5:45 am at the mail packaging unit and on the road in her current slightly re-build Peugeot Partner-postal car.

Based on this, two of the important design program criteria for me in my process of designing a new postal car became to design an ergonomic and user-friendly postal car, for the delivery person to easily get in and out of with new letters and sometimes packages about 200 times a day. To do this I was working and prototyping with many materials on my own in various parallel ways:

c/ d/ Sketching on paper for understanding the scale of the human body and for capturing different possible overall spatial principles to match this.

e/ The postal car as an ergonomic and user-friendly work place was my main focus, but from my day-trip, I clearly realized that the car was (of course) not a stand-alone product – which we as industrial designers could tend to view them as. Thus, in parallel with the above I was working with a series of diagrams on paper of organizational structures, because I acknowledged that what might happen in and around the car when delivering post, was to a large extent connected to the practices and systems at the letter-sorting postal unit. This was where the driver packaged the car in the morning. Yellow plastic boxes keeping the letters in the right order, were essential in the current practices of organizing the letters and when moving them from indoors to the car. Thus to me the spaces for, organization or and movement of these boxes got a lot of my attention – again to assist in designing an ergonomic and user-friendly postal car work-place.

f/ g/ h/ This was combined with small-scale model-making to get all vehicle-elements in place and full-scale 1:1 prototyping to personally explore and rehearse the interactions. The full-size explorations included standard letter and package sizes, mock-ups of my new box proposals, etc. Practically imagining myself in the car made it very concrete.

i/ Creating many sketches of car styles – to eventually end at my final proposal.

I was working with all these materials and considerations, and for my tutoring sessions and mid-way critiques during the project, some of these materials were picked by me to assist in telling my current story of my focuses and proposals. It was all refined for the final presentation of my final proposal – at that time still visualized as hand-sketched drawings! (i/).

Of course, while doing this project I was not alone in a world of my own. The teaching style was studio based, so I was mainly working in the studio sitting next to the 19 other students also making their proposal for a postal car. Some were friends, and we did of course interact and help each other in the process now and then, but not very much – in my views – because we at the same time were competing to make the best proposal.

This example is from 1999, and as an example from teaching, of course it is not as complex as design processes in a research project or design bureau collaborating with clients, engineers and other professions. Yet, the example corresponds with the kinds of tangible materials engaged in Schön's example from architectural (also teaching) practices.

Chapter 1

Additionally, my reason for including this example here, is to later emphasize some similarities and many differences between the just exemplified individual one-designer practices of designing for others, and collaborative co-designing practices in multi-disciplinary, distributed project teams. The following is one such example from the *Palcom*-project:

Appendix 03

An example of co-designing / Exemplar 02

In the previous example, I was designing a proposal for a postal car, to support new workflows and practices for people delivering mail and packages. At the Rehab Future Lab event, the aim was also to make proposals for mixed-media technologies to support and hopefully improve new workflows and practices for both hand-surgery rehabilitation staff and patients. But happening within the participatory design (IT research) *PalCom*-project, the intension was also to co-design these with the hospital stakeholders. In both projects the outcomes – proposals – were accomplished based on an understanding and analysis of current practices, but the little 'co' makes the practices of creating these proposals very different.

Exemplar 02

Appendix 03

This rehab Future Application Laboratory (FAL) co-design event happened about 1½ years into the *PalCom* project. In the meeting room with Group 2, it was the first time one of the programmers (a person also on the managing team of the whole project and from another country and university) met the two staff members from the hand-surgery rehabilitation department at the hospital. The hospital department is an official but quite small stakeholder in the project, but the occupational therapist had been engaged throughout the project with the local *PalCom* team at the local university. Project members from this university had organized the event, and were there represented by the PhD scholar in interaction design also sitting at the table.

Exemplar 02 /
Introduction /
circles 03, 05

Generally, this has been a premise of all the large distributed, participatory and multi-disciplinary co-design (research) projects I report from in this thesis. New people continue to meet, and continue to quite quickly have to somewhat understand each other to be able to engage in co-designing (in the situation at the table).

Before this event, a design process of developing and detailing the proposals introduced in the situation (with scenarios and mock-ups), had been happening partly in dialogue with the occupational therapist and another physician-colleague, but mainly among the small team of four interaction design researchers at the local university. As I was not there at the time, I cannot report in details about what happened, but I know parts of this preparatory work happened with fragments of processes as if the individual process described above – but then coordinated among them to reach the proposals shared and explored with the others at the event.

Summary – Part A / Introduction

Chapter 7

Appendix 03

Exemplar 02

With the two different examples discussed in this Part A / Introduction, it is clear that there are differences in practices of designing and co-designing. Of course, the overall *frames* of teaching and IT research make an overall difference between these two examples. However, with the integrated part of the PalCom process being events like the described Future Application Laboratory, where the intension is not a (mid-way or final) presentation and critique, but dialogue and co-designing, the situated practices and structures of co-designing are very different compared to (my) one-designer practice.⁴⁹

.....

⁴⁹ In Part B / Chapter 5 more critically I return to Exemplar 02, in my detailed explorations and discussions of materiality in co-designing practices. As a part of discussing delegated roles of materials participating in co-designing, I will question if using the same kinds of materializations as in one-designer practices (like the pre-designed mock-ups and scenarios) actually fosters much co-designing in the situation.

Chapter 1 / Dissecting and Re- formulating Donald Schön's Sentences

Characteristics of designing and co-designing

Donald Schön's work is about professional reflective practice, for example reflective design practice. His work has been and still is greatly influential in relation to understanding how professionals, like designers, do in practice and reflect in action.

One of the examples of practice he has studied closely is an example from architectural practice. His descriptions and reflections on that example, correspond very well with my one-designer's practice exemplified in the Part A / Introduction. There are clear differences in practice between this example and the *PalCom* Rehab-example also introduced there. In this chapter, I do in a way take a step backwards from P&A, Yet, still many of Schön's fundamental insights about (design and designing) practice are also very useful for understanding co-designing practices, because he generally places emphasis on the materiality and situatedness of design practice.

Part A / Introduction

P&A

The title of the third chapter in *The Reflective Practitioner*, captures Schön views of design practice as...

"Design as a Reflective Conversation with the Situation" (Schön, 1983:76)

..and in a paper from 1992, the title has been slightly, but to me interestingly modified to...

"Designing as Reflective Conversation With the Materials of a Design Situation" (Schön, 1992).

To start understanding and exploring *Material Matters in Co-designing*, in the following section I will dissect these titles and statements, to start getting into details with the situated practices of designing – and co-designing.

Box:

Donald Schön's positioning – positioning Donald Schön

With his book *The Reflective Practitioner*, first published in 1983, Donald Schön proposed his epistemology of practice (Schön, 1983:viii). In 1987 followed *Educating the Reflective Practitioner* (Schön, 1987). Schön (1930-1997) had a background in philosophy but worked for many years as a social scientist at the Massachusetts Institute of Technology (MIT) in Boston.

Schön published *The Reflective Practitioner*, for example in opposition to what he described as long traditions of a “Positivist epistemology of practice” of dividing theory and practice and prioritizing scientific knowledge above professional practice (ibid:viii). From what he saw, most universities were based on such assumptions. But basically, Schön found the divide between the kind of knowledge honored in academia and the kind of competence valued in professional practice puzzling.

He criticized the Positivist or ‘Technical Rationality’ tradition where general principles were valued higher than concrete problem-solving for (ibid:21-30). Technical Rationality captured the dominant principles in academia of prioritizing general principles derived from testable scientific and technical knowledge. With this, the academic scientific inquiry or practice increasingly has become what Schön called ‘a hypothetico-deductive system’, where hypotheses are tested through constrained experiments (ibid:33). Schön described hypotheses as ‘abstract models of an unseen world’, and for the experiments to be testable a lot of variables in real-world situations – like socio-techno-politico-economic issues – were left out.

Schön mentions Herbert Simon as one of the people who, with his proposition of a Science of Design, has tried to fill the gap between what Schön calls “the scientific basis of professional knowledge and the demands of real-world practice” (ibid:45). As Schön phrases it, “Simon believes that all professional practice is centrally concerned with what he calls ‘design’ – the process of ‘*changing existing situations into preferred ones*’...” – and here Schön somewhat agrees (ibid:46). However, to Schön, Simon’s intension is still to preserve the ideals of technical rationality, and to him Simon’s science of design can still only be applied to “...well-formed problems already extracted from situations of practice” (ibid:47). Simon’s science of design does not capture the complex, uncertain, unstable, unique situations of professional practice, which Schön has observed and discusses in detail in his book.

Additionally, *The Reflective Practitioner* was published at a time when confidence in professional practice was declining both in the public

and among critical professionals themselves, as (scientifically trained) specialized professionals often caused larger problems than those they were intended to solve – for example through proposing technical solutions e.g. in a greatly complex healthcare system. As Schön viewed it, some critical practitioners acknowledged that increasingly in real world practice, the “..situations of practice are not problems to be solved, but problematic situations characterized by uncertainty, disorder, and indeterminacy” (ibid:15-16).

Yet, one of the assumptions and main arguments Schön makes, based on his detailed analysis of five different specific examples from real world practice, is captured in his concept of ‘knowing-in-practice’. Basically, he assumes – and through his examples argues – that in problematic situations professionals apply a lot of tacit knowledge as a part of their professional practice, or in other words, professionals know more than they can say (ibid:viii).

Another important assumption behind Schön’s work is – greatly inspired by philosopher John Dewey – that professionals are learning-by-doing. Both tacit knowing-in-practice and learning-by-doing are central elements in Schön’s still highly relevant main argument. In this type of situation professionals do what Schön has coined: ‘Reflection-in-Action’.

‘...Situation’ and ‘...Design Situation’

Starting my dissection, first I will capture how Schön views the ‘...situations’ or ‘...design situations’ professionals like designers engage in.

To repeat from the box, Schön views situations of professional practice, not as ‘... problems to be solved, but (as) problematic situations characterized by uncertainty, disorder, and indeterminacy’ (Schön, 1983:15-16).

Additionally, throughout *The Reflective Practitioner*, Schön assigns and repeats other adjectives to these problematic (design) situations. He for example calls them ‘... puzzling, troubling, and uncertain.’ (ibid:40); ‘.. complex, uncertain, unstable, unique..’ (ibid:14) and generally, he views situations as ‘unique events’ (ibid:16).

One of the five main studies explored in detail in *The Reflective Practitioner*, describes an example of an architectural tutoring-situation during which the student Petra shares her sketches and problems of designing a school with the studio master Quist (ibid:93). With these sketches and Petra’s verbal descriptions, in the situation at the table, Quist is demonstrating his process of designing to Petra. Another studied situation is from psychotherapy, in which a ‘supervisor’ and a student ‘resident’ are discussing the resident’s counseling with a frustrated patient, and in this situation the supervisor is also demonstrating his professional practice (ibid:118).

The contents and topics of these two situations of supervising students are very different. Every situation is unique as Schön continually emphasizes, but the situations of a skilled practitioner sharing or demonstrating his experiences and expertise with a student training to become a practitioner are very similar.

As a starting point: To Schön, professional practice happens in and with the (design) situation. As he has found, in practice every situation is complex, uncertain and unique. However, when analyzing such real-world situations, with his more generic concepts he does identify similarities. In the end of this Part A, I return to a focus on situations in designing and co-designing practices, and propose to look for situations of sameness.

'...With the Materials...'

Schön's titles have been modified from 1983 to 1992 to emphasize how engaging in complex, uncertain and unique situations of practice inherently means engaging '... with the materials of the (design) situation'. Schön's underlying idea was the same, but in the paper *Designing as reflective conversation with the materials of a design situation* from 1992, Schön had explicitly added the word 'materials' into the reflective conversation about the situation. With that modification he also changed his primary choice of word from 'medias' to 'materials' (Schön, 1992).

In *The Reflective Practitioner*, Schön related the exemplified practices of architecture and psychotherapy, and found there were many similarities but also differences between these different professions. One of them was what Schön called, the different 'media' or 'material' in the conversation with the situation. The 'medias' in the architectural example were 'sketchpads, delineations and scale models', and in the example from psychotherapy the 'media' was 'talk' (Schön, 1983:128). However, these diverse medias were in both examples a part of the unique, problematic situation of either fitting building units into a particular screwy slope or finding a way of counseling a frustrated patient. In the architectural example, like in 'classic' architectural practice, the tangible 'media' included in his story are mainly series (and layers of) paper drawings.

When Schön explored the psychotherapeutic example, the 'media' was not just 'talk'. The media in their verbal conversation was made up of a lot of different ways of talking. Some of the talking was about describing the patient's stories – what Schön also called the patient's 'material'. Some talking was about searching for explanations and interpretations, some about opening up and developing alternative interpretations, yet some about conducting experiments of such interpretations, then some suggested and guided strategies of coming inquiries and still some more general discussions about practicing as a psychotherapist through proposing not to make preconceptions (ibid:118-125).

Similarly, Schön also described the architectural example as a design practice combining drawing and talking. As he showed in his analysis, talking is also an inseparable part of the reflective conversation with the

materials of the design situation. In his close analysis, Schön has identified twelve clusters of different elements of talking, which Quist has used in the unique situation with Petra. He has identified ‘talking’ relating to the different elements or domains of program/use, siting, building elements, organization of space, form, structure/technology, scale, cost, building character, precedent, representation and explanation (ibid:96).

Schön saw two different kinds of talking intertwined in Quist’s demonstration of designing for Petra, inspired by Wittgenstein’s idea of ‘language games’. Schön called one the *language of designing* and in between this Quist also spoke another meta-language, which Schön called a *language about designing* (ibid:80-81,95). Thus, to Schön *material* in the situation is both tangible and spoken.

Part B / Introduction

In his 1992-paper, Schön has explicitly included ‘...with the materials...’ in the title, and in this paper, he has included other examples of how architecture professionals and students explore and make sense of the materials they were provided to work with in different exercises. For example, in a design game exercise, each student got three different construction systems called Legos, Tinker toys and Modula. Tangibly they got various materials to work with, but the four students, Schön discussed, all got the same task to ‘make something they liked’. However, they were working individually, and as Schön wrote, ‘...each of them saw the materials in a different way, chose to use different items, singled out different features, and exploited different relationships between items and features...’ (This is what Schön here called constructing a unique stylistic ‘design world’) (Schön, 1992:9).

In another exercise example, (ibid:8) different professionally practicing architects were provided with a material, which Schön described as a principle ‘footprint’ of a branch library, including identifications of six different entrances. Apparently there had been problems with entrances at the libraries, which had been built based on this footprint, so these architects, in the role of consultants, were to analyze the footprint and propose guidelines or whatever they found interesting, particularly in relation to entrances, for future library buildings. Again, Schön’s conclusion was that the three different architects described, approached and engaged differently in the task – or in other words they applied different ‘seeing patterns’ in their conversations with the materials of the design situation.

One took the task of proposing guidelines very literally, established one view of grouping entrances (in what he called end and middle entrances), and built his further arguments based on this view. Another architect viewed the whole footprint – first as a middle with pods and later as two L-shaped spaces without any space in the middle to move between the two. By seeing the ‘marks on the page’ differently he also changed his framing of the problem, which then informed further designing and arguing. Lastly, another architect imagined herself being a pedestrian approaching one of the entrances to get a sense of the dimensions of the space (ibid:8).

These examples illustrate three very different ways of ‘seeing’ in designing, and thus three very different kinds of conversations with quite similar yet different materials of a design situation (I return to the concept of ‘seeing’ in designing below).

To summarize, with his detailed analysis of the many different kinds of ‘medias’ or materials engaged in architecture and psychotherapy, generally Schön views ‘materials’ of practice and of the unique situation broadly, both as tangible materials like paper sketches or Lego bricks as well as many various kinds of talking. However, in my view he has gone more into the subtle nuances and differences of the material ‘talk’ or ‘language’ than he has of the tangible materials in the situations he has studied. It is one of the focuses of this thesis to explore exactly these tangible materials, for example, through understanding their roles in and their relations to the various kinds of talking, or verbal materials, which Schön has shown and argued also to consider as ‘material’ in the unique situation.

(Individual and Collaborative) ‘..Reflective Conversation...’

Schön’s widely acknowledged argument is that generally (professional) practitioners reflect-in-action, and as he has shown in his architectural example, this is also the case in practices of designing. From the parts of his titles dissected above, the reflective conversation happens in action, in the unique situation, and with the various materials of the design situation.

Reflective conversations with the situation can be viewed as processes of ‘seeing-drawing-seeing’ and of responding to the situation’s ‘back-talk’. In the paper from 1992, again through Petra’s work, Schön describes a reflective conversation as a process of ‘seeing-drawing-seeing’. Petra’s process is exemplified as a dialogue with her drawings (a typical visual / tangible material in architectural and design practice). The so called design program – in her case of designing a school – is complex, and Petra cannot address all issues at once. Thus, she makes an initial judgment to set and start with the formal problem of the six classroom units (one for each grade), which she ‘sees’ as ‘too small in scale’, and therefore she has an intension of making them into what she calls a more ‘significant scale’. From her process of drawing – making ‘moves’ of – various ways of organizing the units, her L-shaped home bases appear. She then sees these as fulfilling her intension of a more ‘significant scale’, while also creating other qualities – addressing other ‘domains’, as Schön calls them – which she then judges positively, like the creation of what she calls ‘home bases’ between two grades and additionally to the home-base as an ‘outside/inside’ relationship. The ‘reflective conversation’ of seeing-drawing-seeing with her drawings is a process of discovery, in which she has not defined all her intensions from the beginning, and in which she has not been able to predict all the consequences of her moves. Petra has done this as well as she could with her experiences of practicing to become a professional.

In the tutoring situation, master Quist demonstrates his ways of designing, based on his many years as a professional practitioner – but without

really explaining how and why. At the table, Quist listens to Petra's descriptions of the problems. He sees her drawings, and then he shows a way to approach the situation. However, as Schön sums up, apart from his spoken teacher comments generally about the practice of designing,

Quist has mainly acted as a virtuoso designer responding tacitly engaging his experiences of being a professional architect or designer himself. He is listening to both the back talk from their drawings and the back talk from Petra. In other words, Schön phrases professional (designerly) practice as characterized by listening to and reflecting-in-action to 'the situation's back talk' (Schön, 1983:94). Yet, he has not really engaged in a collaborative conversation or dialogue with her, in which he also reveals his reflections and corrections of errors made, and thereby engages her in his reflections on his own actions to also encourage her to reflect upon her underlying, tacit principles of judgment in her acting (ibid:104,276-278).

Another part of practices of reflective conversation is what Schön calls 'problem-setting', through processes of naming, framing and re-framing. In 1983 when *The Reflective Practitioner* was first published, as Schön puts it, some of critical practitioners acknowledged that increasingly in real world professional practice, the "...situations of practice are not problems to be solved but problematic situations characterized by uncertainty, disorder, and indeterminacy" (ibid:15-16).

Schön's critique of working with hypotheses is that they depend on previously 'well-formed problems', but from his studies of professional practice 'problems are unique and unstable', so they typically do not fit within academic, theoretical and generalized categories. Furthermore, he states that 'problems do not present themselves to the practitioner as given' (ibid:40), but they 'must be constructed from the materials of problematic, puzzling, troubling and uncertain situations' (ibid:40). Thus, an integral part of professional practice is 'problem setting'.

Generally, Schön describes problem setting as 'a process in which, interactively, we *name* the things to which we will attend and 'frame' the context in which we will attend to them.' (ibid:40). He continues; 'When we set the problem, we select what we will treat as the "things" of the situation; we set the boundaries of our attention to it, and we impose upon it a coherence that allow us to say what is wrong, and in what direction the situation needs to be changed' (ibid:40).

Similarly, Petra decided to start by focusing on the significant scale of the classroom units. Additionally, according to Schön, there is '...a problem in finding the problem...' (ibid:129), and in both the examples of architectural and psychotherapeutic practice, the supervisors are demonstrating to the students how they continually question their initial focuses and views, to 'reframe' what they see as the problems of the situation they are in.

An example: Back to the beginning of their reviewing session, Petra started by presenting her problem of being stuck, as she could not solve

the problems she had uncovered. She said: *“I am having trouble getting past the diagrammatic phase. I’ve written down the problems on this list. I’ve tried to fit the shape of the building into the contours of the land there, but the shape doesn’t fit into the slope”*.

Quist starts by asking *“What other big problems?”*, and after having questioned the scale and directions in relation to north-south, he verbally re-frames the problem by saying *“You should begin with a discipline...”* ...and he proposes the parallel principle.

Another example of Quist reframing Petra’s original view, concerns the gallery, which she originally thought of as a general pass-through, but through their explorations in his words have changed from being “in a minor way...the major thing” (ibid : 91). In the situations of both architecture and psychotherapy, the supervisors relate to their prior experiences, but masterly demonstrate an engagement in ‘...the peculiarities of the situation at hand’ (ibid: 129). They do this by listening and step by step re-framing the problems stated by the students to find the problem(s) they find worth prioritizing and paying attention to.

About an exercise called ‘Silent game’, Schön describes an example in which three people are engaging without any clear prior roles of being either the teacher or the student (Schön, 1992:11). In this exercise and collaborative situation - as the ‘silence’ word in the exercise title indicates - a constraint was no talking. This was a collaborative exercise with two players, A and B and an observer C, and A was to construct a secret ‘rule’ - like ‘trying to get relationships that are not horizontal or vertical’ - based on which he/she would build a construction with the available ‘materials’ (Lego bricks). Next, it is hopeful that player B would understand and extend. And then they took turns until they were both satisfied. Observer C observes and documents every move along the way, and afterwards verbally everyone shares their experiences of seeing and doing.

In this very constructed exercise, it can be criticized that the so called problem-framing is very limited, and that a lot of issues are left out. With his academic intensions of creating scientific knowledge about reflective practice based on real world problematic situations, it is a bit odd that he chooses to include such a constructed experiment of collaborative reflective conversation with the materials of the ‘silent game’ situation. However, from my own experiences of participating in a silent game, through the practical doing, it does reveal meta-level insights about different ways of thinking and engaging in collaborative reflective conversations.

To summarize, with these various examples, Schön has shown how a reflective conversation with materials in the design situation, is an intertwining practice of various processes, for example processes of setting the problem or issues to attend to through naming, framing and reframing, and that this practically can be done through listening to the situation’s back-talk through processes of seeing-drawing-seeing. All this is also essential in practices of co-designing.

On 'Design...' and 'Designing...'

Lastly, we proceed to the beginning of Schön's titles, at which point I get to his views of the reflective practice of design and designing. In the example with Petra and Quist, Schön captures various characteristics of designerly (and professional) practice - characteristics that I also find relevant for understanding co-designing practice.

To Schön, one characteristic of designing is the continual process of going in cycles between the 'whole' or the 'global' and the 'unit' or the 'local' (Schön, 1983:93). For example, Petra's design of L-shaped building units creating a shared home base for the first and second grades, likewise for the third and fourth grades, and fifth and sixth grades, which she also finds corresponds well with her "global" intensions of what she '...wanted to do educationally anyway' (ibid:83). Petra has to handle all this herself. This is an important part of practicing as a designer; while in co-design projects different stakeholders can to some degree place their emphasis on different parts, in co-design projects the relationship between the units and the whole matters.

Chapter 2

Another characteristic of designing is setting what Quist calls 'a discipline' for connecting the unit and the whole. More or less explicitly identifying a 'discipline' can be viewed as setting a main focus, specific viewpoint or underlying principle, from or within which to explore various possible solutions. For example, extracted from Petra's idea of the L-shaped class room units, Quist's suggestion for a 'whole' is a coherent discipline of 'a geometry of parallel', which the different building units then should relate to. However, as a remark about a general design practice, Quist also comments that such a discipline always can be what he calls 'broken open' again (ibid:99). It can be reframed.

Another characteristic of designing is the practice of shifting between asking 'what if' or what 'can' or 'might' happen, and what 'should' or 'must' happen (ibid:93,101). Schön calls this "spinning a web of moves, consequences, implications, appreciations, and further moves" (ibid:94). Quist demonstrates this to Petra by saying and showing how his exploration of positioning her L-shaped classrooms into the screwy slope, calls for a gallery, which 'must' then be more than an corridor, to connect with some of the other main building units. A characteristic of both designing and co-designing practices of being future-oriented - through asking "what if" current situations were changed in this or this or this way. To be able to do this practically, inherent in this, there is a need for understanding current practices and strategies and listening to the situation's back-talk to identify what can and must happen.

Lastly, partly repeating from the section on the reflective conversation above, another fundamental characteristic is the practice of reframing the problem in the situation. In between Quist's demonstrations of design practice through combining drawing and speaking, as mentioned above, he intertwines meta comments about the practice of designing like addressing the '*the problem of the problem*' (ibid:92). Being a one-designer (or a virtuous

supervisor) framing and re-framing which problem or challenge to attend to is very often an implicit practice; but as in ‘silent games’, compared with co-designing practices, this is where I find a large difference, as focuses are continually negotiated with the (talking and tangible) materials of the design situation. Yet, at an overall level, acknowledging the importance of framing and re-framing are still highly relevant also in co-designing.

Central characteristics of designing (and co-designing)

I have now captured some of the central general characteristics of the practice of design and designing, as described by Donald Schön back in 1983 (and 1992). In my view, they are still highly relevant for understanding co-design and co-designing practices. However, in co-designing the shifts between the whole and the units, the relationships between ‘what if’ and ‘must be’, and re-framing of what the problem(s) or challenge(s) are, are not done solo by one designer, but largely in reflective dialogue it is all continually negotiated with the different co-designers or stakeholders – and materials (both understood as talk and tangible materials).

With Schön, several characteristics of co-designing are now captured, and several issues and focuses of this thesis are established. For example:

- (Co-) design practice is happening in unique and complex situations.
- Materials are integrals of the unique (co-) design situation.
- As an integral part of their practice (co-) designers engage in reflective conversation with the materials of the unique (co-) design situation.
- Material in the (co-) design situation can both be talk and tangible
- Tacit knowledge can be difficult to express, but is a part of professional (co-) designing practice.
- In the reflective conversation or dialogue in the unique situation, an important part of doing is setting or establishing the problem or topic to attend to through practices of framing, naming and re-framing.
- (Co-) designing is mainly a future-oriented practice through asking ‘What if’.
- (Co-) designing is a practice of combining the whole and the parts through continually engaging in exploring and experimenting with possible moves and proposals.

I have already been merging co- into the list above, indicating that I find his views highly relevant also for co-designing, and I bring these views with me as a very good starting point. However, various parts of the co-designing practice exemplified in Exemplars 01 and 02, Schön’s work, cannot explain this alone.

Exemplars 01, 02

Schön and co-designing / with Exemplar 01

All Exemplars I will view the six Exemplars and other examples in this thesis as practices of co-designing, and they each capture unique and complex situations. They differ a lot as they are from different projects and events; however, in

all of them various people – and materials – are participating and collaborating in co-designing. So as a starting point for moving from designing to co-designing, I suggest the following modification of Schön's sentences and titles: *"Co-Designing as reflective conversation with the materials of the co-design situation"*.

Teacher / event organizer reflections on action in Exemplar 01

As the first Exemplar of how people and materials are engaging in co-designing, as in the Petra and Quist story, Exemplar 01 comes also from teaching. In that example from a 5-week course on service design for interaction design students, a colleague and I had the roles of project organizers, lecturers, examiners and tutors. As it is partly implicit in Exemplar 01, in the following I share a bit of background for our style of teaching, and some of our thoughts and intensions as teachers largely staging for the students to be co-designing, and share reflections on a few of our own actions in the situations actually happening with the students.

Exemplar 01

Of course, there was a difference in where the students were in their courses (some students on their first day vs. Petra who was a while into designing her proposal for a school), and of course as teachers we meet the students differently throughout the course too as their service concepts started to develop. Still, for his style of teaching, Schön was to some extent critiquing Quist for often not being very clear to Petra about his intensions of their tutoring sessions or of his ideas of designing practice, but found that Quist included this in little sentences here and there intertwined with his own demonstrations of working as a master designer.

As tutors e.g. in tutoring-sessions we at times probably did the same, but in these and other situations we had scheduled for collaborative doing, we aimed at being clear about our intensions with the students. Basically, in line with the official learning outcomes in the course plan, our intensions were for the students in smaller groups and in the whole team and preferably also with external stakeholders to learn-by-doing about service design perspectives and approaches. In addition to this our intensions were for the students to be co-designing within and across their groups, for them to view their work as parts of one shared service solution (rather than staging for them to compete – as is (still) common practice in many design schools – but which we did (and still do) not find very fruitful if aiming to co-design services).

Exemplar 01 / Agenda

Generally, the style of teaching at this institution is largely inspired by Schön's recommendations of teachers being coaches guiding students in their learning-by-doing processes, as captured in his book *Educating the Reflective Practitioner* (Schön, 1987). – In this course too, we largely viewed ourselves as coaches – for example by asking a lot of questions and assisted them in making connections – rather than critiquing and starting to design solutions ourselves, and by explicitly staging for them to be practically co-designing – not only with talk-materials (which we realized during the course that they did quite a lot) – but also with various tangible materials. Of course, in this project as teachers we were not just 'facilitat-

ing' the students' learning process – we were stakeholders too. The topic of service design – in relation to interaction design and sustainability – was (and still is) important to us as teachers, and especially because it was the first time the course was offered, we had wishes and expectations for the work of the students and were anxious to experience how our plans for teaching worked out. Now I will dive into a few of the intensions and motives behind our work and actions as teachers staging co-designing:

Exemplar 01/
Introduction /
circles 01, 02

Related to Exemplar 01/ Introduction, circles 01, 02: Nothing has been designed yet – or rather, no services or proposals for services have been designed yet on the first day of the course (as it says in the exemplar); but as teachers for months we have designed and prepared the staging of the course/project. We had several drafts of the brief and schedule to capture the overall structure of the course. And we also designed material details. For example, as the one preparing the tangible working materials, in the 'buffet of materials', it was a deliberate choice to both include material specifically and locally related to current transportation systems in Malmö (as brochures and magazines picked up at the Central station) as well as a collection of various other materials quite easy to manipulate. This kind of staging built upon many previous experiences of staging for others to grasp their project in a landscape.

Exemplar 01/
circles 03, 04

Related to Exemplar 01/ circles 03 and 04: As exemplified, the students were materializing their shared landscape – sometimes in smaller temporary groups, sometimes a bit on their own, again in discussions with others – and as teachers we observed and largely let them make their own landscape, as we only initially had discussed very limited ideas of the content we imagined they would be adding. However, in the situation at a point I sensed their energy was fading and observed that they were focusing a lot on tangible transportation objects, so I intervened once, as we previously had agreed that we wanted them to think of and later work with needs in specific possible future situations (e.g. as parts of 'user journeys').

I asked something like "When we transport ourselves around, we very often also bring different things with us. What would you do if you were bringing a lot of things to the beach in a summer day?" (a talk-material into the situation, encouraging to explore 'What if'). As exemplified, this sparked new discussions among some students also on the advantages of Danish Christiania-bikes when shopping for groceries. This resulted in rearrangements and production of new tangible additions to the landscape. – Exactly what I hoped for.

Exemplar 01/
circles 04, 05

Related to Exemplar 01/ circles 04 and 05: After about 45 minutes it actually seemed that we all tacitly sensed that their landscape was stabilizing, and slowly we all gathered around it, looking at what had been made collaboratively. Some asked and it was briefly explained what some of the materials meant, and again in the role of the tutor staging this situation of co-designing, I made a last opening by asking if someone still had something to add, but when they were satisfied at this stage I was too.

As we said before, they started making the landscape. One of the intentions of making it, was to decide what focuses to work with within the area of ‘Sustainable Person Transportation’ during the coming five weeks of the project. To use Schön’s phrases, to assist this process of moving from the parts to the whole, I introduced a pile of white rectangular cardboard cards for collaborative framing and naming of the main topics they saw captured in the landscape. They started discussing again how to more generally name the different areas on the board. Names were written and reformulated and a few things were changed to different places – and the landscape stabilized again.

As we already had scheduled activities for the students the next day, we also wanted the students to be organized in four groups of three to four people before the end of this first day, also including the students not present (because we already had scheduled our coming tutoring sessions to include four groups). There were more than four topics on the board, and as we in the situation sensed that it was challenging to get organized, on the spot I ripped a yellow and red piece of paper and asked the students to individually write their name on two and placed these by their two favorite topics.

However, as teachers we had an opinion about their choices of topics, so we did not leave it widely open for them to chose, by saying that we would not encourage them to choose very ‘bluesky’ projects, because it would be difficult to work with different specific ‘touchpoints’ out in the city, which we in the situation repeated as one of the objectives of the course.

We also again reminded them to view their work in the different groups as a part of one shared service solution – again to emphasize the relationship between the whole and the coming parts they would be co-designing. Four groups were negotiated. When my colleague wrote down the topics and group members on a piece of paper, some re-framing of the topics happened too:

For example we suggested that the ‘Router’ group include ‘+the overall system’, which they accepted with some resistance. Again our intension was to emphasize our initial ideas of all their work being a part of a larger system and our assumption that it probably would be good with one of the teams working with more overall transportation-related topics.

I stop here, with some of our thoughts and intensions as teachers staging the students’ co-designing. Generally, this is a series of unique examples of co-designing with the materials of the co-design situation. All the students were training to become interactions designers, so of course it was not a very complex multidisciplinary setup like in the other Exemplars. Still, we were all stakeholders in these examples too; we all had a stake in what happened and what came out of the work. And, a characteristic in these examples as well as in the other Exemplars is, that some were quite explicitly staging how to collaborate – assisted by various verbal and tangible materials – in this case largely by my colleague and me as the responsible teachers of the course.

Additions from Schön's views of Designing – to Co-designing

Exemplar 02/
Part A / Introduction
Exemplar 01

In this Chapter 1, so far I have dissected Schön's sentences to capture characteristics of both designing and of co-designing. Yet, initially exemplified with Exemplar 02 in the Part A / Introduction, and further with reflections on our roles as tutors quite explicitly staging for co-designing in Exemplar 01, I have now captured various details of the differences from Schön's views of designing, to what I will explore as characteristics of co-designing. In the following section I outline four core issues, which I will further explore throughout this thesis. They are:

Four core issues of co-designing that Schön cannot explain alone

First, Quist and Petra are two people and various materials participating in the architectural tutoring-situation, but Schön does not really explore this as a situation of co-designing – and I do not really consider it to be so either. In other words, he does not really explore how this is not just a material, but a planned and quite staged, socio-material situated practice. As the other students in the class, Petra is working on the project of designing a school on her own, and then she engages with her Master, Quist in a tutoring situation – as I was designing my proposal of a postal car. Yet, as Schön also states through his virtuous performance, Quist does not open up for a conversation with Petra about his moves and judgments. Quist acts as a master demonstrating his practice to Petra, and the conversation he has with the situation is more among him, the problems she poses, the drawings she shows him and the drawing he creates, than between the two of them. More generally, Schön only briefly addresses how designing often is participation, collaborative and largely interactive, as many others have critiqued about his work.

Exemplar 01 Exemplar 01 shows, in the situation even when many people are present and participating in the same physical place, at the same time, with the same brief, and with the same palette of tangible materials, many processes (of exploring, materializing and negotiating) are happening in parallel, and not every co-designer can possibly know everything that is going on. Continually, there are needs for verbally – and materially – expressing and negotiating what is what and why. Additionally, to encourage transforming in co-designing projects and at an event, some are often explicitly pre-designing plans for and staging the collaborative interactions (as my colleague and me in the roles of tutors were doing).

In the remaining chapters of this Part A, I start to explore co-designing as socio-material practice and how staging is central in co-designing within co-design projects. In other words, relationships between plans and what actually happens in quite explicitly staged 'co-design situations'.

Second, Schön emphasizes how materials are an integral part of the (co-) design situation, and he proposes a broad understanding of material to both encompass tangible materials and 'talk' – all of which I acknowledge;

but he does not go much into the details of the diversities of participating tangible materials and how their meanings are negotiated in co-designing (co-designing = materializing). For example, in his example from psychotherapy, Schön considers the materials in the situation as the stories told about a previous consultation with a patient. He views ‘talk’ as a material in the situation, so he does apply what could be seen as a broad view of materials. Yet, in the architectural example, he characterizes the traditional medias – or materials – in the design situation, with which architects engage in reflective conversations, as mainly being sketchpads and scale models.

From my own training as an architectural student and as shown in the initial example of me designing a postal car, these were essential medias or materials engaged in my work. However, specifically, sketchpads are not very convenient when more than a few people are collaborating, and as a lot of co-designers are not very comfortable with drawing, I have not found them very useful in fostering co-designing. Therefore, in the various Exemplars throughout the thesis I am exemplifying and exploring other tangible materials formatted to support co-designing exactly.

For example, Exemplar 01 shows that in the situation, co-designers are engaging in processes of *materializing*, negotiating the meaning of the (tangible) materials, reaching *materialized* states, reframing and *rematerializing* issues, agreeing to collaboratively ‘open’ or ‘de-frost’ something previously *materialized* or ‘hardened’, etc. Also, more generally, Schön does not go into so much detail with the different ‘roles’ and relations among various (tangible and talking) materials in processes of *materializing* in the unique situation. He does not really consider the assemblage of materials participating in co-design situations and engaging in staging – and what I come to call *formatting* – co-designing. Thus, in the remaining of this Part A, I start to explore this and especially in Part B, I will add and explore various other Exemplars and theoretical perspectives for broadly understanding and exploring processes of co-designing as *materializing* with people and materials in the co-design situation.

Exemplar 01
Chapters 2, 3, 5, 6

Chapter 6
Part B

Third, Quist and Petra are two people. Various drawings and a lot of talking are involved as materials in the architectural situation; but he does not really go into the larger relations and networks of other people and materials within and across the larger project set up and institutional context (co-designing = relating). Schön very briefly explains the educational context of the example with Petra and Quist, but otherwise he only focus on the details of the situation.

As I have already shown and acknowledged, this work has surely added to an understanding of (co-) design practice, yet no situation happens in isolation, so also understanding the communities of practice and the larger networks and relations that it is embedded within, also adds to an understanding of co-designing. In Chapter 3 of this Part A, I further explore organizational issues and management or rather cultivating or staging issues of co-designing. In Part B I add and explore various other theoretical

Exemplar 03
Part B

perspectives for understanding the unstable or continual transforming relations of both people and materials in co-design projects, events and co-design situations.

- Exemplar 01 **Fourth**, Schön briefly describes the setting of the project Quest has formulated for Petra (and the other students) to do, but he does not really explore the overall performative structures, rituals and staging of the tutoring-situation in which Petra and Quist are participating and performing (co-designing as performing). At the table with Petra, implicitly Quist demonstrates his architectural skills in a masterly way by asking her questions and sketching himself, and he intertwines comments about the practice of designing. But apparently to Petra it is challenging to distinguish what is what. As described, in Exemplar 01 the co-teacher and I had been carefully planning the project brief and the detailed staging of the situations of co-designing that the students engaged in – and these structures were explicitly explained to the students at the beginning and throughout the situation. These plans or intensions were staged with an assemblage of materials, but of course, as I will discuss in Chapter 3 of this Part A, these plans were not like the actual situated actions, but they were explicit resources and actors of the situation in which everyone were performing. In
- Exemplar 03 Part C I will add and explore various other theoretical perspectives for understanding in more detail the practices of staging and performing with materials in co-design projects, events and situations.

Summary / Chapter 1

- Part A / Introduction To repeat from the Part A/ Introduction, my focus in this thesis is not particularly the outcomes, but much more concentrated on understanding processes and practices of co-designing and to be able to eventually make suggestions for future staging of co-designing (drawn together in Part D).
- Part D Through dissecting Donald Schön's views of 'design' and 'designing' (from 1983 and 1992), in this Chapter 1, I have captured many (still relevant) characteristics of designing – and co-designing. Yet, especially with discussions of Exemplars 01 and 02, I have also exemplified and identified four core issues of co-designing that Schön cannot explain alone. These I explore throughout the thesis, but first, to repeat from above, to better fit with co-designing, I propose to modify Schön's sentence to:
- Exemplars 01, 02

Co-Designing as reflective conversation with the materials of the co-design situation.

Chapter 2 / Participatory Design, Communities of Practice & Materiality

Further positioning this thesis

To me, *co-designing* is simply another word for Participatory Design (PD), and I consider this thesis to be closely related to the research field of PD – as I positioned my work in Positions & Approaches. One of the characteristics of co-designing that Schön did not address very thoroughly is exactly the participatory nature of (designing and) co-designing. Since the late 1970s, this has been explored and researched within PD.

P&A
Chapter 1

In this chapter, with Jane Lave and Etienne Wenger's concept of 'communities of practice' as 'participation and reification', Eva Brandt's work on relating this to co-design projects and 'events', Pelle Ehn's concept of 'intertwining language and design games', Susan Leigh Star's views of 'boundary objects', Thomas Binder's proposal of viewing co-design projects as 'design laboratories', Erling Björgvinsson's extensions to understanding processes of reifying as 'hardened' and 'defrosting', and several others, I will further position my understanding of participation and materiality in co-designing.

I first present a brief historical account of PD (Box). Then I discuss co-design projects as platforms for stakeholders from different communities of practice to meet and merge, various views on PD processes, workshops/co-design events, roles of facilitation or rather staging, different examples of hands-on ways of staging PD processes, views on methods, tools and techniques, processes of hardened and defrosting reifications, and lastly, different well-established and emerging views of representations, objects, things, materials and materiality within the field of PD.

Participation and reification in communities of practice

For understanding participation and explaining co-designing practices, many PD researchers have related to the concept of 'communities of practice' (CoP), and throughout this chapter I will relate to this work too (Lave and Wenger, 1991 / Wenger, 1998).

Box:

Brief historical positioning of participatory design

The first participatory design (PD) projects emerged toward the end of the 1970s. In projects such as 'Utopia' and 'Demos', systems designers and researchers like Morten Kyng and Pelle Ehn worked closely with professional typographers to develop new IT-systems for their work on newspaper editing and printing practices (Bjerknes et al. 1987 / Ehn, 1988). In addition to developing the actual systems, these projects had a clear political agenda to promote democracy at the workplace, inspired by pioneering work on computers and local trade unions by Kristen Nygaard (e.g. Nygaard and Bergo, 1975). The projects were set up so the workers would be heard and involved in the processes of developing their future workplaces, instead of their managers making top-down decisions on their behalf, which was usual practice at that time.

In the coming years, similar projects followed. In Scandinavia, these kinds of projects were coined 'cooperative design' / the 'Scandinavian' tradition of participatory design (PD). In the US, a few researchers worked in similar ways, e.g. at Xerox Parc, and here the new design practice came to be known as 'participatory design' (e.g. Suchman, 1987).

Core publications and conference

Written by authors from both continents and from research areas of software design, anthropology and computer-supported collaborative work (CSCW), the still widely referred to *Design at Work – Cooperative Design of Computer Systems* (Greenbaum and Kyng, 1991), became the classic PD book, explaining the approach as a situated design practice of doing in action.

The first conference on this new approach, held in 1988, was entitled 'Participatory Design Conference.' Also in Scandinavia, PD soon became the most widely used term to capture a collaborative – or co-design – approach to design. The main papers of the first conference were later gathered in the also widely referenced book *Participatory design – Principles and Practices* (Schuler and Namioka, 1993), also assisting in establishing the field. The book *Bringing Design to Software* argued for human-centered design and participatory design approaches to software design – something that has also influenced this field of PD, interaction design and Human-Computer Interaction (HCI) (Winograd, 1996). Since then, a few other books have been published, and three different journals have published special issues on participatory design (e.g. Bødker et al, 2004 / CoDesign, 2008).

Appendix 05

Appendix 02

The book reporting on the DAIM-project, *Rehearsing the Future*, also closely relates to PD (Halse et al, 2010), as well as *Design Things* with examples from the Atelier project (Binder et al. 2011). A new anthol-

ogy with a collection of perspectives by authors who have followed the field for years is in the pipeline too (Simonsen & Robertson, forthcoming). Otherwise, the main research is found in the various conference proceedings (e.g. PDC Proceedings 2008 / 2010).

Application domains and the multidisciplinary character of the field

Initially, PD was applied and developed within IT/systems-design research projects, and research-wise the field is still closely related to this, but during the last decade the use of PD has expanded to a diversity of areas and domains, including home and leisure, kid's learning, public and urban development, artistic work, etc.

Still, PD has been accused of focusing mainly on issues relevant to academic research rather than business interests, but this is changing too. For example, in Denmark the aim of the research center 'Participatory Innovation' is precisely to merge PD with business contexts and interests (funded by the Danish Enterprise and Construction Authority / the program 'user-driven innovation' / 2008-2013).

Practically, this is done through collaboration among various disciplines and research areas such as participatory design, business management, design-anthropology and interaction analysis. The first Participatory Innovation Conference (PINC) was held in January 2011, and was a truly multidisciplinary conference, seeking to address the challenges of this (e)merging field closely related to PD.

Communities of practice is generally a concept or theory of learning.⁵⁰

Wenger et al. describe CoP as '...groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis' (Wenger et al, 2002:4). CoP also creates a sense of belonging and confidence among its members. It creates a common identity and can create a spirit of inquiry. It fosters both tacit or intangible and explicit or tangible knowledge (ibid:5, 15). Inspired by the idea of CoP, Gerhard Fischer has coined the related concept 'Communities of Interest (CoIs)' (Fischer, 2001). Together, these clearly captured characteristics of co-design projects include people with different professional practices who establish and interact in the shared project, typically because of shared interests in the topic in focus.

Appendices
01-05, 08

⁵⁰ The concept and theory of CoP has largely developed in opposition to only considering learning as something individual, something that happens in the classroom and away from real-world situations – which Wenger claims has been the dominant view of learning in the Western world. Instead, with the concept of CoP, Wenger and his co-authors exemplifies and argues that learning is a social, embodied practice, that learning takes place everywhere, and that learning and knowing is not a static thing that can be effectively managed, but rather is a social and dynamic process referred to as learning in doing. Today CoP is a quite established concept for speaking about communities of shared interests and knowledge processes in organizations.

Further, Wenger claims that tangibly CoP ‘may create tools, standards, generic designs, manuals, and other documents – or they may simply develop a tacit understanding that they share’ (Wenger et al., 2002:5,9). This leads to one of the main characteristics of CoP: it is viewed as an intertwining relationship and inseparable pair of ‘participation and reification’ (Wenger, 1998:e.g. 63,105).

Participation is viewed as ‘actors who are members of social communities’ (ibid:55-56), and as people who engage with their body, mind, emotions and social relations. Additionally, to Wenger, participation refers ‘not only just to local events of engagement in certain activities with certain people, but to a more encompassing process of being active participants in the practices of social communities and the construction of identities in relation to these communities’ (ibid:4).⁵¹

Reification or processes of reifying is viewed as ‘making into a thing’, and as ‘...giving form to our experiences by producing objects’, which also is considered an integral part of any practice (ibid:58-60). As Wenger exemplifies, very practically reifications can take a variety of forms – for example; signatures on credit card slips, gourmet recipes, medical procedures, meeting minutes, evening news, national archives, lesson plans, text books, private address lists, sophisticated databases, small logos, huge info processing systems, formulas, a truck, a statue in a public square, etc. Additionally, he claims that abstractions like democracy, economy, gravity, etc. become concrete with the reifications made to deal with them – like drawings, technical prototypes, signed manifest documents, charts, communication and visualizations of good examples, etc.

At the Rehab Future Lab event, we were at an overall level dealing with abstractions of ‘surgical rehabilitation’, ‘explicit interaction’ and ‘palpable computing’, yet the main reifications (printouts of the agenda, copies of pre-designed paper scenarios and hard-foam mock-ups) brought to the table and participating in the situated co-designing practice made this (more) concrete.⁵²

.....

⁵¹ Even though I, in this thesis, mainly focus on the situated practice of co-design events and situations where stakeholders physically meet, I clearly acknowledge Wenger et al.’s broader understanding and use of ‘participation’ emphasizing that participation of course also encompasses active participation in the community – e.g. in the project, network and in between events (further – Chapter 4).

⁵² Reifications in various ways relate to the idea of ‘touchpoints’ in service design, which roughly are all the points a ‘user’ interacts with in the interaction with a service (P&A). With a service design perspective, when coming for a weekly consultancy at the hand-surgery rehabilitation ward, a patient gets in contact with: the sign in the elevator indicating it is on the 5th floor, the waiting room, the cashier checking the consultancy has been pre-paid, a band aid, the table and workplace of the physiotherapist or occupational therapist, a triangular pillow on the table, different exercise training tools, A4 instruction sheets – being annotated during the consultancy, a little appointment card – being annotated with the time and date of the next consultation, etc. Thus, a touchpoint can be the often physical materializations also viewed as points assisting providers in providing the (in this case – rehabilitation) service. All these touchpoints or reifications are a part of the rehabilitation practice and the interactions between the patient and staff while providing and experiencing the service.

Generally, Wenger further claims that reifications are viewed as ‘projections of meaning into the world, projections that then get their own existence or have their own reality in the world’ (Wenger, 1998:58), and that their character as reifications not only is in their form, but also ‘in the processes of practices that they are integrated in’ – again intertwining with participation (ibid:61).

Lave and Wenger’s initial concept of legitimate peripheral participation captures how people participate differently in CoP (Lave and Wenger, 1991:5). Additionally, CoP are everywhere; some CoP are informal and without a name, others are more formalized and have a name, like financed co-design (research) projects (Wenger et al, 2002:5). ‘Newcomers’, wishing to enter are initially in the periphery of CoP – and who will have to relate to and learn the skills and knowledge of the community – through learning the processes of reifying from the ‘oldtimers’. Of course it is observed too, that this does not always happen without tensions, as the ‘newcomers’ might enter with other interests and viewpoints – possibly with wishes of questioning and challenging the current processes of reifying. Yet, generally, if participants in a CoP meet regularly, Wenger claims, that ‘over time, they develop a unique perspective on their topic as well as a body of common knowledge, practices, and approaches’ (Wenger et al, 2002:5).

Eva Brandt (2001) has related this view of CoP to co-design projects, and has recognized how new people continually meet and have to collaborate in and throughout a distributed co-design project. One relation she has found is when designers and others initially enter a current workplace and meet the *old-timer* professionals there, they do so to understand the field in focus of the shared project. Yet, as (co-) design projects are basically about change, Brandt also found that the ‘questions, comments or suggestions from newcomers made the old timers reflect on their ways of working, which at times resulted in new understanding’ (ibid:155).

Much, as in the PalCom project, where suggestions by the researchers to engage mixed-media technologies in the patient and staff interactions, made the staff realize how much of what they currently explained during a consultancy, the patient actually missed when training at home.

Appendix 03
Exemplar 02

Additionally, Brandt found that workshops – or co-design events (see below) – in such projects, are where the participants or stakeholders (and ‘oldtimers’) from different CoP interact, but in a sense all as ‘newcomers’. Thus with a project, a new CoP is or can be established, as ‘there are no old timers with knowledge of this specific design context’, as Brandt phrases it (ibid:152). Everyone is new to this unique design context, but everyone also brings previous experiences and different views into the project.

With the concept of CoP and how Brandt has applied it for understanding organizational structures of participation in co-designing, I now view co-design projects as platforms for people initially from different CoP to meet, align, interact and address shared areas of interest, to possibly merge into a shared project CoP. Further, with these views, it is also recog-

nized that co-design projects are changing as new people (and materials) are continually entering and leaving and that different views of what is valid knowledge and practice can cause tensions.

Other conceptual views of materials commonly used in PD research

Developed around the same time as Lave and Wenger's initial concept of CoP, the concepts of *intertwining language and design games* and *boundary objects* were also published. These concepts, which were quickly and significantly recognized in PD research, also form a part of my basis for understanding how materiality is intertwining in co-designing practices.

Pelle Ehn coined intertwining 'language and design games'. In his *Work-Oriented Design of Computer Artefacts* (1988), he applies Ludwig Wittgenstein's ideas of language, interaction and communication as 'language games' in use as a way of understanding cooperative or participatory design processes as 'intertwining design games'. He views language games as social activities. He also views languaging to participate in various intertwined language/design games. Participation in these games largely happens because there is a 'family resemblance' with other language games, in everyday life as well as in professional practices (ibid:105-106). Participation also includes following rules – not necessarily 'explicit regulative rules', but 'the fundamental rule of being able to play together with others' (ibid:106).

Further, Ehn views 'design artefacts' as not only material but also social, and as 'reminders' and 'paradigm cases' of both past experiences and possible future ones (ibid:107-110). He claims that 'if the design artefacts are good, it is because they help users and designers to see new aspects of an already well-known practice' (ibid:113). In other words, 'If they are good design artefacts, they support good moves within specific design-language-games (ibid:110). In practice, in the UTOPIA and DEMOS projects, as will be described below, these views were translated into practice by staging design-by-doing and design-by-playing by the designers as 'design games' to set the stage in the situation for cooperative or participatory design work (with some explicit rules and engaged artefacts like mock-ups) (ibid:Chapters 12 and 13 / Ehn and Sjöberg, 1991 / Ehn and Kyng, 1991).

Further, this was related to the concept of creativity, which is understood as the ability to follow rules in appropriate but unforeseen ways in situated language / design games, thus providing openings for design-views that have been revisited and reemphasized in *Design Things*, which Ehn has co-authored (Binder et al., 2011:163). Another important point is refreshed too, that 'requirements for a good design device and good moves in a design game are not shared understandings among all participants, but just that those moves make sense (though in different ways) to all participants' (ibid:165).

Susan Leigh Star's concept of 'boundary objects' (1989) is another classic way of understanding how objects are intertwined in practice and design work. Generally, her argument is that these objects work as shared reference points among participants of various interests and disciplinary

backgrounds. She emphasizes that ‘boundary objects’ are not understood or seen in the same way by these different stakeholders or people, but that they still have so much resemblance that they bind a project or community together. This concept was introduced in relation to research on Artificial Intelligence, but is widely referenced in PD research by Brandt, Ehn, Binder and many others.

It has also inspired Wenger, who acknowledges that CoP are not isolated; members of a CoP have relations also outside organizations and establish relations across different CoP. Additionally, CoP have more or less clear boundaries, and both people and things can help make transitions between and within communities of practice. Related to this, when participants are members of several CoP, they can work as ‘brokers’ among them (Wenger, 1998:105, 108-110). Likewise, with a reference to Susan Leigh Star, Wenger also argues that things or artefacts can work as what he also calls ‘boundary objects’ both between participants in the same and in different CoP (ibid:105-108).

At the Rehab Future Lab event, from within the same organization, it was only two people of the current main team of four interaction design researchers from the local university, who were staging the event at the hospital. One of the other colleagues at the university had been doing the tangible hard-foam mockups (additions to the Exemplar), but he did not participate in this shared experience of exploring with them and discussing their integration in practice. So, along with the future scenarios and the mock-ups, the list of insights collaboratively annotated at the end of Day 1, images and videos of roleplaying with the mockups and personal notes, assisted the two organizers in later communicating and transporting the insights and experiences to the colleagues back at the university. This transfer was important for them to be able to collaboratively engage in the further development of the ‘vertical’, technical prototype.

Exemplar 02 / List

Exemplar 02 /
circle 07

Exemplar 02 /
Afterwards

Still, one of the challenges of boundaries, Wenger describes this way: Crossing boundaries between practices expose our experiences to different forms of engagement, different enterprises with different definitions of what matters, and different repertoires – where even elements that have the same form (e.g. the same word or artifact) is understood differently. By creating tension between experience and competence, crossing boundaries is a process by which learning is potentially enhanced, and potentially impaired (Wenger, 1998:140).

To summarize, with these various concepts, it is clear why methodological discussions of which hands-on processes to apply and which materials to engage, often arise in co-designing projects, and at the table in the group-work co-design situation when multi-disciplinary stakeholders get together to co-design. Thus, co-designing does not always happen naturally, but needs staging, as I will discuss further below.

Iterative PD project and approach as ‘design laboratories’

From a quite different angle, not particularly with a focus on (speaking

about) materiality, central in PD research is also an understanding of how co-design project processes are understood and carried out.

Rather than phased waterfall or linear process models, (still) classic in traditional design, PD commonly views processes as iterative (e.g. Floyd, 1984). Phased models roughly capture the following overall process: first doing fieldwork/desktop research, then idea-generation, then conceptualization, possibly some evaluation and then implementation. With iterative process models generally it is recognized that this should happen in shorter repeated cycles, to build upon previous cycles.

Appendices
01, 02, 03, 04, 05

Yet, generally, despite the cycles or loops, such ideal models also typically include repeated phases (roughly as listed above). However, in all the co-design projects I have been engaged in, we have not worked in such structured ways, and a more correct illustration would perhaps be the ‘fuzzy front end’ of Liz Sanders and Stappers’ process model (2008:3) (Figure 8a) and the middle part of Bill Moggridge’s process model (2007:730) (Figure 8b).

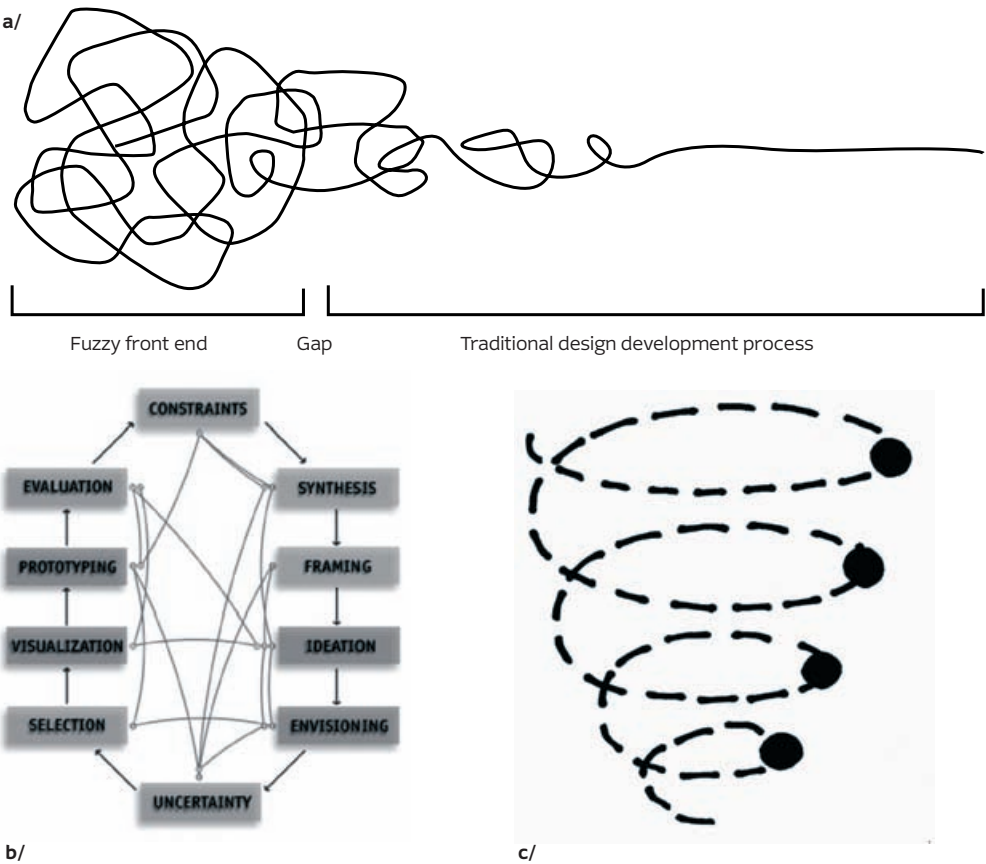


Figure 8/ a/ The fussy-front end of (co-) design processes as illustrated by Sanders and Stappers (especially left side of the model) (2008). b/ The middle numbered lines as an example of the real design process at IDEO as illustrated by Bill Moggridge (2007). c/ Iterative, event-driven process organized around ‘customer/‘user’ workshops’ in a spiral loop as illustrated by Eva Brandt (2001). / Reprinted with permission from the authors.

In the PalCom project, in the different ‘work-packages’, we would work on various issues and do so from various angles in parallel. Similarly, in the Atelier project it turned out that the project exhibition at the yearly, public European project-reviews was very important for aligning the parallel work happening in different countries. Processes can be illustrated in so many ways. I have especially found Eva Brandt’s loop-iterative process model useful insofar as it emphasizes the importance of events (2001:219-222) (Figure 8c).

Strongly building upon ideas of CoP, Thomas Binder suggests viewing (PD) projects (or communities and networks) as *design laboratories* to emphasize an explorative and experimental approach, arguing that all activities and events in a project laboratory should be considered as explorative and connected (Binder et al. 2008 / 2009 / 2010). Tied to this, in *Design Things*, a project is viewed as a temporary ‘alignment of resources’ (human and non-human – Chapter 4) (Binder et al. 2011:158). Thus, when a co-design project is (named and economically) established, the multi-disciplinary participants or stakeholders (participation) are temporarily aligned too.⁵³

These views of PD processes, emphasizing an explorative and experimental practice and viewing a project as an alignment of resources (human and non-human), as the characteristics of openness to ‘fuzzy-front-end’ collaboration combined with structuring the process around ‘workshops’ or co-design events (see further below), I all surely acknowledge. These are some of the core characteristics that make me suggest to view PD as an approach.

Adding to these recommendations, one of the practice-oriented suggestions I have already made, largely building upon collaborative work with Binder and Brandt in the XLab project is to approach and organize co-design (research) projects with a programmatic experimental approach. For example, shared experiments will create shared experiences to collaboratively build upon, and a shared (yet evolving) project program will not tightly structure and manage what to do in a project, but will establish a shared reference about the main topics and some agreement about how to practically work with those.

Views of workshops or ‘co-design events’ in PD projects and processes
Related to views of iterative processes and to my brief discussion of method versus approach, within PD there also seems to be different views of what ‘workshops’ – or ‘co-design events’ – are and should be. To many researchers and designers (also relating to PD), the ‘participatory design workshop’ is considered an applied method to be used along with other applied methods, such as ethnographic fieldwork, using personas, and making a prototype. They use the term ‘participatory workshop’ to capture how ‘users’ and possibly also other stakeholders are invited in to participate once

.....
⁵³ Not to navigate too many theoretical concepts, I neither use the term design laboratory nor design thing about a project in this thesis. I acknowledge and relate to the characteristics these terms capture, but stick to the more commonly used term, co-design project.

or several times in an otherwise design team-led process (e.g. Proceeding of PDC 2008 / 2010).

Foreword: Program This, however, is not the practice I am exploring in my thesis. Instead, as stated in the Foreword: Program, my understanding of workshops is closer to that of Eva Brandt. To briefly repeat, closely related to the ‘design laboratory’ understanding of projects, Eva Brandt has argued for an understanding of workshops as events in event-driven development/ PD processes, in which a series of events tie the project or laboratory together (Brandt, 2001 / Binder et al. 2008 / 2009). When concluding the DAIM project, Eva Brandt and I recently reviewed the point about *Co-design Events* as important in co-design projects (Brandt and Eriksen, 2010a). My views in this thesis are similar.⁵⁴

Foreword: Program As emphasized in the Program: Foreword some of the co-design events exemplified in this thesis ‘end users’ were not physically present, as I have found Exemplars 01, 03, 04 that events only with multidisciplinary teams, in terms of materiality, in many ways address the same issues as when ‘user’-stakeholders participate.

With and without ‘users’ present, practically, how to stage co-designing at such events continues to be a challenge – which continues to motivate me to explore this. With my focus on aiming to understanding *material matters* in co-designing and the *materials* of the co-designer, throughout this thesis I explore, draw together and suggest various issues and challenges to be aware of when practically doing this.

Foreword: Program Further, as also stated in the Foreword: Program, with the purpose of understanding what actually happens when co-designing at co-design events, based on a recommendation in *Design at Work* (Bødker et al., 1991:147 – see below) and my analysis of the various Exemplars, I argue All Exemplars that we do not act, perform or co-design in an event but in the situation or Chapters 1, 3, 6, 8 quite explicitly staged *co-design situation* during a co-design event.

Facilitation – or staging – of participation is central in PD processes

In situated event-driven PD processes some(one) organize, facilitate or stage participation. In *Design at Work*, Bødker et al. (1991) discussed the changing roles of designers participating in co-designing. In the chapter *Setting the stage for design as action*, they described this change:

Because this way of designing is new to us as designers, we may often be in situations where the best path leads away from what is most familiar to us; (...) This obviously creates trouble for those who dislike uncertainty. But there is no simple way out (...) If we stick to our old well-known and “secure” design practices, we as designers end up like those caricatures of users who resist to change (ibid:147).

.....

⁵⁴ Instead of the commonly used word ‘workshop’ throughout this thesis I use the phrase ‘co-design event’. Yet, they are considered the same: establishing an explorative work mode different from a classic meeting with main material as words and talk (P&A, Parts B and C).

Generally, despite their use of the words tools and techniques, I also still find their recommendation relevant:

We advice readers [or event organizers] to pay attention to the situations in which design is taking place, and to modify, develop, and apply those tools and techniques that seem most appropriate (ibid:147).

Part B / Introduction

Even though this book was published more than 20 years ago, the changing roles of designers and the challenges of changing to co-designing practices are still highly relevant and continually discussed in design communities. To refresh, as captured in one of my questions in the Foreword: Program, this work is intended to suggest core ‘materials’ and roles of co-designers.

P&A

Foreword: Program

Again, co-design projects and practices have many similarities, with less time-constrained and formally described CoP, one being that they need ‘cultivating’ and ‘nourishing’, rather than tight managing with a focus on effort, focus and efficiency, as Wenger et al. argue (Wenger et al., 2002:e.g. 12-13,185). Wenger and his co-authors suggest cultivating by designing specific systems, procedures, politics, institutionalizations, roles, visions, product affordance, work processes, etc, while at the same time incorporating passion, trust and instinct as well as engagement, imagination and alignment (ibid:185,237). As discussed above, reifications or more generally materiality is too an integral part of ‘cultivating’ or ‘staging’.⁵⁵

Related to this, part of setting the stage is to acknowledge the power relations among groups/stakeholders with different resources, practices and interests, Bødker et al. also discuss and further argue that designers should engage with an open mind. Additionally, that setting the stage should support involvement (ibid:147). This role is still being discussed: if designers then only are facilitators of participation, if they should apply their professional design judgment and skills e.g. of visualization and ‘drawing together’ and basically if the title ‘facilitator’ is the right word.⁵⁶

Despite the title, there is a lot of (material) power or responsibility in the role of *event organizers*, so how should this role be navigated and how practically can the stage be set for participation and involvement? This is what is important to me and what I explore, draw together and suggest throughout this thesis.

Materials at co-design events are different from classic design processes
A comment at a co-design event could easily be: *“Oh no, I am not good at this, I cannot draw this... – can’t you do it!?”*

.....

⁵⁵ Again not to juggle too many different terms, I neither use ‘cultivating’ and ‘nourishing’ very much throughout the thesis, but continue with the well-established phrase of staging in PD, and especially in Part B I intertwine staging with the phrase and practice of ‘formatting’. Yet, the characteristics of ‘cultivating’ I also view as important for co-designing.

⁵⁶ In my opinion, designers should continue to be professionals in their domain, but with empathy and interest in engaging and co-designing with others and changing one’s standpoint in the collaboration. However, I will refrain from going further into this discussion, but will emphasize that I do not use the term facilitator but instead refer to ‘event organizer(s)’ staging and formatting co-designing.

Buxton speaks about many ways of sketching (Buxton, 2007), which surely is a good source of inspiration also for staging co-designing; but if there are no other materials available in a co-design situation than pen, paper and words, this could easily be a comment to a traditionally trained designer (with sketching and materialization skills). Sketching and drawing on paper and computers are classic ways of visualizing, which most (classic) designers are trained in doing. Yet, in co-design teams not everyone will be trained in these ways of working, making collaborative work a challenge. If traditionally trained designers are the only ones who visualize both what they think and say themselves, as well as their interpretations of what others think and say, then it is a different kind of co-designing from the kind we have aimed at staging in the different exemplary events presented in this thesis.

In *Design at Work*, Pelle Ehn and Dan Sjögren describe a different but related experience with pre-designed materials by the designers – system descriptions. They write:

As system designers we are familiar with making and using system descriptions (...) This was our approach in the initial analysis and design work in the UTOPIA project. (...) As design experts we tried to capture the participating typographer's views of work organization and technology (...) At first we thought that we were very successful with our many system descriptions. As designers we quite liked the systems we were designing, and we thought that the typographers were pleased with the descriptions as well. There came a day, however, that put an end to this idyllic form of designer-user cooperation. This was the day when we found out that the system descriptions only made sense to us, (...) The only sense our system descriptions made to the participating typographers was that they were made by us, that is, their own experts. There was no co-design going on. (Ehn and Sjögren, 1991:247-248).

Systems descriptions might be useful also in co-designing, but to follow Bødker et al.'s recommendation above, participating with an open mind and setting the stage – or staging – for involvement, does not necessarily mean to pre-design the proposals for solutions and bring these to a co-design event, as Ehn and Sjögren had done. In the remaining sections of their paper, they exemplify and discuss how they instead started working with 'design games' – in that case called 'Organizational Kit' for co-designing or reconstructing an understanding of reality for the publishers (ibid:250) (Ehn, 1988).

To summarize, closely related to this, as I argue through this thesis, some of the important skills and materials of co-designers, participating in setting the stage or staging and formatting for co-designing, is rather pre-designing proposals for solutions to pre-design formats of collaboration encouraging involvement and participation e.g. at co-design events.

Many PD 'techniques' and 'methods' for practically co-designing – at co-design events

Intertwined in the research on participation, for practically staging co-designing, within PD, many techniques, methods or tools, as they are often called, have been developed. First, there are a few by now classic examples

from *Design at Work*, many of which are still being used (Greenbaum and Kyng, 1991): Examples include collaboratively generating visions during ‘future workshops’ (Kensing and Madsen, 1991); through cooperative prototyping (Bødker and Grønbæk, 1991), by working with ‘design games’ (Ehn and Sjögren, 1991), and (inspired by industrial design practices) mocking up the future with cardboard mock-ups (Ehn and Kyng, 1991). Today, most of these have also become well-established ways of working within interaction design. However, these ways of co-designing with participating materials mainly deal with making, acting and materializing concrete prototypes and proposals of future artefacts, systems and practices.

Liz Sanders was one of the influential co-design researchers starting to focus on engaging materials for establishing dialogues on other design-related issues than only on sharing proposals of future solutions (Sanders, 1999). Reflecting a growing attention to user-centered and experience design, to access experiences and establish empathy, she emphasized understanding what people SAY/DO/MAKE (ibid:4). Say, related to already established market research practices of interviewing people; Do, related to the increasing acknowledgement of anthropologically inspired practices in commercial design bureaus of also observing what people do in their daily lives; Make, she proposed as new, often very hands-on ‘Make-tools’ also for accessing people’s dreams, wishes, etc. She has explored and published widely on these also as ‘generativ design research’.⁵⁷

P&A

In my experience, combined with say and do, Make-tools is not only a good approach to understanding people’s often unspoken dreams and wishes, but also presents a very hands-on material to work with, not only in dialogues with ‘users’ but more generally in co-design processes among different stakeholders. Insofar as I consider materials for making as participating rather than as tools, I have not used the term ‘make-tools’ to express the ways of co-designing that I have (co-) organized, but the idea of collaboratively making - or quite explicitly staged *materializing* - has been and still is fundamental in my approach to *staging* and *formatting* for engaging with others in co-designing.

Part B / Introduction /
Chapters 5, 6, 9

Increasingly over the last decade, many other ways of co-designing through making have also been developed and applied in PD projects. This includes engaging material ‘probes’ for inspiration in design-oriented dialogues with ‘users’ (Gaver et al., 1999 / Mattelmäki, 2006); continuing to stage participation with tangible ‘design games’ for various purposes (e.g. Brandt, 2006); pre-designing ‘critical design artefacts’ explicitly staged to spark questions and move perspectives (Bowen, 2009); and lately introducing ‘tangible business models’ as a part of creating and capturing business value in participatory innovation projects (Mitchell and Buur, 2010 / Buur and Mitchell, 2011).

Although not from PD, other sources of inspiration in my work have been ‘Lego Serious Play’ for modeling business relations⁵⁸; processes of mak-

.....

⁵⁷ www.maketools.com

⁵⁸ www.seriousplay.com

ing small materializations during series of exercises, as material ways of exploring and expanding the conceptual design space of a project (Heape, 2007); and modeling landscapes, objects and characters with waste as the Danish children's TV host Shane Brox does to create large sceneries for telling stories (Brox, 2008).

Appendix 05 In the DAIM project, we also developed and recommended a number of examples, seeking to establish fruitful and engaging situations of co-designing, including co-designing small-scale and video-recorded 'Doll scenarios' (Halse et al. 2010:134-135); 'Fieldshops' as a way of merging fieldwork and co-designing in the same workshop or co-design event (ibid:200-201), and finally 'Landscape Games' (ibid:140-141) or simply 'Landscapes' – which I have explored and refined as a part of the PhD studies too.

e.g. Exemplars 01, 03

To summarize, together these examples show how working with hands-on (often non-digital) materials is an intertwining part of PD research and of co-designing practices⁵⁹. However, as I argue for participating materials in co-designing, I suggest not to view materials as just a part of a method, tool or technique. This is captured in diverging ways and terms of materials in PD.

Part B / Introduction

Diverging views and terms of materials in PD

There are (still) diverging views of materials in PD. Some see them as parts of tools, techniques and methods, and others, like me, as intertwining, socio-material parts of practice. As several tracks at each Participatory Design Conference indicate, within the PD community one of the main research areas is related to 'methods'. Of course, an important part of a field and community is at least to some extent to share and continually refine its methods or practical ways of working. However, my reason for briefly mentioning the various examples above is not to discuss different 'methods', but to further emphasize that reifying, making and materializing with materials is widely recognized as important in co-designing.⁶⁰

Chapter 3 / Part B Again, one of my arguments in this thesis is that materials are participating in the co-design project, events and situations. The above-mentioned *Design at Work* presents a similar view in the first part of the book entitled *Reflecting on Work Practice* (Greenbaum and Kyng, 1991). Eleanor Wynn (1991) argues for taking practice seriously and suggests both recog-

.....

⁵⁹ 'Digital materials' have also been participating in the staging of collaboration at events during the WorkSpace, Atelier and PalCom projects (Appendices 01, 02, 03 / e.g. Exemplar 06). However, as they need quite a lot of programming prior to an event, to work smoothly at the event, a lot of assumptions and plans about what will happen needs to be made beforehand, often making it challenging to appropriate the materials in the situation if needed. Therefore, over the years we have gone more and more back to paper-based materials at least in the fuzzy-front end of the projects (P&A, Part B / Introduction).

⁶⁰ Despite my own architectural and very material design practice, when starting to become a co-design researcher, with a focus on co-design methodology, I initially thought that primarily meant developing, sharing and mapping methods; however, as this thesis displays I have changed that view.

nizing: 'It is what the systems designers do at the designing job, and what the prospective users do at the jobs that, traditionally, the designer might transform...' (ibid : 46-47). Also one of the authors of *Design at Work*, Lucy Suchman's suggestion of understanding the richness an *artful integration* of people, artefacts and systems in everyday practice is also generally widely acknowledged (Suchman and Trigg, 1991 / Suchman, 1987/2007).

Chapter 3

Generally, within PD, viewing practice as socio-material and/or socio-technical is well established too. As shown by now, co-designing as socio-material practices have also been addressed research-wise, but not with the same level of detail as everyday practice. At least, when speaking about how participation is staged at co-design events, methods, tools and techniques are (still) very established terms, in many ways missing the socio-material view of our own co-designing practices. This thesis is exactly concerned with an understanding of the details of socio-material co-designing practices, especially at co-design events and situations.

Chapter 3 / Parts
A, B, C

Various other design researchers have explored and named materials in (co-)designing processes too. A couple of examples: Intertwined with practically staging design games, in line with others researching engineering practices, Eva Brandt uses the expression 'Things-to-think-with' (Brandt, 2001:223). Another example: Referring to the use of comparable, 'rapid prototyped' and more and more refined mock-ups and prototypes engaged in meetings among industrial designers and their clients, Jan Capjon introduces the term 'Material Catalysts' (Capjon, 2004). For example, Brandt's work builds largely upon the concepts, initially discussed in this chapter, of 'language and design games' (Ehn, 1988) and 'boundary objects' (Star, 1989).

In PD, the term 'representation' is often used, to describe the various objects, things, visualizations, materials 'coming out' of co-design situations. It is possibly the above-mentioned anthropologically inspired perspectives and approaches in PD that also have inspired the quite common use of the phrase representation in PD.

However, Bo Westerlund (2009) suggests quitting the use of the term arguing that representations represent something that is already here. Anthropological documentations aim to represent or document current practices, and as such, it is misleading to use the term about design work. In short, he claims that the stories told and the materializations made about possible futures are the best co-designers can do, at that time in a project, as there is nothing yet to represent. Instead, he suggests the term (co-designed) 'proposals', which then get more and more refined as the project moves on. Inspired by this argument, in this thesis I too suggest not to speak about representations when dealing with possible new futures, or even more generally in (co-) design processes. In Chapters 6 and 9, I rather speak about what is *materialized* and *rematerialized*.

Chapters 6, 9

To summarize, there are diverging views of materials and ways of speaking of materials in co-designing and in co-design / PD research. In this

subsection, with inspiration from Bo Westerlund I have agreed to refrain from using the phrase ‘representation’, and additionally I have argued started to argue for also viewing co-designing practices as socio-material situated practices in which materials are participating. This I will discuss much further in Part B.

‘Hardened’ and ‘de-frosting’ of reifications in co-designing

Another way of understanding and speaking about how non-humans participate in practice is Erling Björgvinsson’s *Socio-Material Mediations* (Björgvinsson, 2007). He too relates the concept of CoP, and has extended the understanding of reifications with his examples of two differently situated healthcare practices.⁶¹ Generally, he explores these examples as parts of proposing space and place-making as socio-material relations and learning as an integral part of practice. From his observations and interactions with the hospital professionals, he found that reifications and socio-material infrastructures needed to be ‘hardened’ or ‘frozen’ to become part of their practice. Yet, in their continually evolving hospital practice, he also discovered processes of reifications being ‘defrosted’ – their form and/or meaning was re-negotiated and possibly re-made. Important for understanding co-designing practices and processes of *materializing*, he also found that it was much easier for the people who had been engaged in producing a materialization, to re-open or ‘defrost’ it again.

In relation to designers and design practice, Björgvinsson further encourages designers to acknowledge how materiality is an ongoing process and how they carefully position themselves as well as the artefacts and technologies they make and introduce in this ongoing practice.

In my one-designer process of designing a postal car, exemplified in the Part A / Introduction, hardening and defrosting largely happened in a flowing, often quite implicit, process. I was continually day after day refining my previous sketches, developing new ones based on them, writing on top of them if I went back a few pages in my sketchbook, and adding to the full-scale mock-ups as I experienced something dysfunctional, etc.

With Björgvinsson’s examples, the practices of working with best practice-videos was continually evolving too among the people working at the emergency unit, but they also found a need for some of the processes to be more explicitly ‘hardened’ to actually become an integral part of their infrastructures, systems and practices, for example, by establishing a technical support team for producing technically good quality videos and a critique-team reviewing the quality of the contents of the video, etc. (Björgvinsson, 2007).

.....

⁶¹ The two hospital settings are an emergency unit and at a hand-surgery rehabilitation department (the same as described in Exemplar 02). He discusses examples of self-produced media, like best-practice-videos created in the environment by the healthcare personnel, him and other designers engaged in open-ended design processes. He argues that these work as mediators in the sharing of local, situated meaning, but also that they are defrosted if the staff (through practice) realizes that what was shown in a video no longer was considered ‘best practice’.

In the service design student project and process, this need for making explicit is also present. On the first day of the course, the students were *materializing* their first service project landscape, but we explicitly staged the process as tutors. At the end of the day, the landscape hardened and it stayed in the corner of the classroom for several weeks, until we too had to stage for the students to ‘defrost’ and re-make the landscape the second and third times this was done several weeks later. The *materialized* landscape was in a sense everyone’s property, and thus in a sense nobody’s property to just rework, until it was collaboratively agreed that it was time to ‘defrost’ and re-negotiate the issues and meanings it captured.

Exemplar 01
Chapter 6
Exemplar 01 /
circle 08

Likewise at the Rehab Future Lab, the stakeholders were intended to engage in a bit of de-frosting of the hard-foam mock-ups on the table ‘... through assessment and incremental improvements...’ as was stated in the previously emailed invitation.

Exemplar 02 / Email
with goals and
agenda

To summarize, the exemplary situations briefly discussed, captured the family resemblance and characteristic of co-designing including ‘hardened’ and ‘de-frosting’ of reifications as recognized by Erling Björgvinsson (2007). What I in Chapters 6 and 9 also suggest to call and understand as *materialized* and *re-materialized*. Yet, this characteristic I have seen across several projects, which continues to emphasize the need for quite explicit staging of co-designing.

Chapters 6, 9

Reestablishing and emerging broad views of materiality in PD

As mentioned, Lucy Suchman’s broad understanding of the socio-material richness of ‘situated action’ in which humans and machines artfully integrate and are different from ‘plans’ of action, has also greatly influenced views of materiality in PD. Still highly relevant, in her most recent book, *Human-Machine Reconfigurations – Plans and Situated Actions 2nd Edition*, she has re-published these arguments (Suchman, 2007).

Chapters 3, 4,

Lastly in *Design Things*, also building upon the theory of CoP and inspired by Bruno Latour’s views of ‘human and non-human relations’ and work of *Making Things Public* (Latour and Weibel, 2005); Thomas Binder, Pelle Ehn and several others explore ‘participation’ in designing by collaboratively extending the idea and understanding of ‘thing’, ‘thinging’ and ‘design things’ as socio-material assemblages (Binder et al., 2011). Largely based on insights from the Atelier project as mentioned, these authors suggest viewing a ‘project as a design thing’ as assemblage aligning resources (people, materials, technologies) (ibid:157-158) entangled design games as socio-material design things (ibid:165). Further, the evolving, transforming object of design (systems descriptions, models, sketches, maps, mock-ups, prototypes, etc.) is also viewed as socio-material public things during design processes engaged in structuring controversies (ibid: e.g.164,169) and the outcomes of a project as device and ‘design thing’ (not just of matter) but capturing matters of concern and possibilities of new experiences of design after design (ibid:156, 170).

Chapter 4

Appendix 02

P&A

‘Design things’ is a quite new concept, still not as widely recognized as ‘participation and reification’, ‘language and design games’, ‘boundary objects’

and ‘socio-material situated actions’, which all greatly have influenced views of co-designing processes and artefacts, devices, objects, things, materials in PD processes. This thesis builds upon all these views and concepts too.

Parts B / C
Chapter 4
Chapter 5

To summarize, in PD, in the writing, terms such as ‘boundary object’ or ‘design artefact’ are often used to generally capture a prototype or model, referred to as overall concepts, without going into much detail with what situated roles the ‘boundary object’ or ‘design artefacts’ actually have and play in the co-design situation and network. These are some of the details I discuss throughout this thesis. For instance, I will argue that they are parts of, or composed of, an assemblage of often invited objects, artefacts – or non-human materials – participating in various ways with various delegated roles. I will do this using various other theoretical perspectives than the ones presented here, in order to not have too many theoretical concepts at play and I will not largely be using these terms onwards.

Summary / Chapter 2

In this chapter, I have further positioned my work in relation to participatory design (PD), especially with emphasis on an understanding of co-design projects as communities of practice (CoP) and on views of materiality in co-designing practices. I have established the view that a co-design project can be seen as a platform or organizational structure aligning people (old timers) from various CoP to meet, and potentially, where all initially are newcomers, for a new shared project CoP to develop through shared experiences. I have also acknowledged that there are boundaries among different CoP and that tensions arise in establishing new shared practices, but that both people (brokers) and materials (boundary objects) can make transitions between these.

I have also positioned my work in relation to views of PD processes as ‘design laboratories’, tied together by ‘co-design events’. Further, I have discussed how ‘setting the stage’ and ‘staging’ in the situation during such events gives (designers as) event organizers a different role from classic design processes, and with that (material) power. As a part of this I have presented and discussed different practical ways of ‘staging’ co-designing in PD or co-design projects, fostering and encouraging engaging co-design dialogue and collaboration.

Together they show that the important role of materials is widely accepted within PD (and other design-oriented) fields. I have started to further discuss this in a materiality perspective, showing that within design communities and PD there are (still) clear differences of how materials are viewed – whether as a part of a ‘method’, ‘tool’ and ‘technique’ or as intertwining in the complex socio-material practices of co-designing. This last view builds upon well-established ideas of ‘language and design games’ and the broad emerging view of ‘design things’. The thesis builds on and relates to these latter views.

Chapter 3 / Plans & Co-design Situations

Perspectives mainly by Lucy Suchman and the DAIM project

With Donald Schön, in Chapter 1, I established an understanding of central characteristics of designing – and co-designing – practices, particularly with a focus on the materials in the situation. In Chapter 2, as a part of further positioning this work in relation to participatory design, I explored participation and materiality as intertwining in co-designing practices.

Chapter 1

Chapter 2

In this Chapter 3, I further explore my re-formulation of Schön’s ‘...the design situation’, and propose to view and call the situations of co-designing as something different – as quite explicitly staged *co-design situation*. This is mainly done by extending Lucy Suchman’s arguments about ‘plans and situated actions’, briefly mentioned in Chapter 2, and by relating to insights from the DAIM project. Additionally the chapter briefly exemplifies how three different ‘situations’ already are integral in (interaction and service) (co-) design practice.

Appendix 05

As Schön and most of the authors I related to in Chapter 2, Suchman too views practice as embodied, socio-material situated action. While acknowledging that every situation is unique I continue to recognize that there are ‘situations of sameness’ or ‘family resemblances’ also in co-designing. Yet, with Suchman’s work I further extend and add a focus on the active situated role of artefacts and particularly emphasize how plans are materially and spatially intertwining in (the staging of) co-design situations at co-design events.

Chapters 1, 2

Chapter 3

To repeat from the Foreword: Program, the intension of emphasizing a focus on situations (rather than only people, or events) is exactly that co-designing does not only happen at co-design events, but during the situations happening during an event. With this chapter, to paraphrase Trine Paludan (2010), I suggest ‘going for situations’ both when aiming for understanding and staging co-designing practice.

Foreword: Program

Box:

Positioning Lucy Suchman – Suchman’s positioning

Chapter 2

Lucy Suchman was trained as an anthropologist, but has pioneered through her engagement with an ethnomethodological approach in participatory technology research. For many years she has been an active stakeholder and a widely referenced author in the Participatory Design community.

With twenty years as a researcher at Xerox’s Palo Alto Research Center (PARC) from the beginning of the 1980s, and about ten years as a professor of Science and Technology in the Sociology Department at Lancaster University, her main areas of interest and many anthropological studies have continued to involve technologies (especially artificial intelligence systems and robotics). Throughout these years, her research focus has mainly been on ‘the social and material practices that make up technical systems’ (Suchman, 2007:backcover).

Based on her PhD dissertation done while at Xerox Parc, her main views of practice were first published in the widely referred book, *Plans and situated actions: The problem of human-machine communication* (Suchman, 1987). Additionally she has published a long list of papers and book-chapters, for example a chapter about ‘*Understanding Practice: Video as Medium for Reflection and Design*’ in the classic PD book *Design at Work* (Suchman and Trigg, 1991).

Chapter 4

Still clearly relevant, she re-published most of the arguments from 1987 in her latest book, *Human-machine reconfigurations, Plans and Situated actions 2nd Edition* (Suchman, 2007). As the title of this book indicates, her view is still that humans and machines are not separated, but rather that they are complexly intertwined in dynamic practice (and should not be separated in an analysis of practice, either). One of her reasons to re-publish her own arguments from 1987 is to be able to comment on, challenge and discuss them in relation to current research contexts, for example the field of Science and Technology Studies (STS), which she increasingly is relating her work to.

Part B /
Introduction

Methodologically, she stresses that the concept of situated actions argues against reconstructing the course of actions based on prior intentions (plans) or (academic) ideas of typical situations, but rather she proposes to understand the concrete unique situated actions.

Practice as plans and (socio-material) situated actions

In this section, I will further extend Lucy Suchman’s views of practice as plans and situated actions, where humans (people) and machines (technology broadly viewed) and other socio-material relations are complexly and dynamically intertwined and continually re-configured.

As a starting point, Lucy Suchman claims ‘of course all action is situated’ (Suchman, 2007: 17/Note12), and that all actions essentially depend on the ‘material and social circumstances (ibid:70). Additionally, to refresh from Chapter 2, she continues to argue that situatedness not only involves people and technologies, but that practice is complex and dynamic (ibid:268), and that practice should be understood as ‘artful integration’ of ‘sociomaterial arrangements’, ‘sociomaterial assemblages’ (ibid:e.g.264) or ‘socio-material (re)configurations’ (ibid:e.g.268).

From her detailed empirical studies of concrete practice, she has also found that the circumstances and conditions of situated actions are not constructed from conventional rules, but that plans are a part of actions too. In other words, that the material and social circumstances or conditions of actions not just are there or self-evident, but they are also constructed in action and interaction (ibid:52/Note1).

Suchman's emphasis on plans as a resource among many in the situation

Suchman’s emphasis on plans adds to what I have explored so far in Chapters 1 and 2. In her words, ‘...the plan is prerequisite to prescribe the action’ (ibid:53), and plans capture intentions of actions as ‘every account of communication involves assumptions about action’ (ibid:51). Furthermore, to Suchman, activities of planning are a form of situated action too, as there is nothing outside of action (ibid:61/Note 8).⁶²

Chapters 1, 2

Additionally, plans are described in various levels of detail, and when it comes to plans, she emphasizes that there is a problem in constructing plans, because in the actual situated action and interaction, unexpected occurrences are quite usual including breakdowns, failures and surprises.

Further she has found that action is full of improvisation, which cannot (luckily) be fully planned for. Thus, instead of viewing a pre-constructed plan as a documentation of what should happen, as ‘they do not in any strong sense determine its course’ (ibid:72), she suggests viewing plans as a part of the circumstances of and as resources in the complex situated action. All the Exemplars in this thesis are examples of unique complex situated actions of co-designing, and prerequisite plans were also intertwining in staging the co-designing at the different exemplary events.

All Exemplars

.....

⁶² This last point is emphasized in ‘Human-Machine Reconfigurations’ (2007) because she herself had discovered that this could be misunderstood from her descriptions from 1987.

Exemplar 02 / circle 03, 05 Chapter 1 **At the Rehab Future Lab event**, the unique material and social circumstances were partly planned and organized before the event and partly constructed in the situation. For example, before the event it was planned to split up in two groups working in parallel, but at the event they were organized ad-hoc. Thus, if the computer scientist would have been swapped with a sociologist, no doubt other issues and perspectives would have been brought up in the group-work situations. As the groups were constructed, in Group 2 they were two members of rehab staff and two researchers (sometimes roleplaying ‘user representatives’). Yet, if one or two patients had also been there, again no doubt it would have been another situation, with their different *material* (stories, experiences, concerns, interests, wishes) also being brought to the table. (Of course this should then also have been a part of the actions prior to the event, as the patients should have been invited to participate as stakeholders too).

Exemplar 02 / circle 04 Exemplar 02 / circle 05 As it happened at this event, based on previous fieldwork, the interests of patient-users were condensed in the (tangible, material) paper-scenarios provided in a copy for everyone in the room, in combination with the low-fi, hard-foam mock-ups also on the table. Another circumstance was that this group-work co-design situation happened in a small meeting room, where they stayed in their seats around the table, when understanding and agreeing on intentions, roleplaying with the mock-ups and discussing issues and suggestions for incremental changes. Again no doubt the situated actions would have been different if, for example, the roleplaying would have been played out in the current real-world rehab environment just outside the door.

Exemplar 02 / circle 01 / Chapter 5

Of course, many circumstances and conditions were at play. Here I have just emphasized a few, which to me are relevant to highlight and be aware of when planning for (and staging) situated actions of co-designing.

To summarize, I have now initially related the core of Lucy Suchman’s work about viewing practice as plans and situated actions to co-designing. In the following sections I also briefly explain my other backgrounds for suggesting to emphasize a focus on situations when aiming for both understanding and staging co-designing.

Think and go for situations (DAIM recommendations)

Appendix 05 Related to Suchman’s work, but more practically, during the DAIM project, ‘situations’ were widely discussed, and one of our design-anthropological recommendations from the project was: *Think situations!* and *Go for situations* (Appendix 05 / Paludan, 2010). In this section this recommendation is briefly unfolded.

Our DAIM discussion of what a situation is, dealt with when one situation is beginning and ending, and a new situation begins, yet we found no need to strictly define that. Rather, based on various fieldwork examples, practi-

cally this recommendation emphasized not to only focus on people, or types of people e.g. generalized as ‘personas’⁶³, but rather on the magic of situations (in that project – mainly waste-handling situations). Also largely capturing my views, as a part of arguing for going for *situations of sameness*, Trine Paludan summarizes it this way: ‘...there are many ways to “go for people”. The magic everyday life as a resource for new ideas and innovation also entails the magic of situations and the people who move in and out of them’ (ibid:153).

This recommendation was based on various observations and dialogues

For example, a man was explaining how he at home was very aware of how they sorted and recycled a lot of their waste in a complex homemade system in the basement of their house, but at the stadium watching a football match with some mates his priorities were different concerning waste. Based on such specific examples, again Paludan argues that ‘people move in and out of different but recurring situations during their daily life’ (ibid:151). She emphasizes the flow or stream of situations that compose daily life, and as an example she cites a woman explaining: *“It’s perfect where I live. The waste containers are right beside the parking lot. Every morning when I take the car, I bring with me my waste and get rid of bottles and paper”* (ibid:153). A lot of people get rid of their waste in the morning on their way to work or when they are on the way to doing something else, and a lot of people want it to be easy to get rid of their various waste when they decide to clean up (not only when the truck comes by once a month). These are just a couple of examples of waste-related situations of sameness in daily life.

This view and suggestion of going for the ‘sameness of situations’ largely resembles what Pelle Ehn (1988), following Wittgenstein, has phrased as ‘family resemblance’ of following (far from always explicit) rules in both professional and everyday ‘language games’, and in co-designing in ‘inter-twining language design games’.^{64 65}

Chapter 2

⁶³ To keep a user-centered focus, working with personas is very common practice in interaction design (e.g. Nielsen, 2011). Surely personas can be useful, and of course it depends on how they are (staged to be) intertwining in the (co-) design practice, but I suggest being cautious about ‘just’ using personas as a method, exactly because they take the person portrayed out of his or her situated actions and instead describe them as a generalized ‘type’ of person.

⁶⁴ Instead of ‘sameness of situations’, as the concept and phrase ‘family resemblance’, based on Ehn’s work, is commonly recognized in Participatory design communities, throughout this thesis that is the phrase I will be using. (more details in Chapter 2). The idea of family resemblance also relates to what I in Part C discuss as different performative structures and characteristics.

⁶⁵ In ‘Engaging Design materials, formats and framings...’ (Eriksen, 2009) among other issues, quite practically I suggested structuring co-design situations in overall types or clusters, and I suggested to name three central kinds of situations in co-design projects as: ‘Co-design situations of...exploring current use(r) practices’, ‘co-design situations of...mapping networks’ and ‘co-design situations of...co-designing (possible) futures’. Throughout my PhD studies, with examples of unique co-design situations, I have named and re-named such overall types or clusters – but explicitly clustering and naming different kinds or types of situations is not my interest in this thesis. Yet, this work has intertwined in identifying the more generic characteristics or family resemblance, in this thesis also argued to be ‘delegated roles’ to materials participating in co-designing (Chapter 5).

Different 'situations' already in (co-) designing practices

From a different practical design perspective, situations can also be viewed as intertwined in co-designing in different ways. For example: Situations are a part of what design builds upon (e.g. studies and understanding of current - use and user - practices). Ideas of future use situations are what are being designed (e.g. captured as storyboard scenarios about future practices); these are at least common practice in interaction and service design. And, as this chapter aims to emphasize, situations too are a part of the processes of co-designing (e.g. between and during co-design events).

Exemplar 02 **All these three 'situations' were intertwining in the Rehab Future Lab event.** During the group-work (situation), the occupational therapist is continually explaining some common situations (of family resemblance) in their current practices at the rehab unit, while also engaging in exploring the proposed possible new situations, materially captured with the paper scenarios and mock-ups, which, if implemented, eventually would be partly changing their current practices into new situations.

Exemplar 02 / circles 03, 05 At the same time, the stakeholders at the event were engaging in various situations of co-designing (during which their insights and concepts were explored and developed). At this event the development of these various (kinds of) situations were inseparable parts of their practice – the future rehab-situations they were discussing and shortly roleplaying, and the flow of situations they collaboratively went through during this half-day at the hospital. Yet, it is not always that situations of co-designing are (clearly) about understanding current situations and/or creating future situations.

Chapter 7 With some different materials engaged and with a different frame of
Exemplar 01 the situation as discussed in Chapter 7, the Service Project Landscape
Exemplar 03 event and the DAIM Kick-off-event show situations of initially grasping
P&A what could be called their shared programmatic project design space
and issues of interest.

To summarize, as this whole chapter indicates, this collaboratively developed recommendation from the DAIM project also influenced my focus and analysis of co-design practice – exactly thinking and going for *situations* and situated actions for understanding the situated roles and actions of materials in co-designing. Further, throughout the thesis when I refer to situations, it is not the situations being studied or designed, but it is the *situations of co-designing practice* I refer to. This leads to design situations versus co-design situations.

Design situation vs. co-design situation

Chapter 1 I concluded Chapter 1 by rephrasing Schön's sentences from '...with the situation' and '...of a design situation', to '...of the co-design situation'. In this section, I further extend these distinctions.

Briefly, the design situation is viewed as flowing in often quite implicit one-designer or local team design processes. Yet, when aiming for understanding and practically staging co-designing, I propose to focus on what I coin the *co-design situation*, which is quite explicitly staged at co-design events and aimed for participants to collaborate.

It could be argued that I interpret Schön's phrases '...with the situation' and '...of a design situation' a bit literally when in a sense focusing on 'in' situated embodied actions, mainly at co-design events; yet, my reasons are that it directs a detailed focus on how people and materials are participating in co-designing, and on how tangible materials assist in making transitions among these *co-design situations*.

Schön's and my examples of 'design situations'

In Schön's exemplar, where the architectural student, Petra, is designing her proposal for a school, during her 'reflective conversation with the materials of a design situation' (Schön, 1983/1992), she is developing and refining her proposal in a quite fluid process, roughly defined by the outer structures like the start and end of the curriculum project.

Chapter 1

Generally, design processes with one person or a team of a few people working together on a daily basis are often flowing, and it can be difficult to say exactly when a *design situation* is starting and ending. In this flowing process the topic and issues or problems are continually being explored and re-framed in various ways, with various materials, often in various places and over longer periods of time. My own process used to be as an architectural and industrial design student, as displayed in my example of designing a postal car.

P&A
Part A /
Introduction

Changing from one situation to another is sometimes quite clear, while changing at other times is subtler. As just described, Petra is going through a long process of designing her proposal for a school, but by dissecting her longer process, within it '...the design situation' with her tutor, Mr. Quist, can also be considered as a special situation, in this case with a quite clear beginning and ending.

Likewise, in the Service Design project, the smaller teams of three to four interaction undergraduate students in one view had their ongoing processes or flowing situations in their teams throughout the five week service design project. On the other hand, the shared session during the previously planned and scheduled slots in the project brief, where we as tutors were engaged and staging how to collaborate, all had quite clear beginnings and endings, for example, each of the three times when all students collaboratively were *materializing* and later 'defrosting' and refining their shared 'service project landscape'.

Exemplar 01 / e.g.
circle 06

Chapter 6
Chapter 2
Exemplar 01 /
circles 03-05, 08-11

As exemplified, design situations are often flowing, and during distributed co-design projects, of course, there are processes like that too; but there are also more explicitly staged situations. During co-design projects, when one person or a small local team on a daily basis engages in pro-

cesses of exploring an issue in detail, this could be viewed as a flowing design situation. Through these flowing situations or processes, new insights and proposals for solutions on a certain issue, challenge or problem relevant to the overall project is of course often developed. However, *co-design situations* are different.

Quite explicitly staged 'co-design situations'

All Exemplars Co-design events, as the ones I report from in the Exemplars, happened in a certain pre-picked place, around a certain or several pre-selected overall issue(s), topic(s) or problem(s), with a certain pre-assigned person or team as event organizer(s) mainly staging how to collaborate, within a certain pre-defined time-period, and very often with a certain previously prepared assemblage of materials. As discussed in Chapter 2, within the PD community, such events are often called 'participatory workshops', but generally inherent in staging for participation at such events, is an expectation that the people present collaborate.

Chapter 2 What I just listed could be viewed as parts of the plans for such events, but of course with Suchman I again repeat that these were not similar to what actually happened, the situated actions, but all these elements surely set some of the circumstances and conditions for what (possibly) could happen. These plans can generally be seen as parts of the staging of an event, and why I also suggest viewing *co-design situations* happening during such events as being different from flowing design situations because they therefore often are quite explicitly staged for collaboration too. Generally, as initially argued in the Foreword: Program, I argue that co-design events, and thus *co-design situations*, are often more explicitly planned, prepared and staged than the daily flowing design situations. Additionally, as exemplified, they therefore have, not definite, but much more clear beginnings and endings.⁶⁶

Foreword: Program **There is a family resemblance across co-design situations – also within the same project, while every unique situation built upon the previous.** For example, in the service design project, the second time of collaboratively defrosting the landscape built upon the first time, the third time build upon the first and second, etc. The first version of the landscape captured various issues of interest among the students and was also created with the purpose of identifying the topics of the four different groups of students. On our request as teachers, the landscape was collaboratively defrosted and re-arranged after the halfway presentations, to now share, merge and match the four groups' current focuses and interests.

Exemplar 01 / circles 09-11, Afterwards A third time about a week later, again on my request as a tutor, the landscape was defrosted again and a few changes were made, but at this point in the project, the students' concepts, and thus their shared project landscape, were stabilizing, and only after about five minutes they did not have a need

.....

⁶⁶ The beginning and ending of a co-design situation, I further explore in Part C / Chapter 8 as situation warm-up and situation cooldown.

for making anymore changes. Building upon each other, at an overall level, these three situations were unique, yet they had the same main intensions and in this series even many of the same materials were engaged; this can be viewed as examples of *family resemblance of co-design situations*.

Further, with a closer look at the first round of building the landscape, this situation could be further dissected into a flow of even shorter (and in some moments parallel) situations, which the participants (students and materials) moved in and out of, like the situation of negotiating and moving the positioning of the car-parking lot on the edge of the board/town, or the situation in which five students engaged in collaboratively creating a person transportation system up in the air. To me it is not the most important thing to know exactly what, when and how many of such shorter situations occur during co-designing. What is important is that material clearly mattered in the situations of co-designing and in the changes in the kind of inquiry they engaged in. This I further explore in the following section.

Exemplar 01 /
circles 02-05

Exemplar 01 /
circle 04

Exemplar 01 /
circle 04

Materially and spatially staging (plans) during co-design events and situations

Lastly, as a transition to Part B, I will return to Suchman’s (and my) interest in understanding the ‘active role of artefacts’ and the ‘people-artefact relations’ in situated actions, during aco-design event (Suchman, 2007:e.g. 270). Across the six Exemplars, and of course among other factors, I have found that materials and spatial arrangements are often active in provoking changes among what could be viewed as different *co-design situations*.

All Exemplars

Again at the Service Project Landscape event, in the role as the staging teacher, I materially marked the change from a mainly explorative inquiry to a mainly analytic inquiry. I tangibly did this by introducing the small pile of white cardboard ‘signs’ for the students to name and thus capture more overall and central topics and ways into the project. Here, tangible *formats* assisted me as a teacher in reaching the plan of ending the day with four different groups of students.

Exemplar 01 /
circle 05

Chapter 5

Similarly, at the Future Rehab Lab event, the changes among situations were quite clearly marked, first, by starting in plenum. Next, was the splitting up in two groups in two separate physical settings (gymnastics-room and meeting room down the hall), with some similar and some different materials, and with a quite specified guideline in the schedule of what to do (for example, including a suggestion to make an ‘assessment and identification of incremental changes’). The last step was again meeting in plenum to collaboratively summarize, merge and list insights on a large white flip-over paper from the parallel group-work situations (more reflection-on-action inquiry, to use Schön’s phrase). Thus, at this event, organizing to be in different spatial locations clearly assisted in staging the different co-design situations.

Exemplar 02 /
circle 02

Exemplar 02 /
circle 03

Exemplar 02 /
Email with goals
and agenda

Exemplar 02 /
circle 07

Chapter 1

The agenda, often available in paper print-outs, are also an active material resource at co-design events. As emphasized by now, co-design events are often carefully planned, prepared and staged, in relation to how much time is allocated for what. All the six Exemplars include a copy or re-creation of the time-schedule of the event, as I in retrospect found they played central (delegated) roles at each of their events. Time-wise and topic/focus-wise, it assisted both organizers and other participants in knowing roughly when and roughly how to do what. In other words, it assisted in *staging* and *formatting* co-designing.

All Exemplars

Chapter 5

Chapters 5, 6

But again, as Suchman says, the plan is never as the situated actions; for example in the emailed agenda of the Future Rehab event, it was suggested during groupwork to ‘roleplay’ the scenarios, but this only actually happened very little. What actually happened was that the four people around the table talked more about and discussed qualities and challenges of the proposed future situations. Still, what I view as *co-design situations*, are often closely tied to the planned slots in the proposed agenda of the event.

Exemplar 02 / circle 05

Parts A, B

Summary / Chapter 3

Chapter 1 Building upon Donald Schön’s emphasis on the (often flowing) ‘...design situation’, mainly with Lucy Suchman’s work and insights from the DAIM project, in this Chapter 3, I have acknowledged that every co-design situation is unique, and have also shown and further recognized how there are family resemblances across different situations in co-designing. However, for understanding and staging co-designing, I have also proposed to focus on the quite explicitly staged *co-design situation*.

Thus throughout the thesis, when I use the terms *co-design situation* or *situation of co-designing*, I am referring to quite explicitly planned and prepared, yet of course unique and hopefully collaborative and explorative, but quite clearly time-constrained and explicitly staged situations in co-design projects, often mainly happening during a co-design event.

Chapters 1, 2 Adding to the understanding of co-designing practice established in Chapters 1 and 2, with Suchman’s emphasis on plans as a resource in the situated actions, I have started to explore and argue that plans are materially and spatially intertwined in situated (staging of) co-designing.

Parts B, C

Chapter 5 In Chapter 5, in relation to concepts by Bruno Latour, I further address Lucy Suchman’s ideas of situated reconfigured human-machine relations, to continue my exploration of the active role of artefacts or materials and plans as integral parts of specific situated actions of co-designing.

To summarize this chapter, in addition to focusing on co-design events, I suggest to: Go for *co-design situations* both when aiming for understanding and practically staging detailed processes of co-designing with materials.

Part A / Summary

From designing to co-designing practices and situations

First – Recognizing that designing and co-designing are different (organizational and socio-material) practices...matters

Viewing co-designing largely as reflective conversations with the materials of the co-design situation...matters

Recognizing that the role of designers largely changes from mainly designing forms and proposals for others, to (co-) designing formats for staging co-designing with others...matters

Understanding how a complex, continually transforming assemblage of materials (e.g. including talk as material) participates in situated co-designing...matters

And mainly with Exemplar 01, I have also started to show how Acknowledging that tangible materials can be used for collaboratively exploring and capturing programmatic issues, focuses, questions and concerns of a co-design project...matters

These are the main programmatic statements I have started to explore in this Part A.

Captured with the little ‘co-’, throughout this Part A, I have exemplified, explored and discussed how there are similarities but also very many differences between designing and co-designing. Concluding this Part A, I now argue that designing and co-designing are two different practices. As I have mostly done in Chapters 2 and 3, in the rest of this thesis I will only be focusing on further understanding and staging situated co-designing practices.

Chapters 2, 3

Yet, first here is a brief summary of the arguments made, mainly with Exemplars 01 and 02, in this Part A about *Material Matters in Co-designing*.

In Chapter 1, with Donald Schön, I have captured many characteristics of designing (and co-designing) practices, but also with a discussion of Exemplar 01, I have identified four core issues of co-designing that Schön cannot explain alone. Still, from his work I place an emphasis on the ma-

Chapter 1

Exemplar 01

terials of the unique situation, also including a view of ‘talk’ as material, which are central focuses throughout the thesis.

- Chapter 2 In Chapter 2, with various authors, I have further positioned my work in relation to participatory design (PD), especially with emphasis on an understanding of co-design projects as ‘communities of practice’ and on views of materiality in co-designing practices. Partly building upon my positioning in Positions & Approaches, I have (further) related to views on: PD processes as design ‘laboratories’; the importance of ‘co-design events’ in PD processes; ‘staging’ during such events, which gives (designers as) event organizers a different role from that in classic design processes, and with that (material) power; different practical ways of staging co-designing in PD or co-design projects also showing that the important role of materials is widely accepted within PD (and other design-oriented) fields.

- Part B Yet, I also started to further discuss this in a materiality perspective, showing that within design communities and PD there are (still) clear differences of how materials are viewed – whether as a part of a ‘method’, ‘tool’ and ‘technique’ or as intertwining in the complex socio-material practices of co-designing. This last view, which I will explore throughout Part B, builds upon in PD, well-established concepts of ‘participation and reification’, ‘language and design games’ and ‘boundary objects’ as well as the broad emerging view of ‘design things’. These names I do not use extensively, but this thesis builds on and relates to these latter concepts and views.

- Chapter 3 In Chapter 3, mainly with Lucy Suchman, plans in the situated and socio-material actions have been further emphasized. As already specified in the Foreword: Program, also building upon Schön’s focus on ‘...the design situation’, for understanding and staging co-designing, here I have exemplified and suggested going for the quite explicitly staged *co-design situation*, at co-design events. With Suchman’s views of plans as a resource in the situated action, I have also started to further explore the active role of artefacts or materials as parts of materially and spatially staging co-designing.

Lastly, as a red thread throughout this Part A and important in relation to the overall program and topic of this thesis, commonly - but with different words – with these various authors I have now established my fundamental arguments for viewing materiality as an integral part of the co-designing practice and situations. In other words, since materiality and participation cannot be considered separately, firm ground for my continual argument about *Material Matters in Co-designing* has been established.



03

Kick-off –from DAIM

Co-design Project	DAIM (Design Anthropological Innovation Model) (Appendix 05)
Main project case	Waste handling and recycling
Time & Year	28. May 2008 10:00 – 16:00
Participants at events	Project manager and three others from core team, three from development-department at the waste handling partner organization, 1–2 from each of the other Danish, Swedish and American partner institutions and companies, another PhD scholar and I (mainly to document)
Timing in Project	Month 2 out of 20
Location	The Danish Design School in Copenhagen / Denmark
Event organizers	Project manager and three from core team at The Danish Design School
My Roles	Documenting, observing and participating a bit in one team to start with and some in plenum discussions
Ways of documentation	Video cameras, still image cameras, personal notebook, used tangible materials were kept, copies of documents

Agenda

01

Designantropologisk Innovationsmodel (DAIM)

Agenda for workshop d. 28.5.2008 at Danmarks Designskole



10:00 *Welcome* 02

Short overview of the project (.....)

- objectives
- time plan
- deliverables
- organization

10:30 *Things on their way (a first encounter with the world of waste)* 03 04 05

Questioning categories searching for meaning (.....)

Hands- on exercises

11:00 *Experiences and challenges, inspecting the common toolbox* 06

Bringing together a bow tie and a spiral (.....)

Partner presentations

12:30 *Lunch*

13:00 *Mapping a landscape of waste and innovation*

Brief reports from the field (.....)

Building a landscape in three steps (group exercise) 07

- From field visits to situations=people+place+activity+time 08
- Identifying relations 09
- Preparing journeys of innovation 10

Re-telling the journeys (reports from the groups) 11

15:00 *Next steps* 12

How to proceed towards the tentative innovation model?

- Framework & Toolbox
- The inspiration seminar June 24'th
- Commitments & Collaboration
- Transition from phase 1 to phase 2

Project organization

- Project workshops
- Steering group meetings
- Website and other kinds of project communication
- In and out of the the core team
- Dates for coming workshops/meetings

Other issues

.....
This agenda handed out in paper-prints at the event is an updated version of what was emailed beforehand.
(On the back is a list of participants with indications of which group/table 1, 2 or 3 to join).
.....

Introduction

We are in a large lecture/exhibition room at The Danish Designschool in Copenhagen, and today is the first time all the partners of the DAIM-project meet physically. Some have been involved in writing and commenting on drafts of the project proposal for this design-anthropological user-driven innovation project with a first main case of waste handling and recycling, while others are quite new to the topics and approaches of this shared, newly started project.

Beforehand, five tables are set with table cloths, the blue with Group 1-2-3-signs, a white with four candles and a white with a printed square grid on it. The buffet with croissants and fresh coffee is set, the projector is on, the video cameras are on their stands ready to record the day, a pile of updated agendas are waiting to be passed around, and on the piano other materials are lined up for being engaged throughout the day. We are eighteen people. In each of our bags we all bring some 'things on their way' too. The stage is set – now it is time to get the project kicked off.

01

Preparing for this first 'partner meeting'

During the first months of the project, among other issues like getting organized and signatures on the contract, the project manager and the core team spend their time doing initial fieldwork in the area of waste handling and carefully planning and preparing this first partner event. Parts of this e.g. includes; visits with most partners, two status emails from the project manager (send two weeks and two days before – see below) and discussions of how to kick start this intended to be explorative project. Two days before, they rehearse how the different prepared materials are working, refine and take images to include in the presentations of what to do...

```
>> xx <xx@xx.xx>
>> 26-05-2008
>> Subject: FIRST PROJECT MEETING 280508: bring 3
things (DAIM-PROJECT)
```

Dear partners

Our first meeting is approaching, and to make us familiar with a world of waste, we will ask each of you to bring three things, that are on their way (to the trash bin, to new uses or to ??).

All partners will be present at the meeting and we look very much forward to see you, to hear your short presentation of experiences and challenges and not least to discuss with you what kind of design anthropological innovation model we shall put to use. (...)

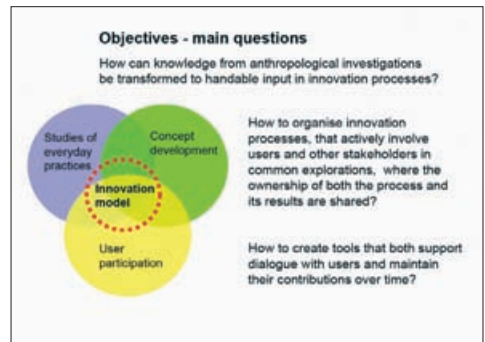
02

'Welcome' / 'Short overview of the project'

Everyone have said hello, the projector is turned on, we find our seat, and one from the core team officially welcomes us all.

Then, assisted by slides, she briefly refreshes what we in the contract have agreed to do together during the following 20 months.

She for instance goes through objectives, main questions, 'why waste?', project time schedule, deliverables, organisational structures and the core team's expected commitments from the partners are listed too.



Why waste?

"For years we have serviced both citizens and companies based on a very limited knowledge of what actually is happening and what people think and experience."

(Quote by employee at waste incinerator partner)



Commitments



- Active participation in workshops and seminars (8)
- Steering committee meetings (7)
- Formulation of Design-Anthropologic Innovation Model and Tool Box
- Active participation in 1-2 projects within the pilot project
- Participate in planning and follow up on one tool seminar
- Try out innovation model and tool box in at least one commercial project
- Participate in propagation of results

'Things on their way'

Another colleague takes over, while second-hand plates and a pile of little white cards are placed on all group tables. Standing next to the table with four lit candles, with one of the white anecdote cards she is explaining how to use these together with the things brought along to capture interesting questions and categories. We all get the things brought from home out of our bags. Stories are already being told, and on the way to her own group, she says:

"And you have half an hour for this, then we meet here to create a shared kind of Southern Danish cake-table..."



04

The three groups work in parallel – here snapshots from the stories and dialogue in Group 3...

1/ A design researcher from the core team:

"What did you bring?"

2/ 3/ An architect working at the waste incineration plant explains: *"I brought this because it is beautiful – it's a small transportable astray that fits into the pocket. (...) – but in relation to our common project, maybe we can create a campaign for better sorting? I'm happy that the Danish Design School is participating. I believe that beautiful garbage bucket can help us make better sorting."*

A design researcher from the core team: *"What could we call this?"*

The ashtray ends up in a plate with his other things, all agreed to be viewed as 'inspiration for the project'. As the case partner in the project they hope to get help with a more qualitative practice than they are used to – this is what the wooden doll is supposed to mean.

The things are also grouped with a hand-written note by one of the others saying 'Beautiful objects – more cautious use?' as well as a note asking 'How do we keep things in circulation?'.

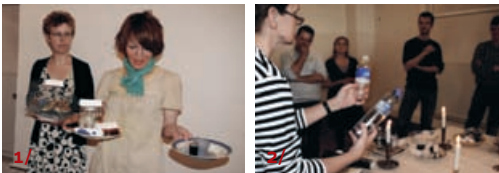
1/ A consultant in collaborative design processes from the US: *"I have brought this water bottle – I refill it for three-four days, and then I throw it away. In the US we are told not to use these again – probably because they want us to buy a new one..."*



- > **4/ 5/** A design-anthropologist is showing his T-shirt and tells how he has had it for years, but never worn it. It has a print in front reminding him of a group of students in Southamerica he used to work with. A design researcher picks up on his story and explains how her old VHS-videotape is filled with video-recordings from a research project conducted six years earlier. She has never watched it since, and has piles of VHS-tapes in her cellar. They discuss how there seems to be a connection, both are kept but not in use. Instead they evoke memories and might come into use. Both are things in transition somehow, which is an overall interest in the group. Reading through the cards, one catches their attention 'You are what you throw away' ...or rather with these examples they agree to turn the card and write: 'You are what you do NOT throw away'.



They take turns at telling about all their things, and collaboratively they create four plates of 'waste-cakes' – and with the poetic and provoking anecdote cards, they negotiate and try to grasp how to describe what important issues each plate is capturing in relation to the project and topic of waste handling and recycling.



2/ The consultant from Group 3 explains: (referring to a plate with two empty water-bottles, an empty small shampoo bottle and an empty glass) "This is the category of things that are designed to be thrown away, but we thought about how they could be reused. We are told over and over again in the US not to reuse bottles because of worms (...) but we all have practices of refilling (...)"

3/ 4/ The project manager from the incineration plant partner says: (referring to a plate with a still functional wrist step-counter, half of a plastic packaging and a clump of aluminium foil) "This one is about being shameful to throw it out because it has a potential. But by recycling you have a right to buy something new. From shame to right to buy some new stuff. (On the card there is also a note saying 'Obtaining the right to buy new goods')."

05

Plates with waste-related issues are made into a 'Southern Danish cake-table'

What ended being 36 minutes goes fast, but all groups have made and named different plates when we meet by the candle-lit table. Associated with a short story and explanation, one by one each plate populates the shared table. The following are fragments from the dialogue:

1/ A design-anthropologist from a Danish design consultancy starts explaining: "We ended up with five categories. (while lifting a plate in her hand with a blue rubber bubble and a box for films) This one is called 'transit' – things that you don't know if you should keep or throw out (...) This is called 'new role and function' (...)" (one with a painted jar with a lid and an old electronic toothbrush – then she places both on the table).

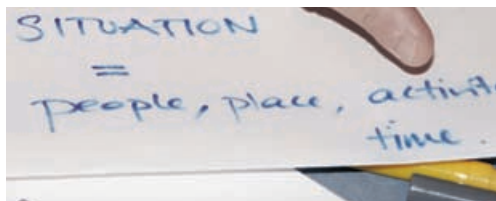


06

'Experiences and challenges, inspecting the common toolbox'

Back in our seats, the projector is on again, and assisted by slideshows or notes, the project manager is the first of all the partners to tell a story of current views and challenges of what he thinks 'the model', which we are going to develop collaboratively, could and should not include.

(One is writing down keywords in a document that gets printed during lunch and is used in the afternoon).



07

'Mapping a landscape of waste and innovation' – in three steps

After lunch a design-anthropologist in the core team starts by briefly showing and telling about seven newly conducted half to one day field visits with everyday people and waste professionals. Each visit is captured in a collection of paper field-cards each with an image and a small text.

With the last slide and also by pointing towards the other white table with a printed large grid. He explains that the plan is to work in three steps shifting between working in the groups and collaboratively mapping to further capture ideas and interests. He ends by saying:

"In your group you pick one of these seven new plates with field materials, and use these to make three new situations..."



08

Step ONE: 'From field visits to situations = people + place + activity + time'

Each group quickly negotiates which one of the field visits to work with, and as soon as one of them is chosen, the image-cards spread on the group tables. With Group 3 again, where one from a large Danish architectural firm has joined the group. Fragments from the discussion:

The woman from an architectural firm says: (looking at one of the cards with quotes) *"The municipalities says: 'Oh, it is so difficult about changing habits'."*

An architect working at the waste incineration plant continues: *"There is a very big conflict between the very engaged people and the municipalities – so the challenge is for the municipalities to get the people positively to do the sorting. And avoid getting negative (...)"*

A consultant in collaborative design processes: (while pointing at a handwritten note) *"So I have an idea – what if we make three situations. We have a very diverse group of people – what if we do one with kids, one with the engaged activists, and one maybe with the municipalities. Then we can start with the different kinds of people, and fill in."*

A design-anthropology researcher interrupts: (while marking on one of the images with quotes, now lying on top of one of the foam boards) *"It funny, because I thought of a situation already, but I am not quite sure if it will fit in. I just thought of the story with the*

>

- > jars – cleaning the marmalade jars. I pictured coaching that person in the kitchen (...). If there could be a coach coming in. (...) I just want to get to that moment of deciding what to do. Do I have to wash it, or?"

A consultant in collaborative design processes:
"We don't have to solve it now."

Many of the others: "No, No, No..."

Design researcher / core team member: (an image about jars has been placed on top of one of the white

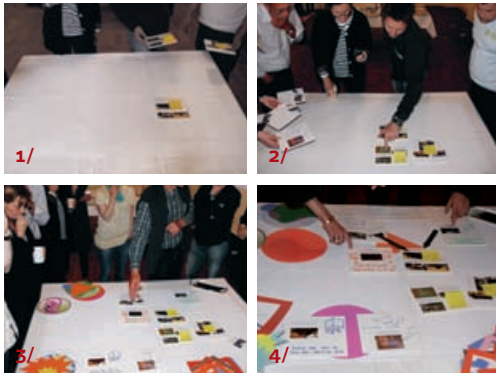
squares) "Couldn't this be one of the situations?" (She also places a blue pen – the design-anthropologist starts writing.)

During the last three minutes, the rest of the group makes the two last situation-cards. One about possible dialogues between activists and the municipality and one about the dilemma of being a truck driver when goods cannot be delivered because the packaging is damaged (shops say the product cannot be sold even though the product inside is fine).

09

Step TWO: 'Identifying relations'

The project manager came by and asked how much more time the groups would need – now 4 minutes later they all meet by the table with the grid. It is time to relate the different situations. **1/ 2/** After a short negotiation among two of the organizers, it is agreed that the person holding the board tells a short story about the situation before it is placed in the grid. During the process, some positions are discussed and negotiated, and some boards are moved to be closer to one or more related situations.



3/ 4/ Then, plates with new colorful paper-shapes enter the table. The project manager briefly explains and demonstrates how these are intended to mark and emphasize relations. We work in parallel in different areas of the table; various shapes are selected and added to highlight different relations. The jar-situation with a coach in the kitchen is e.g. related to a situation by another group called 'Dad teaches the kids to sort the trash'. Several other boards are related to one called 'Waste broking', etc. **5/** A landscape of more or less connected waste-related situations has emerged.

10

Step THREE: 'Preparing journeys of innovation'

Time is running, but as the project manager explains we also need to do this last step to start practically preparing how to work and collaborate in this project. With inspiration from the freshly printed documents with fragments from the mornings presentations of 'Experineces and Challenges', post-its and new wooden pieces; he quickly demonstrates how the yellow

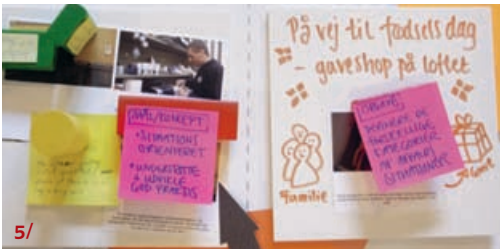


cylinder is intended to be mark a starting point and how the other pieces are intended to capture steps on the journey in the landscape. The groups each take a plate, go to their table to annotate specific suggestions on the pieces.

Step THREE: 'Preparing journey of innovation & Re-telling the journeys'

1/ In Group 3 some earlier issues merge into these discussions e.g. around the kitchen, but now it is changed into concrete steps of working.

2/ 3/ These are captured on post-its and taped onto the blue wooden pieces. They make a series, bring it to the table with the landscape, and continue working there by fitting the pieces into the landscape. They also add extra arrows to indicate how they suggest working in loops. Group 2 comes around too, and starts discussing where to place their pink journey and issues.



4/ Group 1 joins, and they take a round of re-telling their journeys one group at a time. Innovation suddenly gets very practical – different quite common ways of working such as 'focus groups' and 'probes' come to the surface as well as approaches of working with experiments and real-life prototyping.

5/ 6/ 7/ Additionally, suggestions like 'Building onto local communities and initiatives' and working 'situation-oriented' have been written down, and questions like 'Why splitting up campaigns, events, collaborations and concepts?'. All these are briefly discussed, but...

'Next steps'

The event is to end by 16:00. This last activity was actually planned to last a whole hour, now it is around half past three. On the project manager's request, everyone gets back to their seat, and he takes the word:

"Yes, as the last point, we wanted to talk about the Next Steps. As you just said, there are a lot of things already on the table now (...) there is some work to do,

but that was also the idea of the workshop today – to open up (...) You get a feel for what our model could look like and also what kind of issues we are to address (...) I think we got some very sharp statements about some of the challenges the design bureaus see today (...) and with us as a research environment. When establishing new innovation models, how do we manage these transitions from opening up and somehow

>

> create a starting point for continuous change, and that is exactly a concern that several of you pointed to (...) There is also a lot of representatives from the municipalities in this group, (...) it is not a question of inventing everything anew but finding a way to bring together. So over the next month, we would like to produce a document that gives a collage of a first tentative innovation model – pointing to the tools in the toolbox (...) and to give an idea about how to integrate design interventions and anthropological interventions as a part of innovation. We would like to see this as a starting point (...) (He explains various already scheduled plans in the near future). I think we should just open up for very brief comments and thoughts about these Next steps...The floor is open..."

Different ideas, wishes and questions are shared e.g.: a common site for sharing images; an internal blog for comments and sharing new insights e.g. with the documentation of today as a starting point; one from the design bureaus is asking what is expected by them – how many hours to spent, etc?; further how to possibly do and engage in the pilot project (about waste handling and recycling), etc.

Lastly, some more practical issues are raised by the project manager (Steering group, coming workshop dates, an open website or blog, etc.) By four o'clock the event is officially ending:

Project manager: "There are a lot of things to think about (...) Thank you all for coming..." (short clapping).

Afterwards...

Shortly after the event, a (closed and later public) project blog was established. On the blog, the following was shared about this event: the agenda, links to the different presentations, some selected images and an illustrated and commented series of selected waste-plates made by one of the co-organizers of the event.

The manager left the first blog post further reflecting upon insights and challenges. Additionally, the core team also established a web archive for storing all the images and video documentations. In the studio, several shelves were emptied to store the boards of situations, the wooden pieces, the used anecdote cards, etc.

Many other collaborative events followed during the 20 months of the DAIM project. The first next event was a month later with about 30 public and private company stakeholders interested in the topics of waste handling and recycling and design-anthropological approaches.

The pilot-project on waste-handling ended in April 2009, and was disseminated in a 'Box of inspiration' targeted (Appendix 05) for wastehandling professionals interested in applying a design-anthropological and co-designing approach in their work.

After this other shorter projects run by the partner design consultancies were done to explore and further develop the DAIM-model and tools. Parts of this Kick-off event and parts from the many other activities are gathered in the final book about the project *Rehearsing the Future* (Halse et al., 2010) (Appendix 05).



(Copied from blog on 02. November 2011)

This Exemplar 03 is mainly intertwined in the thesis in the following places:

P&A
Part A / Chapters 2, 3
Part B / Chapters 5, 6

Part C / Chapters 8, 9
Part D / Chapters 10, 12



04

Per:form –from XLab

Co-design project	XLab (Appendix 04)
Overall event focuses	Relationships between experiments, program and collaboration in design research
Time & Year	22. Nov. 2006 10:00 - 17:00
Participants at events	XLab core team (four co-design researchers including me) and three newly started or coming PhD scholars (one in ceramics, one in textile design & participation and one in interaction design and media)
Timing in Project	Month 11 out of 13 (additional financing for publishing > 2011)
Location	House at the Royal School of Architecture / Copenhagen / Denmark
Event organizers	Especially one other XLab core-team person and I
My Roles	Member of XLab core team. co-organizer before event, main procedure and time keeper at event, still image documentation, co-creator of log after event
Ways of documentation	Video camera, still image cameras, personal notebook, used tangible materials and documents were kept, log and DVD made the day after the event

Open Invitation with Agenda

01

OBS! Individual Preparations beforehand:

- all participants bring inputs inspired by the topic e.g. 1-3 examples of previous works.
- all participants bring different 'building materials' inspired by the topic...

Agenda:



Approximate Timetable:

- 10:00-10:15 Workshop intro 02
- 10:15-10:45 Brief stories by all participants of the inputs and material brought along.
- 10:45-11:45 Silent 'brainstorming' by materializing concrete proposals. (Including Coffee, tea, etc) 03
- 11:45-12:30 Mapping/organizing all proposals + attaching keywords. 06
- Lunch 07
- 13:15-14:30 Silent decision of which concept to detail > Manufacturing the chosen concept. 08
- 14:30-15:00 Individual Video Reflections of experiences (max. 5 min. each) 09
- 15:00-17:00 Debriefing and Post-Reflections in plenum – started by viewing the results of the groups and the individual Video-reflections. The research questions work as a guideline and connections to the inputs are made. 10

Workshop criteria / constraints:

- no talking until the Debriefing (only during lunch break – but about other things!)
- we can listen to music/radio.
- no use of pen & paper for writing (only for personal notes and during the part of attaching keywords).
- the organizers provide different basic workshop materials and tools for the different groups, but all participants bring some as well. [See preparations above]
- each participant bring inputs inspired by the topic.
- each participant has 1 'Time-out' during the day to stop, and verbally express e.g. frustrations, ideas of how to proceed, etc. 05
- during the whole workshop each group has a 'Confession video room' where participants individually can go and record their frustrations, ideas, comments, etc. verbally. 04
- each group produce one proposal by the end of the day.
- most of the activities of the workshop is documented on video (as a surveillance camera)
- supported by the materials and tools used and produced workshop is initially debriefed by making individual 'Video-Reflections' of what was experienced during the day.

OBS! The language of the workshop will be Danish.

Above most of page 2 of the XLab project open invitation to: 'Per:form – a silent experimental workshop'. The invitation also included a brief text about the project, a description of the 'Topic of the Day' and 'Design Program' (see circle 02), recommended readings, etc.

Introduction

We are in a large and light room at the architecture school in Copenhagen. We are seven people and lots of materials prepared to actively participate during the whole day of this 'Silent Experimental Workshop'. This event is the second of three hands-on 'experimental workshops' in the XLab-project. Apart from the four of us in the core project team, two of the others here also engaged in the first 'Beginnings workshop', while one is new to the project but knows several of us from before.

Briefly, XLab is a meta-project exploring programmatic design research with experiments at its core. We are practically exploring and reflecting upon ways of speaking about relationships between experiments and a 'program' in design research.

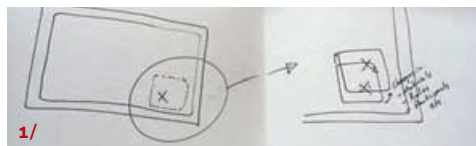
Today we will do and make a collaborative experiment. There are lots of refreshments, a 'buffet of materials' along the window and we start by sitting around the large black table in the middle of the room.

01

The event has been planned and prepared in various ways in the XLab core team

1/ After the first XLab 'Beginnings workshop', the focus of this event was captured in a sketch. We zoom in on one experiment with co-design work at its core and explore how we perform.

2/ On the 22. Sept. we had a 'rehearsal Performance workshop' with the same topic, program and a very similar agenda, but only among the four of us. From this we e.g. added the ability to add post-it keywords, the extra base for the shared proposal, the confession booth, less symbolic materials in the buffet.



02

'Workshop intro & Brief stories...'

The two of us organizing this day, start by briefly repeating the XLab focuses and the agenda, aims and constraints of the day.

Inspired by today's topic and program (send with the call) the other five present their examples of previous experiences, capturing their initial views and takes on the topic of the day.

The working materials brought along, are also explained and added to the 'buffet of materials'. They are e.g.: Clay, threads for creating textiles, an image-based game, a paper with keywords cut out of a miniature book, etc.

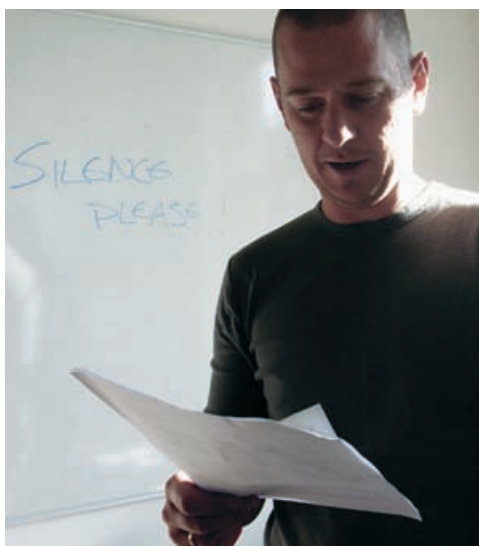
The topic and program is visible on papers stuck on the walls, and to start the 'silent brainstorming', the program is read out loud, before 'SILENCE PLEASE!' is called and written on a white board.

Topic of the day:

Decision-making device(s) for interdisciplinary collaborative design work

Design program...

A decision is made as we contemplate the advantages and disadvantages of our options....Which options? We concentrate on differences between alternatives... We think about these differences and their relative importance... At some point, a decision is made; differences reach equilibrium. To support the process as we can not speak, we have to manifest options, materialize and visualize differences, and try to maintain balance while still moving... Thus, we try to really 'make' decisions.





03

‘Silent Brainstorming’

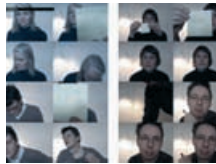
Music is playing, and inspired by the open program, five of us are making proposals. With a white square from the stack and materials from the buffet individually ideas are captured. Both by working with familiar materials, and by getting inspired by other’s proposals populating the table, 28 in total when time is up.



04

‘Confession booth’ available all day

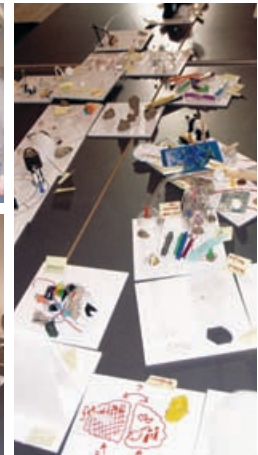
In a room next door, we can go aside for a moment to verbally record personal frustrations, reflections & experiences on a video camera (this is only used after lunch).



06

‘Mapping / organizing proposals’

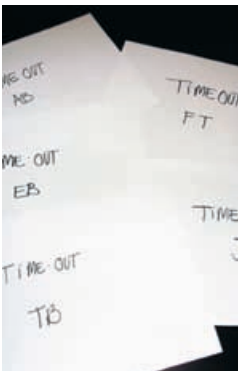
Still in silence, after brainstorming, the proposals are collaboratively mapped and organized on the large table. After initial moves, I interrupt and ask them to add post-it keywords and phrases as they please. Also with sign language, the landscape is changed some after this. It is time for lunch (where it is only allowed to talk about other things).



05

1 x ‘Time-out’ each

The five engaged in making also has one possibility to call a ‘Time-out’ to speak out loud (four use this opportunity after lunch).



07

8 of the 28 proposals – all photographed and described separately during the lunchbreak

As organizers we had prepared how we want to photograph each proposal with a black background. Additionally on the spot we also ask everyone to write down a few lines description for each their proposal (first shared afterwards).



1/



2/



3/



4/



5/



6/



7/



8/

1/ J: A 'turn-taking' device where the cloud in the middle represents the common unknown. The watch, the stone, the dice, and the weights represent various personalities or ways of viewing qualities in the decision process.

2/ F: Four players can build the form, each with its own color plasticine. The tracks can be read and each actor's action can be seen.

3/ T: A turn game. A mechanism to create stories. The needles on the string are randomly put in the small pieces of paper on the board. The papers with a pin in are turned around and then (perhaps) a story occurs.

4/ E: Cooperation. All have a different perspective (glasses) / contribution. Differences in the hierarchy, the angle of attack. Everyone gives bids for collaboration about the same task.

5/ A: Fishing. Upstairs, downstairs. Is there someone who takes the bait, and how does one move it from one side to the other? It may take time.

6/ E: Ferris Wheels. Up/down, random. Black box. Large / small.

7/ J: Monopoly where one moves from space to space in order to work through one's idea. Each space represents design conditions, limitations etc.

8/ A: Loupe. Time for immersion. Use the magnifier and work with the details. Then a whole new world will open, which one can investigate.

Confession [13:40] by design researcher and XLab core team member (E):

"We have been asked to write keywords on the various concepts. I think that things develop by doing that. It generates a lot of reflections. I'm a little anxious about how it will continue, how the collaboration will be. If we succeed, what can I contribute relative to the others?"

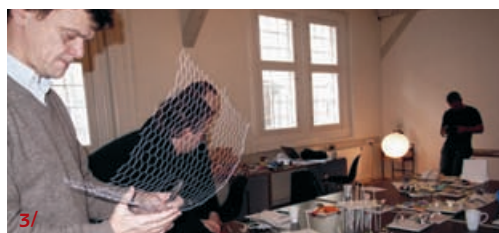
'Silent decision of which concept to detail > Manufacturing the chosen concept'

"Ok, time is passing, so now it is time to decide and make one shared collaborative decision making device. You have to include this 40 x 40 cm board, but otherwise it is up to you. The hour to make this starts now and ends at a quarter to three, and you have to be silent again."

1/ 2/ This was my introduction. The large white square is placed in one end of the table, and the five start working again. Some start by pointing at proposals, others with new materials.



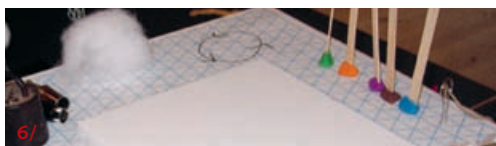
3/ Confession [13:55] by design researcher and XLab project manager (T): "We are part of a joint building project. The beginning was a little droll. We started by collecting some sketches. Several suggestions were in play. I think it was E. who started by collecting some of the sketches from the brainstorming, like a suggestion. Then she took the one with a lot of pipe cleaners, and I saw it seemed like a brush or some pollinate. I had an idea of making something out of chicken wire so we could get away from the big white plate. What was droll was that it took quite some time to cut out the chicken wire, and everybody else got started simultaneously. I had to concentrate on the chicken wire so I did not sense what the others were doing, if they were working with or against me. And when I was finished, then there was no room for it. Actually, I'm in doubt if the others were waiting for it to come, or on the contrary tried to prevent it from taking place. But it is fun. Now we have to see if I can get into it, if I can get into the process again".



4/ 5/ Confession [14:05] by design researcher and XLab core team member (E): "We are working on a common concept, and I find it difficult to find out what the others really want. It seems that it is about getting as many different ways of choosing into the machine. It is difficult to follow. Right now, I think that maybe too many things are being part of the concept. Instead, it is about making a synthesis, and trying to cut to the bone instead of wanting to get everything in. I'm excited about how this will develop".



6/ Confession [14:07] by PhD Scholar in textile design (A): "It was just this plate with a circle and three arrows – I think it is a little difficult to explain using signs what it is all about. It is about that one needs to keep investigating things until one is done, and it is something about not being at a standstill".



7/ Time-out [14:08] by design researcher and XLab project manager (T): "Time is now 14.08 and you have to listen to me, and you are not allowed to talk against me! Ha, ha. I do not know if it was on purpose, but I saw some shadows on the plate. I thought it was a really nice idea that one had some resources, and that we in one way or the other could create some images together. I do not know if that was what you had in mind, F.? Still now I take this (he replaces the 'Menopoly'-board with the marked 'Loupe'-board), just as an invitation to try it out. Then I've used my timeout to invite you. I think that this is just what we need".



8/ Confession [14:18] by coming PhD Scholar in interaction design (J): "Oh, really – what is it that we are making? Well, first we made something with light and shadows, but was it a game? Where are the things that determine if one is moving forward? What we are doing right now is more a play than a game. Of course, one can ask what rules are interesting at all when one is creating a design-tool or design-games".



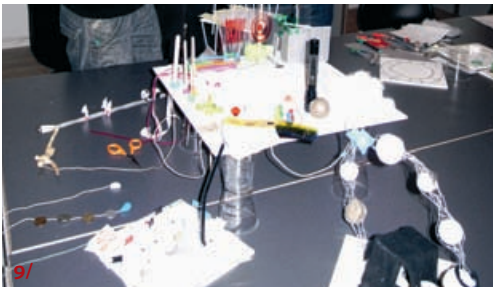
8/ Time-out [14:21] by coming PhD Scholar in interaction design (J): "The space without time. While what we are to do is a design game, then there needs to be time in it, and that means that things change. Because it is a game then we need some rules or some mechanisms or some things that are encapsulated in the game we are making, which kind of indicates that there are more phases that can come. I see it a little like an ascending line that is represented, but I'm very much in doubt about how one can come up the line. Implicit in this there are no rules for how the participants should act, and that indicates that this is more of a landscape one can play in that we are about to make. So this is why I keep putting these pieces and this dice in the middle, but I think it is a little pitiable attempt to make rules. But on the other side, I cannot find out how one shall illustrate this with rules. This was the reason why I put this here. This plate is a part of the machine. So – I think at least we need to find out if we are making a landscape or if we are creating something that is extended in time. This was what I wanted to say".

10/ Time-out [14:33] by PhD Scholar in textile design (A): "Now I think that I've done something radical by moving this from the middle again. And it was of course to tell you that I like the idea with the shadows, but that I miss some peace in the jumble. This is also why I put the wall up so it is possible to give some distance to everything. Sometimes one needs distance from each other even though it is an interdisciplinary exercise. So with this I want to argue for space for some peace in our little world".



Confession [14:35] by coming PhD Scholar in interaction design (J): "Yes, I must say that I perceive this like a self-description process. We describe how it is to be one's self, one who works, how we dream about work, our visions, more that formulates some methods or rules or principles, which we can pass on to other people. So this is a self-reflective process".

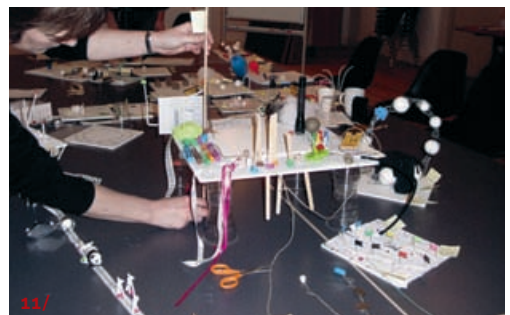
Confession [14:45] by PhD Scholar in ceramics (F): "We are close to the final proposal for our 'decision machine'. But I really feel like cleaning up, and removing things. On the other hand, it is also difficult not to destroy things that are fine. But I would have preferred a much simpler machine, where there are some strict rules for how to make decisions, and not all the possibilities that we have now. Still I'm afraid of being too tough and cut things away. But it is very advanced now".



9/ Time-out [14:27] by PhD Scholar in ceramics (F): "So, I see this as something between a landscape and – I would not say that it is a game, but there is a kind of timeline, a path that goes through the landscape. And I see it as a flexible landscape where it can change over time. There are both a starting point and something about that one can walk through the landscape. But I would not call this a game. The dice is something about chance, but I would rather say that everyone has the possibility to change the landscape under way. Simultaneously it is possible to stick to the path. I see the string as the path. So one can change the string. It is a kind of variable, and the landscape can be changed too. So I see this more like a 'decision machine'. Then one puts some challenges on the path. There are various levels, and the string can go up and down. It can also be expanded and other paths can be added. This is what I think we should use it for".

Confession [14:47] by coming PhD Scholar in interaction design (J): "What really surprises me with this process is how rich the various objects are that we are working with. They are both rich in the sense of symbols that refer to big problematic issues, but also their materiality. We started to play with the toys and everyday objects that each of us brought with us. Then we started to link them with strings or other things. Then they started to function as a kind of 'the objects participate'. Because they are three dimensional, they refer to more things than images. It is possible to play with them. So they work quite well".

11/ The final 'collaborative decision-making device'.

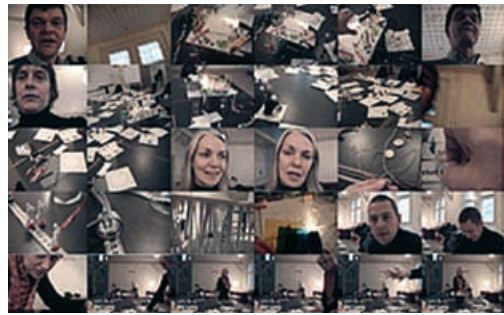


'Individual video reflection of experiences'

Just after finalizing the shared proposal, as we please, one by one all of us are alone to record a max 5 min. 'video reflection' story while filming in and around the final proposal. I also ask everyone to write down their three main issues of interest. The following are fragments from some of the videos:

Fragment from video (E): "(...) I think the one with the many pipe cleaners was funny. It looked like something with something over and under the water (...) One can dive into the water but does not know what is happening. Something is unconscious, something is conscious".

Fragment from video (me): "(...) J. used his time-out and talked about how it looked a lot like a landscape and that it was difficult to see what rules guides one through the landscape. (...) Make a decision about if you were making some rules or a landscape. I could not see that anyone pursued it further (...)".



Fragment from video (T): "(...) Actually I think it was difficult to get into the process. It took me quite some time. (...) I think that the first timeout this time worked very well. It kind of gathered the group. I think that we agree upon the fact that it was a landscape, but also that there were various ways to move within the landscape symbolized by the threads.

(...) In the end A. started to make some space. There should be some peace. There should be space for new things, and she moved the white plate in the centre. I replaced the plate with one that she had made earlier because I think it is important to be able to see the imprint from what happened earlier".

'Debriefing & Post Reflections in Plenum'

Now we can freely speak with each other. We start by reading out loud each our three main issues of interest, before we watch all the reflective videos. Now we discuss what has just happened and what we can learn from this. The following are fragments from this mainly verbal discussion:

T: "I'm the one to begin explaining what we have achieved. It is a decision machine that I think we finally ended up seeing as a landscape in which one could move. The basics are that we have a landscape, where one partly sees things that one can do something with, and partly things that have already been done. That which has already been done is the history. But all in all it is a collage-machine that has some interesting things inside. I also think that it was interesting to be on the sideline for quite some time, because I came into the process very late. It was interesting to see how one can think along the same lines as the others".

A: "It is very special when one is used to work with patterns and systems that this was so chaotic. I had to get used to that. I do not feel that we made any decisions concerning aesthetics. I forgot to say that during my timeout, but when I got used to that I actually found it

very funny and instructive. It was especially instructive when one could see why the others were doing what they were doing. What was difficult was to stick to one idea. We have not committed ourselves on a continuation. It might have changed the process (...)"

F: "As I said in the confession booth, I think it was quite frustrating with the many different paths. I would have preferred a more simple machine, but I also know that if one wants the straight highway then there are a lot of things that are lost. Still I would have liked a red string that guided you through the landscape and brought obstructions that one needed to consider in order to make decisions. Actually, this is what is happening in our machine too. So, on the one hand, I think that the project succeeded; on the other hand, it is so open that everything is possible, and that is very confusing".

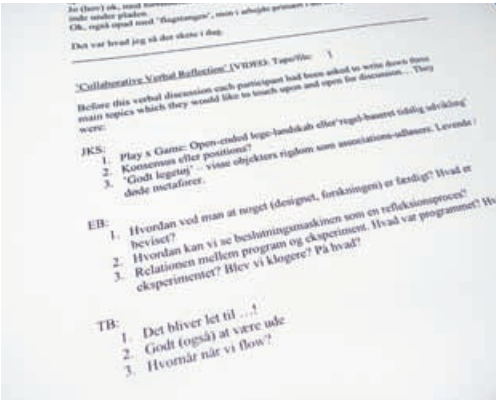
J: "Okay the big problem is that there are still no rules. This is a landscape. Then I think that the composition has lost its simplicity the simplicity that each of the early concepts had. I think that this is the result of too much consensus and too little clarity. My recommendation is that we make a third step in which we clear the table and start all over. Concerning the process, I'm surprised that the individual objects contain so many possibilities. The objects refer both to something like toys and something with great symbolic value. I suddenly realize that physical objects have far more symbolic value than images".

> **E:** "I was the only one who did not have a time-out. I almost made one close to the end because I felt that we were kind of finished. In the XLAB group we had talked about whether it is a feeling one gets about when something is finished. At first I wanted the machine to be relatively simple, not just something where a lot of things were thrown together. But I'm also happy about the result. It has a lot of different entrances. It is like a machine, which undergoes a time sequence. What I find important is 'what if'. It is a proposal about what one could do. Let's try to do this in common! There is a tape measure with a group of people on it. I like that they are doing something together. They met a challenge but succeeded. Here is something about various perspectives".

JR (observant): "I do not precisely know what was happening, but my reflections come as questions. Early in the process I thought about if one always works with one proposal at a time? Does one always finish ones own proposal before possibly interacting with other people? It was also interesting to see that there were no time-outs during the brainstorming session and the sorting session. They first came when they started to collaborate. So the question is, does the need first come when collaborating? The last question is: What is it really that you have made? I find it difficult to see if it

is a specific design suggestion or some kind of text, a description or maybe perhaps just something textual rather than a design".

I (as observant): "(...) What I saw was (...) Many parts of the machine are taken from the early individual proposals. Only very few of these are still intact. Instead, many elements have been combined. What happened was also that you made a base relatively quickly, the white board balancing on four plastic cups. You were somehow not able to change this later on".



Afterwards...

The following day the two of us staging the event, made a log of what had happened in a word-document with texts and images and on a DVD with selected video-clips. This was used when we met a few days later in the XLab core team to continue our reflective debriefing of this experimental event.

We had decided from the beginning of the project to make a book about the insights from the project, so the two of us observing started working some on how this could become an interesting book chapter. The two others were soon busy preparing the third and last larger 1-day XLab experiment or workshop called 'Intersections workshop'.

At that event we were focusing on the exemplary and genealogy, intervention and arguments, some of the same and some new people were exploring

together with us, and again we were working with hands-on materials (This time image & text cut outs from three different PhD dissertations we had read beforehand).

January 2007 soon came and the project was officially over – without having finished the book. The four of us in the core team went in different directions. In 2008, the project manager applied for additional funding for engaging a graphic designer in experimenting with the publishing of the work – this was granted. Several conference papers have been published about this work, and in the fall 2011 the book XLab was published too (Brandt et al., 2011) (Appendix 04).

(As described in 'Positions & Approaches' this work has influenced my PhD approach too).

This Exemplar 04 is mainly intertwined in the thesis in the following places:

P&A
Part A / Chapter 2
Part B / Introduction / Chapters 4, 5, 6

Part C / Introduction / Chapters 8, 9
Part D / Chapters 10, 12

Material Name:

Position:

Affiliation:

This could
be a format

Material Name:

Position:

Affiliation:

Material Name:

Position:

Affiliation:

Part

B

*Participating Materials
– Formatting Co-designing*

Participating Materials

– Formatting

Co-designing

Introduction

Initially – from my program I repeat: *Broadly seeing materiality and materials – like people – as participating, relating and acting in co-design networks, projects, events and situations...matters*

In this Part B, I will be exemplifying, exploring and arguing for this programmatic statement. Building upon Part A, this Part B starts with the preliminary positions that participating materials in co-designing is different from ideas of materials ‘only’ viewed as a part of a method, tool or technique and different from ideas of affordances (as applied in much design research) of inherent semantic meanings ‘in’ products and artefacts. Rather, with a series of examples with disposable cups, I start to argue that meanings of materials are negotiated in the situation. Lastly, to further position this work, through relating to recent material culture studies (MCS) authors, initially, I further establish a broad view of materiality in co-designing.

Throughout this Part B, I further explore and argue for this broad view of materiality in co-designing. First, with Bruno Latour and ANT perspectives combined with further exploring Lucy Suchman’s views of situated practice, I discuss co-designing as agency, relations and networks (Chapter 4). Second, with Latour’s concept, I propose different ‘delegated roles’ to non-human, mostly touchable, materials participating in co-design networks, projects, events and situations (Chapter 5) Third, I draw some of these proposed ideas together, when emphasizing *formatting* of co-designing at co-design events as processes of *materializing* and *rematerializing* (Chapter 6).

Chapter 4

Chapter 5

Chapter 6

The main examples discussed in this Part B are:

Exemplar 03 / Kick-off

Exemplar 04 / Per:form

Exemplar 01 / Service Project Landscape (some)

Exemplar 02 / Rehab Future Lab (some)

Introduction / A series of examples of co-designing with disposable cups – mainly from Teaching

Chapter 5 / A general example about brainstorming

Chapter 5 / An example with ‘Fieldcards’ and no formats / from Palcom

Chapter 5 / Post-it notes as examples of generic formats / related to DAIM

Chapter 5 / Examples of student studio-configurations / from Atelier

Chapter 5 / An example of a conference room as a constraining physical location

First preliminary position: Not (design) methods, techniques and tools – but socio-material co-designing

All Exemplars For many years, I have had an interest in understanding designing and co-designing practices. My own initial idea of research in this area of interaction design and co-design in a broader sense, was to develop, share and reflect upon methods, tools and approaches used in designing and especially co-designing. However, with the various theoretical perspectives I relate to, with all the Exemplars, I no longer view tangible materials as a part of a (design) method.

As I will further argue throughout this Part B, I now view materiality in a broad sense and suggest viewing materials (tangible and e.g. talk) as participating in the co-design situation, event and project network. Yet, in various (co-) design communities there is (still) a lot of focus on methods and tools. In the following section, I will briefly extend this positioning.

'Methods' in interaction design, participatory design and service design

In opposition to straight forward engineering approaches from problem to solution, as one of the first design research communities, the 'Design Methods Movement' has gained quite a lot of attention since the 1960s, with their various communications and discussions of making previously implicit design processes more explicit. With his book, *Design Methods*, John Chris Jones (1992) has been one of the influential authors here. In his later research, he turned around and argued for almost the opposite position, but many still mainly relate to these initial views.

In the interrelated design fields, interaction design, service design and participatory design, participation of diverse stakeholders is one of the cornerstones in the processes of developing new interfaces, systems, touchpoints, etc. Also in these fields, it is quite widely acknowledged that socio-technical and socio-material relations of people, technologies and other materialities are intertwining in and continually changing practices. Still, within the participatory/co-design community, participation is mainly considered to be from people – especially 'users' but also other stakeholders with diverse professional backgrounds – and it is (still) widely used to speak about participatory techniques, tools and methods. At every Participatory Design conference the last several years, there have been several paper tracks entitled something like 'Method' (e.g. Proceedings from PDC'08 and PDC'10). Thus, at participatory workshops the artefacts or tangible materials are (still) often considered as a part of a technique, a tool or a method.

None of the main authors in this thesis speaks about methods

Chapter 1 To mention a few from Part A, among them are: Donald Schön, with his broad understanding of materials in the design situation (Chapter 1). As recognized by many PD researchers, Jane Lave and Etienne Wenger's concept of communities of practice emphasizes a continual intertwining of
Chapter 2

participation and reification (Chapter 2). Lastly, Lucy Suchman suggests to pay attention to the reconfiguring relationships between people and active artefacts or materials and plans in the situated action (Chapters 3, 4). They all in a sense oppose to the idea of materiality ‘just’ being a part of pre-defined (design) methods. Rather, with these authors I establish my view that artefacts, technologies, materials, etc. and humans are all intertwined in the unique everyday and quite explicitly staged co-design situation.

Chapter 2

Chapters 3, 4

An example of related views within co-design research: As a part of his argument for what he has coined ‘design laboratories’, Thomas Binder suggests going *Beyond Methods* (Binder, 2010:18). His argument is built from the Design Methods Movement, whose main accomplishment in his view has been that it established a focus on processes of designing rather than on the designed products and services. However, he also comments, ‘Today, method has become a more ambiguous term that may lure us to believe that good results can be obtained by complying with standard procedures’. And later he continues, ‘If we ran a design laboratory with a standardized toolbox, we would (at best) get a standardized results already baked into the tools and methods we employ’. Instead he argues ‘...in each design laboratory, these tools and methods have to be shaped and sharpened by the issues and concerns of the participants (...)’ (ibid:19).

Chapter 2

Even though he recommends going *Beyond Methods*, for some reason Binder still ends the essay by saying ‘...the successful design laboratory must create its own inventory of tools (e.g. seen as camcorders) and methods (e.g. seen as design games). This means that a toolkit is an outcome of the design laboratory, not a resource readily available at the start’ (ibid:21). (It should be mentioned that in the project description, one of the specified deliverables that had been negotiated with the public funding organization was to be called a ‘toolkit’, which might be why he continues to use these terms). Despite the use of the terms ‘methods’ and ‘tools’, his point is in many ways similar to my point made with Wenger and Binder in Chapter 2, about viewing co-design projects as platforms, or design laboratories, over time creating a new, shared project community of practice with its over time co-developed shared practices of participation and reifying (materializing).

Chapter 2

Summary / first preliminary position

To summarize, initially I suggest not to only view materials as a part of a (design) methods, tools and techniques, when aiming for understanding the complex practices of participating materials in co-designing.

Second preliminary position: Meanings of materials are negotiated in the (co-design) situation

To further start my argument for participating materials, I will jump right into a series of examples with disposable cups.

Meanings of disposable cups

There are so many different versions of disposable cups. There are brown, silver, white, semi-transparent, and transparent soft plastic disposable cups. There are hard-plastic transparent ones, and there are tall ones and shorter ones also formed to create a handle while drinking. There are also others made of coated cardboard again with or without handles. Various kinds of disposable cups are (culturally established to be) very convenient for drinking hot chocolate, coffee, lemonade, wine, drinks, beers, etc. Generally, they are all designed to hold cold and/or hot liquids. Being able to hold liquids could be seen as one of the main affordances of disposable cups.

Even though it is not very environmentally friendly, because it is easy to serve extra people and because it is easy to clean up, disposable cups are often (used) participating at parties. Likewise, at conferences and in office meeting rooms disposable cups are often also populating those spaces. Sometimes they are personalized and connected to one person by writing a name on the outside, so it can be used several times. Generally, they are designed for one time use – and being for one time use could be viewed as another material affordance or property. Yet, in another view the way disposable cups are used depends on a complex network of factors, norms and cultural practices in the specific situation. For example, we can consider the attitude of the organizers and drinkers, the availability of different kinds of liquids and cups, the number of available cups in relation to the number of guests, etc.

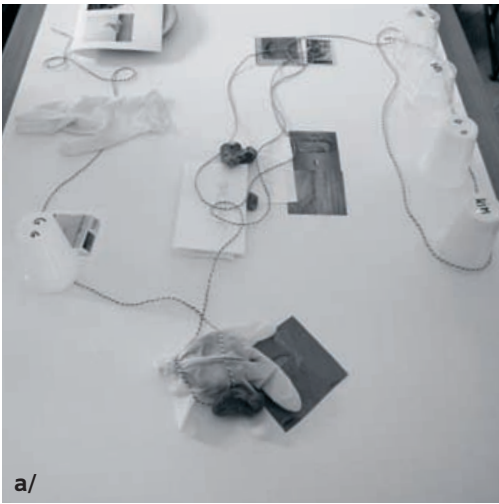
A series of examples with disposable cups in co-design situations

While a student, I participated in a ‘Designing for User Experience’ workshop (spring 2000).⁶⁷ There, I was initially inspired, by another group engaging disposable cups in their collaborative work.

Figure 9/
Disposable cups
turned upside down
and with sketched
on faces, used to
collaboratively play
out future scenarios
of possible uses – in
this case for sup-
porting dialogues
between taxi drivers
and customers.



⁶⁷ Briefly described in P&A / ‘Modes of Design Inquiry’/ Figure 3e.



a/



b/



c/



d/



e/



f/

Figure 10/ a-f/ Different examples of negotiated meanings of disposable cups in the co-design situation.

For several years, among the physical materials I bring along in my bag for co-design events and situations are disposable cups. In the many different co-design situations I have engaged in, they have been used and manipulated for various purposes and collaboratively applied a variety of meanings in the situation. For example (the following letters match the letters in Figure 10):

- Appendix 07 **a/** During the exercise of creating ‘Project Landscapes’ in the XLab ‘Beginnings’ workshop, a newly started PhD student within ceramics also used disposable cups of two kinds to capture the different stakeholders in his project. Here, two cups are white as these stakeholders financial and thematic interests were still a bit unclear to the student, while ‘DKDS’ where he had his everyday workplace and ‘CDF’ within which the workshop was hosted, both were transparent as he, at the time, was more comfortable with them, as they did not put any demands on his work as the other two institutional actors.
- Appendix 04 **b/** In this project landscape, created as a half way project status by a team of Danish ITU master students, dissected from the underlying fieldwork, small disposable cups with name-tag stickers on the outside were engaged to capture the main analytic insights and issues of interest, with which the group through this exercise identified and wanted to continue working.
- Appendix 07 **c/** As a part of quickly role-playing possible future scenarios of sorting waste on a conveyor-belt, by manipulating and taping together two disposable cups, another group of Norwegian industrial design students quickly mocked-up two versions of handheld scanning devices. These were engaged in exploring and pretending to do the job of identifying different kinds of materials on the belt. Yet, from experimentation with these, they turned out to not be the most convenient, so in the later video-recorded scenario, they were replaced by a third version – an ‘interactive’ (blue cleaning) glove (in the back of the picture).
- Appendix 07 **d/** After a series of different exercises of materializing different parts of their newly started project, the last task of a one day workshop was to capture on video the main issues they had discovered during the day. Inspired by a kids’ game of making walkie-talkies with cups and string, here a team of Norwegian industrial design students engaged three disposable cups connected by strings to illustrate the main actors (they imagined to be) collaborating in their project – them as a team, the company they were going to work with and the company’s customers. On the strings they attached written, expected challenges between them and the other stakeholders. While they captured their main insights as a video with voice-over, they pulled the strings through the cups to eventually make the stakeholders meet in the middle around a shared concept and solution.
- Appendix 07 **e/** In this 3D-service-mapping, created by interaction design master students in Sweden, a transparent disposable cup turned upside down, was capturing an important, in a sense immaterial, inviting ‘Message’ in their service. Connected with various other actors in the service network, the students considered the message as an important touchpoint in

their future project. (The message of invitation would appear on a mobile phone when connected to Bluetooth e.g. on a bus, and the receiver would then be invited to receive and accept a music tune composed by youth in the local neighborhood).

f/ Lastly, in the situation of co-designing a ‘collaborative decision-making device during the XLab largely silent Per:form event, eight transparent disposable cups were quite quickly included as a constructive element for raising the white board above the table to extend the working space. Later, by placing a watch – a metaphor for ‘time’ – in one of the cups, one of the participants added the meaning of the cups as marking important pillars in collaborative decision-making.

Exemplar 04 /
Appendix 04

In the first example of Figure 10a, as a co-organizer I had explicitly suggested using disposable cups for materializations of project actors or stakeholders, but in all the other examples disposable cups were available among many other tangible materials, and engaged as the students and other people pleased, and their specific engagement, qualities and meanings evolved in every unique co-design situation. All six Exemplars show similar situations, in which the meaning of the materials is negotiated in the situated actions. As discussed throughout Part A, in Exemplar 01 tangibly the negotiations very clearly materialized in the shared project landscape; and in Exemplar 02, less tangibly, but here negotiations of and with the materials in the situations surely happened too. A quick glance at Exemplar 03 and 04, shows the same.

All Exemplars

Exemplar 01
Exemplar 02

Exemplars 03, 04

Etienne Wenger’s views on negotiating meaning

As discussed in Chapter 2, participation and processes of reifying intertwine also in co-design project communities of practice. Negotiating meanings of reifications and materials are an inherent part of this. In other words, to Wenger ‘practice is about meaning as an experience...’ and that meaning making is a part of what makes life meaningful (Wenger, 1998:52, 286-Note 2). Thus, meaning is an experience, and experience is situated or located in a process that he calls ‘the negotiation of meaning’ (ibid:52). Integral in all these situated processes, he argues, that in communities of practice we engage in a variety of activities, but in the end, ‘it is the meanings we produce that matters’ (ibid:51).

Chapter 2

Summary / second preliminary position

In this section, with the various examples of negotiated meanings of disposable cups in co-designing, I have shown how meanings of materials are negotiated among the stakeholders in the co-design situation.

***Third preliminary position:
Not only artefacts with affordances ‘in’ them***

Related to the above, another of my initial positions is in opposition to the concept of affordances, that meanings of materials are not ‘in’ them, and thus that materiality is not simply artefacts.

James Gibson's idea of affordances

Building on his previous work on human perception, James Gibson's *The Theory of Affordances* has greatly influenced (product) design theory and practice (Gibson, 1977). From detailed studies of ecological physics and how animals (are studied to) perceive the surfaces and environment around them, Gibson claims that the theory is 'an explanation of how the "value" and "meanings" of things in the environment could be directly perceived' (ibid:67). Further, as he was inventing the concept, he defined affordance as: '...the affordance of anything is a specific combination of the properties of its substance and its surfaces...' (ibid:67). He emphasizes that he is speaking of physical properties and of what the environment affords, and that the 'combination of properties is "meaningful" whereas any single property is not (ibid:67-68). In other words, what he finds meaningful is what can be directly perceived or understood from the physical properties and surfaces in the environment.

Product semantics of design is inspired by the idea of affordances, and Klaus Krippendorff's work on 'product semantics', has been greatly influential in industrial design. However, here the interpretation of affordances has been somewhat simplified through suggesting ways to design for (and talk about) the fixed, functional signs indicating the intended use of a product (Krippendorff, 1984/1989/1990). A couple of examples can be that a square button with smooth sides and placed in a hole affords pushing in, while a round button maybe with sensible lines on the sides to support a good grip and with a scale around it affords turning. These established product semantics can be very useful when designing product surfaces and interaction points and surfaces.

In his book, *The Semantic Turn*, Krippendorff (2006) has partly moved on from the ideas of pure product semantics; here he acknowledges the importance of not only studying the affordances of one artifact at a time, but rather paying attention to 'ecologies of artefacts'. With my backgrounds in architecture and industrial design, I surely agree that the material affordances or product semantics of surfaces are 'speaking back' (to use Schön's phrase) and that this is or can be a part of suggesting a certain situated use. Still, his views of the role and meaning of artefacts, also in processes of designing, build upon his earlier work on product semantics.

Affordances has also partly influenced thinking in HCI and interaction design, for example through Donald A. Norman's work and book *The Design of Everyday Things* (1998). To Norman, his work is in many ways in opposition to many Gibsonian psychologists, but he does acknowledge Gibson's theory of affordances of objects as 'the start of a psychology of materials and of things' (ibid:9 / Note 2). Through many detailed close-up interaction examples – both of digital and non-digital things – Norman shows how the design either supports users or makes them feel stupid or clumsy in their everyday actions; and he claims that designers and manufacturers have a large responsibility in this. Because of an interest in designers not causing frustrations in everyday life, through practical design principles and suggestions, the book was also

an argument for usability and user-centered design. He strongly argues for an understanding of the everyday actions or the use situation, which I of course acknowledge, but his work has mainly a focus on the interaction between one user or person and one everyday thing at a time, which is simplified in relation to the complex socio-material interactions of co-designing I explore in this thesis.

In material culture studies (MCS) research, many also oppose to affordances. Daniel Miller, one of the fathers of recent material culture studies and editor of the anthology *Materiality*, acknowledges that there are many theories of objects as artifacts. He mentions Arjun Appadurai's influential book *The Social Life of Things* (1986) (Miller, 2005:7), but he also strongly suggests not reducing a theory of materiality to the value, quality or properties of objects. James Gibson's influential concept of affordances can be considered as an example of such a 'simple' theory of materiality. In, *Materiality and Society*, sociologist and material culture-researcher Tim Dant (2005), acknowledges that Gibson, compared to his early works (e.g. on driving cars – 1938), in his theory of affordances has been re-thinking and moving away from only considering what is perceived to be happening within the body, but also in the material environment. Still, according to Dant, without recognizing culture and its variability on the meaning and value of material, Gibson has continued to view affordances as the fixed properties of things (Dant, 2005:70-73). Likewise, in *The Design of Everyday Life*, sociologist Elisabeth Shove et al. are also fully aware of semiotics and product semantics and with those views the idea of affordances; but with her colleagues she too distance their work from these views. Shove et al. do so with a clear reference to Fischer, who in their words has stated: 'affordances cannot simply be "built into" or "read out of" artefacts, but are discovered by users through interaction with them' (Shove et al, 2007:110-111 about Fischer, 2004:26).

Materiality not just objects or artefacts

Tied to the above, a 'theory of mere things as objects', Miller critically calls 'the most obvious and most mundane expression of what the term *material* might convey – artefacts' (Miller, 2005:4). He argues that this simple view of material soon breaks down when it meets real world practice; however, he does acknowledge that this still is the everyday (and in some research fields) the common understanding of materiality (ibid:4). In research, some of the reasons materiality for many years has been given so little attention in many academic fields, to Miller, 'is that objects are important not because they are evident and physically constrain or enable, but often precisely because we do not "see" them...' (ibid:5).

Summary / third preliminary position

In this section, in opposition to the concepts of affordances and product semantics, I have argued that materiality is not simply artefacts or objects. Rather, to connect to the second preliminary position, the meanings of materials are not 'in' them, but are intertwined in and negotiated in co-designing processes and situated practices.

Fourth preliminary position: Broad views of materiality and participating materials

Materiality is an integral part of being human. Materiality is a part of society and materiality is a part of the complex processes, relations and practice of everyday life – and of co-designing. Building upon the views established in Part A, the last initial position I want to extend, is my argument for a (second) broad view of materiality.

Opposition to the subject-object dichotomy

Chapter 4 Theoretically, the views and theories of materiality as simply artefacts (see above), relates to the subject-object dichotomy, which has influenced much sociological and humanist thinking in the 20th Century. Generally the recent material culture studies researchers mentioned above are opposed to this simple understanding of materiality, as is Bruno Latour (e.g. 2005). This makes their views differ from many other social sciences, in which philosophically categorizing and ordering the social with the strong theoretical concepts of superior ‘subjects’ and ‘objects’ – e.g. when analyzing communication – in many fields still are very influential (Miller, 2005:5-6).⁶⁸

Materiality as doing and materializing

In *Materializations – New perspectives on materiality and culture analysis*⁶⁹, Tine Damsholt and Dorte Gert Simonsen (2009) view materiality as an active verb, as ‘doing’, and with that ‘materializing’. They explicitly highlight the English –ing form, to emphasize the intertwining and engaging with materials in ongoing, not stable, factual and well-defined processes (Damsholt et al., 2009:15). As applied by many PD researchers, this argument clearly relates to Lave and Wenger’s views of participation and continually intertwining processes of reifying in communities of practice (Lave and Wenger, 1991 / Wenger, 1998).

Chapter 2

Additionally, Damsholt and Simonsen propose viewing materiality or materializations as process and agency, relation and network, and performativity and practice (Damsholt et al., 2009:15).⁷⁰ To support this view, they refer to Donna Haraway’s concept of ‘hybrids’, which in time and space show how different materialities continually intertwine and merge in more or less stable materializations (of phenomenon) (ibid:30). Further, they view materiality as continually being mobilized, translated, tempo-

.....

⁶⁸ I do not use or encourage using the dichotomies subject-object, tangible-intangible, material-immaterial or digital-physical. So, throughout the thesis, when a non-human not touchable with the hands is participating in co-designing, I do not use the terms immaterial/intangible/digital. Rather, when I use the term ‘material’ it encompasses the various non-humans participating in the project, event and situation. Still, to capture that a material can be touched with the hands, I use words like ‘hands-on’, ‘touchable’, ‘physical’ or ‘tangible’.

⁶⁹ Title translated from Danish by me.

⁷⁰ These views have also largely influenced the structuring of some chapters in this thesis.

rarily stabilized, merged or unfolded in networks, rather than being initiated by one superior creating or doing subject (=human being) (ibid:15).⁷¹

Materiality as skills, having and doing

Elisabeth Shove et al. extend the view of materiality as doing, to be an interplay and relationship between practical skills, 'having' and 'doing' (Shove et al., 2007:25). From detailed studies of what they call the 'restless kitchen', as Shove et al. have observed and understood, there are three different relationships between having and doing:

One, sometimes some materials are missing and thus only enable doing with what is available. Two, sometimes there is a balance between having and doing. Three, sometimes there is plenty of materials (having) but the doing, for various reasons (e.g. lack of skill or motivation), does not really happen; they call this 'unrealized practices' (ibid:26-34). Distinctions that definitely also are relevant in relation to understanding practices of (materializing in) co-designing.

Further, from interviews and guided 'tours' of personal toolboxes with amateur DIY'ers, Shove et al. clearly show that '...materials are integral to doing...', and that the interplays of both materials, tools, competences and practice are transforming in the process (ibid:67).

Their topics of plastics, consumption, kitchen practices and DIY projects are not my main interest. But generally, with their studies of these specific examples, these authors show how diverse materials are participating in processes of materializing, and in the continually mobilized, merged, unfolded, and temporarily stabilized networks, where '...what they are made into and how they are 'materialized'...', influences their 'life' in the network (ibid:106). In other words, Daniel Miller, with a material-culture-perspective, also proposes to study '...how the things that people make, make people' (Miller, 2005:38).⁷²

The Per:form event and broad views of materiality

At the experimental Per:form event, previously it was agreed that we would mainly be exploring in silence – largely leaving out talk, which I with Donald

Exemplar 04 /
circle 02

.....

⁷¹ Damsholt et al.'s main academic intension is to suggest and exemplify how materiality can be integrated analytically in cultural sciences; this is partly different from my intension of understanding and staging co-designing. Also, the anthropological accounts in their studies and many material culture studies are on materiality in everyday life; but co-designing is not everyday life; it is much more explicitly staged as emphasized in Part A. Still, these broad views of materiality I also find relevant for understanding and staging co-designing.

⁷² The perspectives explored here relate to my initial experience and practice-based views of what I used to call 'Material Means' (Eriksen, 2006b). In that paper, I suggested an initial analytical framework for understanding co-design processes as 'Materials' – 'Materializing' – 'Materialized' – and especially emphasized what I called 'Re-representing' (Based on reviews I phrased it like this, but in the initial version of the paper I called this 'Re-materializing' – which is what I have returned to in this thesis – Chapters 6, 9). As this thesis shows, now for example with this theoretical grounding, I still suggest these views to be relevant both for understanding and staging co-designing.

Chapter 1 Schön view as a material in the situation too. In the situation, it turned out that this talk-material was missing sometimes, but (maybe because of the experimental framing of the event) the constraint was respected. Instead, for the various co-design situations during the day, we were 'having' a whole 'buffet of materials' and a pile of white foam-board squares to choose and pick from when 'doing' and 'making' - or materializing - both the different proposals and one shared proposal for a 'collaborative decision-making device'.

Exemplar 04 /
circles 03, 07, 08

Exemplar 04 /
circles 02, 03

Exemplar 04 /
circles 07, 08

For the buffet, everyone had been asked beforehand to bring and add a material. The PhD student in ceramics brought clay and the coming PhD student from textile design brought a lot of roles of thread. For both of them, on a white board, the first materials they chose to include in their proposals were the materials they had brought - the materials they were familiar with and had professional 'skills' working with. Yet, in the situation they were manipulated and combined with other, to them, less comfortable materials from the buffet, and after having made the first proposals (after having personally warmed-up) they were also exploring with only some of these other materials, with which they had less experience and fewer 'skills'.

Quite similar processes happened for the other three participants. Additionally (additions to the contents of the Exemplar), before calling silence, as organizer, I had said that it was ok also to go outside the room and find materials to work with if someone wanted to - but no one did. They all worked with what was available in the room and even what was at the two main tables arranged for the day - what we were 'having'. Except for the few materials brought by the participants, all the other physical materials were made available and arranged by us as event organizers. Relating to one of the core issues captured in Part A, that staging is important in co-designing, and as this shows too, in co-design projects, the organizers have a lot of (material) power being the ones largely deciding which materials are invited and for what, at co-design events.

Chapter 2

The Rehab Future Lab event and broad views of materiality

Exemplar 02 /
circles 03-05

Exemplar 02 / Email
with Goals & Agenda

For the Rehab Future Lab event, prior to the event the main organizers had pre-designed other materials than those described above. To engage mainly in the group-work situations, for this event, my colleagues had prepared and brought a selection of a few hands-on materials (the hard foam mock-ups, two different scenarios of their possible use, printed for everyone, and the agenda and plan for the event⁷³). No one else had been asked to bring anything, except for the staff at the ward that had been asked to book rooms for us to be in.

Exemplar 02 / circle 01

As shown in the Exemplar, the environment at the unit is very rich with diverse tools and materials (for supporting the staff's storytelling about injuries, for all kinds of rehabilitation-training-exercises, for measuring progress and status, etc., etc.). However, as shown in the Exemplar, at this

.....

⁷³ 'Classic' interaction/industrial design materials and practices.

event, we were not working in those environments but in booked meeting-rooms in the hallway. In the situation, we were split up in smaller groups in two separate rooms, and we, roughly according to the plan, assessed ‘incremental changes’ through roleplaying and discussing with these pre-designed proposals for future applications.

Exemplar 02 /
circles 03, 05
Chapter 5
Part C / Introduction

Very practically, for one of the groups, in addition to the materials brought along for ‘doing’ this, spatially we were ‘having’ the table and chairs in the small room. In this group, and quite commonly, each participant was also ‘having’ their personal notebook and writing-tool and some also a printout of the agenda of the day in front of them. As mentioned above, the intension here was to assess and explore the sketched proposals. Yet, these materials we were ‘having’ for ‘doing’ the collaborative exploration through roleplaying, at least in this situation, did not really get the intended roleplaying-kind-of ‘doing’ going for very long. Rather, as described, it quickly turned into verbal discussions, yet sometimes with a gesture towards and with some of the hands-on materials on the table. (Later in this Part B, in Chapter 5, I further discuss and question roles of pre-designed proposals in co-designing).

Exemplar 02 /
circles 03, 05

Chapter 5

Despite their different physical materials and spatial event setups, both these exemplary examples of co-design situations show how – with different ‘having’ materials – co-designing is *materializing*. Yet, at least at co-design events, as I have started to address in Part A, these processes are often quite explicitly staged – and what I, later in Chapters 5 and 6 of this Part B will explore much further as *formatting*.

Chapters 5, 6

Summary / third preliminary position

In this last section, building upon the positions established in Part A, with Damsholt et al. and Shove et al., I have now initially extended my understanding of a broad view of materiality in co-designing. Materiality is understood as doing and materializing, clearly depending on the relationship of skills and having (materials available).

Summary – Part B / Introduction

I acknowledge both the work related to (co-) design research on methods and on affordances and semantics, but as I have argued in this Part B / Introduction, I do not find these different theories the most suitable when aiming to understand and explore participating materials in co-designing, so I leave them here. Rather, in this Part B, I build upon and extend the broad views of materiality initially established in Part A, and now also understood as *doing* and *materializing* clearly depending on skills and available (having) materials.

Further, through examples of co-designing with disposable cups, I have displayed how meanings of materials are not inherent ‘in’ them – like argued with the theory of affordances – but at least in co-designing largely are negotiated in the specific co-design situation.

Throughout this Part B, I will further explore and argue for this broad view of materiality in co-designing. First, with Bruno Latour and ANT perspectives combined with further exploring Lucy Suchman's views of situated practice, I will explore co-designing as agency, relations and networks (Chapter 4). Then, with Latour's concept, I will explore different 'delegated roles' to non-human mostly touchable materials in co-design projects, events and situations (Chapter 5). I will also explore *staging* and *formatting* co-designing at co-design events as processes of *materializing* and *rematerializing* (Chapter 6).

Chapter 4 / A Broad View of Materiality – Co-designing as Relating

*Perspectives mainly by Bruno Latour
and Lucy Suchman*

Bruno Latour's work has inspired many during the last decades including authors I mentioned in Part B / Introduction regarding material culture studies, and increasingly (co-) design research community members too. Building upon the broad views of materiality I have already established in Part A and in the Part B / Introduction, with some of Latour's work and Actor-Network-Theory (ANT) perspectives, here I will extend this broad view of materiality in co-designing – views I strongly suggest co-designers acknowledge for understanding their *material* when participating and engaging in (*staging* and *formatting*) co-designing.

In addition to viewing materiality as *doing* and *materializing*, with clear inspiration from Latour, Tine Damsholt et al. (2009) also suggest viewing materiality as relations and networks. To emphasize Latour's focus on relations, follow their recommendation to focus on *doing* I further suggest viewing co-designing as continually relating.

Part B / Introduction,
Footnote 70

The core of Latour's work capturing ANT perspectives, is exactly the aim of broadly understanding networks and relations. With the ANT concepts of 'human and non-human intermediaries and actors' – often with 'delegated roles' – making others 'act' in continually transforming re-assembling networks of 'group-formations' – often in processes of 'circulating references', Latour is a central reference for understanding the relational character of materiality – also in co-designing. With different words and concepts, these views in many ways relate to Etienne Wenger and his co-author's work on understanding 'communities of practice' (CoP) as continually intertwining processes of 'participation and reification'.

Chapter 2

In this chapter, I also briefly relate Latour's views to Suchman's (1987/2007) understandings of the 'human-machine or artefact configurations', where I especially re-emphasize her point about the role of 'plans' in the unique 'situated actions', also important for understanding relations and relating in quite staged co-design projects, events and situations.

Chapter 3

Lastly, as mentioned in the Part B / Introduction, both Latour and Suchman oppose the subject-object dichotomy and generally argue for a broad view of materiality. With different words, phrases and concepts, they only sometimes use the term ‘object’ – but also thing, artefact, and machine.^{74 75}

Box:

Latour Positioning Actor-Network-Theory (ANT) – Positioning Bruno Latour

As a branch of science studies and related to Science and Technology Studies (STS), ANT is a rather new social theory. For example along with John Law, Bruno Latour is one of its ‘fathers’. In his introduction of *Reassembling the Social – An Introduction to Actor-Network-Theory*, he positions the field in the following way: In opposition to most other social sciences, he calls ANT a ‘sociology of associations’ and ‘sociologies of the social’ – and sometimes also refers to it as the ‘sociology of translations’ (Latour, 2005). This book is an introduction to ANT, but also summarizes most of Latour’s views from many years of research.

Bruno Latour first became a philosopher, later an anthropologist and is sometimes called a sociologist. In his work he combines the typical practices related to both fields – doing detailed ethnomethodological studies and theorizing. In the ANT approach, rather than viewing people as ‘informants’ whose social behaviors are to be categorized into orders and a ‘social’ vocabulary, he argues, that the job of the (ANT) analyst is to track the traces of temporary group formations to reassemble the social. Thus, methodologically, even though he too theorizes by naming observed phenomenon, rather than the widely applied academic practices within social sciences of categorizing and grouping prior to field studies, he argues for making detailed anthropological accounts as a basis for theorizing.

Related to the approach, in opposition to many other social sciences, generally he wants to overcome the humanist and modernist theoretic-

⁷⁴ In the Part B / Introduction with material culture researchers, I mainly used the term ‘material’, but with reference to Heidegger’s broad understanding of Dinge as gatherings, in a broad sense Latour often uses the term ‘thing’ – e.g. ‘drawing things together’ (P&A / Part D) and ‘Making things public’ (Latour and Weibel, 2005). Suchman tends to use the terms ‘artefact’ or ‘machine’. Thus, in this section I sometimes use thing when referring to Latour, sometimes artefact when referring to Suchman, but otherwise throughout the thesis I will continue to use ‘material’ and ‘materiality’.

⁷⁵ At large, Latour’s intensions are both to change the focuses and approaches of sociology and other social sciences; however, as I am applying ANT in a designerly way, what I mainly explore here, for the purpose of further understanding and re-assembling co-designing, are the main concepts just mentioned in his work / ANT. In addition to these theoretical concepts, during the last years of my research, Bruno Latour’s work has also inspired my ‘Designerly Way of Theorizing and Drawing Together Approach’ (P&A).

cal traditions of dividing the world into ‘objects’ and superior ‘subjects’, and he claims that his sociologist colleagues have been a part of establishing this simplifying dichotomy.

Closely tied to this, he claims they generally all use the ‘social’ as the tie or the stuff to study and with which to explain the world, and with that also viewing things as representations or avatars of the same already existing social orders. According to him, in opposition to this, ANT basically gets back to the object and detailed descriptions to understand and reassemble the social. What in his view – and the more and more who follow ANT and STS – is interesting to carefully study and describe are the actors in networks, and how they continually mediate and reassemble the unstable social.

Lastly, with a continual interest in understanding and questioning the networks of politics, democracy and other power-relations, and with the continual intension of changing the focuses and approaches of sociology and other social sciences, one of Latour’s main issues is to come to terms with what he calls scientific ‘Matters of Fact’ (related to the academic simplifying practices of categorizing mentioned above) and instead he argues for focusing on what he has coined ‘Matters of Concern’ and ‘Drawing Things Together’.

P&A / Part D

Latour’s website with publications: <http://www.bruno-latour.fr/>

Co-Designing – Not in groups but in group formations

Despite all the ‘group-work’ in co-designing, according to Bruno Latour there are no (theoretical) groups – at the most there are so called ‘group formations’ (Latour, 2005:27). This is his first source of uncertainty or concern about how to view relations in continually ‘reassembling’ networks. As described in the box, this corresponds with how he is opposed to organizing people and things in stable groups or categories. In this section, this view is briefly explained and related to views by Etienne Wenger and his co-authors (1991/1998/2002) about communities of practice (CoP).⁷⁶

Chapter 2

As opposed to what the title ‘Actor-Network’ indicates, Latour emphasizes that the point of an ANT perspective is NOT to basically identify that different actors (human and non-human) are connected in networks – lots of theories can be used for this, he says. He accepts that carefully sketching

.....
⁷⁶ As ‘group work’ is such a common phrase in participatory design, throughout this thesis e.g. in the Exemplars, I continue to use that term – but with the understanding of the complexities of relations and relating explored both here and in Chapter 2.

connections can be useful in an analysis of identifying who are really actors and who only plays intermediary roles. However, with such sketches, he suggests viewing a network more as a ‘work-net’, emphasizing a focus on tracing who makes the others work or act (I get to these terms and concepts of ‘intermediaries’ and ‘actors’ below) (ibid:142).

Yet, with Latour’s general assumption that the social is unstable and continually reassembled, as mentioned, he naturally argues that there exist no groups, only what he calls ‘group formations’ (ibid:27) or ‘groupings’ (ibid:34). Relating to a grouping is an ongoing process; and humans are typically a part of various group formations including their family, different teams at the workplace, spare time mates, etc. Again this clearly overlaps with views of CoP where people are found to be engaged in many communities at the same time – and where ‘brokers’ and ‘boundary objects’ engage in making connections and relations both within and across different CoPs. Yet, the idea of mediators, explored further below, extends an understanding of the complexities and roles.

Group formations are constantly at work or continually ‘performed’, Latour also claims (ibid:31-34, 63). In these ongoing processes among the actors themselves new resources are continually gathered, boundaries are continually changed, anti-groups are continually created and mapped, one or more talkative spokespersons are continually engaged, and professionals like journalists and social scientists are continually mobilized all to be ‘a part of making the group exist, last, decoy or disappear’ (ibid:33). Different actors like ‘group makers’, ‘group talkers’ and ‘group holders’ are, according to Latour, continually necessary for group formations to be made and re-made (ibid:32). In co-design projects such (human) actors are, for example, project managers and event organizers (sometimes the same person(s)), and the other characteristics also largely apply to large, multi-disciplinary, distributed co-design projects.

Summary / Not in groups but in group formations

Chapter 2 Latour is opposed to ideas of ‘stable groups’ and rather argues for focusing on and acknowledging the unstable or continually transformed and performed character of networks and group formations. In this section, this view has been related to Etienne Wenger and his co-authors’s work with communities of practice. Formations of unstable groupings largely happen through transformative relations of people and materials. In other words, these relations are continually reassembling and reconfiguring. So next, I will explore both Bruno Latour and Lucy Suchman’s views on this.

Networks of Human and Non-Human Actors (in Co-Designing)

Actor-Network-Theory (ANT) rests on the basic premise that actors in a network both can be ‘humans’ (people) and ‘non-humans’ (places, events,

things or materials, etc.), and that both have, what in ANT terms, is called ‘the agency’ to act. When being actors, generally they do something, mediate the actions of others and make a difference to ‘a state of affairs’ (ibid:52).

In this section, I extend this basic principle as described by Bruno Latour in *Reassembling the Social* (2005), and describe how actors and intermediaries are participating and acting in continually transforming networks. I also further explore an understanding of co-designing as relating by briefly intertwining it with ideas of CoP and with several of his other academic concepts– especially ‘delegated roles’ and ‘circulating references’.

Chapter 2

Non-humans make others act too

Latour claims that things (non-humans) – like people – with their agency might ‘authorize, allow, afford, permit, suggest, influence, forbid... actions’ (ibid:72). As he exemplifies many can agree that ‘popular festivals are necessary to ‘refresh social ties’, that ‘it is good for a company to distribute a journal to ‘build loyalties’, that ‘without price tags and bar codes it would be very difficult to ‘calculate’ a price’, and that ‘without a totem it would be difficult for a tribe to recognize that they are “members” of the same clan’ (ibid:37). At this level, these examples and views clearly overlaps with Lave and Wenger’s ideas of ‘processes of reification’ in CoP. Yet, to Latour / ANT these make all the difference, and to really understand their precise effects they need to be studied in detail.

Chapter 2

An example of investigating roles of doors as parts of our social world

Triggered by a little handwritten note on a hallway door saying “The groom is on strike, for God’s sake, keep the door closed”, in his paper *Where are the Missing Masses? Sociology of a Door*, as an example Latour (1992) investigates roles of doors as parts of our social world. First of all, he shows how doors make it possible to pass through walls while still maintaining to work like a wall – for example, keeping out the cold. One of the inventions making this possible is the non-human actor, the hinge. However, they are both for opening and closing doors, and with lazy people in a hurry (human actors) doors are not always closed properly. Like the little note, his observations are that the impact of ‘keep door shot, please’-signs weakens after a while.

Earlier, in some places, porters were paid to make sure the door was closed properly, but this role has now, almost except at Hilton hotels, been what he calls ‘delegated’ to yet another non-human actor, the hydraulic door closer. This technology is carefully designed to gather the energy from the person pushing the door open, and using that for a smooth closure. It does this really well, but it is not ‘scripted’ to extend this situation, in helping people get to the door. This might also depend on a series of other ‘aligned set-ups’ mediated through maps, roads, signs and other people on the way there.

This example is quite similar to his classic example of road-bumps as ‘delegated policemen’ making drivers slow down at the speed (Latour, 1994:38). The road-bump, the kind of handle on a door and the hydraulic

door closer all have the agency to make humans act in a certain way, but once in place, the action is quite similar every time a car is proceeding and passing the bump and a person the door.

Chapter 5 I do not view the actions (of humans and non-humans) described in Latour's example of a door as being 'in unexpected ways', but the kind of door handle, the hydraulic pump, etc. do make the (human) people passing through the door act in certain ways. So this perspective was more an example of 'delegated roles' to non-humans. Yet, with his many studies of scientific practices, of course, Latour is also basing his theories and agendas on studies of much more complex networks and relations. As I discuss much further in Chapter 5, the idea of 'delegated roles' to non-humans, I also found this very useful for understanding how materials are participating differently in co-designing.

The Per:form event in ANT and CoP perspectives

Exemplar 04 Intertwined with phrases and concepts about communities of practice, initially with this basic ANT perspective, the Per:form event could be viewed like this: On the day of the Per:form event, the temporary project-network was assembling. As humans three newly started or coming PhD scholars and the four of us of the core 'team' (or the XLab (temporary) group-formation and by then a (temporary) project community of practice). On that day, we met in the chosen large and light location (another non-human). Two of us (humans) previously had agreed to be event organizers, but we had all been engaged in planning which (non-human) materials to invite.

Appendix 04

Exemplar 04 / initial list

Exemplar 04 / Open call with agenda The other (human) participants decided to join based on an emailed (non-human) open invitation, sent around in the larger network (of many communities of practice) of Danish (co-) design researchers. The emailed invitation (a non-human actor) was making these people act by actively choosing to join the XLab group-formation. They were all 'new-comers' to this CoP. Two had been invited 'in through the backdoor' to participate in the first 'Beginnings' event, so they were familiar with the socio-material experimental situated practices of the XLab network. One was a complete 'newcomer' on that day, but had years before been in the same learning environment as most of the core-team members, so in that way he was familiar with the ideas of this practice, yet, as the co-designing as materializing went on, through his doing surely he was the one mostly challenging the others with his material moves based on wishes to establish 'rules'.

Appendix 04

Exemplar 04 / circle 08

Exemplar 04 / circles 01, 03 **Everyone was asked to bring some hands-on working materials (non-humans)** to the event, while we as organizers had prepared all the other materials (non-humans), as described in the Exemplar and in the Part B / Introduction. Within the whole core 'team' we had discussed, prepared, rehearsed and refined the hands-on materials; decided on the constraint of working in silence (another non-human actor – manifested when said out loud and written in large letters on the whiteboard at the event) co-designed the written invitation, etc.

Let me dwell with the invitation. The content of this document was carefully considered, so it would answer a lot of the questions we expected the participants to come up with before we met, so it could substitute for us organizers being present to answer. With Latour's idea of delegated roles to non-humans, I suggest that such a document can be considered a 'delegated time and topic keeper'.

Exemplar 04 / Open
call with agenda

However, as it both contained a description of the intensions of the XLab project, the main 'program' capturing the topic of this event, a detailed schedule of the day, specifications of two individual preparations, a list of recommended readings and links, contact info about us in the core-team, compared to the delegated policeman and doorman, this delegated time and topic keeper came to play very different roles and made each human actor (participants and organizers) act in various ways both before and during the event.

Appendix 04
Chapter 5

Summary / Networks of human & non-human actors (in co-designing)

As a part of understanding co-designing as relating, building upon Part A and the Part B / Introduction, I now also acknowledge that both humans (people, participants, organizers, stakeholders) and non-humans (reifications/materializations, materials broadly understood) are a part of continually making a (co-design project) network. Added to this view, with Latour, I have showed how some non-humans have delegated roles, which I explore much further in Chapter 5. Yet, Latour actually does not view all human and non-human participants as actors. So before I explore the Exemplars further, first I will discuss some distinctions between what Latour characterizes as 'intermediaries' and 'mediators'.

Chapter 5

Tracing (material) 'intermediaries' and 'mediators' (in co-designing)

Latour argues for reassembling the social through tracing relations and connections in networks. In processes of tracing relations, Latour has found that it is not everyone or everything that are actors; so to distinguish who are actors and who are not in *Reassembling the Social*, he is using the concepts of 'intermediaries' and 'mediators' (Latour, 2005).

People can act, and things can be made to act, (ibid:70); 'actions are not fully conscious', 'actions are surprises' (ibid:45), Latour states. Still, Latour continually stresses that actors are only actors – or what he used to phrase 'actants' – if they 'make others do unexpected things' (ibid:e.g.59). If they are actors he also calls them 'mediators' (ibid:37). Mediators make others do unexpected things; they use their agency to act, their 'input never tells what the output will be' (ibid:39) and then they cause what he calls 'transformations' (ibid:52). Differently, if people or things (or materials) do not make others act, to Latour they are not actors, but what he calls mere 'intermediaries'. Their 'defined inputs are like their defined outputs' (ibid:39) and he finds those irrelevant to describe in much detail.

Chapter 5 **In co-designing, however, I often find it challenging to distinguish** what is/was what, because rather than one human or non-human on their own, I have observed an assemblage of (non-human) materials (broadly understood) participating – for example when staging co-designing. Still, ideas and practices of mediating and transforming surely also apply to co-designing.

Appendix 09 **Tracing transitions, transformations or the transformative**
To understand this in other words, ANT is both seeking to understand and trace transitions, transformations or the transformative, and Latour also distinguishes between ‘transportation’ and ‘transformation’. To him ‘intermediaries’ are only transporting humans and non-humans, information and meaning but without transforming anything, whereas ‘mediators’ are transforming actors and networks. Roughly, ‘transportations’ are only moving or temporarily changing the people engaged; whereas ‘transformations’ are permanently changing people and relations (Latour: 2005:105-108). As Latour / ANT is exploring relations in networks, he is not particularly interested in the personal individual transformations, so to use the title of his book, to Latour *Reassembling the Social*, or transforming happens all the time. If relations (temporarily) stabilize, then he finds them interesting to explore and understand.

P&A /
A Designery Way... **From yet another view, mediators or actors leave traces**, which then can be (back)-tracked in a reassembling of the network that it was/is an actor in (ibid:53). Group formations leave traces, and it is these traces or delicate trails that Latour methodologically finds interesting to track and re-assemble to understand the social. He particularly encourages a focus on the exceptions of more stable states over longer periods of time or scales as well as ‘which vehicles, tools, instruments, materials provide such stability’ (ibid:35). Again, this is what he generally calls the ‘mediators’.

Foreword: Program
Chapter 2
Chapter 7 **Designing and co-designing are** generally based on an understanding of current practices, future-oriented practices focusing on ‘what if’ (to use Schön’s phrase), and thus intended to propose (and provoke) change or transformation of current practices. So, as many others have researched and recognized already, the processes, practices and relations of (designing and) co-designing are continually transforming too – with non-human materials (E.g. Linde, 2007 / Binder et al, 2011). Related to this, with Eva Brandt, I still claim that quite explicitly staged co-design events and situations, can play a transformative role in a co-design project, or ‘group formation’, or ‘community of practice’ (Brandt and Eriksen, 2010a).

Exemplar 04 **The Per:form event in ANT and CoP perspectives (continued)**
Intertwined with ideas of processes of reifying, views of *materializing*, and these ANT perspectives, the Per:form event can further be understood like this:

Exemplar 04 /
circles 02, 03 At this co-design event, what made the seven participants (two of us organizers) act in surprising ways in the situation called ‘silent brainstorming’, as I have argued earlier, was not one mediator/actor but an assemblage of materials (broadly understood).

The assemblage was e.g. made of: The mornings walkthrough of the schedule of the day, my co-organizers writing ‘Silence Please’ on the whiteboard, the white square foam boards, the explained previous experiences of collaborative decision-making, the individually brought and other (available) hands-on materials in the buffet, the time constraint of 45 minutes, etc. Whether one or the other was an actor or intermediary in this situation of *materializing*, I find it challenging to distinguish.

Differently, the final shared proposal on the table when we had finished the process of co-designing as *materializing*; it was video-recorded and photographed, and then cleaned up, and maybe because of its messiness and need for simplifying (as several said in their reflections), this could be viewed as an intermediary. It was in the centre of focus during the collaborative (co-design doing and *materializing*) process, but it was not what became the ‘boundary object’ or actor after the event.

Exemplar 04 /
circle 08

Afterwards, again with Wenger and Björgvinsson’s (2007) interpretation of ‘processes of reifications’, the (temporarily) ‘hardened’ or ‘materialized’ outputs, which were mediating our later reflections on the event were: The transcribed confessions and verbal time-outs, selected images, fragments of videos, the individual list of three main interests in relation to the overall topic of the event,- written down just after we finished making the shared proposal.

Chapter 2

This process clearly relates to the following ideas of circulating references, so the discussion of the Per:form event is continued in the next section.

Exemplar 04 /
circles 04, 05, 07-10

**Summary / Tracing (material) ‘intermediaries’ and ‘mediators’
(in co-designing)**

Further related to Chapter 2 and the Part B / Introduction, in this section I have extended Latour’s views of the roles that both humans and non-humans can take (and be delegated to take) as ‘intermediaries’ transporting and as actors/mediators transforming and making others act, also in co-designing. However, I have also shown how these at least in co-design events and situations are intertwined in assemblages of materials.

Chapter 2
Part B / Introduction

Relating to ‘circulating references’ (in co-designing)

Lastly, to further understand and establish a broad view of materiality in co-designing as relating, I will apply another influential concept by Latour: ‘circulating references’ (Latour, 1999). ‘Circulating references’ captures Latour’s observations of how (academic) insights and arguments develop through collaborative processes of transforming with the materials of the situation, to relate back to Schön (1983).

Chapter 1

Exemplified in great detail in his essay *Sampling the soil in the Amazon forest* in the book *Pandora’s Hope*, through a detailed study of a research

excursion by a multidisciplinary team of natural science researchers, Latour describes their very material and transformative practices as a process of circulating references (ibid:e.g.24).

As researchers, the team-shared aims were to discover new academic insights with samples of soil and other data from the Amazon forest. Latour's focus was different as he was observing their excursion, to study how academic data, references and evidence are produced. He saw that the researcher's practice was largely a combination of talking to each other, studying maps, investigations on site in the quite small selected area on the edge between the forest and savanna, collecting samples of soil, vegetation and worms in the area, making notes, making sketches, diagrams, new maps, transforming the samples into generic numbers - assisted by a cardboard with color codes and holes next to them to match sample colors (an intermediary non-human), etc. All this data was intertwined in their collaborative analysis and in the written report of the excursion, which again (when back in France) eventually was transformed into various academic publications.

Latour describes and illustrates this process as a chain of transformations from what he calls matter › form › gap. In the process of changing matter › form, it reveals a gap in their knowledge, pushing them to a new step with new matter › form › new gap, etc. This process is provoked by different mediators and assisted by different intermediaries. Latour clearly acknowledges that every step is a 'reduction' of the complex natural ecology on site in the forest/field. Yet, he argues that when transformed that reduction is also 'amplification' (new gained properties and insights) (ibid:71).

To describe these transitions and chains of transformation (from forest to expedition report), relating to the very common term 'representation' used in social sciences, he uses the phrases that they consistently 're-represented' or worked with 're-representation', as they went through these -later traceable and reversible - steps (ibid:70-71). I will further relate to this in Chapter 6 when discussing processes of *rematerializing*.

Chapter 6

The Per:form event in perspectives of circulating references (continued)

The XLab project, during which Per:form took place, also started with academic intensions, in our case of further understanding relations between programs and experimentation in (co-) design research.

Appendix 04 /
Exemplar 04

Exemplar 04 /
circles 03, 06-10

Practically during the day of the Per:form event, we investigated this by starting from previous experiences and tables full of many different invited and available hands-on (having) materials (with different delegated roles) › through staged processes of co-designing as *materializing*, selected materials were transformed into 28 different proposals of 'collaborative decision-making devices' › further transformed into one shared proposal › then video-recorded to capture individual reflective stories about what had been made and individual handwritten lists of the three most immediate interesting insights › which fed into the collaborative verbal reflective discussion of what had happened.

This was mediated by the (non human) white squares in different sizes (tangible *formats* – Chapter 5) and again by the (non-human) schedule in the invitation, assisting us (human) event organizers in structuring the time of the day, and pushing us to move from one situation of experimentation and reflection to the next. Parallel with that the video camera in the ‘confession booth’ also recorded short individual verbal explanations, frustrations and thoughts. Altogether, later these were useful data in our detailed reflections on what happened (where new transformations and processes of circulating references has happened too e.g. before becoming an Exemplar in this thesis).

Chapter 5
Exemplar 04 / Open
call with agenda

Exemplar 04 /
circles 04, 08

Summary / Relating to ‘circulating references’ (in co-designing)

In this section, with Latour’s concept of circulating references, I have added yet another understanding both of transformative relations and process of *materializing* in often quite explicitly staged co-designing.

Relating to Lucy Suchman’s views of reconfiguring relations in situated actions (in co-designing)

Lucy Suchman views her own work as related to Science and Technology Studies (STS). Clearly related to Latour’s view that the social is continually re-assembling, similarly Suchman argues that in the situated actions ‘human-machine relations’ are continually reconfiguring, or transforming (Suchman, 2007).

Latour’s example about ‘circulating references’ does capture complex, transforming situated interactions. However, to further broaden the views on *relating* in co-designing, with my focus on co-design events and situations, in this section, I re-connect to Suchman’s ideas of how ‘pre-requisite plans’ influence and are resources in the ‘situated actions’.

Chapter 3

To refresh from Chapter 3, as the title of her most recent book, *Human-machine reconfigurations*, indicates, her view is that humans and machines are not separated, but rather that they are complexly intertwined in situated socio-material practice. Her intensive studies describe and exemplify how there are no fixed relations between what she also sometimes calls humans and artifacts, or sometimes calls ‘human-artifact interactions’, but that their relationship is continually reconfigured in the situation (ibid:269).

Overall, both Latour and Suchman’s insights and concepts build upon detailed studies of practice, but their focuses are slightly different. If Latour focuses on theorizing and drawing together to explain relations in complex transforming networks, Suchman mainly focuses on theorizing and drawing together to explain relations in complex transforming situations. With his focus on larger networks and mediators leaving traces in networks, he does not focus so much on what prescribes practice or plans.

Here Suchman's work on plans and situated actions nicely adds a dimension to the understanding of co-designing as relating.

Agendas capturing plans were (non-human) actors at all exemplary events

Exemplar 04 / Open
call with agenda

One of the artefacts or non-human materials (hands-on -if in print) participating and capturing plans in the co-design events included in all the Exemplars, is the agenda and schedule. These are common artefacts capturing plans or intensions or assumptions for practice; one example is the invitation to the Per:form event including a schedule (see descriptions above).

Exemplar 01 /
Course brief, co-
design process and
agenda

Another example of a document capturing prescriptions of situated actions is the course brief for the five-week service design project with interaction design students. To mark the beginning of the project, the written and printed course description or brief was passed around so all the students got a copy (thirteen similar non-human actors). As tutors, it was the first time we did such a course, and we had planned, discussed and refined the written content of this document for months, so it would answer a lot of the questions we expected the students to come up with along the way, so it could substitute for us when not present or available throughout the project.

Appendix 07

Chapter 5

With Latour's concept, such a course description can in addition to being a 'time and topic keeper' be considered a 'delegated tutor', as it assisted us tutors of the course in helping specify our expectations for their work, planned situations for them and us to interact, what they were expected roughly to focus on and do when, etc.

Compared to the delegated policeman and doorman, this delegated tutor came to play very different roles and made each human actor (student or tutor) act in various ways throughout the project. Still, it only captured our ideas, intensions and expectations with the course. For example, after the mid-way presentation, the students had not in their presentations included as many proposals for detailed 'touchpoints', as we had hoped for. We had not planned beforehand and included in the course schedule the situation of roleplaying with quickly mocked up touchpoints. Yet, in the situation with the time left and with our experiences of following the process of many other design students, we decided to appropriate the plan, add, and stage for the students to make their ideas more concrete through this role playing. The (non-human) talk-material mediating this were our brief verbal introduction of how to do this and our instructions that we in about 20 minutes wanted them to present what they had done.

Exemplar 01 /
circle 07

Summary / Relating to Lucy Suchman's views of reconfiguring relations in situated actions (in co-designing)

As displayed, the views of Latour and Suchman in many ways overlap, but in addition to the concepts by Latour, also with discussion of Exemplars 01 and 04, in this section I have also re-emphasized Suchman's point about how pre-requisite plans, e.g. materialized in tangible agendas, influence and are a resource in the situated actions. I find this important because co-design projects structured around co-design events and situations involve a lot of planning and quite explicit staging and *formatting*, largely

Chapters 5, 6

mediated by (human) project and event organizers and the assemblage of (non-human) materials assisting them in doing so.

Summary / Chapter 4

With Bruno Latour / ANT perspectives and concepts, in this chapter I have finally theoretically established my broad view of materiality in co-designing. I have recognized how people (humans) and materials (non-humans) are participating and relating in complex, unstable (co-designing) networks and situated actions. In addition to the broad views established in Part A, viewing materiality as doing and *materializing* as established in the Part B / Introduction, here I have added that materiality can also be viewed as relations and relating. From Latour’s extensive work, I have explained and explored the following main concepts and terms for broadly understanding roles of materials, materiality and co-designing as relating: non-human and human ‘intermediaries’ and ‘actors/mediators’, ‘delegated roles’, ‘transporting and transforming’, as well as views of processes as ‘circulating references’.

Lastly, relating to Chapter 3, I have also added and reestablished Lucy Suchman’s emphasis on ‘plans prescribing situated actions’. Plans are often manifested in event agendas at co-design events, at least they were at all the exemplary events included in this thesis, and I have discussed these as an important non-human material or resource participating – and often acting – in situated co-designing. Despite their different overall focuses, Latour on reassembling networks and Suchman on reconfiguring in the situation, they both build their arguments on the fundamental socio-material perspectives that people and things/artefacts/materials are continually participating and intertwining both in the complex networks and in the specific situated actions.

Together with the views established in Part A and in the Part B / Introduction, it is this broad view of materiality that will be the foundation for my further exploration of *material matters in co-designing* throughout the rest of the thesis, and that I propose when aiming for understanding and staging co-designing.

Chapter 5 / Delegated Roles of Various Participating Materials in Co-design Events & Situations

*Delegated... ‘coach assistants’ / ‘instructors’ /
‘playmates’ / ‘advocates’ / ‘time and topic
keeper’ / ‘handy-men’ / and the physical
location*

Part A In Part A, I established a focus on co-design situations for understanding how people and materials are participating in co-designing. Further, so far in this Part B I have established the view that co-designing can be understood as transformative processes of *materializing* and *relating*. In this Chapter 5, I return to the important characteristic that makes me argue for viewing designing and co-designing as two different practices: quite explicit staging of collaboration, and *formatting*, which I will also start to call staging in this chapter.

It is common language to say “...*what’s the role of ...*”, but what it can mean to play a ‘role’ as a non-human in co-designing, will be explored in this chapter. Especially with Bruno Latour’s concept of ‘delegated roles’ to non-humans, I will explore more generic ‘delegated roles’ of mainly touchable materials, without a conscious mind, participating in co-design situations at and around co-design events (Latour, 1992). Following my suggestion

Chapter 3 in Chapter 3 to acknowledge the sameness or family resemblance of situations, here I also propose to look for family resemblances of material characteristics, and I will do this by studying the material details in the unique situations and across several of the Exemplars and other examples.

Several Exemplars

Chapter 4 Building upon Chapter 4, this chapter also rests upon the view that materials (non-humans) broadly understood, like people (humans), can be actors, making others act and playing roles in co-designing, roles, which in co-designing often are quite explicitly delegated by the (human) event organizers and other participants/stakeholders. Yet, as also discussed in Chapter 4, in the specific co-design situation in the Exemplars, it has not just been one tangible material that has been an actor making the others act. Rather, in

Chapter 4
All Exemplars

each situation it was a temporary assemblage of various material (broadly understood), which were participating in *staging* and *formatting* co-designing. More generally I suggest that there is always an assemblage of materials playing various delegated roles and intertwining in situated co-designing.

Reassembling and drawing together – not deconstructing

Instead of reassembling, Latour has been accused of deconstructing the social, but in *Reassembling the Social* he extensively argues why this is not what he is intending to do, as his overall interest for many years has been on relations and ‘drawing things together’ (Latour, 2005/1986).⁷⁷ This chapter could also be criticized as the deconstruction of the Exemplary situations I discuss through naming different characteristics of selected tangible, hands-on materials participating in co-design situations at co-design events. However, I view them as intertwining in an assembly of materials, which the first sections are intended to emphasize. Then, the intension of studying the participating materials separately is to better understand their different characteristics and delegated roles in the continually reassembling and reconfiguring of processes of *materializing* and *relating* in situated co-designing. P&A

Practically, I will also suggest these as characteristics to materially pay attention to when being a co-designer participating in *staging* and *formatting* complex situations of co-designing.

Materials participating in quite explicitly staged co-design events and situations

Before I separately get to the detailed *delegated roles* of materials participating in co-designing, I will discuss various examples of how I see these as intertwining in an assemblage of materials participating in (*staging* and *formatting*) co-designing at co-design events.

Delegated roles intertwined in a classic brainstorming session

A classic example of a co-design situation is a brainstorming session – here it is generally described for the purpose of exemplifying the different terms and concepts discussed in this chapter:

For a brainstorming session, a smaller, often multidisciplinary team meets for about an hour in a shared meeting space (the participating human stakeholders and the *physical location* and setting/stage). As a part of the invitation to participate, the problem/topic/issue(s) to explore are usually intertwined in the invitation and agenda of the event (the *agenda* and *framing of content*). In some brainstorming sessions, the participants just start the clock; in others where some participants are not as comfortable with the rules, these are spelled out. The basic rules are usually: be open,

.....

⁷⁷ Analytically back-tracking which participating non-human materials were intermediaries and which were actors ‘making others act’ (which Latour suggests to do) is of course possible also in the co-design networks I report from, but also with my intension of proposing issues relevant when staging co-designing, back-tracking has not been my overall methodological approach in this thesis (P&A and Appendix 09).

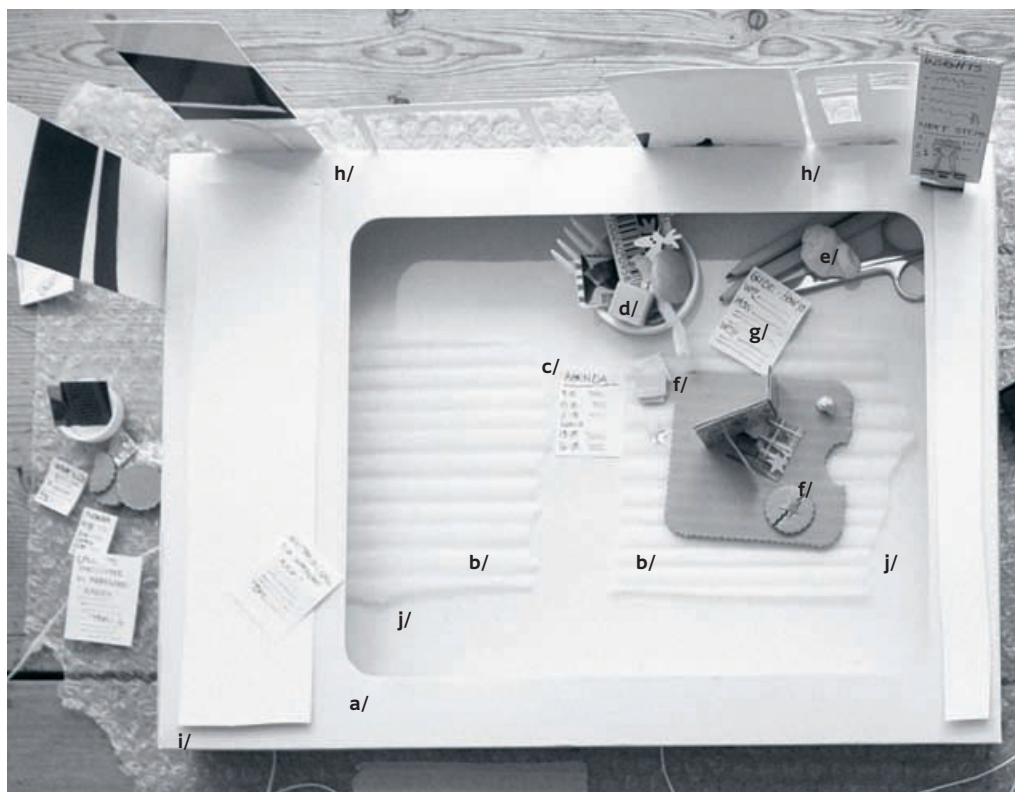


Figure 11/ The main materials with 'delegated roles' participating in co-designing discussed in this chapter, are also captured in the 'Emerging Landscape of Material Matters in Co-designing' (image is a zoom-in of the Overview / Emerging Landscape of Co-designing – Chapter 10).

Foreword: Program
Chapter 3

a/ The white box captures a 'co-design event' (Foreword: Program). **b/** The white uneven striped plastic pieces inside the box resemble a 'co-design situation' (Chapter 3). What is mainly discussed in this chapter (all in the lower area of the white box) is: **c/** The little white paper saying 'AGENDA' – called 'delegated time & topic keepers'. **d/** The various materials in the round lid – called 'content materials' and 'delegated playmates'. **e/** The scissors, pencils, etc. – called 'manipulation & connectors' and 'delegated handymen'. **f/** The rounded cardboards in different sizes, pile of small square cardboards and stars – called tangible 'formats' and 'delegated coach assistants'. **g/** The little white paper saying 'GUIDE-HOW TO' – called 'delegated instructors'. **h/** Also, around the edge of the white box, the different surfaces and shapes – capturing the physical location or setting and stage of the event. **i/** Additionally, the edge of the white box frame this 'co-design event'. **j/** The edge of an uneven striped plastic piece frame this 'co-design situation' (frames are not discussed here, but in Chapter 7).⁷⁸

Chapter 7

⁷⁸ In the paper 'Engaging Design Materials, Formats and Framings...', I initially introduced and exemplified a 'micro-material perspective' on materials in co-design situations (Eriksen, 2009). Yet, in this thesis, I rather view this as 'a complex assemblage of material'. In that paper I illustrated these relationships in a simplified graphical diagram including squares inside each other. The outer square was called 'Specific Co-design Situation', next 'Framings of focus', then a square of 'formats of exploration' and lastly in the middle 'design materials' – to capture that I found these intertwining in practice. Most of those views are the same, but in this thesis I have re-named some of the terms and I include more nuances.

no critiques and build upon each other's ideas (the staging *formats* and *guides* of doing and *materializing*). Before starting, the one who invited the others (the event organizer) might also specify how to be working with the available invited materials e.g. each one has one color for marking, all sketch on a shared whiteboard, on a large shared white piece of paper or separate ideas on separate post-it notes (the *delegated tangible formats*). The session is (hopefully) energetic – everyone is writing down or sketching everything that pops up in his or her mind, building upon what the others do (the specific ideas can in this situation be considered as *content materials*). Towards the end of the session the various ideas might be grouped more explicitly, and the team might also in the situation prioritize which ideas or collections of ideas to bring forward (this relates to what I in Chapter 6 propose to view as *rematerializing*). Chapter 6

This was a classic example of a co-design situation, where the *formatting* in many ways is quite generic and similar to other situations, but in which the outcomes/the new contents cannot be predicted because they emerge in the collaborative exploration in the unique situation. Chapter 3

The plan of inviting or meeting for a 'brainstorming' session indicates a need for more ideas in a project, as well as an expected open-minded mood and engagement in visualizing a variety of ideas (what I propose to view as *frames* of the event and situation – Chapter 7). The problem/ topic/issue(s) of course also needs to be more or less openly specified before starting such as challenges of waste handling or hand surgery (the *framing* of the problem/focus/issue, to also refer back to Schön (1983). Then the choice to work on a whiteboard, on a large shared piece of paper, with post-it notes or even with a combination of these, plus sometimes additional rules of turn-taking, is chosen to specify how to practically carry through the session (what I propose to view as the *delegated tangible formats* and *guides* participating in the quite explicit *staging* and *formatting* of the co-design situation – largely done by the event organizers). Lastly, all the specifics – in this case the written and sketched ideas (I propose to view as *content materials* and *play-mates* in the unique situation). In the real situation of course all of this is naturally intertwining. Chapter 7
Chapters 1, 7

In four frozen moments from Exemplars 01 / 02 / 03 / 04

In each of the four frozen moments happening during these Exemplary events, an assemblage of materials was participating. In the following I have highlighted the mainly physical materials with family resemblance in their generic delegated role, largely delegated by the event organizers. Combined with other examples, these are the main situations I will explore further throughout this chapter. Exemplars 01, 02, 03, 04

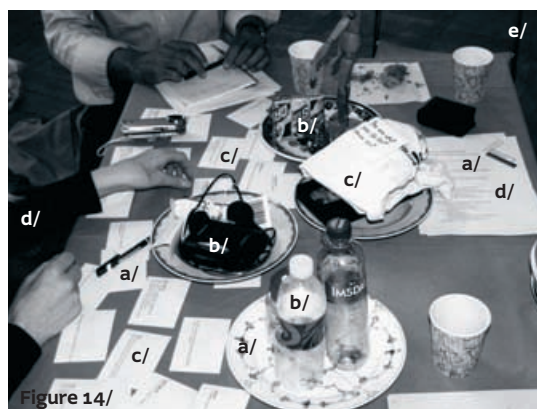
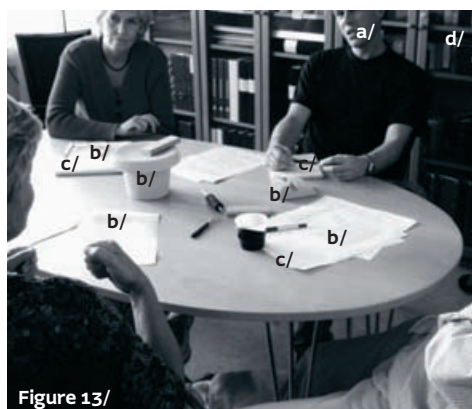


Figure 12/ Frozen moment from Service Project Landscape / Exemplar 01. It includes hands-on materials with different delegated roles participating in the situation of co-designing a project landscape. **a/** *Format of exploration* as a base for the first round of building (delegated role by me as a teacher/event organizer). **b/** Additional (topic/field-specific) *content materials* (delegated roles by me as a teacher/event organizer). More *content materials* were available in the ‘buffet of materials’. **c/** Selected and manipulated *content materials*, with added and negotiated meaning among students. **d/** *Format* for collaboratively naming topics/issues of interest (delegated role by me as a teacher/event organizer). **e/** *Format* for connecting students with topics (delegated role by me as a teacher/event organizer). **f/** Location or stage of the event.

Exemplar 01 /
Circle 05

Exemplar 01 /
Circle 02

Figure 13/ Frozen moment from Rehab Future Lab / Exemplar 02. It includes various hands-on and talk materials with different delegated roles participating in the situation of co-designing future hand-surgery rehabilitation practices. **a/** *Formats of exploration* – in text and talk mainly saying ‘roleplaying’ and ‘discussion’ (in agenda and delegated roles by situation organizer). **b/** *Pre-designed proposals* as content materials (initial delegated role by event organizers beforehand), and with added and negotiated meaning by stakeholders in the situation. **c/** Additional personal materials (notebook, pen, coffee cup). **d/** Location or stage of the event.

Exemplar 02 /
Circle 03

Figure 14/ Frozen moment from Kick-off / Exemplar 03. It includes various hands-on and talk materials with different delegated roles participate in the situation of starting to explore issues of waste handling and design-anthropological innovation. **a/** *Format of exploration* as a base for holding content (delegated role by event organizers). **b/** *Content materials* (topic-related) with added and negotiated meaning by stakeholders in the situation (brought along and delegated their initial role by one stakeholder). **c/** Provoking (topic-related) *content materials* (delegated role by event organizers). **d/** *Framing* of event and situation in text and talk (delegated by event organizers). **e/** Location or stage of the event.

Exemplar 03 /
Circle 04

Chapter 7

Figure 15/ Frozen moment from Per:form / Exemplar 04. It includes various hands-on materials with different delegated roles participate in the situation of starting to make proposals for collaborative decision-making devices. **a/** *Format of exploration* as a base for holding content (delegated role by event organizers). **b/** *Content materials* (generic) (delegated roles mostly by event organizers, and some by each stakeholder). **c/** Selected and manipulated *content materials*, with added meaning by one stakeholder. **d/** Locations or stages of the event.

Exemplar 04 /
Circle 03

Co-designing is done differently in each of these four frozen co-design situations, and more or less explicitly, the choice of materials indicates the approach to co-designing. Yet, across these situations, distributed around the physical location in which the co-designing happened, there are similar characteristics of the delegated roles to the participating materials. Throughout this chapter, I explore similar characteristics or ‘delegated roles’ to certain materials across the different Exemplars, which can be

P&A / Chapter 2

All Exemplars

Chapter 3 viewed as the sameness / family resemblance of ‘delegated roles’ to various non-human materials participating in co-designing at co-design events.

Chapter 6 To repeat, my aim is not to end with a deconstruction of situations of co-designing, but to explore these separately in detail, to further understand the different materials in the complex mediating assemblage intertwining in situated co-designing, also for later drawing together suggestions of how to accomplish *staging* and *formatting* for future co-designing. The following participating materials, which I suggest as very important to acknowledge as a co-designer, are:

- *Agenda* as ‘delegated time and topic keeper’
- *Content materials* as ‘delegated playmates’
(including *pre-designed proposals* as ‘delegated advocates’)
- (Tangible) *Formats* as ‘delegated coach assistants’
- *Guides* as ‘delegated instructors’
- and lastly, a reminder about the role of ‘The physical location – also a part of the co-design event materiality’.

Agenda as ‘Delegated time and topic keeper’

Chapters 1, 3, 4 In comparison with individual one-designer processes, co-designing is a much more explicitly staged practice, and agendas play a central role. Staging co-designing involves practically planning and preparing specific events and situations. Of course, not everything can be planned and prepared before an event – then there would be no reason to meet! – but agendas capturing plans and preparations are very often engaged in the assemblage of non-humans participating in co-designing. I suggest viewing agendas as important materials engaged in the co-design project, event and situation, and with Latour’s concept I suggest viewing them as having the role as ‘delegated time and topic keepers’.

By ‘delegated time and topic keeper’ I mean that an agenda present at an event assists both the event organizers and the participants in structuring the time scheduled together and the hours or minutes set to address or collaboratively explore the different topics/issues/challenges of the event.

Exemplar 01 / circle 09 At the Service Project Landscape event, as one of the teachers and event organizers I was referring to the clock and our previously made agenda (indicating when the day should end), when interrupting the students and saying “*You have five more minutes, and remember to...*” When the five minutes were up, the students had stopped adding to the landscape, but in the situation, with the newly updated landscape, I suggested also to discuss project relations and add additional stakeholders. In other words, we partly followed the agenda and appropriated what to do in the situation.

More generally, as soon as more than one person is engaged in designing, or co-designing, explicit planning of when and where to meet, what

to work with and how becomes an often time-consuming part of the practice. At all the co-design events, pre-designed agendas, capturing the main plans of the event organizers, were participating at the event and situation. As acknowledged with Lucy Suchman, these are one resource among many in the situated action, but beforehand a lot of negotiations among organizers and stakeholders are often merged into the plans materialized as agendas, e.g. with titles, time slots, names of responsible people, questions to consider, etc. Thus, as the event, its agenda is also unique.

All Exemplars /
Agenda
Chapters 3, 4

The overall agenda of a co-design event has the aim of chopping up the time into smaller situations with different purposes and/or focuses. Each time slot can be viewed as a unique quite explicitly staged *co-design situation*, and together they become a series of such situations. Sometimes more or less invisibly one situation merges into the next one, but at other times clear breaks are made – this depends on the situated *staging* and *formatting*.

Chapter 3
Chapters 1, 3, 6, 7, 8
Part C / Introduction

At all the Exemplary events, practically the participants either brought the specific agenda along because it was received beforehand as a part of the invitation to participate. Often the agenda was also projected at the event or it was available as a stack of print-outs, or a combination of these. walkthrough of the agenda also happened at most of the events, for everyone to be aligned with the structure planned for the coming hours of interactions. And, during these co-design events the agenda or schedule was very often on the tables in various (shared or personal) A4-print-outs, and often referred to many times throughout the specific event it was participating in.

All Exemplars /
Agenda

When participating in explorative co-designing processes, quite explicit structures are important for participants to be somewhat comfortable, architect Peter Fröst argues in an interview about Design Dialogues used in his architectural practices (Halse et al, 2010: 80-81 / Fröst, 2004).⁷⁹ However, writing an agenda with various time slots and maybe preparing inspirational or propositional slideshows, in my experience, is usually not enough to make stakeholders comfortable or to stage co-designing. Often, on its own, it does not provide the materials needed for everyone to be able to act as co-designers, but in the assemblage with other materials engaged for staging and formatting co-designing, the agenda is often an important mediating actor.

Summary / Agenda as 'delegated time and topic keeper'

When aiming for understanding and staging co-designing, I suggest paying attention to and carefully (co-) designing agendas often having the role as 'delegated time and topic keepers'.⁸⁰

⁷⁹ The Design Dialogue processes he refers to are largely similar to the series of co-design events in Exemplar 05.

⁸⁰ In Part C / Chapter 7, I further explore how plans in the 'materialized' form of an agenda are important materials also participating in establishing certain frames at a co-design event and situation.

Content materials as ‘Delegated playmates’

Some of the materials engaged in co-design situations are specifically about the topic, field, project, etc. that is being addressed at the co-design event and situation. These materials are different from what I later suggest to view as *formats* assisting in setting the scene for how to work in the situation. If the *formats* are about how to co-design, then what I propose to call *content materials* take many diverse forms and are about the WHAT.⁸¹ Further, in this section I will distinguish between what can be viewed as *generic*, *field/project/topic-specific* and *pre-designed content materials*. With Latour’s concept I overall propose to call these various content materials ‘delegated playmates’.

By ‘delegated playmates’ I mean quite open-ended sometimes pre-designed materials participating in playing, exploring, framing and re-framing the topic/issue/problem(s) in the specific situation. These are the materials, among which some are selected, and from which meaning is negotiated among the participating stakeholders.

In this section, I also briefly address manipulation and connection tools or ‘delegated handymen’. There is a special kind of pre-designed *content material*: *pre-designed proposals* for future design solutions such as scenarios, 2D and 3D visualizations, sketches, models, mock-ups, prototypes, etc. With Latour’s concept, I propose to distinguish these and call them ‘delegated advocates’.

Generic content materials

To me, *generic* indicates that some(one) have brought or invited some materials to a co-design event and situation (e.g. the event organizer), but without any specific plans about their detailed use or meaning in the situation. They are an available (having) material that might get engaged in the situated doing and *materializing*.

Part B / Introduction
Chapter 6

Exemplar 04 /
circle 03

At the Per:form event, we had a large ‘buffet of materials’ of generic content materials. Several tables were put together to form the stage of this buffet. It contained various materials in different shapes, different sizes,

.....

⁸¹ There is a difference in this thesis, in relation to my paper ‘Engaging Design Materials, Formats and Framings...’ (Eriksen, 2009). In that paper I use the term ‘design materials’ to capture what I speak about in this section, and my understanding of their role in the situation is the same, but in this thesis I instead propose to call these ‘content materials’. One reason is that ‘design material’ is a broadly used term already with a variety of meanings: Related to interaction design, Jonas Löwgren has long been using the phrase ‘digital design materials’ to capture what interaction designers in his view need to (learn to) understand and design (e.g. Stolterman & Löwgren, 2004) (P&A). Related to design-anthropology, Joachim Halse also uses the term ‘design materials’ to broadly capture the non-humans engaged in co-designing (Halse, 2008) (Chapter 7). To distinguish from these uses of the term, the main reason to now use ‘content materials’ is to better capture what I believe these diverse materials do in the specific co-design situation – they work as content to play, explore and negotiate with.

different feels, and different material properties. At this specific event, as one of the event organizers, I brought and arranged most of them, but all participants had also been asked to bring ‘a working material’, as said in their invitation to participate. In the buffet, initially I had grouped them in some (to me) logical order around related characteristics, and then the others added theirs somewhere, but as shown in Exemplar 04 in use they were merged, manipulated, mixed and meaning was added in many ways.

Exemplar 04 / Open
Call with Agenda

Exemplar 04 /
circles 06-08

In the buffet, from left to right, the generic *content materials* were: A large clear plastic bag containing white fluffy fabric (often used for pillow and teddy-bear filling), a piece of metallic rolled up hens’ net, a tool for cutting the net, and various wooden sticks approximately 70 cm of length in different widths and types of wood. Then, uneven sizes of cardboard, plastic and papers in various colors, thicknesses, contours were included. In the back of the buffet, there were folded pieces of fabric again in various colors, kinds and thicknesses. In the front of the table was a scissor marked with a torques fabric tied around it to mark that it was specially for cutting fabric, a light-blue block of foam approximately measuring 20x20x7 cm, and a collection of various colors of balls of cotton. Next, there was clay in different bright colors, two plastic bags with moist brown clay, placed by the participant doing a PhD in ceramics. Then, white and black pipe cleaners, wooden sticks (like for Danish ice creams), and behind this two piles of transparent disposable cups turned upside down were placed. Two transparent hard plastic shells, a transparent plastic bag with red zipper, and a large pile of thin cotton and wool threads on white cardboard rolls in many different colors were placed by the participant preparing for a PhD in textile design. Behind those, were a yellow tennis ball and a wooden drawer with open drawers, one contained tools for sewing, one balloon and white cotton balls in different sizes, one game piece like dice and ludo pieces. In the back, a small semi-transparent bag with various things and different colorful brochures illustrating previous work was placed by one of the participating and organizing co-design researchers.

Exemplar 04 /
circle 03

Next, a mixture of tools like glue for wood, glue-sticks, scissors, felt pens in different colors, cutters, rulers and a cutting board were placed (‘delegated handymen’ – see below).

At the right end, were white pieces of paper with printed rectangles with keywords from a pixi-book, placed by one of the other participating and organizing co-design researchers, as well as a large pile of printed images approximately 5x7cm, all parts of a game previously designed and placed by a participating interaction designer working within TV production. (These two brought materials could also be understood as *pre-designed content materials* – see below). Lastly on the far right was a laptop playing soft music (otherwise there was silence most of the day!).

Exemplar 04 /
circle 03

As mentioned, some materials were selected, manipulated and added meaning in the ‘Silent brainstorming’ situation, and thus became a part of a proposal on/with a white cardboard square, while others never were chosen and stayed in the buffet.

Exemplar 04 /
circle 07

Exemplar 01 /
circle 02

Exemplar 01 /
initial list

Chapter 1

At the Service Project Landscape events there were a quite similar buffet, with many of the same *generic content materials*, but also including piles of (topic-specific) magazines and transportation-related paper brochures. (At that event, the materials were staged to be used for a different focus, the overall focus on sustainable transportation). The same happened there: some *content materials* were chosen, manipulated, negotiated meaning and integrated in the shared landscape, while others stayed untouched in the buffet.

To summarize, what characterizes these *content materials* is that they are ‘invited’ into the event by organizers or other participants, but without a specific pre-assigned idea about their meaning and use in the co-design situation. They are present (having) materials in the situation, and can be chosen to engage in playing, exploring and negotiating meaning with the participating stakeholders.

Manipulation and connections / or ‘delegated handymen’

Chapter 6

In these buffets were also various ‘tools’ engaged in doing manipulations and connections of the *content material*, such as scissors, glue, tape, cutting knives, etc. At these events an array of tools was present – these could be called ‘delegated handymen’. They just blended into these quite explicitly staged co-designing as *materializing* processes, but generally if there are not enough scissors at an event, then questions like “Are there extra scissors?” or “Can we borrow your scissor for a short while?” are very common. For example, elephant snot can be seen as a tool for hanging papers on a wall, which is convenient to have if this is what is happening at the event, but if there is a bulletin board that same function can better be achieved with pins.

Exemplar 04 /
circle 07 – image 3,
circle 08

During Per:form however, these were not only used as ‘handymen’, pins in different colors were also selected and used to mark different elements in the co-designed ‘collaborative decision-making device’. In this situation, these changed from being a tool engaged in manipulating or connecting other materials, to being a material that was added a certain meaning in the group working with it. It changed roles in the situation to being a *content material*.

Pre-designed content materials

Part B / Introduction
/ Chapter 6

Another collection of *content materials* is what I suggest to call *pre-designed*. To me, *pre-designed content materials* indicates that some(one) have brought them along to a co-design situation, with a specific plan or ideas about their detailed use or meaning in the co-design situation. In other words, that some(one) in the design team, e.g. the event organizer(s) or other stakeholders, has selected, prepared or (co-) designed these before the event. Still, again depending on the situated *staging*, they can be available (having) materials that might get engaged in the playful and negotiating and *materializing* in the co-design situation.

Pre-designed content materials can be: selected printed images, selected artefacts, specific stories from current practice, access to selected video-clips of current practice, etc. These can also be characterized as *field/topic/project specific*, if they have been personally or collaboratively

chosen or created particularly in relation to a field-case within the project, or if they relate to the overall topics and issues of the project.

Pre-designed content materials can also be; future scenarios, drawings, foam and paper models or mock-ups, prototypes, etc. – visualizations of proposals for future solutions. However, these two different characters of *pre-designed* play very different roles in the co-design situation. Of course, it depends on where the team is in the co-design process, and what the shared previous experiences are, but as I will discuss below, in relation to the approach to co-designing it makes a big difference whether it is a selection of images of current practice or a prototype, which has been *pre-designed* before a co-design event. These different *pre-designed* (non-human) materials are typically invited and staged to participate in very different ways.

P&A
Chapter 2

First, on field/topic/project-specific, pre-designed content materials, with examples from the Kick-off event: The *content materials* engaged in the ‘Things on their way’-situation were pre-designed. They were brought and shared at the table by the participating stakeholders. Before that event, in the invitation to participate, each partner and participant had been asked to bring ‘three things on their way’. For instance, some brought things from past projects, one brought the waste collected during the morning’s train ride, some brought things that have become dear for strange reasons, others brought things they would like to throw away but kept because they still had value (e.g. economically or personally), and yet others brought things to make a positioning of expectations in relation to the just started project. In Group 3 they brought empty ½ liter water bottles, empty glass containers, a Walkman, a used flight-baggage tag, a T-shirt, a videotape with recordings, a wooden doll, a metal soda-bottle changed into a ‘camera’ and a little silver ashtray. At the event, to spark inquiries into exploring when these brought things become waste and when waste becomes things, cards with poetic anecdotes were also at the table (these can be seen as written, questioning *content materials* – *pre-designed* by some of the organizers). At the table, the groups were discussing meanings intertwined with sorting the things brought, using the pre-designed cards to name the issues negotiated and identified.

Part B /
Figure 14
Exemplar 03 /
circles 04, 05

Exemplar 03 /
circle 01

Exemplar 03 /
circles 04, 05

Exemplar 03 /
circle 04

Second, another example of hands-on, *pre-designed content materials* engaged at the Kick-off event, were the printed ‘field-cards’ with an image and a brief related texts (approximately 10x10cm). They were invited as a part of the first step of co-designing the ‘A Landscape of Waste and Innovation’. These *field-related content materials* had been *pre-designed* by the event organizers who had been doing some initial waste-handling related fieldwork before the event. They were designed to be specific but open-ended, in the sense that the organizers wanted the participants to discuss from real specific situations, but they had no specified plan of what the cards were intended to mean to the participating stakeholders. As shown in the Exemplar, at the event the initial seven different fieldwork visits were very shortly introduced with a quick visual slideshow in a short presentation, and then each group chose one of the seven collections of field-cards to work with at the ta-

Exemplar 03 /
circles 07, 08

Exemplar 03 /
circles 07, 08

Exemplar 03 / circle 08	<p>ble. Further at the table, some field-cards were selected, some combined, some ripped and discussed and negotiated in the group, as a part of creating three challenging situations of waste handling.</p> <p>These are two examples of what I propose to view as <i>pre-designed</i> but <i>open-ended content materials</i> either selected or created by the participating stakeholders or by the event organizers: <i>Content materials</i> that do or do not get engaged in the specific co-design situation, but with these <i>pre-designed materials</i> there is also a clear relationship between skills, ‘having’ and ‘doing’. In other words, a clear relationship between what is available or invited into the situation and what is collaboratively <i>materialized</i> and <i>rematerialized</i>.</p> <p>Pre-designed proposals as ‘delegated advocates’</p> <p>As mentioned, other <i>content materials</i> play different roles in the situation: <i>pre-designed proposals</i> for future solutions materialized as written, sketched, ‘live’, animated scenarios, 2D and 3D visualizations, diagrams, scale drawings, models, mock-ups, prototypes, etc. I have acknowledged, that making proposals for solutions is a classic core competence of being a designer, and proposing potential new futures is also an essential part of co-designing practices, but in co-designing I will argue that <i>pre-designed proposals</i> for solutions can get to play a very special, not necessarily constructive role in the co-design situation at a co-design event (at least early in a co-design project). Therefore I propose to call these ‘delegated advocates’.</p> <p>The role these content materials get to play very much depends on the <i>staging</i> (and <i>formatting</i>) but if no or only little staging is done, pre-designed proposals almost implicitly can create a situation of defense and attack in a co-design situation. So, to push it to extremes with Latour’s concept, I propose to call <i>pre-designed materialized proposals</i> invited into co-design situations by their producers as ‘delegated advocates’.</p> <p>By ‘delegated advocates’ I mean that <i>pre-designed proposals</i> can, without it necessarily being the intension of the producing designer(s), establish a court-room like situation, where the proposal becomes the mediator between the producers of the specific proposal defending it, and others (unless they are just thrilled) at least to some extent are criticizing or questioning it. This is a typical more or less implicit staging at design critiques or designer-client meetings, and in some projects this might be fruitful. Yet, in my experience this is often very exhausting and often not really a fruitful situation of co-designing. Of course, there will always be arguments and negotiations, because stakeholders have different interests and perspectives, but again if no <i>staging</i> is made, then <i>pre-designed proposals</i> inherently can set the stage as just described.</p> <p>Pre-designed proposals for future solutions were the main tangible materials prepared for three of the six Exemplars – yet the staging for co-designing with these differed largely. The research team and organizers of these events had <i>pre-designed proposals</i> for technologies engaged in and/or spaces for possible future practices:</p>
Part B / Introduction Chapters 6, 9	
P&A / Part A / Introduction	
Chapter 6	
Chapter 4	
P&A / Modes of Inquiry	
Exemplars 02, 05, 06	

<p>At the Rehab Future Lab, the <i>pre-designed proposals</i> were made as two different versions of hard-foam no-tech mock-ups together with two different detailed written and sketched scenarios of use. At that event, these were staged for the stakeholders to engage in roleplaying their own (staff) or someone else's (patient's) possible future.</p>	<p>Exemplar 02 / circles 03-05</p> <p>Exemplar 02 / Email with Goals & Agenda</p>
<p>For the Design Dialogue events, the architect's <i>pre-designed</i> and prepared more and more detailed scale floor-plans on large A1 papers, staged for the participants in smaller temporary groups to participate in design dialogues about their own possible futures in the coming shared workplace.</p>	<p>Exemplar 05 / circles 04, 05, 11, 14</p>
<p>At the Architects' Future Lab, the whole spatial environment was <i>pre-designed</i> to pretend to be a future architectural studio, in which a palette of possible new technologies, <i>pre-designed</i> as technical prototypes, was integrated to assist various parts of the design process of landscape architects. The staging at that event was structured for the four architects (human 'user' stakeholders) to engage in different full-scale rehearsing of situations relevant to current and thus also possible future architectural practices.</p>	<p>Exemplar 06 / Introduction, circles 02, 06-08</p> <p>Part C / Introduction</p>
<p>I especially go further into details with Exemplars 05 and 06 in Part C, so here is a discussion of Exemplar 02. For the Rehab Future Lab, as mentioned, the event organizers at the local university (interaction design researchers) had prepared two quite detailed scenarios of possible future use situations and practices at the rehabilitation department, and two versions of hard-foam mock-ups matching those two different use situations. At that event, the group of participants split in two, and each group brought one of the hard-foam models while all participating stakeholders got a set of print-outs of the scenarios. These were the main tangible <i>pre-designed content materials</i> invited into those group-work situations. As it said in the emailed invitation/agenda to the event and as explained at the beginning of the event and at the beginning of the co-design situation, these was planned to be used in role playing the future practice to discover incremental changes and qualities</p>	<p>Exemplar 02</p> <p>Exemplar 02 / circles 03-05</p> <p>Exemplar 02 / Email with Goals & Agenda</p>
<p>A bit of roleplaying took place, and the occupational therapist pretending to be herself in the future did discover and express different concerns and other ideas arising from this experience. She was constructive but still questioning and in some instances criticizing the proposal, while the host of this situation and the one roleplaying being a patient (a PhD scholar from the local university, who had been engaged in <i>pre-designing</i> the proposal) at least to some extent was defending the proposal by explaining the rationales behind the design-decisions resulting in this <i>pre-designed proposal</i>. It was about one and a half years into the four-year project, but it was the first time the two other stakeholders in the group met, and this <i>staging</i> also mainly created a situation for them of questioning and a bit of ideation rather than actually engaging in co-designing.</p>	<p>Part C / Introduction</p> <p>Exemplar 02 / circles 02, 03, 05</p>
<p>As this thesis is about co-designing, of course proposals for future practices are important parts of the broad materiality, and no doubt concrete proposals often become 'boundary objects' in co-design projects and networks.</p>	<p>Chapter 2</p>

P&A
Chapter 2
Part B / Introduction

E.g. Exemplars
01, 03, 04

Still, with my many various experiences, I will argue, that at least in the beginning of a project, *staging* for stakeholders to participate in identifying issues of interest and concerns and co-designing proposals responding to these, can at the same time support creating engagement and ownership of the proposed solutions and of the project as a whole, which also is an essential part of the process when designing services. This might sound obvious and easy, but materially it is actually a quite dramatic change compared to the practice most designers are taught to do – make proposals. Most of the many events I have been engaged in have been staged for negotiations as a part of co-designing rather than court-room like fighting and competing.

Chapter 1

Chapters 6, 9

Lastly, in this section I have mainly been focusing on the tangible *content materials*. Still, back to Schön's broad view of materials in the design situation, and the broad view of materiality established in this Part B, to me *content materials* can both be present as touchable and as *talk materials* – such as a story of a previous experience, an expression of expectations, etc. Additionally, what is documented (or *materialized* and *rematerialized*) from an event, and thus feed into the continual co-design process, eventually also can get to work as *content materials* in the following *co-design situation*.

Summary / Content materials as 'Delegated playmates'

Content materials are the materials engaged in exploring the field, topics, problems and/or challenges of the specific project they are participating in. They are the materials that are invited into and possibly explored and negotiated collaboratively in the specific co-design situation, which is why I propose to call them 'delegated playmates'. *Content materials* can take a variety of forms; in this section I have proposed to call them *generic* and *pre-designed*, which again either can be open-ended but related to the main field/topics/issues/ challenges of the project or proposals for future practices. As a special kind of *content materials* 'classic' *pre-design proposals* I have proposed to call 'delegated advocates'. I have also very briefly addressed what I view as tools used to manipulate and connect these content materials as 'delegated handymen'. In this section I have also argued that the *staging* for these different materials to participate in the situation is essential, which leads to *formats*.

Formats as 'Delegated coach assistants'

P&A
Part A / Introduction

Chapter 6

One of the special materials engaged in co-designing – but not necessarily explicitly engaged in classic designing – is what I propose to call *formats* or *formats of exploration*. *Formats* are largely what co-designers *staging* participation at co-design events (co-) design. They play a very different role in the situation from *content materials*. As the title of this Part B indicates, as a part of exploring participating materials in co-designing, I suggest placing particular emphasis on processes of *formatting* and on these hands-on, physical *formats*. They are appropriated in the unique situation, but there is a family resemblance across different

examples, and they can be viewed as quite generic materials for *staging* co-designing. With Latour’s concept, I propose to call them ‘delegated coach assistants’, as they generally can assist the event coach or organizer in staging HOW to collaborate.

By ‘delegated coach assistants’ I mean, physical materials and other explicit guidelines engaged in assisting the event organizer or coach in staging HOW to practically be co-designing in the situation at a co-design event. *Formats of collaboration* are often composed of an assemblage of materials (physical, written, projected, spoken, etc.). Physical materials have often (more or less explicitly) been delegated this certain role as a format by the organizers before the event.

It should be mentioned, that in the situation, *formats* assist the coach/event organizer in *staging* the collaboration in a certain way, which (materially) gives the organizer(s) power and might be unfamiliar and uncomfortable to some stakeholders. This can of course cause methodological discussions among the different stakeholders of how to collaborate; then the meaning of the *formats* might be negotiated. On the other hand, if accepted, they assist in avoiding spending long and precious time at a co-design event discussing how to collaborate in the situation; they can be delegated to assist in *staging*, *formatting* and setting the scene for doing and co-designing as *materializing* and *rematerializing*.

Chapters 2
Part C/ Introduction

Chapters 6, 9

An extra example from PalCom with no formats

An experience from the PalCom project made me realize and emphasize the importance of *formats* in co-designing. This experience made me wonder why some materials are not staging co-designing on their own. When reflection upon this experience, I realized there were a lot of *content materials* but no *format of exploration*.

As a smaller part of the large PalCom project, in Malmö, initially we were seven interaction (co-) design researchers with various backgrounds working with the case of rehabilitation of hand surgery patients. About a year before the Rehab Future Lab, in the months before this other one-day event (September 2004), two of us had been doing observations and dialogue-based field work with patients and staff at the local hospital. To share our rich insights with our local colleagues, we had prepared a varied collection of ‘Fieldcards’. The approximately 50 cards all included fragments from our fieldwork. Our hopes were that they would help us combine the two main focuses of the day; analyzing field data and developing initial mixed-media concepts. These focuses (and event and situation *frames* – Chapter 7) we had all more or less silently accepted by accepting the email agenda sent out by the project manager beforehand.

Appendix 03

Exemplar 02

Exemplar 02 / circle 01

Chapter 7

Our intention had been that we, through the cards, collaboratively would dive into these *field-specific, pre-designed content materials* to discover interesting design challenges. However, very quickly the team manager asked something along the lines: “*What are we going to do with these? Maybe you could tell a bit to start with...*”. So after a bit of confusion be-

tween the two of us who had pre-designed the cards, we started combining different cards such as the ‘Group Training Session’-situation-card, the ‘Coffee-table in the Hallway’-place-card and the ‘Inger’-patient portrait-card, to assist us in telling stories and creating new possible relations about the insights we had gained from the field studies.

This sparked some questions and dialogue along the way also with the others, but they never really engaged in exploring the cards. After lunch we really had to start generating and visualizing ideas for initial concepts, as we had plans of presenting these to a larger group in the project a few days later. The ‘Fieldcards’ stayed on the table where we had left them, while we collaboratively listed six (mainly previously identified) use-situations and ideas, which we would like to explore further through sketched scenarios.



Figure 16/ A collection of ‘Fieldcards’ invited into a co-design situation in the PalCom project of analyzing field insights and developing initial mixed-media ideas and concepts. They contained rich field-related data, but in the situation they were difficult to engage because there was no ‘format’ of collaborative exploration.

For the point of this section I stop here, but generally, what is exemplified, is a co-design situation, in which one had made the schedule, and we who prepared for the materials for the event only focused on content. We were all aware of the two focuses or intensions (*frames*) of the day, and also the limited time available for exploring the contents on the available ‘Fieldcards’ (*field-specific content materials*). Still, it was challenging, because we had not prepared any *format(s)* suitable for collaboratively engaging with the *content materials* in this co-design situation.

Formats are inspired by graphic design

Working with grids is a typical practice within graphic design, as soon as there is some repetition both from page to page or from day to day (e.g. Müller-Brockmann, 2008/1981).⁸² Graphically, daily newspapers are a good example. The publisher does not create a new grid, or format every day for setting up the day’s paper; but creates new news stories, new background reportages, new comic-strips, new weather forecasts, etc. Journalists create new content every day to fill into the specific grid-format. Grids/formats create some constraints or guidelines, partly setting the scene for HOW to act.⁸³

Paper and post-it notes are classic examples of a format

Widely used in co-designing, paper-based office, working-tools in one view set some constraints, e.g. the size affects how much can be written or sketched on it, and in another view they are very open for various uses. A4 paper can be folded, cut out, made into an air-plane, printed on, etc. Post-its are also one such *format*. Post-it notes are one of those materials that very often are invited into a co-design event – for example when brainstorming, but also for many other activities. On Thursday 10th of March 2010, I took a five-minute tour around the open office of the Co-design Cluster at The Danish Design School, mostly working with the DAIM project at the time. I found examples of the following various collaborative uses of post-its:

Foreword: Program
Appendix 05

Post-its are generic quite open-ended, moveable and glueable *formats* that can be used for many different purposes, as is a piece of paper. However, in the situation at a co-design event, similar to other tangible *formats*, the use of the post-its needs *staging* and *formatting* to be used in a certain way, otherwise again the question “*How are we going to do this or use these?*” is very likely to be posed.

Chapter 6

.....

⁸² For creating the layout of this thesis, my sister and graphic designer made different grids for me/us to position the images, paragraphs, etc. within.

⁸³ Various examples of more or less exploratory formats: Specific graphic grids, like for a newspaper, can be considered a format; a standardized formula to fill in yearly tax-calculations can be considered a format; everyday paper-based (office) working-tools like A4 papers, A5 lined pads (with company logos), post-it notes, flip-over charts, etc. can also all be considered as formats. The tax formula is not designed for exploration, but for anyone to be able to add their various personal numbers in specific pre-defined spots, to change it into this year’s personal tax registration; the newspaper grid often includes some openings for daily creative exploration and the office tools are very open to a wide range of uses. Thus, depending on the specific setup, the grid or format can work as tight or loose design guidelines for HOW to be doing this.

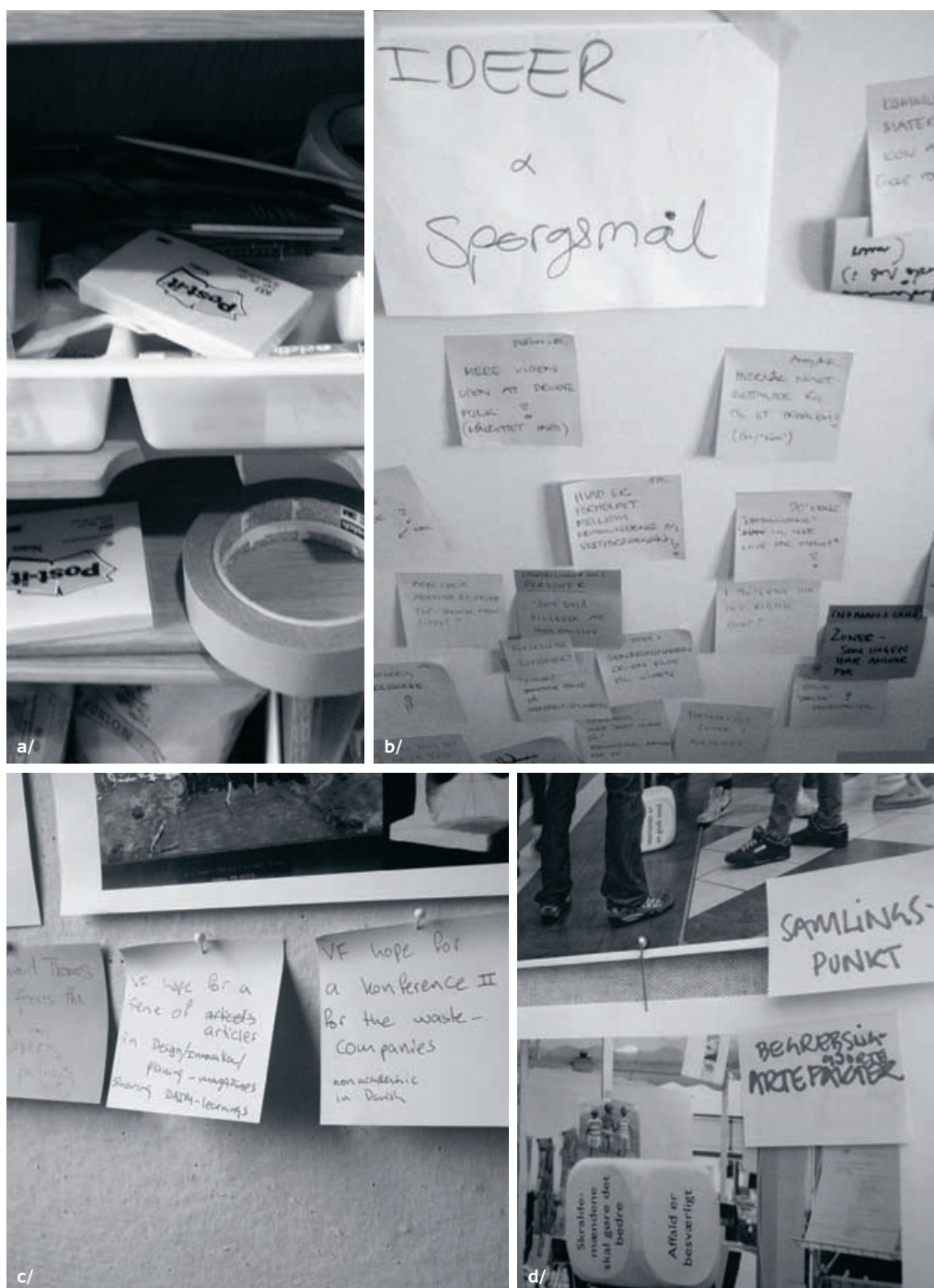


Figure 17/ a/ Post-it notes among various other office equipment – waiting to be ‘invited’ into a situation of personal use or co-designing. **b/** From a DAIM event, a board was kept with post-its including annotated and collected ‘Ideas & Questions’ that came up during that event. **c/** After another DAIM event, post-its were used to write reminders on a bulletin board of the wishes of a stakeholder (VF). **d/** Lastly, in analysis of a DAIM co-design event, yet a classic use of post-its were used for highlighting insights as keywords.

At the Per:form event, because the participants were not allowed to speak, little light-yellow post-its were invited once during the day, while mapping the 28 proposals. Here the notes were explicitly staged for writing keywords and small phrases or thoughts about how a proposal was understood, and then it was stuck onto the proposal.⁸⁴

Exemplar 04 /
circle 06

Different examples of formats in Exemplars 01 / 03 / 04

At the Kick-off event, in the ‘Things on their way’ situation, intertwined on the table with the tangible *content materials*, various other tangible materials were also invited to participate – tangible *formats*. These materials had previously been delegated their role as *formats*, by the event organizers: the antique plates, the anecdote cards and partly the agenda also lying in print on the table, as well as the large white candle-lit table. Without the verbal introduction about how to engage these in this particular situation, for example, the plates and the candles could just as well have been *content materials*; but here the plates were explicitly delegated the role to gather collections of things, and with them the negotiated co-designed issues and questions of interest. The anecdote cards were delegated the role to assist in provoking new perspectives on the things brought. Lastly, the candle-lit table was delegated the role as the scene on which the issues and insights (on plates) by the different groups could be merged and related.

Exemplar 03 /
circles 04-06

Exemplar 03 /
Agenda / circles
03-05

Exemplar 03 /
circle 03

As organizers of the Kick-off event, additionally as a part of the assemblage, my colleagues had also *pre-designed* the question with which they were asking the participating stakeholders to bring the content materials (beforehand via email) and the schedule and timing of the participation of these at the event.

Exemplar 03 /
circle 01

Exemplar 03 /
Agenda

Pre-designing formats is also a large part of what we as event organizers have done before the other co-design events illustrated in the Exemplars. For the Service project landscape situation, as at many other co-design events I have (co-) organized, materially we prepared and provided the 70 x 100 cm white foam board as a *base-format* for the students to collaboratively work on and within. However, the white board did not make much sense on its own when the students entered the classroom after lunch. First when I had explained what to do, and explicitly delegated the role as a *base-format* to the board, the students knew what to do with it. So, it did not do the job on its own, but together with the slide and my verbal guidelines, the students were quickly ready for co-designing as collaborative *materializing*.

All Exemplars
Exemplar 01 /
circle 02

Exemplar 01 /
circle 01

Exemplar 01 / circles
02-04 / Chapter 6

At the Kick-off and Per:form events, foam board was also participating as tangible *formats*, but for those events it was cut out beforehand by the event organizers into approximately 20x20cm squares. At these two

Exemplar 03 /
circles 07, 08
Exemplar 04 /
circles 03, 07

.....

⁸⁴ Of course, I have been engaged in many other co-design situations where post-its have been participating too, and they are a good format often assisting in staging an explorative frame, but in the Exemplars included in this thesis I have deliberately chosen examples in which many other kinds of materials were engaged too.

Exemplar 04 /
circle 03

Chapter 6

Exemplar 03 /
circle 08

events, these *formats* were tangibly identical, yet their situated *staging* and *formatting* differed. In the ‘silent brainstorming’ situation during the Per:form event, the square tangible *formats* were delegated the role as *base-formats* on/with which to capture proposals of collaborative decision-making devices. During the Kick-off afternoon, when a ‘Landscape of Waste and Innovation’ was co-designed and *materialized*, for Step 1, each group got three square foam boards, but in this situation they were explicitly delegated the role to each capture a specific current or future situation of waste-handling.

To generalize, I have taken 70 x 100mm foam boards to many different co-design events and situations, and in many cases such *tangible formats* can be almost duplicated or slightly modified for use in co-design situations of sameness or family resemblance. Still, as described, it needs specific appropriating, staging and formatting in the situated action. On the other hand, in the specific situation, if the way of co-designing proposed by the event organizers, sometimes assisted by *tangible formats*, is accepted by the stakeholders, then the *format* in itself is not particularly interesting. Rather, then it is the specific *content materials* that are explored and negotiated but intertwining with the *tangible formats* in materializing, that gets the main attention (Chapter 7).

Formats in co-design research

Chapter 2
Exemplars 03, 04

Lastly, Thomas Binder and especially Eva Brandt have, inspired by the work of Pelle Ehn, extensively explored practically working with ‘design games’ as an overall concept for *staging* and *formatting* co-designing during co-design events (e.g. Brandt et al., 2008 / Brand, 2006). These examples from events done and experienced with them (Kick-off and Per:form), can also in my view clearly be related to the concept and practice of engaging in design games. If the tangible materials of a board design game are divided they are also a combination of what I propose to call *tangible base-formats* and *content materials* as well as other *formatting* rules of interaction. Yet, in this thesis I do not widely use the phrase of design games, because my intension is to go further into the structures and roles of the various participating materials of the co-design situation.

Summary / Formats as ‘Delegated coach assistants’

As the title of this Part B indicates, I argue that *formatting*, *formats* or *formats of exploration* are extremely important when staging co-designing, along with *content materials* / ‘delegated playmates’. As *formats* are largely what co-designers staging participation at co-design events (co-) design, they can be considered a very central ‘material’ for the co-designer.

In co-designing, some physical, hands-on materials are delegated the role as a *format* (often by the event organizers), and at a co-design event, they assist the organizer(s) or coaches in setting the stage of HOW to collaborate. Therefore, they are given the name ‘delegated coach assistants’. Yet, these non-human *formats* do not stage co-designing on their own; they are a part of an assemblage of materials participating in formatting also including specific guides of how to be co-designing.

Guides as ‘Delegated instructors’

At a co-design event, verbal, visual and/or written *guides* of how to be doing together in a co-design situation are often made available by the event organizer(s) in plenum or to the smaller groups. *Guides* are typically more or less *pre-designed* by the organizers and can take a variety of forms. They can be seen as a part of the assemblage of materials *formatting* and assisting in *staging* for co-designing; with Latour’s concept I suggest to view them as ‘delegated instructors’.

By ‘delegated instructor’ I mean materials (hands-on, projected and/or spoken) that set some quite open or more structured instructions of how to be co-designing in the specific situation, so participants do not spend all the valuable time together discussing ‘how to be co-designing’, but rather doing it. If there are many groups working in parallel, such guidelines can exactly work as a delegated instructor assisting the organizer(s) in staging how to be co-designing without having to always be there in person.

Guides of co-designing have taken various forms at the exemplary events
Guides have sometimes been participating as separate printed paper documents, sometimes visually displayed, sometimes integrated in the event invitation, sometimes integrated in the agenda, usually spoken out loud and usually a combination of several of these.

In the first Service Project Landscape situation, before the students started doing and collaboratively *materializing*, as a tutor I projected a few slides explaining why and how to do a landscape, and ended with an inspirational list of topics of what to possibly include. This projection remained visual throughout the situation while the students were co-designing their shared transportation-landscape.

Chapter 6

Exemplar 01 /
circle 01

At the Rehab Future Lab event, the *guides* of how to be collaborating at the event were already integrated in the mail-invitation sent to the participating stakeholders beforehand, and at the event they were verbally repeated with reference to the invitation and in the groups even further explained verbally.

Exemplar 02 / Email
with Goals & Agenda

Likewise for the Per:form event, where my co-event organizer, verbally was calling silence after briefly having explained what to do for the coming 45 minutes, with reference to the agenda.

Exemplar 04 /
circle 02 / Open call
with agenda

Similarly, at the Architects’ Future Lab, every situation was described in the agenda including an indication of the planned persons and technologies participating, as well as a brief description of the scenario to explore. At the event during the days this was appropriated with reference to the just concluded shared experiences.

Exemplar 06 /
Agenda /
circles 04-14

At the Kick-off event, the *guides* were very briefly integrated into the printed agenda made available at the event, and before each *co-design situation*

Exemplar 03 / assisted by some of the other *formats*, what to do was explained verbally.
Agenda / In Group 3, one stakeholder also wrote down the main parts explained to
circles 02, 03, 07 consider when composing a situation. The stakeholders in that group re-
Exemplar 03 / ferred to this paper several times during that situation.
circle 08

Exemplar 05 / **Lastly, at the first Design Dialogue event,** the instructions of what to do
circle 04 when split up in different groups were explained in plenum by one of the
Exemplar 05 / hosting architects assisted by a series of projected slides. When the groups
circle 05 had split up, one of the hosting architects also went by the groups and
physically demonstrated how to place the foam pieces on top of the maps to
mark places of interest to the stakeholders. At this event the stakeholders
were discussing places of interest and concern, but it was first when an
Exemplar 05 / architect came and said ‘In 10 minutes we would like you to present...’ that
circle 07 at least the group I followed actually added the little pieces onto the board.

Summary / Guides as ‘delegated instructors’

Chapter 8 Together these various examples show that the *guides* – or ‘delegated in-
structors’ – of doing in co-designing tend to be mixed in with other ma-
terials in the assemblage participating in *staging and formatting* co-de-
signing in the co-design situation at an event. Further, that the guides are
often made present in various material forms, combined with verbal sum-
maries or explanations by the event organizers at the beginning of and
often also during each co-design situation. Some set the scene when they
have been introduced at the beginning of a situation (what I later call *situ-*
ation warm-up – Chapter 8), while others are consulted or repeated along
the way. As a part of the *assemblage of formats*, when an event organizer
is not physically present with a group, these ‘delegated instructors’ can as-
sist the organizers in *staging* co-designing.

The physical location – also a part of the co-design event materiality

Lastly, the *physical location* in which co-designing happens is also an inte-
gral part of the non-human materiality influencing and intertwined with
what can and does happen at co-design events and situations. In this sec-
tion, I also very briefly position this view in relation to references from my
architectural background and from IT and interaction design research.

Connection to classic Danish architectural references

With my background in architecture, naturally I view the physical and
material space as an integral part of life and practice. Here are a couple of
classic Danish references that have shaped my views of architecture: The
first basic books that really inspired me to study material details of space
and how they influence experience were *Om at Opleve Arkitektur* (in Eng-
lish: *Experiencing Architecture*) (Rasmussen, 1964) and *Byen Rum Byens*
liv (in English: *Public Spaces Public Life*), also adding strong emphasis on
the interplay between the built urban environments and social life (Gehl

and Gemzøe, 1996) and finally, a book building on most of the same arguments as in Gehl's classic world famous and in city and urban planning continuously relevant book *Life Between Buildings / Livet mellem Husene* (Gehl, 2001/original 1971).⁸⁵

Focus on space and place in interaction design

Within interaction design, there is increased acknowledgement of the importance of understanding the space or environment of situated interaction. When designing IT-systems and designing for interactions, acknowledgement of the importance of the environments, was especially established with the research focuses on ubiquitous computing, augmented reality and pervasive computing. These various fields were strongly initiated by Mark Weiser's classic visions of the Computer of the 21st Century, imagining IT calmly integrated into the environment (Weiser, 1991). Initial work on this happened at Xerox Parc where Lucy Suchman also had been working and influencing the focus on understanding situated actions.

P&A
Chapter 3

A core reference that still is manifesting a focus on the importance of space and place within the field of interaction design (and HCI) is *Where the Action Is – The Foundations of Embodied Interaction* (Dourish, 2001). The concept of 'Embodied Interaction' builds upon phenomenological traditions of understanding detailed situated practice rather than generalized abstractions, and the concept is still widely used. Architect Malcolm McCullough's *Digital Ground – Architecture, Pervasive Computing, and Environmental Knowing* (McCullough, 2004), has further established a theory of place for interaction design, and building upon these various references Jörn Messeter has also explored this further in his work on place-specific computing (Messeter, 2009).

In, *Metamorphing*, Per Linde is likewise acknowledging the importance of space and place, but different from the others, he is especially exemplifying and arguing how space and place are part of the materiality of processes of designing (Linde, 2007:67-79). Generally he phrases it like this: 'We can look at the interplay between space, objects and human actors as assemblies of temporary and short-time events and at place as emerging through ongoing practice and perceived as shared experience by the actors within the practice. Intermediary spaces emerge when artefacts, people and spaces are meshed into specific instantiations if the evolving activities within a physical location. (...) So what constitutes place is a complex totality of social engagement with other people, use of artifacts, information, and lived experience that is hard to pinpoint. Hence, place is experienced space ...' (ibid:67).

.....

⁸⁵ When studying to become an architect, in every project we were encouraged to study the 'context' of the site we were going to design – typically with a focus on the shapes of the surrounding physical spaces, the current flows of movement, the current functionalities in the surrounding environment, etc. We often emphasized the physical and visually accessible 'context'. I am fully aware that the term 'context' is used quite differently e.g. in anthropology with a strong focus also on organizational factors and socio-material relations, and that 'context' also has been appropriated to fit with the field of interaction design. I will not go further into these different views, as my aim with this section mainly is to also view the physical environment as an actor in the co-design situation.

Lastly, in *Design Things*, in the chapter *Emerging Landscapes of Design*, Per Linde and the other authors claim that ‘the environment becomes a “lived landscape” in which the designer journeys and dwells’, and that this is intertwining with ‘the object of design’ that the designer creates, as they describe (Binder et al, 2011: 131). The various references mentioned also relate to or include discussions of what is space and what is place. My views are very similar to Per Linde’s, but as this is not my main focus in this thesis, I have deliberately refrained from further entering those discussions. Rather, with Per Linde’s argument, I agree that the space, environment or physical location influences the practices of (co-)designing.

Inspirational learning environments in the Atelier project

Appendix 02

In the Atelier project, in which both Per Linde and I were engaged, we were exploring what we called ‘Architecture and Technology for Inspirational Learning Environments’. Our main environments of study were studios of architectural students in Vienna, Austria and interaction design students in Malmö, Sweden. In addition to various hardware and software technologies such as projectors and RFID-technology, and in addition to the flexible-on-wheels furniture, physically and spatially the main addition we created in the Malmö studio was a grid of squares in the height of the ceiling and what we called ‘ubicom building blocks’ (45 x 45 cm transparent plexi-glass modules with joints, fabrics, and other working materials). As shown in Figure ??, this allowed the different students using the space to continually reconfigure the location to make it a suitable place for their current scheduled activities. The Atelier masters students used the studio as their daily workplace so they had their materials available and could leave them behind from day to day, much as Petra was working in Donald Schön’s stories of architectural practice (Schön, 1983/1992).

Chapter 1



Figure 18/ Spatial configurations of the studio of the interaction design master students engaged in the Atelier-project. These various reconfigurations of the physical location happened within about two months. It was both used by the master students in their project work at that time of exploring ‘semi-public places’, and during a two week open workshop entitled ‘Ubicom building blocks’, also organized as a part of the Atelier project.

Physical locations of the exemplary co-design events

Yet, the physical locations of all the Exemplars were all meeting rooms or lecture rooms, booked for the time allocated for each of these unique co-design events. They were all temporary spaces of co-designing. This is a characteristic of many co-design events and thus of co-design situations happening during events; the location is temporarily used (and made into a temporary project place) for this event during this project. And because of this temporality, very practically the location typically has to be left as it was received.

All Exemplars



Figure 19/ Another example: A quite typical not very flexible conference location – which through its materiality of heavy furniture and working materials e.g. coffee cups, logo paper and pens and printed agendas inherently establish a certain hierarchy and quite word-based way of interacting. (Images from a yearly Danish design researcher residential meeting – August 2009).

Thus, unless there is a print-shop, a wood-workshop or other facilities next door where it is easy to access additional working materials, apart from the standard materials available in such lecture, meeting or conference rooms – like a projector and projection-surfaces, maybe a whiteboard, a flip-over chart, and sometimes logo, A5 paper and pens, all the other materials and artefacts to possibly engage in co-designing have to be brought along or invited by the event organizers and other participants – as we did for all the different Exemplar-events (The *formats* and *content materials* described above are examples of such invited tangible materials).

The Rehab Future Lab-event happened at the Rehabilitation unit, which was a very different and site-relevant location compared with a conference or lecture room. – Yet, as illustrated in the Exemplar, during the event we were mainly in booked, differently sized meeting rooms at the unit. The larger gymnastics/meeting room was able to be refurnished to fit the different situations and was suitable for everyone to meet, get started and eventually to meet again to summarize at the end of the day, while the smaller meeting room down the hall only really allowed the group to sit around the round table. But the rich materiality of the physical location, which is a part of the daily practice at the unit, was not integrated in the planned *co-design situations*. These other locations at the unit only got to play the role of a kind of background inspiration during the event, as we quickly passed through them between the meeting rooms.

Exemplar 02 / circle 01

Exemplar 02 / Introduction / circle 02

Exemplar 02 / circles 03, 05

Exemplar 02 / circle 01

Chapter 1
Part C / Introduction

These locations were not very actively engaged in the co-design situation when the different stakeholders were roleplaying possible future practices with the mock-ups brought along, even though the sketched scenarios were intended to be used in these or similar locations. I disagreed with this choice, because from my many experiences, such co-designing activities can greatly benefit from engaging a relevant rich physical context. As the tangible materials on the table are ‘speaking back’ as Schön (1983) argues, a full-scale environment can do the same, especially when engaging in full scale embodied engagement and roleplaying of possible future practices.

Exemplar 06 / circles 05-07

Exemplar 06 / circle 02

Appendix 01

Exemplar 06 / Agenda / circles 04-14

Part C / Introduction

Relevant full-scale locations were an integral part of the Future Architects’ Lab. Here, before the event, we had established a possible future architect’s studio in the large meeting/lab of the WorkSpace project, the ‘iRoom’. At the event, we explicitly combined this location with also working outside by a large building site, relevant to the task of the architect’s designing a re-design of the courtyard as a part of the event. To return to the concept of delegated roles, different areas on the iRoom and of the outdoor setting had previously been delegated roles as explicit stages of different scenarios explored collaboratively during the event.

Summary / The physical location

The choice of the main physical location and its surroundings influence what kind of co-designing can take place. Also, the flexibility of materially arranging the interiors in the space during a co-design event matters in relation to what kind of co-designing takes place in the situation. In other words, inherently the physical and spatial location plays a role in co-designing, and can also be delegated an explicit role in a specific co-design situation.

Thus, when planning where an event is to take place and when *staging* co-designing in that location, the materiality of the meeting or lecture or conference room or relevant physical location matter as do the many other materials engaged in co-designing. I suggest this too to be viewed as important ‘material’ for the co-designer.

Summary / Chapter 5

Identified across the Exemplars, and with Bruno Latour’s concept of ‘delegated roles’, I have in this chapter highlighted different mainly tangible hands-on materials, which were parts of the complex material assemblages participating in those co-design events. Across the Exemplars and other examples, from which I have experiences, I have exemplified and discussed: *agenda* as ‘*delegated time and topic keeper*’; *content materials* (e.g. *generic, topic-related, pre-designed, etc*) as ‘*delegated play-mates*’; (*tangible*) *formats* as important often distributed ‘*delegated coach assistants*’; *guides* as a part of the formats as ‘*delegated instructors*’ and finally *the physical location* also as an important part of the materiality of a staged co-design event and situation. As one special and design classic kind of *content materials*, I have also discussed pre-designed proposals invited for co-design events as ‘*delegated advocates*’. I suggest all these too to be viewed as important ‘material’ for the co-designer.

To repeat from the introduction of this chapter, my intension has not been to deconstruct the situations for the purpose of simplifying and generalizing, but to study them separately in details to better understand their sameness, material family resemblance and characteristics. In the following chapter on *Formatting Processes of Materializing and Rematerializing* they are all complexly merged again as happens in real situated co-designing.

Chapter 6 / Formatting Processes of Materializing & Rematerializing

*With participating materials at co-design
events and situations*

Chapters 2, 5 Throughout the thesis I have mentioned *formatting* as a part of *staging* and *setting the scene* for co-designing. In Chapter 5, I explored and exemplified physical *formats of collaboration* and suggested viewing them as ‘*delegated coach assistants*’. In this chapter, I will further exemplify and explain what I mean by *formatting*.

Chapters 4, 5 I will explore and exemplify *quite explicit staging* and *formatting* of processes of *materializing* and what I propose to call *rematerializing*, at co-design events. Both these processes are intertwined in co-designing practices – and as discussed in Chapters 4 and 5, an assemblage of materials is participating and assisting event organizers in *formatting* these explorative and reflective processes. *Physical formats* are core parts of the assemblage of materials along with the agenda, detailed guides, etc. assisting event organizers in *formatting* for co-designing. Then in the situated action at the co-design event, with participating *content materials* and stakeholders, a special kind of co-designing can occur.

Chapter 2 My views of *formatting* build upon the early acknowledgement within participatory design, that some are *setting the scene* and *staging* co-designing (e.g. Bødker et al, 1991). Related to PD, others have also been using the phrase ‘*formatting*’ when discussing staging participation (e.g. Brandt et al, 2008). The phrase is the *-ing* form of the practice of working with *formats* e.g. common in graphic design. Further, it also ties to the understanding of co-design projects as platforms for different communities of practice (CoP) to meet and merge, which Wenger and his colleagues suggest cultivating rather than effectively managing.

Ideas of ‘materializing’ is building upon experiences and theories

My views of co-designing as *materializing* both build upon my many previous experiences and upon most of the theories I have related to so far. Theoretically, my view of co-designing as *materializing* largely builds

upon merging arguments by Tine Damsholt et al. (2009) and Elisabeth Shove et al. (2007) showing that there is a clear relationship among skills, the available ‘having’ materials and doing.⁸⁶ It also clearly ties to Donald Schön (1983) and the dialogue with the materials speaking back in the situation, to Jane Lave and Etienne Wenger’s views (1991/1998) of practice as participation and continual processes of reifying, to Lucy Suchman (1987/2007) and the continual reconfiguring of socio-material relations and the active role of artefacts in the situated actions, which all also relate to Bruno Latour’s (e.g. 2005) concepts of translations and transforming.

Part B / Introduction
Chapter 1
Chapter 2
Chapters 2, 3, 4,
Chapter 4

Going further into the actual doing and co-designing as *materializing*, relating and adding to the understanding and situated practices of reifying, with Erling Björgvinsson’s views (2007), processes of *materializing* stabilize and (temporarily) result in ‘hardened’ materializations/reifications/ outputs, what I in this chapter suggest calling (temporarily) *materialized*.

Chapter 2

To summarize, within co-designing we are continually *materializing*, but there is also a special kind of *collaborative materializing* going on in the group-work situation at co-design events, where the dialogue with the material often is intense and can be surprising. Here, *materializing* can be understood as doing by making and giving (material) form to ideas, details, proposals, issues, questions, etc. In other words, co-designing by *materializing* and making the material that is speaking back in the situation, again to revisit Schön’s phrase (1983).

Chapter 1

Ideas of ‘rematerializing’ is building upon experiences and some theories

My views of co-designing as *rematerializing* also both build upon my many previous experiences and upon some of the theories I have related to so far.⁸⁷ Further, with Erling Björgvinsson’s views, ‘hardened’ or *materialized* outputs might later be (collaboratively decided) to be ‘defrosted’ again, as he phrases it. Depending on their character, sometimes these can get to play their own life in the project as they are, or they might be slightly

Chapter 2

.....

⁸⁶ I started working with the term ‘materializing’ as a way of understanding co-designing before Shove et al. and Damsholt et al.’s books were published. This initial work is captured in my exploratory short paper ‘Material Means... ‘Re-representing’ – important explicit design activity’ (Eriksen, 2006b). In the paper, based on my various practical experiences of engaging in co-designing, with simple sketches I laid out a so-called initial analytical framework for discussing different ‘types of Material Means’. Co-designing at events was sketched as a process from Materials > through Materializing > to Materialized + further Re-Representing, a flow I still view as central parts of co-designing. In the paper, I use some similar and some different words from those here, for example: My focus has changed from types and means/meaning to matters, but still the aim was and is to assist in understanding materiality and different material processes of co-designing.

⁸⁷ ‘Re-representing’ roughly captures the same meaning of what I in this thesis rather suggest calling ‘rematerializing’. Despite the name, the paper (Eriksen, 2006b) was largely an argument for acknowledging this experienced – but sometimes missing – yet what I found an important part of co-designing practice – which I still find important. However, in that paper I was not really addressing the importance of ‘formatting’ and ‘staging’ and that the initial materials had differently delegated roles, which I now argue are quite explicit, influential and essential in co-designing. (When published this paper was also a part of the programmatic positioning of my PhD project / P&A).

Chapter 4 modified along the way, but they are also very often revisited and may be re-related shortly after they have been created to assist their continuous life in the project, what I suggest to view as processes of explorative *rematerializing* during co-design events. In this chapter I will mainly discuss processes of reflective yet explorative *rematerializing* during co-design events, but over time this also relates to Bruno Latour's concept of 'circulating references' and views of actors leaving 'traces' in the network.

Chapter 5 In this concluding chapter of Part B, I will draw together the different materials with delegated roles discussed in Chapter 5, with emphasis on *physical formats* and *content materials*. This is done to both understand and show how *formatting materializing* and *rematerializing* with *participating materials* can practically happen in co-designing, and to further emphasize important 'material' of the co-designer.

Formatting... Processes of Materializing

Exemplar 03 During co-design events, collaboratively stakeholders engage in processes of *materializing* with the materials of the co-design situation. These group-work situations and processes are often quite explicitly staged and *formatted* (e.g. for collaborative exploration). With the understanding of *formatting* and *materializing* generally described above, in this section I explore examples of hands-on co-designing as processes of *materializing*. I do this through a series of shorter sub-sections each addressing processes of *materializing* in slightly different ways. The main examples explored and discussed are from the Kick-off event.

From materials – through materializing – to materialized

In this sub-section, I start exploring the process from various delegated materials (the available 'having' *materials*), through collaboratively doing and making or *materializing*, to at least temporarily stabilized, hardened, *materialized* states. I will jump right into some examples from the Kick-off event:

Exemplar 03 / circles 03-05
Appendix 05 The 'Things on their way' situation at the Kick-off event, is one example of a process from *materials* – through *materializing* – to *materialized*. The 'Things on their way' situation was the first quite explicitly staged, explorative *co-design situation* of the Kick-Off co-design event and of the DAIM-project. In this specific co-design situation the personal things – or *materials* – brought along, quickly populated the tables (the *content materials*/'delegated playmates'). As soon as the group started discussing and exploring with these, they got mixed with the three antique (still empty) plates and the stack of poetic or provocative anecdote-cards, intended to challenge existing views and change perspectives (the *physical format materials* / 'delegated coach assistants').

The starting point of the situation was the separate available (having) *materials* participating with different previously 'delegated roles', the plates as tangible *formats* and the things brought along as *content materials*

‘invited’ for creative exploration; but very soon they merged in the collaborative and transformative process of co-designing through *materializing*.

In the Exemplar I show a situation in which an old T-shirt and an old VHS-tape are merged on one plate. In the specific situation, the things, or *materials*, are negotiated and add new meaning. They are grouped, the collection is named and then it reaches a state, which I suggest to calling *materialized*. The same happens with the other plates. They stabilized or hardened; no more additions or changes were made – materially – to these *materialized* plates or proposals of relevant issues to acknowledge and maybe address in the project. More generally, when time is up in a group-work situation, the collaborative *materializing* ends with something *materialized* (physically – if physical materials have been participating). This becomes the negotiated materialization of what happened and was agreed upon.

Exemplar 03 /
circle 04

Exemplar 03 /
circle 04

When materialized, the plates were moved into another process of materializing – the process of relating to the other proposals – which also *materialized*. The *materialized* plates of issues also stayed the same – materially, when they entered and were related to all the other *materialized* waste-plates by the other groups on the larger shared candle-lit Danish countryside ‘cake-table’ of waste- and project-related issues. (The white table was the next noon-humna physical *format* assisting the organizers in *formatting* this move from group-work to shared design space.)

Exemplar 03 /
circle 05

The full table was clearly illustrating that the topics and practices of waste handling and innovation can start in many places and are complex and often contradictory. However, regarding my material perspective, when their position had been quickly negotiated among all or some of the stakeholders at the event, all these plates of issues stayed in their *materialized* state and almost in their initially negotiated position on the table. The table was capturing the first shared *materialized* design space of issues and interests in the project.

At the event, it was time to move on, and as the whole team moved to the next slot in the agenda, the ‘cake-table’ had also stabilized – or *materialized*. The whole table and the separate plates were documented in detail by taking overview and close-up still images, but it all stayed as the stakeholders left it until the end of the event. This explorative co-design situation of engaging with differently delegated *materials* had ended, but with this materialization the project design space had been transformed and was now collaboratively opened.

Exemplar 03 /
circle 05 (last image)

In the afternoon of the Kick-off event, new materials were brought into play, to support exploring the design space in another way. During the afternoon’s co-designing called ‘Mapping a landscape of waste and innovation’, the first step on the agenda was called ‘From field visits to situations = people + place + activity + time’.

Exemplar 03 /
circles 07-08

As explained by another event organizer, in the same groups, the intension was now to continue the exploration through capturing three specific situ-

Exemplar 03 / circle 07
 Exemplar 03 / circle 08
 Chapter 5

ations describing one or more persons engaged in a waste-handling-related activity at a specific place, at a given time. After a brief introduction, in which the seven different initial field-visits were very briefly explained, each group selected one of seven collections of pre-printed, field-specific images and brief descriptions. With these (*field-specific*) *content materials*, they explored these specific examples of existing practices. However, with the project design-anthropological approach, the purpose was not to dwell for long in an analysis of them, but rather to relate and discuss with (some of) these through collaboratively specifying – as *materializing* – three situations of current or possible future practices, highlighting issues and challenges of interest. As a part of the staging of this situation, each group also got three white 20x20 cm foam boards, on which to capture the three different negotiated situations (in this situation these boards were the main delegated tangible *formats* / ‘*delegated coach assistants*’).

Exemplar 03 / circle 08
 Chapter 5
 Exemplar 03 / circle 09

Group 3, was initially triggered by an image of an enthusiast, who the municipality did not find it very so easy to engage, but triggered by another image soon moved into continuing their discussion from the morning, about the moment of deciding what to do (about cleaning jars). Engagement with the material field-cards and the dialogue fostered among the stakeholders, collaboratively the group decided to create a situation-board capturing this dilemma both by attaching an image and by handwriting issues and challenges onto the board. Two other situations were likewise created, before they were all brought to the other larger table with a white grid on the tabletop (this can be seen as the next delegated assisting *format*). Here the different situation-boards were related and merged with the situation-boards created by the other groups.

During these situations, different previous experiences, and examples of current practices and personal interests can be evoked by concrete *content materials*, can be brought out into the open and can be explored by collaboratively engaging in what could be called explorative *materializing*, before stabilizing in a new merged and *materialized* form. Of course, some of the identified issues stuck with the individual participants, or were further explored in the next co-design situation. Topic wise, Group 3 continued to explore handling jars and focusing on kitchens.

Chapters 1, 3, 7
 Chapter 8

Lastly, both these co-design situations can be viewed as having a quite clear ending. This occurs when no more *materializing* is done and in these examples the cake-table or landscape has (at least temporarily) *materialized*, or simply because it is time to move onto another scheduled and differently focused and framed situation. This relates to what I in Chapter 8 will call ‘situation cooldown’.

To summarize, with a few examples from the Kick-off event, the path in explorative co-design situations of collaboratively transforming from *materials* with different ‘delegated roles’– through *materializing* – to at least temporarily, stabilized, hardened, *materialized* is shown to be an integral part of co-designing practice. Additionally, I have started to show how these processes during co-design events, happen when it

has been quite explicitly *formatted* and *staged* by the event organizers. I have seen this process at many different co-design events.

Merging and relating of materials intertwine with situated negotiating of meanings

Negotiation of the meaning of material is also an integral part of *materializing*. Materials are often engaged in such negotiations, and what is negotiated, influences what eventually becomes *materialized* from the situation of co-designing. Again I jump right into detailed examples from the ‘Things on their way’ situation.⁸⁸

Part B / Introduction

As shown in the Exemplar, an architect from the waste-handling organization participating in Group 3, explained that all the things he brought were meant as inspiration for the project. His comments led to a discussion about whether the beauty of things will affect use and waste sorting. The ashtray he brought ended up on a plate with his other things, but was also grouped with a hand-written note by one of the others capturing their negotiated meaning in the situation (the note said, ‘Beautiful objects – more cautious use?’). Listening to his presentation of these things made it clear that he picked each of them carefully. He came to the event with his agenda and used the opportunity to bring forward his concerns with the things, or topic-related *content materials*, brought along. He used them to emphasize his views of the importance of aesthetics and information in relation to waste handling; captured in the question above, the others did not fully agree.

Exemplar 03 /
circle 04

Further, his stories also revealed his expectations and established views about what the Danish Design School as a partner in the project hopefully could contribute – beautiful containers and campaigns. He also presented his current as-part-of-the-system-view on how the waste system could be improved in the sense of better sorting, obtained by teaching citizens ‘the right behavior’ through more campaigns and beautiful waste containers. He used the objects brought from home to support the oral communication and to illustrate his points. The objects were pointed at and circulated; they provided the other people with a sense of what he meant by a beautiful object.

Exemplar 03 /
circle 04

This example is not exceptional. As addressed in Chapter 2, power relations is a core area of research in participatory design, and (in my experience) participants or stakeholders at co-design events have a reason and agenda for participating. Thus, a central part of *formatting* is for organizers to create a situation helping everyone bring interests, concerns and possible contributions forward. The everyday things brought to the event (planned and encouraged by the project manager and core team beforehand), and later the cards with highlights from initial field studies (prepared by some of the event organizers) at the Kick-off event helped ease the communication and evoke reflection and negotiation.

Chapter 2

Exemplar 03 /
circle 01

Exemplar 03 /
circles 07-08

.....

⁸⁸ The text in this subsection about the Kick-off is a slight modification of descriptions found in the essay ‘Blank Slate or Full Table?’ (Brandt & Eriksen, 2010b).

Exemplar 03 /
circle 04

Another example also in Group 3, where a design-anthropology researcher showed a T-shirt that he had for years, and another design researcher discussed the old VHS-videotape she brought including old research recordings. The stories connected to these materials, which were at the table evoked new stories, and the other people in the group recognized issues about keeping things that are no longer in use. They asked each other questions to learn more about reasons and rationales. For example, someone asked if it could be enough to take and keep a photograph instead of keeping the actual objects. Seeing the T-shirt again in his wardrobe evokes good memories, but reflecting on the idea about the photograph instead, he said that an image of the T-shirt would probably do the same, and would take up less space.

Exemplar 03 /
circle 04

The sharing of experiences went on in Group 3, as they looked into similarities and differences and negotiated their more general meaning. It was revealed that many have mixed feelings about the things they keep. On the one hand, some evoke good memories; on the other hand it is kind of embarrassing to keep many things that are not in use. Further, as described in the Exemplar, from the collection of provoking poetic cards (*pre-designed* by some of the organizers and made available when the ‘Things on their way’ situation started), to capture their discussion they re-negotiated the card saying “You are what you throw away” and agreed to rather name it “You are what you do NOT throw away”.

Appendix 05

The Kick-off event was the first time all partners in the DAIM project met face-to-face, to engage in co-designing activities. The ‘Things on their way’ situation took less than one hour, and afterwards we worked with other field-related materials on the tables to explore and negotiate the design space from different perspectives. ‘Things on their way’ is one example of how different previous experiences, examples of current practices and personal interests can be brought out into the open and collaboratively explored and negotiated at the table – as integral parts of the process of materializing. The examples also show how tangible, as well as talk-content materials (e.g. stories), are participating in the negotiations of meaning and relations in the situation, while the meaning of the plates (the delegated tangible formats in this situation) were not negotiated.

Exemplar 03 /
circle 08
Chapter 1

“...but we are not going to solve it...(now)”, one later said in Group 3, while co-designing three specific situations – and others responded “No, no”. As initially discussed with Donald Schön (1983/1992), a lot of different talk-materials were engaged in the Petra and Quist situation, and likewise here. Not all the talking was about the topic of waste; this is an example of intertwining questions and responses about how to collaborate in the situation. They were questioning and negotiating the meaning of the *formatting* of the situation they were in, and they agreed that what they were engaged in right then was not a brainstorming situation of co-designing new solutions to current challenges, but a situation of identifying central issues and new questions anchored in specific everyday situations. Most of the nine situations on the square boards were in one view situations also proposing future practices, so as on the cake-table, also in this shared ‘landscape of

waste and innovation’ current and future situations of waste-related practices were merging. However, the main objective of creating the ‘cake-table’ and ‘the landscape of waste and innovation’ was not to brainstorm for solutions, but to collaboratively engage in a first encounter into exploring the shared complex project design space or program of the DAIM project.

Exemplar 03 /
circle 09

To summarize, with more examples from the Kick-off exemplar, I have shown how exploration and negotiation among the participating stakeholders, with the available and participating *content materials*, is also an integral part of processes of *materializing*.

Differently delegated roles to materials

– is often a part of the organizer’s planned formatting before the event

Returning to Bruno Latour’s phrase of ‘delegated roles’, in the Kick-off co-design situations just discussed, some materials were delegated to be participating as *formats* / ‘*delegated coach assistants*’, and others as *content materials* / ‘*delegated playmates*’. In this section, I go further into which materials had which ‘roles’ in which situation, and I will discuss how the organizers *formatting* the event largely do this delegation of roles to these non-humans.

Chapters 4, 5

Delegation of different roles to participating materials largely happens before the co-design event. In the beginning of the ‘Things on their way’ situation, the antique plates played one ‘role’ and the brought along things-on-their-way played another ‘role’. Similarly, in the first step of ‘Mapping a landscape of waste and innovation’, the white square foam boards played one ‘role’ and the printed cut out field-cards played another ‘role’ in the specific situation.

Exemplar 03 /
circle 04

Exemplar 03 /
circle 08

In these situations, I view the things-on-their-way and the field-cards as *content materials* / ‘*delegated playmates*’, and the plates and boards as the main tangible *formats* / ‘*delegated coach assistants*’. The *content materials* have in the first situation, been delegated their role beforehand by the stakeholder who brought them along. In the second situation of creating situations, beforehand they were delegated this role by the organizers making them, planning or intending for them to inspire field-related co-designing. In these specific co-design situations, the things and cards worked as specific field-related content; they materially and visually exemplified an experience, attitude, challenge or example of current practice, which were collaboratively challenged and added new meaning in the situation. This happened as a part of the dialogue of negotiating which *content materials* to relate and what to name them (on the different plates or boards).

Chapter 5

Differently, in these specific situations, the plates and boards (the *formats*) did not as a starting point capture any field-specific value or content; in that sense they were more generic working materials. These *formats* had been specifically delegated their roles by the event organizers before the event along with the agenda and guides. In these situations, these material roles were not negotiated during the event, but of course they could have been challenged (yet, then this is another frame of the situation – Chapter 7).

Chapter 7

Exemplar 04 / circles 03, 07	At the Per:form event, white foam boards – a bit smaller in physical size but with the same intension – were engaged as basic tangible <i>formats</i> during the ‘Silent brainstorming’. Here the theme- or <i>topic-related content materials</i> were different, and the framing of using them different too, but in a similar way the white foam boards worked as tangible base <i>formats</i> , on which to create <i>materialized</i> inputs or proposals for the coming shared process of relating through mapping.
Chapter 1	
Exemplar 04 / circle 06	
Exemplar 03 / Agenda / circles 07-11	Back to the Kick-off event, in the afternoon, for the three steps of ‘Mapping a landscape of waste and innovation’, antique plates were engaged too, but with a different role. Yet, in these situations, the plates were not explicitly specified by the organizer introducing this situation as a material base <i>format</i> ; here it was used as plates are often used, as a shape for holding and carrying something, today not food but, for the first step, three white foam boards and the image fieldcards related to one of the seven field visits. Before this co-design situation, the organizers created seven plates with such tangible materials. As soon as the group, with the one plate they had selected, came to their table and spread out the field-cards and three white foam boards, the plate had, so to speak, played its ‘role’ as carrier in these situations of co-designing.
Chapter 5	
Exemplar 03 / Agenda / circle 07	Thus, material formats are not (very often) self-explanatory. Their intended way or ‘delegated role’ of participating in the specific situation is <i>staged</i> and <i>formatted</i> by the event organizer or whoever has agreed to be hosting a situation. The organizer’s formatting of the situation is staged through the verbal introduction of what to do and/or through a written projected or printed description of what and how to do with this or these <i>materials</i> in the specific co-design situation. This <i>formatting</i> is also often included in what I in Chapter 5 called <i>guides/delegated instructors</i> ’ and <i>agenda/delegated time & topic keeper</i> ’. In addition to being expressed verbally by one of the organizers at the Kick-Off event, the explicit <i>formatting</i> was integrated in the agenda and sometimes also on a few projected slides. At other events the <i>formatting</i> was also captured in specific printed guideline hand-outs, as we practiced at other DAIM events.

To summarize, tangible *formats* need situated explicit formatting and staging to be participating as such. As a part of planning and preparing an event, it is usually the event organizers who do this explicit delegation before and during the actual event. *Content materials* too have more or less been delegated their roles explicitly beforehand, but this can be done by different stakeholders. These different delegations I suggest to view as central parts of materially formatting co-designing.

Merging content materials and formats in materializing

Still exploring the process of *materials* – *materializing* – *materialized*, I acknowledge that sometimes it can be quite confusing what is what materially, and which (non-human) materials have which ‘delegated roles’. Closely related to the previous sections, it can be confusing to identify which *materials* are what I have coined *content materials* and which are tangible *formats*. Additionally, it can be quite confusing when they are

merging or transforming in the processes of *materializing* in co-designing. What makes it even more confusing is when the same material has various ‘delegated roles’ either at the same time or over time. In this section, I go further into how *content materials* and tangible *formats* are merging in a process of *materializing*, and how they change character during this process, where new *formats* usually are introduced to assist the organizer in *formatting* the move to another way of addressing the event topic(s).

Now we go back to the different tangible materials at the Kick-off group table, where the stakeholders started *materializing* the field-specific content materials and the material *base formats* were merging. As a part of the process of *materializing*, they were telling stories, discussing relations and characterizing or naming collections or situations with the Things-on-the-way materials – again with the broad views of materiality established so far in this thesis, this is all considered material in the situation. However, from this dialogue and discussion, tangibly, one plate was used to group the VHS-tape and the old T-shirt, another to group plastic water bottles and empty glass jars, etc. When this had been negotiated, they merged and became one.

Chapter 1
Part B
Exemplar 03 /
circle 04

Another material played a central somewhat ‘double-role’ in the ‘Things on their way’ situation, what I in the Exemplar have called the ‘poetic anecdote cards’. Along the way they were also merging with the other materials. These cards had been carefully *pre-co-designed* and prepared by the team of organizers before the event. The pre-printed texts – about the Right of Property of Waste, the Heritage of Waste, etc. – was in one way *topic- or field-related*, but, as stated in the agenda, they were also intended to provoke the stakeholders in ‘questioning categories and searching for meaning’ of the things-on-their-way, which they had brought along themselves.

Exemplar 03 /
circle 04

Exemplar 03 /
Agenda

In another way, turned around there was a white card – an open *format* (like a post-it note) – on which the groups in some instances wrote their own negotiated, co-designed names or phrases, capturing (some of) the issue addressed on each specific plate (also relating to Schön’s characteristic of naming and framing as integral in designing – and co-designing – Chapter 1). – Back to the cards, quite confusingly, depending on how each individual card was engaged in the specific unique situation, it either played the ‘role’ as a topic-related questioning *content material* or *format* or a bit of each.

Chapter 1
Exemplar 03 /
circle 04, 05

Sometimes formats and content materials are not very clearly divided, while the examples just described are quite clear examples of tangible *formats* setting some rules or constraints for the collaborative exploration while at the same time opening up new discussion and explorations, and *content materials* that are relevant to the topic in focus, negotiated and related. Still, at the first Design Dialogues event⁸⁹, the tangible working mate-

.....
⁸⁹ Discussed much further in Part C.

Exemplar 05 / circle 04
Exemplar 03 / circle 07

rials invited in and introduced by the hosting architects were architectural floor-plans on a large foam-board and diverse little colorful pieces to glue onto the plans. Yet, here the delegated roles were not as clearly divided as the quite complex floor-plans and a list of color-codes also on the large board, which contained a lot of *topic-related* information to discuss and negotiate with and from without needing to engage the colorful pieces. As the Exemplar shows, this first happened in the last ten minutes.

Chapter 5
Chapter 3
Chapter 4

Back to the merging of materials at the Kick-off event. Separate tangible *formats* and *content materials* were the main non-human materials participating at the beginning of the explorative process of co-designing in the groups. Yet, when it was about time to bring the filled plates, (or in the group-work situation of creating three situations, bringing the three filled situation-boards) to the shared white table-cloth table where the *materialized* work of the different groups were related. The different physical *materials* (*content materials* and *formats*), which at the beginning of the *co-design situations* were separate materials had now merged, or been translated, to use Latour's phrase and only made sense together.

To summarize, I have shown how tangible *formats* and *content materials* are merging in the process of *materializing* and end up as one shared *materialized* output. I have also acknowledged that it sometimes is challenging to distinguish which are what, through giving examples of how the same material can play various roles over time or at the same time.

New formats along the way assist in transforming among different processes of materializing

Chapter 4
Chapter 2

Lastly, as a slightly different perspective on processes of *materializing*, I exemplify and discuss how different situations and ways of *materializing* can be assisted through introducing new *formats* along the way during the event. When this happens, other material roles can change too. This relates to the transforming/transporting character of co-designing – to use Bruno Latour's phrases and views of how 'mediators' make others act (2005), and to making moves in 'intertwining language design games' as Pelle Ehn (1988) has recognized.

In both co-design situations described above ('Things-on-their-way' and 'From field-visits to situations'), when meeting in plenum around one of the shared tables with white tablecloths, roles changed as yet new materials were engaged assisting to *format* and stage the next part of co-designing. First, the lit candles and the white table-cloth, and second, the large paper with a printed grid approximately matching the size of the white foam boards were the new tangible materials, delegated as physical formats, engaged in formatting and staging the processes of relating the work of the different groups. When changing to explorations in plenum (also physically moving in the spatial location), the materially merged, hardened or *materialized* – plates or situation-boards were now changed into working as the specifics, the content, the *content materials*, and the new materials introduced: the cloth and candles or grid and colored shapes, now worked as new physically

larger *formats* staging *materializing* in plenum. Again metaphorically, the ‘roles’ of these materials changed, or transformed, during these processes of co-designing.

Exemplar 03 /
circles 05, 09, 10

To the landscape-table with the grid, all groups brought their three ‘situation-boards’, and as it was agreed among some of the organizers on the spot, each group was taking turns briefly explaining every situation and the issues that it addressed, and negotiating the positioning and relations of the different specific situations. Also this table was quickly full of *materials*. The dilemma of a truck-driver not being able to deliver goods because of damaged packaging, made in Group 3, was placed next to a sketched situation called “On the way to a Birthday – gift-shop in the attic”, also capturing ideas of re-using valuable goods.

Exemplar 03 /
circle 09

Next, yet new paper-based *formats* in different colors and shapes (circles, stars, arrows, etc.) entered the table and were very briefly introduced by one of the organizers. Some of these colorful shapes were selected by different stakeholders and used to visually mark connections to highlight more relations, between these André and gift shop situation-boards, and another situation-board called “Waste Broking” created by one of the other groups.

Exemplar 03 /
circle 09

Also at this table, from relating the specific situation-boards, in the verbal discussions new issues and gaps for possible innovations were identified, like including professional people dealing with recycling of goods (and waste) as more active stakeholders in the waste-handling system (more than it was current practice at the time of the event). A gap of potential new practices within the waste-handling systems and networks was further explored in the later mini-project “Heroes of Waste” in the DAIM-project.

Appendix 05

Similar changes happened during the Per:form event, when moving from the ‘Silent brainstorming’ to the ‘Mapping’. At this event, the 20 x 20 cm white foam-boards changed from being the main tangible *formats* during the silent brainstorming on/with which to make specific proposals with the individually selected materials from the buffet, to being a merged part of each specific proposal in the situation of mapping and relating the 28 materialized proposals.

Exemplar 04 /
Open call with
agenda / circles
03, 06

When changing from one situation to the other, silence was broken when I said that the table had to be cleaned except for the proposals; the same black table changed from being a working surface during the brainstorming, to being the spatial format surface on which to silently and collaboratively relate and map the proposals. It turned out to be challenging to do this in silence, and the additional format (small post-it notes) introduced half way, did cause several changes in the mapping on the large table, but the meanings were challenging to negotiate without words (no talk-materials). This is another story, but is an example of how tangible formats also need to carefully fit the unique situation. In this specific situation in which we were working in silence, in retrospect other formats could have been engaged, but the ones that were participating did assist in fostering and formatting changes from one way of working through materializing, to another.

Exemplar 04 /
circle 03, 06

In the introduction of this subsection I used the term ‘transforming’, and it refers to Latour’s views (e.g. 2005) that mediators are transforming networks while what he calls intermediaries only are transporting. The *formats* just described were participating in making the stakeholders act, but whether it was these delegated physical *formats* alone, or those in combination with the assemblage of what was said by the event organizers, the time schedule, previous experiences brought forward at the event, other stories and questions (talk-materials), the generic content materials, etc., I find it challenging to trace. What I will argue though, is that they were assisting and participating in making the human actors act, and in provoking the process to move on and transform during the event.

To summarize, *formatting* and *staging* of co-designing throughout a co-design event, largely means introducing new *formats of collaboration* along the way (tangible, verbally, etc.). In other words, new *formats* participating in *staging and formatting* a transformative process, are assisting event organizers in changing the ways and frames of *materializing*.

Summary / Formatting Processes of Materializing

In this section, I have explored and analyzed this central practice of *formatting processes of materializing* in co-designing. I have done this through detailed examples of specific situations that happened mainly during the Kick-off co-design event. It has been done through the following related but slightly different perspectives: First, with a focus on the move from *materials* – through *materializing* – to *materialized*; second, with a focus on how negotiating of meaning of *content materials* is an integral part of *materializing* in co-designing; third, with a focus on how delegation of roles to materials largely is a part of the organizer’s planned *formatting* of an event; fourth, with a focus on how tangible *formats* and *content materials* merge in the process of *materializing* during a co-design situation; and lastly, how the invitation and introduction of new *formats* during an event can assist in a transformative process of *materializing*.

Formatting... Processes of Rematerializing

During co-design events, if staged and formatted, collaboratively stakeholders engage in processes of *rematerializing*, with *materialized* and/or new materials. And from these processes comes *rematerialized* outputs.

Since 2006, I have emphasized *rematerializing* (or what I initially called re-representing⁹⁰) as important processes in co-design projects and especially at co-design events. Mainly based on practical experiences, I initially and briefly published this view before Lucy Suchman published her *Human-Machine Reconfigurations* (2007) and before I was familiar with Bruno Latour’s *Reassembling the Social* (2005). As a part of reassembling

.....

⁹⁰ See previous note no. 86 about (Eriksen, 2006b).

an understanding of the social, Latour argues that some non-humans become mediators influencing the reassembling of relations and leaving traces in the networks. Additionally, to explain his concept of ‘circulating references’, he uses the phrases that materializations are continually ‘re-represented’ or made into new ‘rematerializations’ (Latour, 1999:70).

Chapter 4

As I show throughout this thesis, in co-designing, the non-humans (or assemblages of non-human materials) becoming mediators and leaving traces in the co-designing processes, are often *materialized* or *rematerialized* during co-design events. Both Latour and Suchman’s work are of course based on many years of sound research and partly with different focuses, but with their strong focus on the continual re-, I have been further convinced that this is important in co-designing too.

Chapters 3, 4

My arguments for rematerializing are backed up by these theories and largely based on previous co-designing experiences, so in this section I keep my points at a quite practical level. I will explain ways of understanding *rematerializing* as different from mere documentation, and will give examples of how such processes can be *formatted* at co-design events. I do this through a series of shorter sub-sections in which I still go into more details of the Kick-off event, mainly the Per:form event and a few other examples.

Rematerializing not just mere documentation

Running recordings with a video-camera of everything that happens at an event, I view as mere documentation, whereas explicitly staged and formatted ways of reflectively documenting insights, negotiations, issues, challenges, ideas, etc. in my view is *rematerializing*. *Rematerializing* is planned, formatted and carried out in relation to possible or expected uses after the event.

For example, before the Kick-off event I and another PhD scholar had agreed to be responsible for doing the shared main documentation of what happened. During the event, we did this by taking about 300 still images and videos throughout the day – what could be called mere documentation without any specific plans of its later use (other than being data for academic publications).

Exemplar 03 / List

Just after the event had officially ended (as additional information to what is in the Exemplar), we made an extra series of still images of the final version of the *materialized* ‘landscape of waste and innovation’, and numbers were added on all the different situation-boards and other tangible materials that ended up being parts of the finally *materialized* landscape. This was done so it later would be possible to re-create the same physical landscape.⁹¹

Similar to many other co-design events, the physical location had to be left as it was before the event, so as soon as the two landscapes had been addition-

Chapter 5

.....

⁹¹ These stored materials of the landscape have by now been re-created once for analysis purposes and once for exhibiting.

ally documented everything was mixed and packed up. What materially was available to work with afterwards was then the tangible *materialized* parts from the landscapes, stored on a shelf named ‘Kick-off’ in the studio of the organizers, and the image and video documentation, stored on a shared server.

Exemplar 03 /
Afterwards A few days later, one of the organizer’s had also established a project blog, for all partners to share material, thoughts and content. To produce some of the first content, he revisited several images of the ‘waste-cakes’-plates, and added a title and a short description or story to the image; these were made available on the blog. In a sense individually he was doing some reflective *rematerializing* after the event.

At many of the exemplary events, video was used to capture what happened. The running video records from these events were stored in the archives of the event, and sooner or later sometimes selections in the video were made by one of the participants to share with others.

Exemplar 04 /
Afterwards For example, the day after the Per:form event, from the many hours of documentation video, my co-event-organizer, who had mainly held the video capturing the detailed process, put together a DVD of about an hour of highlights. After the Future Architects’ Lab,⁹² from the many hours of video, several shorter video-clips were also cut out by one of the sociologists, for presentation purposes to capture and share specific insights in relation to the ongoing technology developments in the project. These could also be viewed as one stakeholder individually doing some reflective *rematerializing* as selections after the event.

Exemplar 06 /
Afterwards

Now, in more detail my views of processes of rematerializing in co-designing during events: Again, often by making, to me *rematerializing* covers quite explicitly staged processes of reflection-on-action and experiences during co-design events (to use Donald Schön’s phrase). Practically, it is done by taking different perspectives and making design-oriented decisions e.g. by critically relating, comparing, and possibly further transforming or adding layers to *materialized* outputs from preceding processes of *materializing*. *Rematerializing* also needs quite explicit *formatting* and *staging* by event organizers to actually happen during a co-design event. Tangible *formats* as creating annotated photos, digested diagrams, reflective movies, annotated mock-ups, sketched comparisons, etc. can be examples of ways of *collaboratively rematerializing* while still in an explorative frame.⁹³

Chapter 1

Based on practical experiences of working in various established Scandinavian PD research environments, for some reason there seems to be much less focus on explicit *formats*, materials and situations assuring that the insights from the shared experiences at the event become a materially rich and integrated part of the following co-design process. Typically, quick summaries and conclusions of experiences and insights

.....

⁹² Discussed much more in Part C.

⁹³ Text in this section partly modified from (Eriksen, 2006b).

Exemplar 02 /
circle 07 /

Exemplar 06 /
circles 15, 16

Chapter 2

Chapter 4

Exemplar 03 /
Introduction /
circle 13

Exemplar 03 /
Afterwards

Exemplar 03 / Afterwards

Time for integrated rematerializing – in the event agenda

Chapter 7

Exemplar 03 /
circle 12

248 Part B / Chapter 6

- Exemplar 04 to engage in within one co-design event. Therefore in this section, mainly with the Per:form event, I will exemplify and suggest how to integrate time for *rematerializing* and how this can happen at co-design events.
- Exemplar 03 / circles 10, 11 At the Kick-off event, in the afternoon, time was running short already when the three groups were re-telling their 'journeys of innovation' (after Step 3 in the event agenda). In these stories, interesting suggestions of how to work in this shared coming project came up. The stories were told with the color bricks placed in the landscape, and documented on video and as still images. Yet, after a few quick comments, with reference to time and only having one half hour left, the project manager broke off this dialogue.
- Exemplar 03 / Agenda / circle 12 Everyone left the *materialized* landscape, returned to their seat at the group-work tables, and turned to the last slot in the printed agenda 'Next steps'. The three group's proposed 'journeys of innovations' related to the next steps, but the way they were *materialized* as an additional layer in the landscape, made them difficult to easily integrate into these concrete 'Next steps' (where the main non-humans materials were the agenda and talk). Shortly, the project manager verbally summarized his initial reflections about what had just happened at the event, and then he went on to go through the different topics related to the next steps. Each of these was quickly addressed, with a few inputs from the others.⁹⁴
- Exemplar 03 / circles 11, 12 / Afterwards
Appendix 05 After the Kick-off event, one challenges was the many open questions up in the air when the event ended. Of course, this was the first event in a long series of partner-stakeholder events during the 20 month DAIM project. Still, (as additional information to what is in the Exemplar), several of the stakeholders who were not at all used to working as was staged at the Kick-off event, this open ending was found quite confusing. On the following day of de-briefing among the organizers, most of them also found all the rich materializations capturing so many different ideas, questions and issues, challenging to grasp, as the project manager acknowledged in his following blog post about the event. However, as the timing in the Kick-off agenda also indicates (and with the half hour delay at the event), with a material perspective I will argue, that in the planning and preparing of this event the main focus was on *formatting* and *staging* processes of explorative *collaborative materializing*, not really on processes of collaborative, explorative yet reflective *rematerializing*.
- Exemplar 03 / Afterwards
Exemplar 03 / Agenda Because of the limited focus on *formatting* and *staging rematerializing* at the Kick-off event, I leave that Exemplar here, and will in the following section focus on the Per:form co-design event. Even though we were several of the same organizers, the Per:form event was much more planned and prepared to also include *formatting* and *staging* of *rematerializing* throughout the day.

.....

⁹⁴ With performative perspectives on co-designing and co-design events, in Part C, I will suggest for this last slot to be viewed as the 'collaborative cooldown' of the co-design event.

For the Per:form event, as organizers, we had carefully co-designed formats and allocated time for rematerializing, so this would happen as integrated, reflective yet explorative parts of the event. The XLab project was of a different kind from the Kick-off event; it was a meta-design-research-project about programs in experimental design research, and from the start it was decided to make a book about the project as the main outcome. What the contents would end up being we of course did not know when starting or when hosting the Per:form event, but we were sure that the three main experiments/workshop-events (where Per:form was the second) should be integrated in the book (Brandt et al., 2011).

Appendix 04
Exemplar 03

Thus, we explicitly discussed beforehand which *materialized* outputs would be nice to have afterwards, in addition to mere documentation. Beforehand, as event organizers, we had also carefully planned most of the following *formats* for *rematerializing* and reflecting to be integrated during the event, but some were also quickly designed and decided on the fly:

- to take close-up still images with a black background of each of the produced proposals (this was planned to happen and did happen during the lunch break).
- to individually write down a few lines describing the meaning of what he/she had materialized on each separate board during the ‘Silent Brainstorming’ (this format was ‘designed’ and added during the event).
- to be able to video-record individual so called ‘confessions’ whenever a stakeholder found a need for speaking (this was planned to happen throughout the whole day but was only used during the afternoon while co-designing one shared proposal).
- to video-record individual stories, observations and initial reflections just after having finished the shared proposal of the ‘decision-making device’ (this was planned to happen and did happen roughly when scheduled).
- to write down the three main individual insights and issues from the explorative process of materializing, before the final situation of reflective discussion (this format was also ‘designed’ and added during the event).

Exemplar 04 /
circle 07

Exemplar 04 /
circle 07

Exemplar 04 /
circles 04 08

Exemplar 04 /
circle 09

Exemplar 04 /
circle 09, 10

As at the Per:form event, a lot of open questions and issues were also in the air when the five main stakeholders engaged in silently co-designing one shared proposal for a ‘collaborative decision-making device’. But in this agenda we had allocated the last two and a half hours for the initial individual reflections and ‘Debriefing and post-reflections in plenum’ (where it was allowed to talk!). We did a lot of *materializing* and *rematerializing* during this event, and actually as discussed in Chapter 4, it was not the actual *materialized* shared proposal for a decision making device on the table (from the process of negotiating and *materializing*), but the assemblage of these various *rematerialized outputs* that afterwards mainly has been mediating our writing of the book afterwards.

Exemplar 04 /
circle 08

Exemplar 04 / Open
call with agenda /
circles 09, 10

Chapter 4

To summarize, with examples and discussions of first the Kick-off and then the Per:form events, in this subsection I have shown how the *staging* and *formatting* of reflective yet explorative *rematerializing* at co-design events largely is a matter of planning and scheduling time for it, prepa-

ring and previously co-designing materials (e.g. *formats*) and at the event *staging* and *formatting* for this to happen.

Formatting for example paper, video and still image cameras for rematerializing

A4 paper, video and still images are some of the materials or media often used for documenting and *rematerializing* during co-design events. Yet, who holds the camera, what the *formatting* of recording is and what gets on the paper or in the image is of great importance. Because the content captured on the paper, in the images and video largely are what becomes available and remembered in the continual research and co-design process after an event.

All Exemplars **Video and/or still images were used both for documenting what happened and for rematerializing, but again it matters who hold the camera.** At all exemplary events one or more of the organizers managed the still and video cameras. However, at another event in the DAIM project a couple of students had been invited to come along to assist with documenting what happened. Initially it seemed like a luxury, so we as organizers could concentrate on *staging* and actively participating in the event. Yet, as the students only had little prior knowledge of the project, and were not going to be further engaged in the project afterwards and thus did not really know what the materials were going to be used for, we were very dependent on them just to be at the right place capturing what we later would find as key situations, dialogues and materializations.

Recording of video can seem easier than still images to get others to do if it is running all the time, but also here the positioning of the camera is essential to capture something useful for later use. Positioning the camera in between two groups or too far away are classic examples of ending with a recording where the sound or imagery is not very useful afterwards. Being too far away also misses the detailed material interactions at a table, which would be relevant for my research to have access to afterwards. Very practically, no or too much flash when using a still image camera can also end up with unclear or over-lit unusable images afterwards.

Exemplar 04 **As listed above, during the Per:form event,** paper, video and still images were explicitly *formatted* to be used in several other quite different ways in addition to mere documentation. First, as described above throughout the processes of collaboratively *materializing* proposals in silence, one video camera was running to capture an overview and details of what happened; it was held by one of us from the core team mainly observing and organizing. Second, another video-camera was set up in the backstage ‘Confession booth’, and turned on and off by the stakeholder wishing to capture a personal reflection about what was currently going on. Third, in the situation called ‘Individual Video Reflections of Experiences’ we all took turns at individually recording a short video with voice-over of what was found interesting.

Exemplar 04 / circles 04

Exemplar 04 / circles 09

Still, the *formatting* was open for us to individually modify the use of the camera, and it was used very differently. For example: to explain what I

had seen mainly as an event organizer and observant I put the camera on a stand and while speaking I was gesturing and pointing at the various *materialized* proposals at the table in front of the camera, and another in a hand-held style was making a close-up tour of the shared proposal also with voice-over. These different records gave very different impressions and highlighted different views when studied afterwards.

Exemplar 04 /
circle 09

Likewise, with the still image camera, along the way I also used it to capture series of images to document the process. Afterwards, we had at least 200 images from the Per:form event. Also over the lunch break a still camera was formatted to be used in a very staged way, as we created a black cardboard scene on which each proposal made during the ‘Silent brainstorm’ was arranged and photographed individually and close-up. Even before the event, we clearly imagined these images integrated in the planned book about the project – and are included. (Brandt et al., 2011). In other words, these different ways of using cameras, I view as different ways of *rematerializing* during a co-design event.

Exemplar 04 /
circle 07

Again as listed above, pieces of A4 paper were also explicitly *formatted* at the event to capture *rematerializations* for later insights. These paper *formats* were (co-) designed on the spot in the situation, because we as organizers and researchers in the situation imagined a need for the knowledge they would capture more clearly afterwards. To ease the challenge of co-designing in silence, in the situation it also gave all the participants a chance to reflect upon and be explicit about their initial views, thoughts and focuses. These hand-written paper documents were also kept after the event, until the written content was digitalized and included in a log of the event (which has worked as data for later academic publications).

Exemplar 04 /
circles 07-10

Exemplar 04 /
Afterwards

To summarize, in this last subsection, I have further explored the different examples of *formatting* for *rematerializing* used during the Per:form event. I have addressed *formatting* of A4 paper, video-recordings and still images. Additionally, I have exemplified how it is important who holds the camera, and I recommended that it is done by someone who also has a stake in, ideas about or plans for what the captured materials are going to be used for afterwards.

Summary / Chapter 6

Chapter 5 Throughout the thesis I have been emphasizing how *staging* is a very central part of co-designing practices, and in this chapter I have emphasized *formatting* as integral in staging. At co-design events, I have emphasized the importance of *staging* and *formatting* explorative processes of both *materializing* and *rematerializing*. Building upon Chapter 5, in these processes I have shown the relationship between and merging of *content materials* and physical *formats* in the explorative co-designing process from the invited (having) *materials*, through *materializing*, to *materialized* outputs. I have displayed the need for new material *formats* to keep collaboratively moving and transforming.

Chapter 4 In addition to *staging* and *formatting* processes of *materializing*, I have also exemplified and argued for *formatting* and allocating time for processes of *rematerializing* during co-design events. While *materializing* is suggested as processes of exploration and experimentation, *rematerializing* is suggested to be more reflective yet also *formatted* to happen in collaborative and explorative ways. From processes of *rematerializing*, often, tangible *rematerialized* outputs are made, which are likely to play a mediating and transforming role onwards in the project and network.

Chapter 9 The practice of *rematerializing* is further explored and emphasized in Chapter 9 / *Rematerializing for Aftermath*.

Part B / Summary

Participating materials – Formatting co-designing

Broadly seeing materiality and materials – like people – as participating, relating, and acting in co-design networks, projects, events and situations ...matters

Recognizing that the negotiation of meanings, especially of participating content materials, takes place among stakeholders in the situation...matters

Acknowledging that formatting is an essential part of staging co-designing ...matters

When formatting, acknowledging how the invited materials in the material assemblage have ‘delegated roles’ when participating in the co-design situation (e.g. as agendas, content materials, formats, guides and the physical location)...matters

Acknowledging that quite explicitly staged processes of materializing – and also rematerializing – are important situations in co-designing...matters

These are the main programmatic statements explored in this Part B.

Part B started with the positioning that materials in co-designing not only are a part of a method, tool or technique, but that they are participating, like people, in co-designing (extending Chapter 3). Further, that these materials are not simply artefacts with inherent affordances in them, but that their meanings are negotiated in the situated action at co-design events. With these positions, building upon Part A and especially with a merge of recent material culture studies researched by Elisabeth Shove and Tine Damsholt and their respective colleagues, I further established a broad view of materiality in co-designing. This view of co-designing as *materializing* was recognized as an intertwining relationship of skills, available invited (having) materials and doing. From this starting point, throughout this Part B, I have exemplified and explored views of co-designing as *relating*, *formatting*, *materializing* and *rematerializing*.

Part B / Introduction

In Chapter 4, with Bruno Latour’s Actor-Network-Theory (ANT) perspectives and Lucy Suchman’s related views on relating in the situated actions,

Chapter 4

building upon Part A, I firmly established a broad view of materiality in co-designing. Here, initially I added the position that co-designing in a broad view can be considered as a practice in which both people (human) and materials (non-humans) are continually relating and acting. From Latour's extensive work, the main concepts and terms explained and explored were non-human and human intermediaries and actors / mediators, delegated roles, transporting and transforming, as well as views of processes as circulating references. From Suchman's work, building upon Chapter 3, I particularly revisited her point about plans as resources in the situation and as intertwining parts of reconfiguring situated relations.

Chapter 5 In Chapter 5, with Latour's concept of 'delegated roles' and with examples across several Exemplars and other examples, I explored and identified family resemblances or different characteristics and quite generic non-human materials intertwined in the complex assemblages of materials participating in (*staging* and *formatting*) co-design events and situations. As suggestions of core materials of the co-designer, I showed and discussed how some materials are delegated the following roles: *Agendas as 'delegated time and topic keepers'* / *Content materials as 'delegated play mates'* (including *pre-designed proposals as 'delegated advocates'*) / (*Physical*) *Formats as 'delegated coach assistants'* / *Guides as 'delegated instructors'* / as well as a reminder about the role of '*The physical location* – also a part of the co-design event materiality'.

Chapter 6 In Chapter 6, building upon the previous chapters, I emphasized *formatting* as integral in staging co-designing. At co-design events, I especially exemplified and emphasized the importance of *formatting* processes of both *materializing* and what I suggest calling *rematerializing*. In other words, I viewed co-designing at events as special processes of *materializing* from invited (having) *materials*, through *materializing*, to *materialized* outputs. Following this, to cultivate co-designing and engagement, I have exemplified and encouraged processes of *rematerializing* resulting in negotiated *rematerialized* outputs, which are likely to play a role and leave traces onwards in the project.

Lastly, also as a red thread throughout this Part B and important in relation to the overall program and topic of this thesis, commonly, but again with different words, with these various authors from different research fields, I have now further established my broad views of materiality as an integral part of co-designing practice and situations. In other words, both when aiming for understanding and staging co-designing, I have continued to argue that *Material Matters in Co-designing*.



05

Design Dialogues – Relocating a University Department

Co-design series	Design Dialogues (Appendix 06)
Initiators	Management of university in Sweden & Dept. of facilities
Time & Year	2009 / Event 1 – Monday 23. February 15:00-19:00 / Event 2 – 9. March 15:00-19:00 / Event 3 – 16. March 15:00-18:00
Participants at events	About 29 in advance selected staff-members, students and admin-personel from the three involved departments (called 'X' / 'Y' / 'Z') / 1-2 persons from the Dept. of facilities / 3 architects / + I was allowed due to PhD interests
Timing in Project	Months 2 and 3 out of 8
Location	Event 1 at the current Dept. 'X' / Event 2 & 3 at the new shared premises – already the current workplace of Dept. 'Y' and 'Z' (both places in a large class-room and in public indoor areas close by)
Event organizers	Three architects (from local architectural company drawing and organizing the process) / partly in collaboration with university project manager
My Roles	Mainly observant / a few comments (as an architect & employee)
Ways of documentation	Video-camera, still image camera, personal notebook, copies of some digital documents and files

Agendas

'Workshop 1'

2009-02-23, 15:00 - about 19:00

- 15:00 Welcome – organization 01
- 15:10 'X' video – Individual assignment – Post-it 02
- 16:00 Slideshow – Inspiration 03
- 16:20 Organizing in groups 04
- 16:30 Design game – in groups 05 06 07
- 18:15 Walkthrough discussion / conclusions 08
- 19:00 End of the day

Stretching legs and breaks – self-organized during group work

'Workshop 2'

2009-03-09, 15:00 - 19:00

- 15:00 Welcome – XX* starts 09
- 15:15 Todays agenda, time schedule, recapitulation of Workshop 1 10
- 15:30 Presentation of layout proposal 11
- 15:50 Organizing in groups
- 16:00 Groupwork –working with the layout proposal (incl. breaks) 12
- 18:00 Groups present discussion / conclusions 13
- 19:00 End of the day

*XX = university
project manager

'Workshop 3'

14

2009-03-09, 15:00 - about 18:00

- 15:00 Welcome
- 15:10? Todays agenda, recapitulation of Workshop 2
- 15:30? Presentation of layout proposal
- 15:50? Organizing in groups
- 16:00? Groupwork – working with the new layout proposal (incl. breaks)
- 17:00? Groups present discussion conclusions
- 18:00 End of the day

All agendas have been reconstructed and translated from Swedish. 'Workshop 1 & 2' are based on images of slides with the agenda shown at the events / 'Workshop 3' is based on memory.

Introduction

We are at what soon will be the 'old' building of Department 'X', and despite everyone present have their daily life at the university, there are many new faces at the first of these three 'Design Dialogue' events.

Prior to this: When returning to work and studies after the Christmas-holidays in January 2009, we were informed about the university management decision, that department 'X' has to leave the current environment and move in with two other departments ('Y' and 'Z') in the university building they are in – already in August 2009.

The physical environment, combined with shared beliefs and experiences in participatory practices, are important parts of the department-identity. So the top-down decision has provoked a lot of reactions, and together we (head of school, staff & students) have claimed at least to be engaged in the process of designing our coming everyday environments.

This claim is accepted, and an architectural company is hired to be responsible for the process of rebuilding including a series of three 'workshops'. They have proposed to mainly organize the workshops as 'design dialogues' – as they call it.

With various interests, everyone present are prepared to get their say in the process of relocating and rebuilding.



02

Video about dept. 'X' – Post-its with issues

Before this event, the architects visited and interviewed various people about the current environment of department 'X'.

All this was made into a 10 minutes video. Before the show, one architect briefly explained what to do assisted by a slide saying:

'Workshop 1'

01

Starting with facts & holistic ideas

The university project manager starts

When everyone have found a seat, with reference to what he has written on the white board, the right dates and times of the two coming workshops are cleared out. He also says:

"The information you got earlier (at all departments) is still what it is all about. It is a process (...) The architects will run the 'workshops' – I will just be around, but I will not interrupt what you come up with or work out. So, then we let the journey start here, and I leave the word to you..." (pointing at one of the architects)

A suggestion from the back of the room, leads to a quick round of presentations of everyone. Then, over to the architects...

One architect explains the event idea

(With reference to projected slides) he e.g. explains the agenda of the day; the overall time-wise very tight design and building process; how they will document with still images and video to include today's work in their first layout proposal.

He also summarizes their reading of the constraints and brief for the whole project, and with that their descriptions of goals and main principles. He ends by saying:

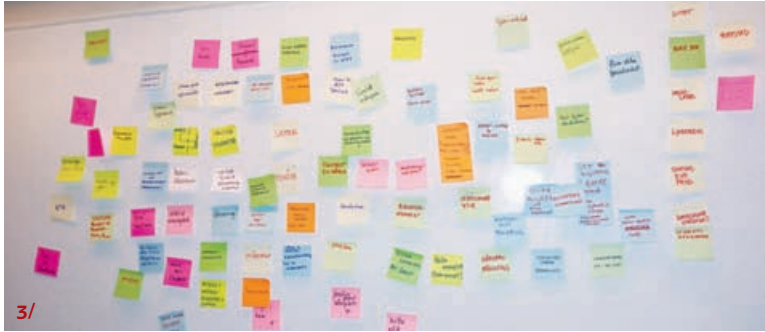
"(...) Today we are not going into details, today you could say is a quite holistic process. It is about positioning in the house, about different functionalities. You can go into details where you find the time, but today is mainly about the holistic organization."

INDIVIDUAL EXERCISE

- Free reflections and associations to the 'X' video.

Write maximum 1-2 words on each post-it note with felt pens

> **1/ 2/** While the video is playing everyone annotates. **3/** Next, by placing and briefly explaining one's two favorite notes on the large whiteboard, everyone contributes with their view of current qualities and difficulties of Department 'X'. To mention a few – the notes e.g. say: Open spaces – informal meeting places / missing 'quiet' spaces – also for students / Dialogue / Daily closeness to the students / Identity / Still Unfinished / Creative chaos / Light / Home base class-rooms / Spaces for exhibitions (walls & floor) / "We do not want the students to go home..." / etc.



03

Various extra information and inspiration

To comment on all the identified issues the university project manager gets out two pie-charts about current uses of locales. He says:

"On these charts, blue – indicates empty; red – booked not used; yellow – used, not booked; Light blue – booked and used. This is a bit technical, but it is a trend. This is why we are here, we need to work on this, because this does not work in the long run with so many unused rooms (...)"

Later, to encourage thinking out of the box in the groupwork, one architect also makes an inspirational image-show of other interiors and workplaces. He e.g. says:

"(...) We would like inspiration..."

04

Introduction to the coming group-work as 'design game'

Another architect takes over and shows the different working materials. She explains how each group will get a box with various small colorful pieces and a board with color-coded plans of all the floors of the building. Lastly, before making 5 groups through counting people from the different departments, she reads out the questions to consider – listed on the slide:

- Which functions can be joint use by the three dept.?
- Which functions could maybe be external (rented)?
- Which connections and flows are important?
- Which shared functions/spaces do we need?
- Which functions are best together?
- What needs to be placed centrally?
- What can be located in the periphery?



"Okay, with these materials, today's assignment is to build a disposition for your three departments' future usage of the coming shared environment..."

One group starts right away and an architect shows how to use the materials

1/ First standing, and while still eating, the group I follow immediately start talking and referring to the maps on the board in the middle of the table. (They are six people; an 'X'-admin person, two 'Y'-teachers, an 'X'-teacher and a 'Y'- and 'X'-student). The box is closed in the sofa.

2/ Fragments from their initial dialogue:

- "Where is 'plattan'?"
- "This is 'plattan' on the C-floor"
- "What does that color mean?"



The board includes: The four main plans (Plan A-D / A is bottom plan) of the current layout; the 5th floor E is in a smaller scale; a list of the guiding questions (in the upper right corner); and explanations of the color codes used e.g. dark grey = not available (listed also on the right side).

3/ 4/ 5/ After 15 minutes the hosting architect comes by, and he is immediately asked to explain some of the color codes. He briefly explains that this is how they were told, but that they should not be constrained by this, but instead mark it with the pieces from the box if they want it to stay like it is. He points towards the box and gets it from the sofa.

3/ 'Y'-student: "Hi, why is our student union office here in the boat colored available?"

4/ 'X'-teacher: "(...) and why is the A-floor colored dark grey, when we were told on the tour that it is available?"

5/ Architect: (with a black circle in his hand) "They are moveable these blocks so you can redesign. If you have drawn anything here, then it is difficult to wipe away again (...) Place it, position, decide what it should be (...) and move on (...) (he picks an orange square from the box and places it in the middle) You can write on these too (...)"

The 'design dialogue' is shifting between talking about challenges and possible ideas

The three pieces placed while the architect was there stay on the board, but shortly after he leaves, again the box is back in the sofa. It is in the way to view all the drawings on the board, which they continue to discuss and point at. Fragments from 8 minutes of their about 1.5 hour long dialogue:

'Y'-teacher 1: [17:19:58] (now standing up) "To orient myself – is this (pointing on the yellow part of the A-floor) the old machine-workshop? (This is confirmed by some of the others) (...) [17:21:34] there is a lot of space here (...) double-high (...) you can in principle drive a car in here – it is available. (...) [17:22:11] It could become very kinky as project-rooms."

'X'-teacher: [17:22:20] (pulling his finger across the yellow part of the A-floor) "(...) it means, these are potential 'project rooms', or?"

'Y'-teacher 1: [17:22:25] "yeah, project-room or project-room – they are very large spaces."

'X'-teacher: [17:22:33] "If we now make the plan that we should use it for the Interaction design programme, (...) a lab, no project room. First semester part time-course, for example, one month project. Then it would be blocked for a month – how would that suit you, if we focus on how to share (pointing towards the first question in the list)?"

'Y'-teacher 1: [17:23:14] "I have no idea. But the spaces down there, they are only very rarely used."

'Y'-teacher 2: [17:23:25] "Yes, it is the old gas-laboratory."

'X'-admin-person: [17:23:28] "But that is where we were to take a look, and it is really a lot of space (...) but work environment-wise – it does not work today (...)"

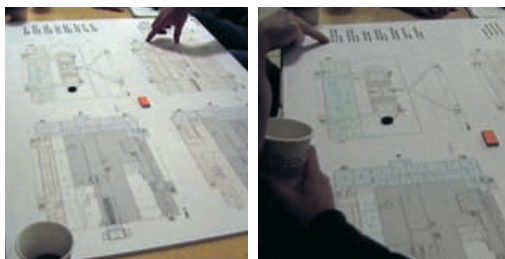
'Y'-teacher 1: [17:23:49] (pointing on the A-floor) "As it is today, this is really used very rarely, so if K3 says they want this the whole year, then that will not be a problem."

'X'-admin person: [17:24:08] (relating to the yellow square in list of color-codes) "But here it says 'available space' – but where we cannot change (the yellow color code on the A-floor the others are pointing). (...) There we cannot change."

[17:24:27] "(...) but then it is also difficult to say, because here it was 'totally re-build' and 'minor changes' – but now we should just wish freely, because this is just brainstorming, but then there is the time-constraint. This cannot cost 15 mill, it might cost 6 mill."

'Y'-student: [17:24:42] "Yes, or 20..." (a bit of laughter) >





> *...and the dialogue continues about possible shared uses and current practices*

'Y'-teacher 2: [17:25:10] (with reference to one of the questions in the list) *"But don't we have to go through, what it is that must be there, and which of this we can share?"*

'X'-admin-person: [17:25:18] (pointing on the list of questions on the board) *"And what could maybe be placed externally?"*

'Y'-teacher 1: [17:25:21] (pointing on the question about shared uses) *"This one for example can be lecture-halls."*

'Y'-student: [17:25:25] *"And 'plattan'...(placing her hand on top of the yellow C-floor) This one we can make much better to suit everyone's needs."*

'Y'-teacher 2: [17:25:35] *"I am really dependent on project-rooms for tests – if it does not work, then it does not work with tests."*

'X'-admin person: [17:25:39] *"Do you have that on the 4th floor (D) now, or?"*

'Y'-teacher 2: [17:25:44] *"Right now we have 18 project-rooms (on the D-floor) – altogether we have 30."*

'X'-admin person: [17:25:50] *"Oh, it is that many."*

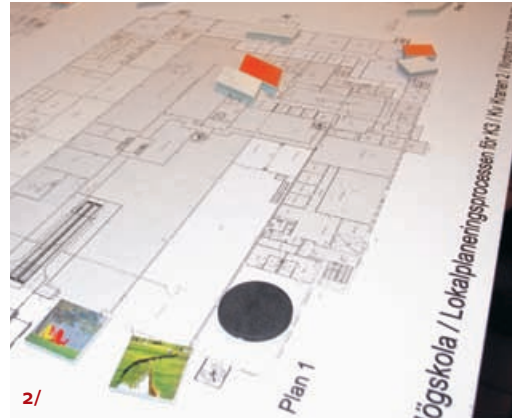
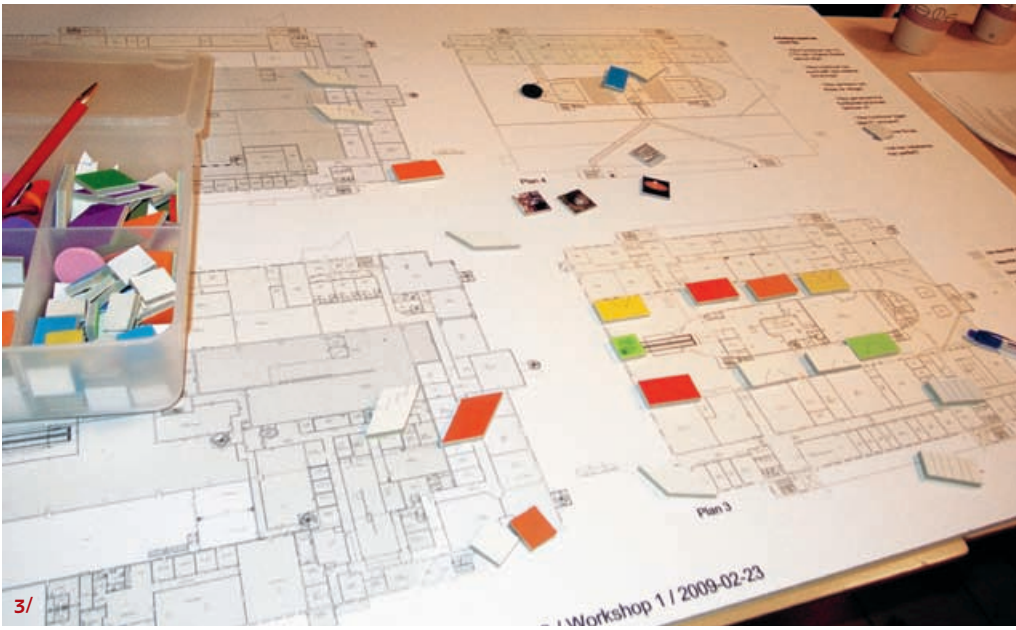
'Y'-teacher 2: [17:25:52] *"There is for example three*

project rooms there (pointing on the D-plane – where the K3-staff is intended to move in) The problem is that the way this course is structured, all about 300 students must be able to meet in their groups at the same time (...) – we cannot solve the being-present problem here. At the moment we have Wednesdays as project day – it does not have to be Wednesdays, but (...) it suits well. At the moment they are building models in these rooms as well, because it allows it (...)"

[17:26:43] *"I realize that we probably will not be able to continue with that, (...) but we need these spaces. Then, they might be bookable, except for Wednesdays – then they could be bookable for all the programs at other times, but then I also think that they would need some kind of atelier, workshop or home-base or what we call it – a larger space where we can handle these models, to store them there (...)"*

[17:27:35] *"We ought to have a system where the students themselves can book an available room (...) then they could log in, here is an empty space, let's book that one (...)"*

'X'-teacher: [17:27:45] *"That is what I said (Pointing towards the list of questions). It is very much about 'scheduling'. (...)"*



07

10 minutes to their presentation > the box is opened and a lot of pieces glued on the board

First when the group is reminded by one of the architects, that in approximately 10 minutes they have to make a presentation in plenum of the main issues and wishes they want to pass on to the architects, they open the box again. Among the many pieces in the box, some are selected, some drawn on and then they are placed on top of the maps. Some work together, others in their area of the board.

They include pieces to mark different proposals such as; a staircase in the middle of the house to make easy access and visible contact between staff and students

going to be on separate floors (A and D); doors opening up toward 'plattan' to make it a more open space; exhibition-space also on the C-floor, the student-union spaces to stay as they are now including a student bar inside and outside the house in a corner of the building on the bottom A-floor; and various wishes for the 'X'-admin/staff area on the D-floor.

The pieces are glued on just before gathering in plenum in the lecture room.

Fragments from their initial dialogue:

1/ 2/ 'Y'-student: "These pieces are quite nice."

1/ 'X'-admin person: "We need the sofas outside the office, for people waiting to see one of us."

1/ 3/ 'X'-teacher: "I'm making the large staircase from the A to the C floor."

08

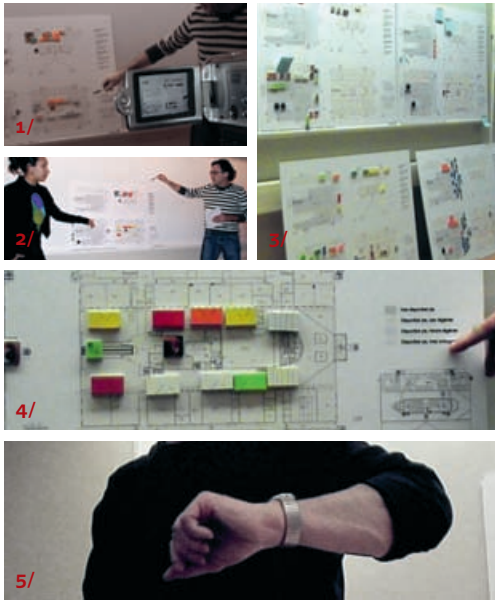
Presenting groupwork with boards

1/ The architect's video-camera is recording.

2/ 4/ The time pressure towards the end left no time to coordinate the presentation, so the two presenting, mainly pointed at the glued on pieces and told their stories and wishes connected with these.

3/ Across all groups, the main issues are about the C-floor as a more open, social, shared and experimental space. Additionally, there are wishes for where to position project-rooms, home-bases, staff, workshops, storage-spaces, etc. We end by clapping.

5/ There are 10 minutes for further comments before the architect explains the next steps and time is up.



'Workshop 2'

09

Starting with discussion of the co-locating & rebuilding process

After a short welcome, and a remark about not understanding the critique about missing information, the university project manager turns to his sketch of relations on the white board. He starts explaining the organization, and it sparks a lot of quite critical comments and questions. Fragments from the discussion:

University project manager: "(...) let me use this circles and triangles to explain. The vice chancellor has made a decision, this goes to the departments – and this we must take care of. It is money we are talking about. (...) It now costs 20 mill. a year (to rent the locales of Dept. 'X'). We have room here, and we only have the money we get for each student (...)"

Professor from Dept. 'X' (not present at 'Workshop 1'): "No, we have been told earlier that we will save 85 mill. by moving here (...) and that we can use maybe 20 mill. for building this house. Everything after that is shit talk (...)"

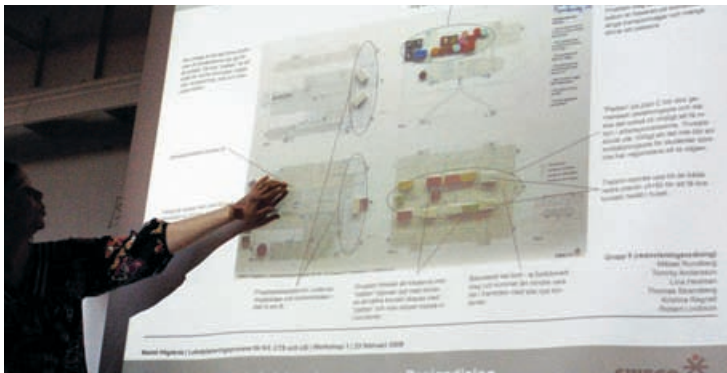
After a while an architect takes over, turn on the projector, and shows today's time-table. Because we are already behind schedule, and they need feedback, it is time to move on...

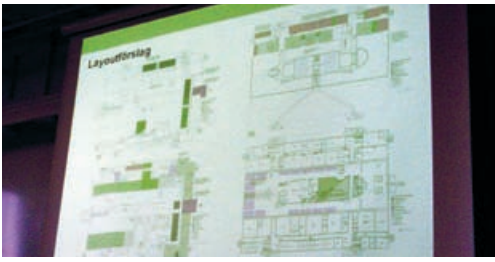


10

Relating to 'Workshop 1' groupwork

Assisted by slides with images of the boards from event 1 – with the architect's annotations on top of them, another architect explains their overlaying reading of what was said then. She goes through all the five boards.





11

Architects present their new proposal

Now the architects show their new proposal and briefly explain it. This also sparks various questions which they briefly answer, but with time passing, they quickly move into explaining how they today would like new mixed groups working like at the first event. They count to make the groups, and show how the materials are a bit different today. Each group will get two A1 prints with floors A-D, and felt-pens to use for annotations, marking changes, comments, sketches or what they want.



12

In new groups

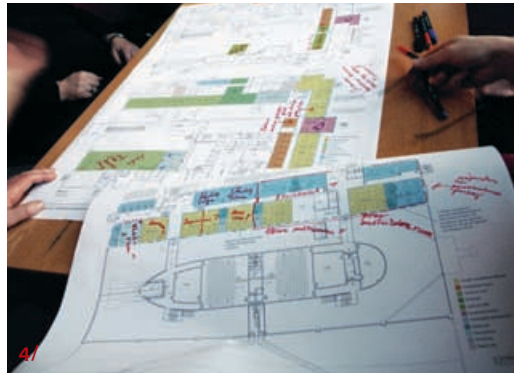
The group I follow is by coincidence with many of the same people from event 1 + a few others e.g. a teacher from Dept. 'Z' and the Head of Dept. 'X'. When she arrives with the maps, they start the detailed dialogue.



1/



3/



Fragments from their dialogue:

1/ 2/ 'X' dean: "Could we think that we for example book these rooms all the time – and then sort out ourselves who has them and for how long?"

'Y'-teacher 1: "I think, but you will have to pay – and it costs. Then maybe for a course we cannot afford the rooms we would like (...) and a lot of rooms might be empty; But no one knows how this will be yet."

3/ 'Y'-teacher: "We will have the double amount of students in the house (...)"

'Z'-teacher: "It is an important question – How can students book a room? Can't you write that (...)"

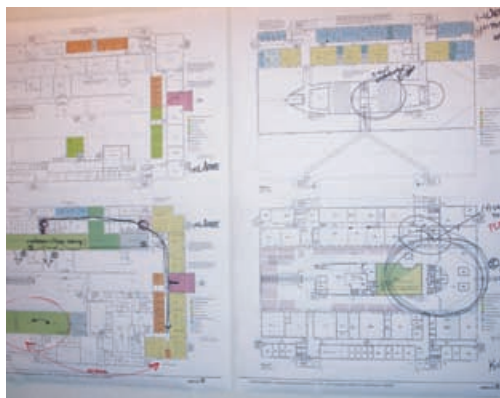
'X'-admin person: "These are nice – shared rooms for the people working in this area – it says for breaks, printers here and so on (...)"

'X' dean: "We can put a YES on those."

4/ 'Y'-teacher 2: "But we are still missing the vertical connection (...)"



2/



13

All groups present their issues and ideas

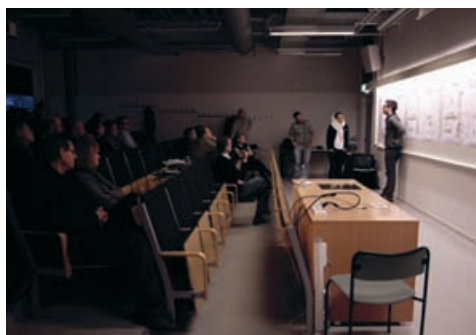
Again, the architects' video-camera is running through all group presentations and comments – today, assisted by the annotations on the drawings. As it is the whole intension of these design dialogue events, they will bring these new inputs back to their office, and incorporate them into their 2nd proposal for rebuilding and drawing floor-plans for the coming shared use of the locales.

'Workshop 3'

14

Almost same procedure as 'Workshop 2'

The architects host this event, and start by showing today's schedule; then the maps capturing last event's groupwork – with their overlaying annotations; they show and explain their 2nd proposal; answer a few questions. The proposal is discussed and commented in new groups, and this is presented. The architects say we will be informed throughout the building process, which already has started.



Afterwards...

In August 2009 the areas for Department 'X' being moved were newly restored and ready to move into. No major changes had been made to the building, but inputs about needs for the administra-

tion area, the staff room and the wood workshop had been included in the final layout. Some staff members are still involved in the process of building a new house – planned to be ready in 2015.

This Exemplar 05 is mainly intertwined in the thesis in the following places:

P&A
Part B / Chapters 5, 6

Part C / Introduction / Chapters 7, 8, 9
Part D / Chapters 10, 12



Center for Pervasive Computing

06

Future Architects' Lab –from WorkSpace

Co-design project	WorkSpace (Appendix 01)
Main use-site / collaborators	Landscape architects from company in Edinburgh / Scotland
Time & Year	27.-28. May 2002 / 9:30-17:00
Participants at events	4 x landscape architects, project manager, on and off 13 other IT, sociology and architecture / interaction design researchers and student assistants
Timing in Project	Almost 1 1/2 of 3 years
Location	iRoom (intended as Landscape Architects' Studio anno 2008), courtyard and roof at DAIMI / Aarhus University / Denmark
Event organizers	Most of the research team / mainly led by project manager, and ethnomethodologist. I was largely involved in planning and preparing
My Roles	Mainly observant / some assisting in staging the situations called 'Project start' & 'Working on the design'
Ways of documentation	Video-cameras, still images cameras, personal notebook, a lot of the used tangible materials were kept, copies of digital documents

Agenda Workshop 27-28 May 2002

DLP prepare their presentation in the morning with ~~Monica~~ and ~~Michael~~.

People mentioned under the **Who** parts must be there, others are free to observe, contribute, etc.
People in *italic* documents (video).

All the slots are timed with the intention of leaving room for experimentation as well as discussions and ideas.

Monday 27th May

Time	Activities	
9:30 - 11:00	Presentations and Introductions Who: All (<i>Johnson, Mouton</i>)	04
	Overview of current status, demo & new directions, the i-room as a working prototype, collection support, TuT, GPS & on site, Topos The Arhus Project: DLP present first design ideas. Scenario: This is a stage in the tender process. DLP and other landscape architects (pretend) have been asked to submit an outline design and have now been invited to present it to us. Tech: Spacepanel, paper, designer's workbench, projection	
11:00 - 13:00	Site visit Who: <i>Johnson, Mouton, Pines</i>	05
	Scenario: A first exploratory site visit, verifying survey information. Taking pictures. Tech: paper, GPS/compass/video & mobile digital support.	
	Project start Who: <i>Johnson, Mouton</i>	06
	Scenario: New information arrives, material must be organised, letters written, liaison with client, etc. Tech: Laptop, phone, spacepanel, table, collectional artefacts, T'n'T	
13:00 - 14:00	lunch	
14:00 - 16:30	Exchanging ideas in a distributed setting Who: <i>Johnson, Pines, Mouton, Pines</i>	07
	Scenario: The office group presents new information, materials, and ideas to the site group in a distributed setting (e.g. between two offices). Tech: Networked Spacepanels and live video,	
	Briefing session Who: <i>Johnson, Pines, Mouton, Pines</i>	
	Scenario: The site group present results and gathered material & tagged map. Tech: camera, video-tracking, tagged map Scenario: The office group present new materials and develop Tech: spacepanel, table, T'n'T, (paper? :)	
	Studio work Who: <i>Johnson, Pines, Mouton, Pines</i>	08
	Scenario: Lots of things need to be sorted in the light of the info information provided, exchange of information and work agrees needs to be drawn. People work in different places in the i-room project and different constellations. Tech: All available technologies/materials	
16:30 - 17:00	Wrap-up Who: All	09

Day 1

Day 2

Tuesday 28th May

Time	Activities	
9:30 - 11:30	2nd site visit Who:   Scenario: Bring design onto the world. Project sketches assessed on site. Design ideas tested against reality. Tech: Camera, screen, mobile unit, wireless LAN, 3D models of site	10
	Working on the design Who:   Scenario: Changes are added to the design. Communication with the group on site. Tech: Laptop, phone, spacepanel, table, collectional artefacts, T'n'T	11
11:30 - 12:30	Experimentation with ideas on site Who:   Scenario: Experimentation of various 3D visualisations of design ideas (e.g. created by  on the basis of 2D sketches from DLP people) on site. Tech: 3D models of design ideas (created by  , Camera, screen, "lollypop",	12
12:30 - 13:30	Lunch	
13:30 - 15:00	Finalisation of Design Who: All Scenario: The whole group prepare the final presentation and all the relevant materials, using as much as possible of the provided technology. Tech: All available technology/material in the room	13
15:00 - 16:30	Presentation Who: All Scenario: The final DLP project presentation is made Tech: Spacepanel, Other projections?, ...	14
16:30 - 17:30	Evaluation Who: All Scenario: Final evaluation of experiences and technology at workshop Formulation of "lessons learned"	15
18:30 - 17:00	Plans Who: All Scenario: Plans for the future.	16
17:00 - 22	Meal & Drinks Who: All Scenario: Hm	

This 2-page detailed agenda was negotiated and emailed to everyone beforehand, for everyone to prepare. At the event it is referred to many times too.

Day 1

04

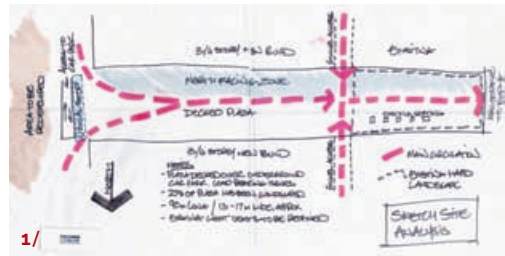
'Presentations and introductions'

The day have finally come. After a quick tour and intro to the iRoom and status of all the available technologies, the architects take the floor. As a response to the design-brief, they present their initial ideas for redesigning the courtyard.

1/ 2/ 3/ 4/ They tell their story mainly with their hand-sketched site analysis and some inspirational moodboards. They for example say:

2/ 3/ Architect 1: "Like you can see here, we propose to make a whole in the concrete deck to get some light into the carpark below (...)"

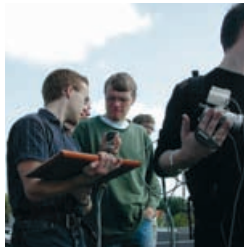
4/ Architect 2: "(...) and then some green vegetation from below up into the courtyard – like you wish (...)"



05

'First site visit'

Now it was time for two of the architects to inspect the site with their own eyes. E.g. underground parking-lot currently being built. Assisted by a technical team, they take their own site-related photographs mainly from the roof of the building (to make sure the GPS is working, so the images are rightly positioned in the Topos software).



06

'Project start'

Meanwhile the other two architects stay indoor with the researchers dealing with organizing materials (Tag n' Track / T'n'T). **1/ 2/** Based on experiences from the first presentation, here we e.g. discuss how it could be smart if the physical moodboard could work as a tangible link to a digital workspace with all the single images – this is created by the architects (by adding an RFID tag onto each moodboard and relating them in Topos on the table display). **3/** Other documents are also 'snap-scanned', RFID-tagged and grouped with 'collection-tags'.



'Exchanging ideas in a distributed setting'

Now more familiar with the site, they pretend to be different stakeholders collaborating on the design – in two different 'future office' locations.

1/ In the 'office' to the left are two gardeners (G1 – back middle and G2 – back left)

2/ In the other 'office' are Mr. Builder (B – to the left) and Mr. Architect (A – to the right).

(In both locations, on the large display, a large image of a car park with light shining through the ceiling is activated as it is red on the edges. Quite rough tree-like red sketches have been made on top of the image. On the other wall in each 'office' a live video-projection shows all the moves of the people in the other office). Here are fragments from their dialogue:

B: (smiling and nodding) "Very good."

G1: "Yes."

A: "Can you go back to the plan line, please."

(with a pen in his hand, coming from the side, one of the software developers assists the Gardeners in getting back to the document with 'the plan line')

B: (as himself) (saying to the ethnomethodologist video filming next to him) "It's good. This would be very useful."

And she responds: "Yes, it is good."

B: (as himself) "Just to articulate what you are saying (...)"

(On the projection to their left, Mr. Builder and Mr. Architect are silently watching how G2 is trying to find, choose and enlarge the plan line map. He succeeds, and the drawing appears on both their displays, already with a red sketch on top of it. He scales it up – simultaneously it scales on the other's screen too).

A and B look at their own workspace and glimpse at the projection from the others. The red sketch disappears.

G2: "There you go – back to the drawing." (= plan line)

A: (with a pen in his hand, a paper drawing under his left arm, he is looking at the scaled up sketch) "Yes, eh... I am worried that you are introducing too many elements into a small space, and that it is distracting from the simple design of the master plan – and of the buildings (...)"



1/



2/

G1: "Well, I'm glad you made that point, Mr. Architect. What we are trying to get across here is the main principle. If you were willing to consider the different treatment in the simple concrete deck, I think that at least we have made a start towards a better user-friendly space. Can we agree in principle that a change is feasible?"

A: (while sketching a yellow rectangular square on top of the plan) "I agree in principle, ...to get more light down to the car park area (...)" (while sketching another hammer-like shape within the other rectangle with his yellow pen. The others are watching his moves and gestures live as if he was standing next to them) "I don't agree in this shape of our planting bed inside this space (...)"

G1: "Ok, what would you prefer..."

G2: "Why?"

A: "It just seems to be too arbitrary..." (while sketching longer slightly wavy lines across the space) "(...) In conflict with the clean lines of the building, and the master plans wavy lines, and the structure we set up for the space (...) it's like a ship."

(laughter)

08 09

'Studio Work' & 'Wrap-up' of Day 1

Working and acting as themselves again, as professional architects, they now collaborate in refining their proposal – both by referring to and sketching on the previous digital drawings and by making new yellow (overlying) paper sketches.

We all end by wrapping up the day's new insights (on the way to the bar & restaurant).



12

'Experimentation with ideas on site'

1/ To create some shading, yesterday the architects agreed to propose inserting pergolas in the courtyard. Overnight, a digital 3D version has been modeled (by one of the researchers). **3/ 4/** To roughly experience how this would be, we are all now outside to see this. **2/** Technically, the pergola is associated with a large visual tag held by one of the architects, and when visually discovered by a live video-feed, the pergola appears in the live video on the display. **4/** This makes the architects able to make their last decisions about their proposal.

10 11

'2nd Site Visit' and 'Working on the Design'

1/ Two architects, with technical assistance, start the day by going out on site (up on the roof) to relate and adjust yesterday afternoons work with reality. They take additional GPS-coordinated images to illustrate challenges, which immediately appears on the display of their touchscreen – and in the associated workspace indoor in the studio.

2/ Now quite comfortable with the touchscreen and Topos, while on the phone with his colleagues on site, indoor the third architect makes various changes in the design to adopt it to their findings.



13

'Finalizing of Design'

Through sketching details by hand, drawing in Autocad and arranging a Topos workspace of selected images, the three architects intensely collaborate.





14

'Presentation'

All the researchers listen and observe carefully how the architects are now so comfortable with navigating in Topos, that they only need little assistance while presenting their final proposal for the redesign of the courtyard.



Bamboos planted in the underground parking-lot would create whispering sounds, natural air circulation and a green lively surface when experienced from the courtyard. E.g. when sitting outside the new proposed café, on the edge of the new wooden deck or in the shadows of the new pergolas...

We are clapping!

15

16

'Evaluation' and 'Plans'

We have made quick prototype-related reflections along the way, often closely tied with new ideas of how to refine or do instead. Now, officially it is time for evaluating and planning ahead, but everyone are quite tired, so it is mainly decided who will make a report of insights during the coming weeks.

Afterwards...

The architects' proposal for the courtyard was send to the Danish architects really responsible for the design of the site, but unfortunately it was too late to make any larger changes.

Some of the immediate technical challenges discovered at the event where quickly implemented in the next versions of Topos and in the specific prototypes.

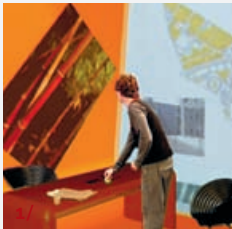
A report, image-based presentations and small video-clips of key situations were made in the weeks following the event.

During the coming months, with some researchers, more Future Laboratories were carried out on site in Edinburgh.

Other insights from the event:

1/ 2/ The visually calm changing projections in the space intended to inspire a creative atmosphere, feed into the plot of the blue-screen vision video *Playful interaction*, which was created mainly by the design researchers a month later.

3/ 4/ Finally, many of the experiments also worked as preparatory explorations for developing new or refining known scenarios and demonstrators, shown at the following EU 'Disappearing-computer' project review-exhibition in Ivrea, Italy. Here, in dialogue with colleagues on site in Scotland, the architects are demonstrating possible future architectural practices to the reviewers (Sept. 2002).



This Exemplar 06 is mainly intertwined in the thesis in the following places:

P&A
Part B / Chapters 5, 6

Part C / Introduction / Chapters 7, 8, 9
Part D / Chapters 10, 12

Before

During

After

This could be
a format

Part

C

*Materially Staging
Performing in
Co-designing*

Materially Staging Performing in Co-designing

Introduction

Initially – from my program I repeat: *Acknowledging that people as well as materials continuously perform (frontstage & backstage) in co-designing, and that a special kind of performing take place at staged co-design events...matters*

In this Part C I will be exemplifying and exploring this statement about co-designing. As mentioned in Part B / Introduction, Tine Damsholt et al. (2009) suggest viewing and relating ‘materiality with process & agency, relation & network and performativity & practice’ (ibid:30). Previously I explored materiality in co-designing as agency, relations, network and practice, and in this Part C I further explore and argue for a broad view of materiality in (staging) co-designing, also understood as process and performativity.

Part B / Introduction

As yet an alternative view to understanding co-designing as ‘methods’, for this exploration, in this Part C, I mainly refer to research related to the field of performance studies (PS). The foundations of PS, to some extent differ from the theories used in Parts A and B. For instance, in most of the writing about performance, e.g. by Richard Schechner and Victor Turner who I mainly relate to, materiality does not have a very prominent role. Still, performance and practice are generally considered as transformative processes and embodied in the world, which makes them partly overlap.

Chapter 2

Part B / Introduction

The main examples discussed in this Part C are:

- Exemplar 05** / Design Dialogues
 - Exemplar 06** / Architects' Future Laboratory
 - Exemplar 01** / Service Project Landscape (included some)
 - Exemplar 02** / Rehab Future Lab (included some)
 - Exemplar 04** / Per:form (included some)
 - Introduction** / An example with three different ways of (not) engaging 'Focusboards' from PalCom
 - Chapter 9** / An example of rematerializing with workshop leftovers and still images from Palcom
 - Chapter 9** / An example of co-designing formats for rematerializing at the event from Palcom
-

Further, the reason for adding performative perspectives to the broad view of materiality, is to focus on and further explore various other issues like structural characteristics of co-design projects, co-design events and especially co-design situations. The main reason is that these are intertwined in setting the scene for how materials participate.

The research within PS largely builds upon work of Erving Goffman, viewing everyday interaction as performing. To set the scene with reference to Goffman and Schechner, in this Part C / Introduction, I establish a basic view of co-designing as performing; but I also show how special quite explicitly and materially staged ways of performing happen before, during and after co-design events. Thus, as in Parts A and B, throughout this Part C, the red thread continues to be on how *material matters* in (*staging and formatting*) co-designing.

Box:
***Positioning Performance studies (PS) /
Erving Goffman / Richard Schechner
/ Victor Turner and others – and their
positioning of the field of PS***

A Multidisciplinary quite young discipline

Richard Schechner, both as a scholar and performance practitioner, coined the term 'Performance Studies' (PS). He did this by co-establishing the world's first Department of Performance Studies at the Institute of Performing Arts at New York University, and by publishing his essay *Performance Studies: the broad spectrum approach* (Schechner, 1988 / in Bial, 2007:2).

A lot of Schechner's practices and views of performances have developed in close dialogue and collaboration with his friend anthropologist Victor Turner; both were clearly inspired by Erving Goffman (Clark, 2007:42). As an anthropologist (e.g. also called a social-psychologist or sociologist) Goffman was interested in understanding elementary social processes and interaction rituals of how people are acting and interacting in everyday life (Goffman, 2005 / original 1967). In his classic book *The Presentation of Self in Everyday Life*, he first introduced his widely referred to dramaturgic perspectives on everyday interaction – for example through theatrical concepts like: 'performing', 'playing roles', 'audience(s)', 'settings', 'scenes', 'frontstage' and 'backstage' (Goffman, 1959). In the 1980s, Schechner wished to broaden the spectrum of what was taught in theatre and dance departments from

primary focuses on aesthetics and text-based criticism (Bial, 2007:5); and Victor Turner wished to 'liberate' the field of anthropology from its genres of 'anthropological work', genres or works like field monographs, comparative studies and textbooks, which he apparently found 'systematically dehumanizing' (Turner, 1987:72). The titles of their books *Between theatre and anthropology* (Schechner, 1985) and *The Anthropology of Performance* (Turner, 1987) clearly indicate how they inspired one another and how they exemplified disciplinary cross-over of topics and approaches.

Today, people with backgrounds from anthropology, rhetoric, theatre, art, social science, etc. view themselves as a part of the practice and/or academic field and discipline of PS. For example, exploring and aiming to understand performativity, performing, performance, ritual and play, performance processes, artistic performances, theatre, games, everyday life with its social dramas as performance, etc. PS is a very multidisciplinary and continually changing academic discipline.

Overall, partly in opposition to much academic work focusing on analysing and identifying stable or fixed (and they often argue – simplifying) categories to describe the ideal world, communication and interaction (e.g. driven by linguistic research in the 20th Century), PS has grown with post-modern focuses on processes. One view generally agreed upon across the various focuses and approaches in the discipline is that their 'object of study is as elusive (Dictionary: tending to escape, difficult to capture), temporal, and contingent (Dictionary: may or may not happen) as performance' (Bial, 2007:2).

Different views of what performance is

Some within PS view performing as a part of art and others as an integral part of daily life; so of course, this also spans a spectrum of different views of what performance and the performative is. The ones studying 'performance theatre' or 'performance art' – also coined theatre studies – according to Marvin Carlsson, (traditionally) characterize a performance as '...physical presence and public display of demonstrating skills by a trained and skilled human being', and additionally such performances are typically displayed before an often passive 'audience' (Carlsson, 1996 / in Bial, 2007:70-75). Again, inspired by Goffman, the ones studying performance of the everyday, view performances as an integral part of daily life and everyday interaction in everyday environments (Goffman, 1959).

However, whatever the 'scene', with the focus on processes and events, generally performances or the performative is understood as happening in places and situations (Schechner, 2006:22). In other words, in a PS view we are performing through our embodied engagement with the world. In Kirshenblatt-Gimblett's words, 'embodied practice and event is a recurring point of reference within Performance Studies' (Kirshenblatt-Gimblett, 2002 / in Bial, 2007:43).

Focus on Transformative Processes

Also building upon Goffman's ideas, one of the main shared claims of PS is: Everything is performance. Additionally, with the focus on processes, generally PS researchers also share an interest in the transformative.¹ E.g. Schechner distinguishes between what he in relation to performing calls 'transportation' and 'transformation' (Schechner, 2006:72). Quite similar to Bruno Latour, to Schechner, 'transportations' are only moving or temporarily changing the people engaged, whereas 'transformations' are permanently changing people and relations. With Victor Turner's ethnographies of rituals, at an individual level, to Schechner most people are only transformed a few times in life, but continually experience being transported almost on a daily basis, a quite stable understanding, in one sense opposing to one of the main intensions of PS – to try to understand and grasp the so hard to grasp transformative (everyday and artistic) performances (ibid:72).

Naming, Understanding and Grasping Performances

Despite the temporal and transformative character of the discipline and its overall object of study – performances – many performance study researchers (still) do establish and name various kinds of (quite stable) categories to understand and structure both the different types and genres of performances and the different detailed processes of their study. To mention a few key authors:

At an overall level, inventor of 'Happenings', Allan Kaprow, distinguishes between "artlike art" and "lifelike art" performances (Kaprow, 1997 / in Bial, 2007:159-163). Likewise, Victor Turner has divided performances in 'social' performances and 'cultural' performances (Turner, 1987:82-83). In Turner's terminology, cultural performances capture theatre and games – or what he calls aesthetics and stage dramas, and social performances capture everyday performances – including what he has coined ritual 'social dramas'. Additionally, Turner argues that each kind of performance '...has its own style, goals, entelechy, rhetoric, developmental pattern, and characteristic roles' (ibid:82).

Lastly, Schechner too names and visualizes generalized but practice-oriented concepts of phenomenon e.g. his proposed sequence of performance processes divided in 'proto-performance', 'performance' and 'aftermath'. As he phrases it, they are intended as an aid for understanding and grasping '...how performances are generated, how they are staged in a focused manner, how they are nested within larger events, and what their long-term effects are' (Schechner, 2006:225).

These concepts and many others, have developed throughout his extensive work of doing performances and intensions of explaining these; yet, as mentioned, in his rich introduction to the field, he does encourage being cautious and aware of generalizations, and he emphasizes that categories – like performances – should not be viewed as fixed or stable (ibid:28,36-37).

First preliminary position: Co-designing as performing

Today, largely based on work by Erving Goffman⁹⁵, it is widely acknowledged that we are always (often unconsciously) performing in everyday life. As an initial positioning in this Part C, I acknowledge this view on everyday interactions, and also make the assumption that we are continually (often unconsciously) performing while co-designing. However, as I have addressed so far in the thesis and will further reemphasize later in this Part C / Introduction, performing in co-design projects – particularly at *co-design events*, is often quite explicitly staged and formatted by event organizers of the *co-design situation*. In other words, special ways of performing happen.

Chapter 2

Chapter 3

Again, Goffman was the first to introduce the idea of performing as a way of understanding and viewing everyday social interaction. As emphasized throughout Parts A and B, also to Goffman, interaction happens in the particular situation. Similarly, Richard Schechner argues that each and every performance, in everyday life or on stage, ‘...is specific and different from every other’ (Schechner, 2006:36-37).

Parts A, B

Everyday life as a scene of performing

Inspired by the theatre, to Goffman (1959), everyday life was viewed as a scene in which people are always playing roles. In this everyday scene, interactions like ‘social dramas’ are unfolding. During what Goffman has coined ‘face-to-face interaction’, he found that people were taking and playing various roles. The roles played (more or less unconsciously) are a part of oneself, but what is performed is defined by the specific situation. Further, in the specific situation the present ‘audience’ (the other people engaged in the interaction) affects the role-taking and role-playing (Goffman, 2005/1967).

In co-design projects, the ‘audience’ could be considered the stakeholders who participate in a shared co-design event, but who are not engaged in collaboratively exploring, planning and preparing before an event and collaboratively ‘reflecting-on-the-actions’ after an event – to use Donald Schön’s concept – as the team of organizers often does. The audience could also be considered the peers of a particular research project, and then all the stakeholders are performers – mostly performing without an audience physically present. This latter view best resembles the co-design projects I have engaged in.

All Exemplars

Chapter 1

To Goffman and the many social psychologists inspired by his work, for understanding interactions ‘the ultimate behavioral materials are the glances, gestures, positionings, and verbal statements that people continually feed into the situation, whether intended or not’ (Goffman, 2005/1967:1) – partly what I, with Schön, view as talk-material of the situation. These bodily performed expressive ‘materials’ are naturally parts

Chapter 1

.....
⁹⁵ See box on performance studies about his background.

of co-designing too; however, as explored in Part A and B, to me *materials* participating in co-designing interactions are also non-humans with various material characteristics and delegated roles.

'Frontstage' and 'backstage' performing (in co-designing)

Chapter 7 In his extensive search for understanding interaction rituals in situations of everyday life, Goffman also looked for generic or similar structures. Among others, he identified what he metaphorically called a 'front' and a 'back' – or a 'frontstage' and 'backstage' and 'outside' regions – of interactions and of everyday performing (Goffman, 1959). As Brendon Clark has shown, this adds an extra dimension to understanding how co-designers are performing in co-design projects, events and situations (Clark, 2007).⁹⁶ The concepts should primarily be considered as metaphorical, but to Goffman they also Chapter 5 had a material side. With my focus on materiality, in the following section, a brief overview of the concepts mainly with a material focus is discussed.

'Frontstage' / front region. To Goffman, materially, 'frontstage' is both the physical and geographically stable setting and scenic parts of a performance and the personal 'front'. The physical setting is a public place, the meeting room or other facilities in which a co-design event happens. Generally, the frontstage also includes props⁹⁷, furniture and the physical layout of the space. To Goffman, this is where performers are performing before an 'audience'. Additionally, not attached to the setting, the personal clothing, racial characteristics, gender, gestures, speech patterns, etc. and the 'costumes' the performer puts on (to play a character), are all considered a part of the 'front' of each performer (Goffman, 1959 :33,109-140).

'Backstage' / back region. To Goffman, the 'backstage' is considered the opposite of the frontstage. Physically, the backstage is sometimes in other physical place(s), sometimes in the same place as the 'frontstage' but at another time. It is where a performer can relax and step out of character as the frontstage 'audience' do not usually have access. Also, backstage is where performers have a more familiar relationship. To Goffman, what takes place backstage or behind the scene is often suppressed during the frontstage performance e.g. activities like running through the ongoing performance, schooling or dropping a poor member of the team, etc. (ibid:115).

Outside region. Additional to the front and back regions, Goffman also added the 'outside' region. He viewed the 'outside' region as people who currently have no access to the frontstage or backstage of a specific, ongoing performance, but 'who are possible future audience members' – a region that is clearly also a part of co-design work e.g. through imagination of and acknowledgement of other potential future users and stakeholders as well Chapter 7 as the academic peers (Clark, 2007:47 / about Goffman, 1959:135). This overlaps with views of 'newcomers' and 'oldtimers' in 'communities of practice'. Chapter 2

.....
⁹⁶ More on Brendon Clark's work in Chapter 7.

⁹⁷ More on 'props', and why I suggest not to use the phrase 'props' about materials in co-designing in Chapter 7.

Applying the concepts of front- and backstage to the Per:form event

During the Per:form event the spatial regions were clearly divided. Here, the front region could be considered as the large room we were in particularly with the large black table in the centre and the long ‘buffet of materials’ along the windows as the main frontstage. Per:form was in many ways an extreme co-design, socio-material experiment; so during this event (inspired by TV reality shows) we also experimented with literally establishing a ‘backstage’ space in a separate room with a video-camera, the ‘Confession booth’. With one of the constraints of interaction, the five participants were not allowed to speak on the frontstage, so this became a space for shortly leaving the collaboration and for verbally expressing frustrations and reflective thoughts. The border was clear, as the only way out of the Confession booth was through the door right back into the front co-designing region.

Exemplar 04

Exemplar 04 /
circle 03

Exemplar 04 /
circle 04

The Per:form event as entering through the back door. In the initial introduction of the first XLab event (called ‘Beginnings’), as core project members and organizers we explicitly said something like “We would like you to think that you have entered through the back door, to collaboratively explore together with us”. Likewise at the Per:form event, where we in a sense wished to establish a space experienced as an open back stage.

Exemplar 04

Appendix 04

The workshop-events as frontstage and core team work as backstage. The XLab project lasted about a year, during which we were four people in the core team, discussing, exploring and working with the meta-topics of the project. During the last half-year, we hosted the three workshops/experiments/events, where we invited others to participate and engage in our explorations – also with various talk and hands-on materials. In this view, again the three events can be considered as the ‘frontstage’ performances, and all the workshop planning, preparing and discussions and analysis among the four of us, could be considered as the backstage of that project.

Appendix 04

Exemplar 04

In practice, these concepts are merging

More generally, also in co-designing practice, the divide between the material/spatial setting and the more mental idea of frontstage and backstage is often not as clearly divided. Goffman has exemplified this through descriptions e.g. of staff-relations in a hotel restaurant and kitchen and in gasoline-station repair facilities. Here, even though the restaurant could generally be considered frontstage and kitchen backstage, he also found that ‘there are many regions that function at one time and in one sense as a front region and at another time and in another sense as a back region’ (Goffman, 1959:127). He mentions that the frontstage also often works as a backstage before and after an event – this is truly the case also around co-design events. Thus, the region or stage should always be considered in relation to the specific, ongoing (staged) performing – also in co-designing.

Summary / First preliminary position

Together with the views of co-designing as *materializing*, *relating*, *staging* and *formatting*, this view of *performing* adds yet a dimension for un-

derstanding (and staging) co-design practice. In other words, it too contributes to alternative views to (co-design) ‘methods’ and processes.

Second preliminary position: Performing, challenging and sharing ‘restored behaviours’ (in co-designing)

Chapters 3, 4 In this section, additionally I apply the concepts of ‘pre-established routines’ or ‘restored behaviors’ used within performance studies (PS). They help to understand why it might be that some stakeholders in the situation do not engage in the way the organizers have planned; in other words, why stakeholders sometimes oppose ‘plans’ and ‘non-human’ materials.

‘Pre-established routines’ and ‘restored behaviors’

Erving Goffman also views everyday performing as mostly consisting of what he called ‘pre-established patterns of action’ or ‘parts’ or ‘routines’ (Goffman, 1959:27). This too has inspired what Richard Schechner later phrased ‘restored behavior’ (Schechner, 1985). Schechner claims that any unique event is composed of, what he has coined, units or strips of ‘restored behavior’ or ‘twice-behaved behavior’ (Schechner, 2006:35-36). Schechner describes ‘restored behavior’ as physical, verbal, or virtual actions that are not-for-the-first-time; that are prepared or rehearsed.

Chapter 4 A person may not be aware that she is performing a strip of restored behavior’ (ibid:29). Infants explore actions for the first time, but Schechner argues, the habits, rituals, and routines of life are restored behavior. As small strips of film can be put together in a thousand ways to make a movie, Schechner argues that restored behaviors are being rearranged or reconstructed in every specific situation. This surely relates to Lucy Suchman’s view of human-machine reconfigurations in the situated action; to Bruno Latour’s basic idea that the social is continually re-assembled, and to what Schön describes as a
Chapter 1 ‘reflective practitioner’, who also is drawing on previous experiences when e.g. designing in the specific work situation –what he calls a ‘repertoire’.

New material ways of working can challenge professional stakeholders

Chapter 7 As Brendon Clark writes, *‘According to Goffman, the stakes can be high in social encounters as each performance has the ability to uphold or transform the individual personality of performers, the immediate social interaction between two teams, and the social structure of all those connected to the performance such as team, establishment, etc.’* (Clark, 2007:46 / about Goffman, 1959:243). Related to this, Goffman also discusses ‘impression management’, which to Goffman means managing others’ impressions of oneself and as a part of that managing and aiming to avoid ‘performance disruptions’. A disruption can be when someone from ‘the audience’ suddenly and unexpectedly enters (and disrupts) the ongoing performance, which can make performers change their roles and cause confusion and sometimes embarrassment (Goffman, 1959:203,136-140).

Looking across the Exemplars, when new physical materials have been invited in as parts of *staging* and *formatting* co-designing⁹⁸, it can also be viewed as challenging some stakeholders' established ways of working in their main professional community of practice. Generally, to Goffman this can thus be viewed as violating their own ability to manage the impressions they would like others to have about their performance as a professional. In Chapter 2, I addressed how some stakeholders sometimes resist working in certain ways, and it might also be that it makes them recall previous perhaps bad experiences or restored behaviors (possibly all the way back to their childhood) of engaging with certain materials – “*I can't draw*” is a quite typical comment in co-designing. This is a supplementary view and a way of understanding this quite common phenomenon in co-designing.

All Exemplars

Chapter 2

Chapter 2

Building up shared 'restored behaviors' in co-design projects

In the Design Dialogue-workshop series, with pre-printed maps and other materials, the hosting architects had rehearsed intensively, in many other projects, the practice of 'design dialogues' (Fröst, 2004 / also reflected upon by Fröst in Halse et al., 2010:80-82). The participants at the first event accepted the exploratory frame of the design dialogue-staging. Yet, this was new to most of the participating stakeholders, and during this first event, most were neither familiar with reading architectural scale drawings with color-codes, nor with using little colourful pieces for capturing and marking their wishes and suggestions.

Appendix 06

Exemplar 05

Exemplar 05 / circles 05-07

In the smaller groups, while also getting to know each other and each other's interests, during the main co-design situation of the first event – the 'design dialogue' – they also established their first collaborative experience of engaging these materials in their dialogue. Even though they were grouped in new teams during the next events, and the materials were changed to floor plans on paper and pens for annotation instead of small card-board pieces, during the second and third events, the participants built on these collaborative now 'restored behaviors' from the first event of engaging architectural drawings in design dialogues.

Exemplar 05 / 'Workshop 2' and 'Workshop 3'

Additionally, I clearly observed that the groups I followed during the second and third events spent far less time orienting themselves in the drawings, and started annotating on them much quicker than during the first event. This I can only speculate about, but apart from the collaborative 'restored behaviors' established and refined throughout this series of events, I also believe that the invited materials mattered.

Exemplar 05 / circles 12, 14

The materials to be used in the design dialogues changed from one A1 board with a large glued on print with four small floor plans etc. (first event), to 2 x rollable A1 papers each with two floor plans in a larger scale (second and third events). Writing with pens is a much more established practice (to everyone) than doing it with little colorful cardboard pieces,

.....

⁹⁸ Which has been a part of my 'Participatory, yet materially interventionistic approach' – see P & A.

and these changes might also have encouraged the process of more quickly moving into marking their wishes and proposals on the drawings, in the sense that the thin large papers were sketchier than the one glued onto a board, and that pens are a usual tool for (the restored behavior) making notes and annotations along the way.

**An extra example:
Three different ways of (not) gaining new shared 'restored behavior'**

Appendix 03 Another example from the PalCom project, happened during the third 'Plenary meeting' (Fall 2004), with the about sixty most active project-members present. Here, for each of the smaller pre-organized multidisciplinary groups in a 1½-hour 'Cross cutting around usesites/prototypes'-slot; a plastic folder with printed usesite-related images and previous usesite-related project-documents had been prepared as inspirational material. Additionally, I brought three sets of 'Focusboards'⁹⁹ as a *format* to work with the inspirational materials (Figure 20a-d). As some of us had worked with 'Focusboards' at prior co-design events, they were intended for capturing the main points and ideas of the groups.

P&A Chapters 5, 6

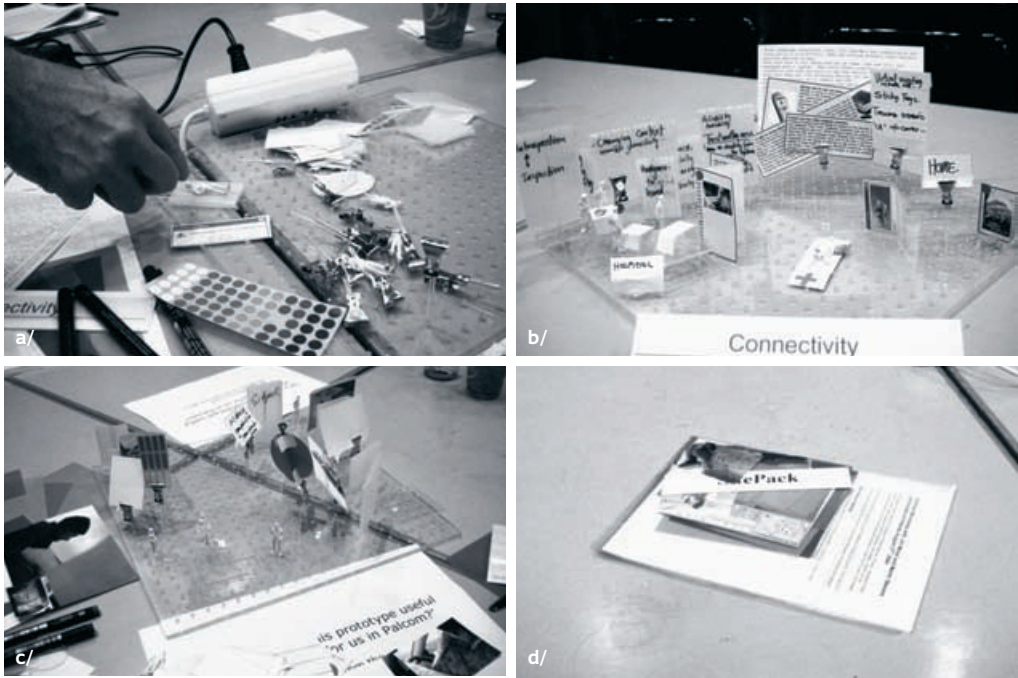


Figure 20/ Three different ways of (not) engaging a 'Focusboard' in three different groups with three different ways of staging its use. **a/** the 'Focusboard'-set as physical formats with surrounding site-specific content materials (Chapter 5). **b/** from the group I staged and participated in. **c/** from the group staged by my colleague who also had prepared inspirational materials and had previous experience with a 'Focusboard'. **d /** from the group staged by a third colleague with no previous experiences of 'Focusboards' (board untouched outside of image).

⁹⁹ The 'Focusboard' is also briefly described in P& A / Modes of Inquiry / Figure 3g.

At the event, the ‘Focusboard’-sets were only available for three of the six groups, so there was no detailed introduction¹⁰⁰ in plenum of how to engage them. It was just briefly mentioned as one possibility among others.

When we split up into the pre-defined groups, I brought one set for my group; my colleague, who had been engaged in gathering and preparing the inspirational materials and who had positive experiences of engaging the ‘Focusboard’, brought one for her group; and a third colleague from the managing team, to whom this was new too, brought one for her group.

In my group of five people, initially while placing it in the middle of the square table, I briefly explained how it could be engaged, and after having discussed our specific use-site and prototype for a while, a professional industrial designer (used to engaging tangible working materials as a part of his practice) picked up on my earlier invitation to engage these, by saying something like “This looks interesting, shouldn’t we now try to capture our discussion by using this board...”. We used it to build up different miniature sceneries of a scenario, in which our specific prototype could be engaged in the specific use context. We took close-up images of these, and later after the meeting as we had agreed, I integrated the images with brief descriptions in a summarizing document, which was used later by the people working specifically with that site and prototype.

In the team of my colleague, who had several previous experiences of working with the board, by the end of the situation, there were only a few notes and images attached onto their board. As she explained afterwards, no one really picked up on her exemplifying how to do this, and she was too tired to put a lot of energy into getting it going.

In the last group, the set stood was untouched on the edge of the table when I came by after the session. The colleague, who brought it to the table, briefly told me what had happened. When they sat down, she had briefly explained that if they wanted they could use this board for capturing their dialogue, but with the introductory opening that this was a possibility, one of the others had quickly responded something like “*Shouldn’t we just do like we usually do?*” – and the set was pushed to the side of the table and stayed there, and like we often did in that project, one of them instead agreed to write notes on a laptop capturing their dialogue.

Relating examples: During the Design Dialogue-events, annotations on floor-plans (with small pieces or hand-written annotations) were how the teams were to capture and present their questions, wishes and proposals, but at the Palcom ‘Cross cutting’-session, as soon as there was an opening for performing in a familiar way – in a ‘pre-established routine’ or ‘restored behavior’ – then several times I experienced that students, colleagues and other participants chose to do as they usually do.

Exemplar 05

.....

¹⁰⁰ What I call ‘situation warm-up’ in Chapter 8.

First impression, professional competence and occupational reputation

Lastly, Goffman also emphasizes how ‘the first impression’, ‘professional competence’ and ‘occupational reputation’ matters in how people perform and interact in the situation (Goffman, 1959/1967). In co-design projects an attitude of *of course* engaging new materials or *maybe* engaging materials in interactions in specific situations thus makes a big difference. Related to this, Goffman acknowledged that professionals pay more or less attention to different parts or routines in everyday and professional situations. He says, ‘...in the social sphere that encompasses his display of professional competency, he will be quite concerned with making an effective showing. In mobilizing his behavior to make a showing, he will be concerned not so much with the full round of the different routines he performs but only with the one from that his occupational reputation derives’ (ibid:43). Thus, *professional competency* and *occupational reputation* also include re-actions for or against engaging (new) materials in situations of co-designing.

Summary / Second preliminary position

If most of what we do, and are comfortable with, is pre-established routines or restored behaviors, as Goffman and Schechner suggest, it is quite clear why some stakeholders more or less explicitly object to new suggested ways of working at co-design events. As a part of suggesting a new way of acting collaboratively, e.g. the Focusboard-sets discussed in this section can then also be viewed as (critically) questioning other stakeholders and already pre-established ‘restored behaviors’ and practices – in this case within the PalCom project. In this example the last group discussed used the slight opening in my colleague’s introduction that this was ‘a possibility’ to quickly agree to “do like we usually do”.

Appendix 03

As discussed throughout the thesis, clearly the person(s) who invites materials and the situation organizer’s words – the talk materials – intertwining in *staging* and *formatting*, plays an important role especially if the proposed way of co-designing is challenging stakeholders to participate in co-designing in different ways from their (professional) ‘restored behaviors’.

Chapter 1
Chapters 2, 5, 6

Part C / Introduction

Third preliminary position: Materially staging and formatting performing (at the co-design event)

Chapters 1, 2, etc. *Staging* and *formatting* are important integral parts of co-designing practices, as emphasized in the thesis title and as discussed throughout the text. Goffman (1959) uses the phrase ‘setting the stage’ of performing, but neither he nor Schechner (e.g. 2006) really use the phase ‘staging’. Still, both their work adds to an understanding of co-designing as performing – and *staging*. The terms, concepts and practices of ‘setting the stage’ and ‘staging’ are well-established within participatory design (e.g. Bødker et al., 1991). In *Design Things*, *staging* is also emphasized as a part of viewing

designing as performing, in which *staging* is suggested to be done in interventionistic, participative and experimental ways (Binder et al., 2011). P&A

In this third and last preliminary position of Part C, I will reemphasize *staging* and *formatting* of performing in co-designing –again with particular focus on how materiality plays an important role. I do this with Exemplars 02, 05 and 06, for which the situated staging roughly encouraged stakeholders to be: ‘roleplaying’ being others in potential future practices; ‘imagining’ being oneself in the future and ‘rehearsing’ being oneself in the future. Exemplars 02, 05, 06

Materially staging ‘roleplaying’ possible future practice

One obvious often quite explicitly staged way of performing in co-design projects is ‘roleplaying’ – also sometimes called ‘experience prototyping’.¹⁰¹ Many different researchers and writers have exemplified and suggested this, and my experiences are too, that it is often fruitful and sometimes even an Aha!-experience the first time people with various backgrounds co-design through roleplaying (e.g. Brandt and Grunnet, 2000 / Buchenau and Fulton, 2000 / Buxton, 2007 / Moggridge, 2007 / Stickdorn and Schneider, 2010). Yet, in the situation, staging is needed, and the staging of roleplaying also has a very material side.

Roleplaying has been a part of several of the Exemplars, for which the stakeholders ‘full-scale’ (with their own body in the space) were pretending to be someone else in the future. Most of these situations were explicitly called ‘roleplaying’, but as shown, they played out differently. As a quite classic example, in Exemplar 01, the full-scale students were roleplaying others (potential users and providers) of the services they were proposing. As explored at several co-design events in the DAIM-project, we also staged stakeholders to co-design through roleplaying doll scenarios of possible futures (Halse et al., 2010:134-135) – what also could be called ‘small-scale roleplaying’.¹⁰² In the following section I will briefly discuss the situation of ‘roleplaying’ at the Rehab Future Lab event: Exemplars 01, partly 02, partly 06
Exemplar 01 / circle 07

Roleplaying was a planned integral part of the Rehab Future Lab, but the invited materials, distribution of roles and staging made it challenging to engage in for long. To refresh, the first afternoon of the event was occurring at the hand-surgery rehabilitation ward at the hospital, where the rehab-staff had their daily practice of meeting with and coaching patients in their personal rehabilitation process. Group 2 was in a meeting room with the mockups and scenarios on the table. After getting settled and a providing a bit of explaining and discussion, the PhD student hosting this group, distributed roles so the occupational therapist was pretending to play or be herself, and he would role-play a patient in the roleplaying of the scenarios. Exemplar 02 / circles 04, 05
Exemplar 02 / circles 03, 04, 05

.....
¹⁰¹ At least in interaction design, service design and participatory design this is a quite common practice.
¹⁰² I have exemplified and discussed both of these kinds of full-scale and small-scale roleplaying in (Eriksen, 2009).

Chapter 7 **Yet, the situated staging made this partly challenging.** For example: She was not doing this with ‘real’ patients, but with the other researcher acting as a patient. Also with the rest of us observing, in my view, this was one of the reasons why it seemed a bit awkward in the situation, and why the (human) participants barely got into the explorative mindset / frame¹⁰³ of roleplaying possible future practices.¹⁰⁴

Part B
Exemplar 02 / Introduction
Exemplar 02 / circle 04

As initially discussed in Part B, there were various materials that also affected the performing here. She was in her everyday clothes (her personal ‘front’) opposed to the white kittle she was usually wearing at work; the pre-written and illustrated scenario (on a printed hand-out for everyone) was very specific and almost scripted leaving hardly any room for exploration; and spatially, they were not in the everyday premises where she was usually meeting patients (her backstage – compared with being at this event), but in the staff meeting room sitting around the oval table. Additionally, the mix of English-Swedish-Danish language (talk-material) among the stakeholders also further removed her from her practice.

In the emailed invitation and plan of the event, the way of co-designing was prescribed as shifting between ‘role-play’ and group discussion. Yet, materially the staging with these different materials, formats and roles was actually challenging to engage for long in roleplaying, resulting in the situated action mostly being a situation of discussion through questioning the current proposal on the table.

Generally, in co-designing it can definitely be useful to get a different perspective, which she partly got from exploring her everyday practice as it happened at this event. Yet, if the staging is intended to explore ones own future practices, in this case with new mixed-media devices, another (material) staging should be set up. In this situation, I would suggest taking advantage of the rich material environment/stage at the department. The following two subsections show how this can be done:

Materially staging ‘imagining’ possible future practice

Another way of materially staging co-designing is for stakeholders to ‘imagine’ being themselves in the future –then the real people are needed.

Exemplar 05 This happened at the Design Dialogue events:

Exemplar 05 / circles 04-06, 12

At all the Design Dialogue-events the architectural maps and other hands-on materials, pre-designed by the hosting architects, were partly staging the stakeholders to imagine being themselves in the future –and to express their wishes for that shared future.

At ‘Workshop 1’, shortly after the group I followed had gathered and started their explorations and dialogue, one of the hosting architect’s came by and

.....

¹⁰³ ‘Frame’ is understood as different from Schön’s idea of ‘framing’, further see Chapter 7.

¹⁰⁴ If this had been the situation, it could possibly have been experienced and viewed as ‘rehearsing’ futures –see further below.

demonstrated how the materials were intended to be used (by showing and sharing his restored behaviors – and through that suggesting for the group to establish this as a shared behavior too). However, with all the layers of information on the board (place-specific scale drawings, color coding and the list of guiding questions to consider), there was plenty to talk about and relate to, and the group continued by talking while referring to these contents on the board.

Exemplar 05 /
circle 05

A first example: one of the students in the group, who already had her daily routines in the building, imagined these coming modifications of the existing building as a possibility for also getting a better space for students to meet informally (backstage) – for example a good inside and outside space for Friday-bars on the ground floor (e.g. based on her restored behaviors of finding this difficult in the current layout of the building). The architect marked this, and in the end she added little images outside the building, to also remind the architects to consider this when designing their proposal.

Exemplar 05 /
circle 05

A second example: with the previous university management-decisions that the department ('X') would become split up on Plan A, D and E, in different ends of the house and with staircases on the outside of the building, the different stakeholders in this group from the department were all quite sceptical about the future identity of their department in this building. They were imagining how this would ruin the current department identity and quality of students and staff interacting in the open hallways and café areas (a current merge of frontstage and backstage teaching environments – based on their restored behaviors of finding this fruitful).

Exemplar 05 /
circle 06, 07

A third example: with the extra department moving in, there was going to be about 600 extra people in the building. A stakeholder from another department – already teaching and working in the building – was also concerned. Sitting on the sofa, verbally he was explaining how he worried about his future Wednesdays, when he still at the same time would need small rooms for about 30 groups of students. Pointing to the D-floor, a lot of the spaces he was currently using are on the D-floor where the department apparently was to move in, the color-coding indicated 'serious re-doing'. From this, again by talking and pointing, they collaboratively moved into an exploration of where there potentially could be other classrooms or other unused spaces that could be changed into new additional classrooms. They especially looked at the A-floor, which they, with glued-on pieces, at the end of the dialogue ended up marking on their board too.

Exemplar 05 /
circle 06

Exemplar 05 /
circles 06, 07, 08

To summarize, these different fragments from the Design Dialogue group-work show how the stakeholders were performing as the competent practitioners they each were. This material staging allowed them to 'imagine' (in their minds and words) themselves in the future. At the end, probably pushed by the reminder that they had to make a plenum presentation in 10 minutes, the little pieces assisted them in *materializing* how they would wish this future to be. In other words, they all, at this point, accepted the new behavior of capturing their wishes and proposals with the small glued on pieces.

Exemplar 05 /
circle 07
Chapters 5, 6

Materially staging 'rehearsing' possible future practice

Appendix 05 Yet another way of materially staging co-designing is for stakeholders to rehearse, pretend or simulate being themselves in the future – then the real people are needed too. As Joachim Halse addresses in *Rehearsing the Future*, based on our shared experiences in the DAIM-project, 'rehearsing' possible futures is not roleplaying, as the stakeholders enacting (e.g. potential future users and providers) must pretend to be themselves in the future. As he argues, this is different from taking on the role of being someone else, or pretending being different from what one is (Halse, et al, 2010: e.g.188).

Exemplar 06 **This happened at the Architects' Future Lab event:** Here, the landscape architects were not 'just' roleplaying or imagining being themselves in the future, but they were 'rehearsing' being themselves in the future – to use this phrase from the DAIM project. Before and during the event, the whole 'i-Room' studio, re-designed for this event, was explained as a prototype of a possible future architects' workplace. Thus, in a sense this event was set up as a backstage everyday architect work environment that made it possible to intertwine their professional restored behaviors as architects and the rehearsal of new possible future professional behaviors and practices.

Appendix 05

Exemplar 06 / Introduction / circle 02

Exemplar 06 / Introduction / circle 03 **Additionally, doing a 'real' job,** pre-defined as one of the other event plans, which we had staged for the architects to do and start to do before the actual event, was also a part of the staging of this 'future laboratory' (redesign of the courtyard just outside the studio). This assisted in establishing a situation for the landscape architects of not just imagining themselves in the future, but through really working here for two days, performing and 'rehearsing' or simulating being themselves in the future. They were still working and collaborating as professional landscape architects, but different new technical and spatial possibilities were engaged and merged into them doing their current core practices. Out of many situations in the Exemplar, this is exemplified when they sit around the now digitalized map on the interactive table, but still discuss while sketching on top of the drawing.

Exemplar 06 / circles 06, 08

Exemplar 06 / Agenda – top of Day 1 **Further, in the agenda,** capturing the overall planned staging and formatting, it explicitly said that there was intended to be time for reflections along the way. The agenda was focused around different pre-defined scenarios, where the four architects were mostly planned and expected to be pretending and performing as themselves in the future. This mix of restored and possible future behaviors, made it possible for them to very specifically consider whether what they had just been experiencing was a desirable future or what the obstacles might be.

Exemplar 06 / circle 07 **In the Exemplar, the situation called 'Exchanging ideas in a distributed setting'** was partly staged as 'roleplaying' as three architects were acting as Gardeners and Mr. Builder. Yet, the one acting as himself (now and in the future), Mr. Architect, was most seriously discussing their current proposal. Also, another architect, who had just been rehearsing a future of being able to remotely discuss and draw design proposals with these new technologies and spatial arrangements, slipped out of his role as Mr. Builder. As a pro-

Exemplar 06 / circle 07

fessional architect he reflected on this new practice, by commenting to the researcher standing next to him, that this could be good.

Exemplar 06 /
circle 07

Some ideas for new applications and refinements of current versions of prototypes came up during this event, but as we claimed about this event in *Ways of Grounding Imagination*, what was mainly performed here were new possible future practices (Büscher et al., 2004).

Summary – Part C / Introduction

Initially in the box, I positioned this thesis as also relating to performance studies (PS), characterized as a multidisciplinary field studying an array of topics but generally aiming to understand and grasp the performative, transformative, processes and performances (events) of embodied engagement in the world –which also characterize co-designing.

To set the fundamentals of this Part C, Erving Goffman’s overall perspective on interaction as performing is a fruitful supplement to the views in Part A and B for understanding and staging practices of co-designing. Building upon my arguments in Chapter 5, that the spatial environment is an important part of the materiality of co-designing, with his concepts of ‘frontstage’ and ‘backstage’, the physical and material environment is extended to be considered as a setting or stage, in which the performing or co-designing is unfolding (First preliminary position).

Chapter 5

Furthermore, building upon views of stakeholders as ‘old-timers’ and ‘new-comers’ in communities of practice, Goffman and Schechner’s concepts of ‘pre-established routines’ and ‘restored behaviors’ have also assisted in providing a further understanding of some of the challenges in co-designing. Challenges around personal motivations and reasons related to professional practice, and thus why there can arise resistance towards working in new (material) ways at co-design events (Second preliminary position).

Chapter 2

Lastly, with Exemplars 02, 05 and 06, I have further related these views to a reemphasis on co-designing as materially *staging* and *formatting*. With these examples, I have shown how some materials are mainly assisting in *formatting* for stakeholders to be ‘roleplaying’ their own and others’ possible future practices, some for ‘imagining’ their own possible future practices, and yet some for ‘rehearsing’ their own possible future practices (Third preliminary position).

As it will show in the remainder of this Part C, the term and concept of ‘staging’ is not commonly used in PS. Still, the various researches within the field shed different light on this practice and reveal many different aspects of performing and interacting, which I also find and suggest as important to acknowledge when aiming for both understanding and staging co-designing.

Chapter 7 / Co-design Research & Performance Studies

Views on – interaction and event as performance / ritual and play / frames / materiality and props / formats as scores

Along with the views of especially Erving Goffman and Richard Schechner, I have now established my basic perspectives of co-designing as performing and I continue to emphasize the materiality of *staging* and *formatting* as integral and important in co-designing practice.

In this chapter, first I share and acknowledge arguments by other interaction and co-design researchers (and colleagues), who already have applied performative perspectives and terminologies for understanding (and staging) (co-) designing practices.

Second, to further relate and position my views of co-designing and materiality to PS, I discuss various central perspectives, terms and concepts in PS – especially as described by Richard Schechner and Victor and Edie Turner. I will address: first, interaction and co-design events as performances; second, staging as an interplay of ritual and play e.g. during the middle ‘liminal’ period of ritual transition processes/events; third, frames as understood in PS – especially overall encompassing frames of projects; fourth, PS views of materiality – especially ‘props’; and lastly, a suggestion to view formats and formatting much as ‘scores’ practically used in PS.

Eva Brandt: Drama and props for staging event-driven processes

Foreword: Program /
Chapter 2

To briefly repeat from the Foreword: Program and Chapter 2, Eva Brandt (a colleague in the XLab and DAIM projects) has proposed driving complex, co-design projects through iterative event-driven processes (Brandt, 2001). This argument we re-established with our shared argument for *Co-design Events* (Brandt and Eriksen, 2010). For proposing event-driven processes Brandt has not applied performative perspectives, but mainly perspectives on participation and learning.

Related to Chapter 2

Yet, to stage engaging collaboration during events, in collaboration with dramaturge Camilla Grunnet, she has proposed using different performative terms in co-designing. In the paper, *Evoking the future: Drama*

and props in user centred design, they suggest exploring collaborative scenario-making through roleplaying and drama, and as a part of that they also propose viewing design representations as ‘props’ (Brandt and Grunnet, 2000). As exemplified and mentioned in the Part C / Introduction, many others are arguing for roleplaying in user-centered or co-designing processes, and a drama perspective there definitely makes sense. I have expressed my views of the term ‘representation’ in Chapter 2, and I return to my views of the term ‘props’ below. Chapter 2

In their respective PhD dissertations, Giulio Iacucci, Brendon Clark and Joachim Halse have all applied performative perspectives for understanding interaction and co-design activities and practices.

Giulio Iacucci: Interaction as performance and performance as completion

In his thesis, *Interaction as Performance*¹⁰⁵, Giulio Iacucci (a colleague in the Atelier project), has applied mainly anthropological concepts of performance by Victor Turner, for understanding the relationship among space, physical interfaces (mainly mixed media artefacts) and bodily presence of humans (Iacucci, 2004). With these performative perspectives and also with reference to Lucy Suchman (1987), rather than focusing on usability and measuring (common within HCI), he suggests focusing on situated expression and the experience of sensing humans. One of his main arguments is ‘situated configurability’ emphasizing that physical interfaces and systems should be designed for and understood as a part of the specific situated also spatial and embodied arrangements (ibid: 78-80). He too places a strong emphasis on ‘events’ (but here viewed as an alternative to ‘tasks’ – commonly focused on in HCI). In opposition to Brandt’s and my views of co-design events e.g. as ‘full-day workshops’, Iacucci mainly views ‘events’ as situated moment-by-moment interactions. This partly relates to my proposed focus on co-design situations. Part C / Introduction / Box on PS
P&A
Part B / Introduction / Chapters 4, 5
Chapter 2
Chapter 3

Largely relevant to my emphasis on materiality, to Iacucci ‘performance is also about bringing something to completion’ (ibid:60) where ‘something’ here both captures his ideas of collaborative ‘events’ as well as ‘artefacts’ or ‘representations’.¹⁰⁶ This partly relates to my proposed focus on what is materialized and rematerialized. Chapter 5, 6

Brendon Clark: Organizing co-design through socio-political performing

In his thesis, *Design as Sociopolitical Navigation – A Performative Framework for Action-Oriented Design*, Brendon Clark (a colleague in the DAIM project) has applied performative perspectives for understanding ‘organizational accountabilities inherent to design projects’ (Clark, 2007:iii). Preceding the events occurring during established co-design projects, which

.....

¹⁰⁵ This thesis mainly relates to Human-Computer Interaction (HCI), interaction design and Computer-Supported-Collaborative-Work (CSCW) and is especially aimed at challenging common views within HCI (at that time) of interaction with digital artefacts and systems.
¹⁰⁶ His ideas are further elaborated in chapter 6 Designing as Performing in Design Things, which Iacucci has co-authored (Binder et al., 2011) / Chapter 2

I study, his situations of study were examples of ‘face-to-face encounters involved in organizing a project’, which he co-organized and analyzed through a performative framework. To him, this includes team meetings, department meetings, participant recruitment meetings, funding presentations, etc. in the process of setting up, negotiating resources and gaining financing for design research projects (ibid:e.g. iv).

Clark has also applied Erving Goffman's concepts of frontstage and backstage, among other performative concepts. As a part of co-design projects, Clark too views the ‘backstage’ as capturing what he calls the performance production – the planning and preparing of interactions in a co-design event – as well as past-reflections and economical, political and organizational, etc. battles and negotiations related to co-design events and projects. In a meeting or co-design event, he generally views group-work as ‘backstage’ explorations of preparing for the ‘frontstage’ plenum presentations during the event. His distinctions of what is ‘front- and backstage’ during events I do not fully agree with. Still, in addition to my focus on the face-to-face workshop events happening during projects, with his main argument and thesis about socio-political navigation, I acknowledge that a lot of materiality, negotiations and decisions are also engaged in the establishment of, and in back regions of, co-design projects.

Joachim Halse: Merging the everyday and the future in performative events
Lastly, in *Design-Anthropology: Borderland Experiments with Participation, Performance and Situated Intervention*, Joachim Halse (a colleague in the DAIM project) has applied performative perspectives for understanding co-design events occurring during several (already financed) IT-research projects. He too builds on Brandt's idea of event-driven processes, but he extends this with performative perspectives. Basically he argues that (what he calls) ‘design workshops’ or ‘design events’ are performative events (Halse, 2008:81, 84). He notes that the participants during co-design events should not consider themselves as ‘performers’; but with references also mainly to Victor Turner and Richard Schechner, by ‘performative’ Halse captures the following view: (co-) design events are not everyday practices in a co-design process, but they are ‘...a momentary suspension of the everyday order’ and they ‘...present a unique opportunity to mobilize at once resources and concerns that would otherwise remain more distantly related’ (ibid:121).

With a main reference to ‘Future Workshops’, a classic workshop set-up in PD projects, to Halse this momentary mobilizing of resources and concerns out of the everyday in ‘design events (...) are explicitly about driving design processes forward by generating new ideas and producing useful design concepts’ (ibid:121). Additionally, while his main interest is to position his views on the emerging field of design-anthropology he claims that a ‘future workshop is a performance of the new, but it is constituted by the very distinction of the new and the old’ (ibid:83, 81). As I show in several of the Exemplars and as I have discussed *staging* so far, I do not only suggest viewing ideas and design concepts to be what co-design events are about. I also argue for the importance of collabora-

tively identifying and *rematerializing* issues or matters of concern, with materials at co-design events.

Further, Halse views a ‘design workshop’ as a ritual in the sense that these events are about transformation or change. Inspired by Victor Turner and Richard Schechner, he finds similarities with performances, as a ‘design workshop’ in his words also “...operates in a special ordering of time, ...attaches special value to objects, ...is unproductive in terms of goods, ...is guided by explicit rules, and ... often takes place in special places, non-ordinary places set aside or constructed to perform the activity...” Halse calls all these different characteristics ‘design rituals’ (ibid:85).

Lastly, alongside performative perspectives, his work also relates to STS or ANT-perspectives, and he considers transformations not only to be of the people participating and/or of the technologies (which was being designed in the projects he has been engaged in), but that transformations are of both ‘people and things, technologies and practices’ (ibid : 85).

Chapter 4

To summarize, at a practical level, in our previous event-driven and/or everyday collaborations, the work and views of these colleagues have of course influenced my work and views during my PhD studies. At a more theoretical level, as a starting point I continue with the focus on co-design events as established with Eva Brandt and continue to recognize the importance of materially staging drama at such events. Fundamentally, I build upon Giulio Jacucci’s overall view of interaction as performance and bring with me his argument for the importance of bringing something to completion. Next, I acknowledge Brendon Clark’s point that a large part of the performing before (and during) co-design projects is about navigating and negotiating socially and politically in the back regions of design projects. Lastly, from Joachim Halse’s work, I bring along the views that co-design events are ritual, performative events out of the everyday in co-design projects, the view that co-design events are composed of what he calls ‘design rituals’, and the view that it is people and things, technologies and practices that are transforming in (design-anthropological) co-designing.

Performance studies views of: Events / ritual and play / frames / materiality

As mentioned in the Part C / Introduction, in the writing of most PS researchers, materiality does not have a very prominent role. Still, the work of understanding performances as situated events, ritual, play, liminal periods and frames shed important light on also understanding co-designing as performing. In this section I relate co-designing and staging to these views, and also briefly position my view of the in PS commonly used term ‘prop’ and lastly I positioning *formats* in relation to ‘scores’ used in PS.

Part C / Introduction

Co-design events as performances

From the work of Joachim Halse, I brought along the view that co-design events are ritual, performative events out of the everyday in a co-design project. They include 'design rituals' and to extend this, co-design events can be viewed as somewhat in between performance theatre and everyday performance.

All Exemplars

Part C / Introduction /
Box on PS

PS&A

Chapters 1, 2, 3, 4

The co-design events captured in the different Exemplars occurred through physical presence, but they were not performances where one or more performers displayed their skills before a quite passive audience. Rather, they were events where the various stakeholders were performing collaboratively during co-designing. Further, all the co-design events were not everyday practice but special occasions, and they were not stand-alone activities, but to use Schechner's expression, they were '...nested within larger events...' (Schechner, 2006:225). They were nested and integral in the longer processes and in the design-laboratories, networks and communities of the co-design project they each happened within.

Foreword: Program /
Chapters 1, 2, 3, 5, 6

Additionally, they were unique, situated events with unique situations of co-designing, occurring at a special time, in a special place with a special team of participants/stakeholders/actors (human and non-human) and '...staged in a focused manner...', again to use Schechner's phrase, through different 'design rituals' as emphasized by Halse (above) (Schechner, 2006:225).

To summarize, as the complex activities they are, throughout this Part C, I will explore how co-design events and situations have both elements of theatrical and everyday performance.

(Staging as) ritual and play in the 'liminal' phase

The view that performances/events are 'staged in a focused manner', relate to ideas within PS about 'ritual' and 'play'. Within PS, ritual and play are considered intertwining in all performance and performativity (Schechner, 2006 / Bial, 2007). In this section, I suggest that staging can be seen as an interplay between collective '(co-) design rituals' and playful explorations – for example during the 'liminal phases' of co-design events.¹⁰⁷

Part C / Introduction /
Box on PS

Within PS, Victor Turner largely established a focus on rituals as performances. In *The Anthropology of Performance*, he describes a ritual as a 'performance of a complex sequence of symbolic acts' (Turner, 1987:75). Partly opposite to this, to grasp diverse views of play within PS, overall Henry Bial describes play as both being: informal and unpredictable or formal and organized; competitive or cooperative; and goal-oriented or open-ended. In other words, for the participants in play to understand

.....

¹⁰⁷ This interplay between ritual and play could also be viewed as an alternative way of understanding creativity / creative inquiries in (co-) designing – in many ways as hard to grasp as performances. Many (co-) design researchers are exploring creativity e.g. with many perspectives related to mine in 'Design Things' (Binder et al., 2011). (Further described in Chapter 2).

what kind of playing is going on, there is also an element of (ritual) structure in playing (Bial, 2007:135).

The idea of ‘liminal’ is integral in his extensive work on understanding rituals as performances, and in the classic text, *Liminality and communitas*, Turner generally views three-phased rituals as processes of transition (Turner, 1969 / in Bial, 2007:89-97).¹⁰⁸ With his analysis of African rituals of boys becoming men, Turner has especially explored the middle period, the liminal period, of ritual processes, or what he has coined ‘*betwixt and between*’ (Turner, 1967 / in Mahdi et al., 1987). Generally, he has found that there are three main phases of such ritual transitional processes: first, leaving being a part of society in one role (as a boy); second, passing through the transformative, liminal, betwixt and between phase (in that ritual by being humble and obeying orders); and last, returning and becoming a part of the society or *communitas* –or community of practice– in another role (as a man). Chapter 2

According to Turner, during the transformative, liminal phase of a ritual process, the person(s) engaged is out of and slips through the established classifications, positions, customs, laws and conventions of the(ir) *communitas* (Turner, 1969 / in Bial, 2007: 89). Additionally, without him going much into details with these, he found that the ‘attributes of liminality or of liminal personae...[are] expressed by a rich variety of symbols’ (materials) (ibid:90).

In co-design projects, generally, the intension is not primarily for participants to undergo personal transitional processes, even though it often does happen (also without being humble and obeying orders), but rather to transform collaboratively. Additionally, co-design events in many ways have a three-phase structure or sequence, where the middle part of the event can be considered as a liminal period. Chapter 8

To summarize, within performance studies, generally ritual and play are considered a part of all performance, and with these views I acknowledge that generally in co-design projects and during co-design events there is also always an interplay between ritual (*staging* and *formatting*) and play (collaborative exploration – as *materializing* and *rematerializing*). Parts A, B
Chapters 5, 6, 9

Additionally, with Turner’s work on the middle, liminal, transformative or between and betwixt phase of a ritual performance, I also suggest the view of a co-design event as having a middle, liminal phase – around which I of course suggest to acknowledge how differently delegated materials are intertwined in establishing design rituals for playful co-designing (as *materializing* and *rematerializing*) in the co-designing situation. Chapters 5, 6

.....

¹⁰⁸ A view strongly inspired by Arnold van Gennep’s transitional concepts from 1909 of viewing ‘...change of place, state, social position and age’ as ‘rites of passage’ including a ‘liminal phase’. Rites are considered as ‘a moment in and out of time’, and according to Turner, Van Gennep had divided rites of passage into three main phases: separation, margin (or limen) and aggregation (or re-incorporation) (Turner, 1969 / in Bial, 2007:90).

Frames – particularly overall / encompassing and explorative-play frames (of co-design projects and situations)

Chapter 1 The concept of ‘frames’ as understood within PS, relate to the ideas of ritual and play. As ritual and play are intertwining in all performing, various frames (or moods, mindsets and overarching structures) are too. Especially with Victor and Edie Turner, in this section I will distinguish and propose these PS views of frames as an additional concept to Donald Schön’s (1983 / 1987) views of ‘framing’ and ‘re-framing’ as essential parts of practices of (co-) designing. I will especially emphasize what they describe as ‘frames within frames’ – where the ‘overall encompassing frame’ is considered quite stable. Lastly, acknowledging that ‘frames’ are negotiated, I will briefly address how the assemblage of materials is helping or challenging in establishing and keeping an ‘explorative frame’ of co-design events and situations.

Chapter 1 **To Donald Schön, reflective (design) practitioners are ‘framing’ and ‘re-framing’** the problem setting or what he calls ‘the context’ and as a part of that they are ‘naming the things to attend’ (Schön, 1983). For example, in his architectural example, based on Petra’s story about what she finds important, through speaking and various new sketches, Master Quist demonstrates a ‘re-framing’ of what (problem/context) he finds most relevant to address first. As emphasized in Chapter 1, I fully acknowledge this understanding of (co-) design practices. However, I view his ‘framing’ as a focus on the context or content (problem, thing or focus) of the work, whereas ‘frames’ as understood within PS are more related to the moods, mindset and structures around and of the situation of acting.

Turner suggests viewing performances as frames within frames, with an overall encompassing frame. Inspired mainly by Gregory Bateson and Erving Goffman, Richard Schechner and especially Victor and Edie Turner have used the concept and metaphor of ‘frames’ to understand and describe what happens in everyday (social drama) performances as well as in ritualized performances (such as sports events and weddings) (Bateson, 1955 / Goffman, 1975 / Turner & Turner, 1986 / in Bial, 2007 :323-336) Schechner notes, that ‘frames’ mostly capture what he calls a ‘conceptual arrangement’, as we are often not explicitly aware of all the different ‘frames’ in a situation (Schechner, 2006:295). Yet, as Turner argues, in many ways ‘frames’ are also practical and situated.

Appendix 01 **PD researcher Bo Westerlund also applies the idea of frames of co-design workshops,** in his work on *Design Space Exploration* (Westerlund, 2009). Largely inspired by Erving Goffman’s work on *Frame Analysis* (1974), Westerlund distinguishes Schön’s framing’ and Goffman’s ‘frames’ like this: ‘...in the context of design the concept frame is usually used in the way Donald Schön (1983) uses it, basically to temporarily set a problem, to identify what to attend to’ (ibid:129), but additionally as used by Goffman, in Westerlund’s view ‘frames are small narratives with simple structures that are among the cognitive structures we use to think’ (ibid:129). Thus, in addition to Schön’s idea of ‘framing’, he suggests to add the concept of ‘frames’ as a part of understanding the exploration of a design space. As this section shows, I too suggest adding this concept of ‘frames’ for under-

standing and staging co-designing, not as Westerlund focusing on narratives as cognitive structures, but rather related to ritual and play and Turner's views of the structures around co-design events and situations.

In my paper *Engaging design materials, formats and framings...*, I used the term *framing* to capture the main focus addressed in a co-design situation (Eriksen, 2009). In the paper I wrote, 'The framings of focus for a particular co-design situations specify WHY and WHAT to explore collaboratively – as in John Chris Jones' descriptions it captures the aim and focus' (ibid:3 -in the paper). That view relates to Schön's idea of 'framing'. The PS view of 'frames' addressed in this section should be viewed as an additional concept –with an overlapping name.

Performing Ethnography includes an example of exploring and discussing different frames, in which Victor and Edie Turner describe how they fabricated, relived and explored a central Virginian wedding ceremony. It was originally observed by one of their graduate students, by playing it out in the basement of their house (Turner and Turner, 1986 / in Bial, 2007:323-336). As a part of their pedagogical strategy of teaching both drama and anthropological students, they have coined this practice 'ethnography performances' or 'playshops', (ibid:324) Practically, it is based on an ethnographic script of an observed ritual or social drama, and when doing an ethnographic performance, students, other staff and they are assigned a role beforehand as groom, bride, parents, friends, staff, priest, etc. Additionally, almost everyone engaged in preparing their own and other's 'props' and costumes to wear and engage during the performance, as well as food and drinks for the 'reception' afterwards. Generally, they put a lot of effort into preparing such an ethnography performance to richly contextualize it.

more in section
below

The purpose of doing this in their anthropological work is to be able to experience (relive, revalue, remodel and rearrange) the culture of a selected (anthropologically observed) dramatic action, with its multiple things, images, symbols, etc. (ibid:324) – a learning-by-doing approach, which surely overlaps with the common practices in co-design work of roleplaying, as described in the Part C / Introduction.

Chapter 1

Part C / Introduction

In their analysis of what happens at such events, Turner identified a variety of frames shaping the event. Generally, they noted that 'Some social events are contained in multiple *frames*, hierarchically arranged, frame within frame, with the ultimate "meaning" of the event shaped by the dominant, "encompassing" frame' (ibid:324).

In the specific example of the marriage, they viewed the 'frames within frames' this way: Outer frame: a 'pedagogical frame' – 'let us learn' as data for their ethnographic and performative studies and research / Next frame: a 'play frame' – 'let us make believe' that we are a part of this ceremony / Next frame: a 'ritual frame' – 'let us believe' in this case in the rituals of a marriage / Inner frame: a 'political frame' – what they call the 'parapolitical structures of the Anthropology Department at Virginia University' (where they were teaching and working) (ibid:325).

With the different political, ritual and playful elements, the ‘overall, encompassing frame’ of focus of this performative event was still their pedagogical strategy of teaching, and if some before or during the performance slightly changed their immersiveness in the role they were playing, then they have argued, the overall encompassing frame remained the same.

Yet, they also found that ‘...the hierarchical nesting of frames was over-ridden by the subjective responses by the actors, who evidently selected one or another of the frames as dominant’ (ibid:326). Additionally, they observed that some found it very natural to ‘act ritually’, whereas others added some irony into their role, while yet others slipped in and out of their ‘frame’ or shifted ‘frames’ both during the performance or several hours, days, weeks or months afterwards.

Chapter 1 **Viewing Schön’s architectural example with Petra and Qvist in such a light**, the overall frame could also here be characterized as a ‘pedagogical frame’ (in this case with a strategy of demonstrating professional design practice), within that a kind of ‘ritual frame’ (the established routines of the tutoring-situation), and within that a ‘play frame’ (capturing the architectural sketching practice of exploring possible design proposals).

Appendices 01-05 **For all the five co-design research projects, the overall encompassing frame could be called a ‘research’-frame**, with aims of ‘generating new knowledge’ (e.g. Fällman, 2007 / Löwgren, 2007), a research-frame encompassing the financial, time, human and non-human, etc. alignments of each of these projects. The main topics and thus the kinds of generated knowledge differed (some) among the projects, and among the different stakeholders the stories about what was the ‘new knowledge’ also differed, but everyone engaged in ‘research’.

Chapters 2, 4

Exemplar 01 / Introduction **However, the ‘overall encompassing frame’ of the Design Dialogue workshop series was different – it could be called an ‘economic’ or ‘for implementation’-frame.** The ‘overall encompassing’ of the Service Design Project, where Exemplar 01 originates was also different, similar to the marriage-example; overall this too could be called a ‘pedagogical or teaching’-frame. Briefly, with inspiration for Turner’s work, these are my suggested ‘names’ for the ‘overall encompassing frames’ of the different co-design projects and activities this thesis builds upon.

Exemplar 01 / Appendix 07

Exemplar 05 / circle 09 **Frames can of course be negotiated in the situation too.** The Design Dialogue event series includes a situation at the beginning of the second event, “Workshop 2’, in which a new participant is using this partly public scene to question and challenge the political and economical frame, but it did not change the overall encompassing frame (and decision) of economy and implementation. Related to this idea of negotiations of ‘frames’, within participatory design – for example, as ‘power relations’ or negotiations between ‘different controversies’ have been widely researched (e.g. Greenbaum and Kyng, 1991 / Binder et al., 2011). I refrain from going further into these discussions, and rather continue with my emphasis on materiality (which in many ways captures power-issues quite tangibly).

Chapter 2

Lastly, I will show how I have found frames and materiality to be intertwining in co-designing. The reason I find it relevant to also relate the concept of ‘frames’, as understood by Turner, for understanding materiality in co-designing, is that I have found the situated actions at the co-design events to quite practically and materially relate to and be directed by the ‘overall encompassing frame’ of the project.

For example, both Exemplar 05 and 06 included architectural work. The landscape architects participating in the WorkSpace project and at the Architects’ Future Lab event, intertwined with exploring all the new technologies, surely engaged in doing a professional job and made a green, user-friendly sketched proposal for a new courtyard within the two days.

Exemplars 05, 06

Exemplar 06 /
circle 14

Yet, compared with the more and more refined drawings from event to event by the hosting architects at the Design Dialogue events, the purpose and ‘overall frame’ of doing them were very different – and this influenced the *materializing* in the situation. In the ‘design dialogues’ the different stakeholders were seriously engaging and imagining their own future in these environments, and the overall economic/implementation-frame, also pushed these architects to deliver drawings very soon after the last event of the negotiated proposal to be implemented, build and ready to move into within a few months.

Exemplar 05

Chapter 6

On the other hand, in the WorkSpace-project, as well as in the Atelier Disappearing-computer project, ‘demonstrators’ explored with relevant ‘users’, which (the Future Architects’ Lab was an example) were good enough as proof-of-concept and thus good enough to prove academic points (within the encompassing research-frame).

Appendix 01

Appendix 02

Exemplar 06

Related to this, Turner argues, that there are many modes or ways of externalizing frames. Turner e.g. mentions: using a special vocabulary; using common speech in uncommon ways; using metaphors; creating fictive portraits of situations and characters (often based on real world everyday experiences of people and problems); emphasizing ultimate and fundamental concerns or ethics (these are often what Turner would call ‘ritual’ frames); and by opening up for playfulness (what Turner would call ‘play’ frames) (Turner and Turner, 1986 / in Bial, 2007:324).

With the aim of both understanding and staging materiality in co-designing, as a part of drawing things or materials and people together at a co-design event and in a project, I surely acknowledge that the ‘verbal reference’ of externalizing and establishing ‘frames’, which Turner especially emphasizes, are important talk-materials as I have identified with Schön.

Chapter 1

Yet, I have also found that various (not only talk but also physical non-human) materials are engaged in doing this. As I have explored in Chapter 6, I am interested in how materials seem to help or challenge participants in getting immersed and engaged in a ‘play or explorative’-frame and/or ‘experimental’-frame at the co-design event and situation.

Chapter 6

Chapter 4	As I am, in a sense, addressing this throughout the thesis, very briefly listed, again across the different co-design projects and events included in this thesis, I have found the following non-humans participating in this:
Chapter 2	– The approved project description e.g. including descriptions of how it has been negotiated and accepted to practically work and collaborate in the project.
Chapters 1, 8	– The (verbally or written, often emailed) invitation to participate at an event e.g. called a ‘workshop’.
Chapters 3, 5	– The <i>agenda</i> e.g. specifying overall time sequences and when to address which topics.
Chapter 5 / Part C / Introduction	– The <i>physical location</i> of the event e.g. depending on the flexibility of the interiors.
Chapter 8	– The materials participating in starting (<i>warming up</i> at) the co-design event.
Chapters 1, 5, 6, 8, 9	– The assemblage of various delegated materials engaged in setting the scene for and invited into the actual co-designing as <i>materializing</i> and <i>rematerializing</i> .
Chapter 8	– The materials participating in staging and ending (<i>cooling down</i> at) the co-design event.
Chapters 2, 3, 6, 9	– As well as the more or less specified intended outcomes of the event and project e.g. <i>materialized</i> and <i>rematerialized</i> issues and concerns, new or refined ideas, a prototype, a new question, etc.

As this list displays, in practice, the partly abstract concept of *frames*, can be understood as intertwining in most of what happens in the situated (staging of) co-designing practice.

To summarize, as an additional concept to Schön’s (co-) design characteristic of ‘framing’ and ‘reframing’ problematic situations to attend to (here characterized as content), I have added the concept of ‘frame’ as used within PS. The reason is to further capture and understand the moods, mindsets and structures surrounding the situated co-designing action/performance. Mainly with Victor and Edie Turner I have acknowledged situated e.g. ritual-, play- and political-frames, and I have especially emphasized what they call the ‘encompassing frame’ of a performance/event.

Chapter 6	I have found that the ‘overall encompassing project frames’ such a ‘research-, ‘pedagogical-teaching’ and ‘economy / implementation’-frame, which can characterize the different co-design projects discussed in this thesis, is overarching and intertwined in many of the non-humans participating in the project, and thus also influences the situated doing and materializing. In multidisciplinary teams, different stakeholders have different interests or focus mainly on some ‘frames’, and therefore, I recommend to project and event organizers to acknowledge and be explicit about their views of the important ‘project frames’ e.g. by intertwining them with the non-human materials participating in the co-design project, event and situation.
Foreword: Program	
Chapters 2, 4	

Views of materiality and ‘props’ (in performance studies)

With a main focus on understanding what the transformative processes

of performance, performativity, performing are, materiality is not at the forefront of performance studies research (PS). Still as this Part C shows, I clearly find concepts and views from PS fruitful additions for an understanding of co-designing as performing, but – at least in their choices of words – generally most PS authors do not particularly emphasize the interaction with and participation of materials as a part of performing, which I have argued for in Parts A and B. Here are a few examples from their vocabulary – especially ‘props’.

Parts A, B

Generally within PS, terms such as ‘scene’ and ‘props’ are common, and generally the (material) ‘scene’ or ‘setting’ is considered an inseparable part of a performance, whereas other material (non-human actors) are often described broadly with the term ‘props’ (e.g. Turner & Turner, 1986 / in Bial, 2007: 334). As mentioned, inspired by theatrical concepts, Brandt and Gunnet, have proposed using the term ‘props’ instead of ‘representation’ in user-centered design (Brandt and Grunnet, 2000). However, to generally use terms such as ‘representation’ or ‘boundary object’¹⁰⁹, or now the overall term ‘props’, to capture the main participating materials in a performative event and situation, I do not find particularly fruitful. This is because such overall generalizations do not really capture the different details and roles, which in my view are extremely important to be aware of, delegate and (co-) design when practically aiming for understanding and staging performing with materials in co-designing.

Chapter 4

Chapter 2

Chapter 5, 6

Roles of materials are mentioned and extended by some PS authors. As a part of preparing for their ‘ethnographic performances’, Victor and Edie Turner briefly describe how they and their anthropological students and colleagues were personally and collaboratively preparing by making costumes, masks, sceneries as well as drinks and snacks for the actual event in the basement of their house e.g. of performing a previously observed marriage as a part of their ethnographic understanding (Turner & Turner, 1986 / in Bial, 2007: 334). Even though they do not spend much more than a few lines in their text on this, it seems that they did find these activities very important as a part of getting into the coming performance.

Also, Schechner briefly calls masks ‘...second being who interact with the human actors’, and he continues, ‘These performing objects are suffused with a life force capable of transforming those who play with and through them’ (Schechner, 2006:203). Despite this acknowledgement, the main focuses of Turner and Schechner’s work are not on these ‘performing objects’.

Yet, other PS researchers do have a more material focus, such as Mary Zimmerman who emphasizes the interplay between herself and other people, initial inspirational texts (poets, novels, back-cover texts, etc.), the material design of the set, and the (in her case – initially fluid) script. In her story, they are all playing central roles in the pre-production and rehearsal processes of setting up a performance (Zimmerman, 2005 / in Bial, 2007:310-319).

.....

¹⁰⁹ Quite commonly used e.g. in participatory design / Chapter 2.

Parts A, B **To summarize**, apart from the material setting or scene in PS considered as an inseparable part of a performative (co-design) event, tangible materials generally characterized as ‘props’, and more broadly materiality, do not have the most prominent role within PS. Still, some authors, such as Mary Zimmerman does in her writing, exemplify and acknowledge such relations. Despite these different priorities in the writing, with the fundamental view that we are performing through our embodied engagement with the (material) world, I accept these differences. With my broad views of materiality established in Parts A and B, I will continue to argue that materials play different roles and participate in setting the scene in the situation for which performing takes place. Throughout this Part C I will therefore continue to keep my focus on various materials in the explorations of co-designing as performing.

Formats and formatting as ‘scores’

I continually argue throughout this thesis, that *formats*, are important materials in the complex assemblage assisting in *staging* and *formatting* co-designing. One of the topics Richard Schechner has pointed out as central within PS, is understanding and grasping how performances are ‘...staged in a focused manner...’, and in his writing he shows and discusses ‘scores’ as examples of doing this (Schechner, 2006:225).

Appendix 05 **‘...Staged in a focused manner...’ can be understood in various ways in relation to co-designing.** In the DAIM-project we argued for open co-design processes. However, ‘openness’ as a premise for explorative co-design event, should not be (mis)understood as not making any plans and preparations for what to do during co-design events. Rather it is a balance staging collaboration, so it plays out in a focused yet open, experimental and explorative manner.

Chapters 2, 3, 5

The concept of formats and formatting, in many ways resembles what Richard Schechner inspired by others calls ‘scores’ (Schechner, 2006:234). The performance network, Fluxus, started creating what now is considered classic Fluxus-‘scores’ in the 1960s. They are brief written descriptions proposing a way to act, provoking a laugh or...whatever people make of them (Friedman et al., 2002).

Lawrence and Anna Halprin and Jim Burns have also inspired Schechner’s use of the term ‘score’. According to Schechner, in the mid 1970s these three collaborators developed what they called a participatory, cyclical ‘RSVP Cycles’ process for collective, creative workshops (Schechner, 2006:234). ‘Scores’ were a part of it, and they apparently both viewed it as a theory and a technique for workshop processes. As Schechner describes it – RSVP stands for:

Parts A, B **‘R’ is short for ‘Resources’** capturing all the subjective and objective materials used in the creative process. These include space, people, money, things, etc. and objectives, feelings, fantasies, open and hidden agendas, etc. related to what I quite similarly and broadly capture as *materials* and *materiality* (and stakeholders).

‘S’ is short for ‘Scores’ capturing scenarios, instructions, plans. Scores can be either open or closed. A closed score controls the action; an open score allows for a variety of options –Related to *formats*, *formatting* and *staging* in this thesis.

Chapters 1, 5, 6 /
Part C / Introduction

‘V’ is short for ‘Valuation’ capturing situations in which the group considers feedback about the ongoing creative process. Here scores are revised on the basis of feedback. Halprin and Burns coined the term ‘valuation’ to emphasize the action aspect of the feedback. Scores are revised not only by talking about what happened but by means of new actions, related to what I propose as co-designing processes of *rematerializing*.

Chapters 6, 9

‘P’ is short for ‘Performance’ capturing the most optimal outcome possible using the scores within the given circumstances (ibid:234 / Schechner, 1988:46-47).

Surely, this is an interesting cycle capturing views similar to mine about ‘resources’ and ‘valuation’ but it is the description of ‘score’ that I want to highlight here, as it clearly relates to the concept of *formats* emphasized throughout this thesis

Chapters 5, 6

In his practical work, Schechner has developed and used scores such as the ‘razaboxes’. When he is organizing (or staging) ‘Proto-performance’ workshops, Schechner has developed constrained ways of practically experimenting and exploring, and a score he uses is the ‘razaboxes’ exercise (Schechner, 2006:233-234). In the razaboxes exercise nine squares are marked on the floor with light-colored tape. These squares on the floor could potentially be used for many different activities, but as a part of the raza-boxes exercise, Schechner had planned each box to correspond with a pre-defined and explicitly named emotion. When performing, each pre-defined emotion is engaged in shaping the action and/or interaction of (human) actors, but again what each actor makes of this quite open setup, is very individual and special every time the exercise is made, he claims.

Chapter 8

This is a quite clear example of an assemblage of material *formats* (physical, spatial, verbal) together setting some rules or constraints for the collaborative exploration – in this case of expressing emotions. To repeat, my description of *formats* from Part B, as the raza-boxes example also shows, for the material *format(s)* (e.g. the squares on the floor) to make sense in use in the situation, they need quite explicit staging and formatting to be combined with a previously specified intension (e.g. explore expression emotions) and focus (e.g. nine different pre-named emotions).¹¹⁰

Chapters 5, 6

.....

¹¹⁰ As discussed in Chapter 5, if this delegation of roles to the non-human formats has not been done beforehand – then chances of a discussion about what to do and how to do it are very likely to arise. This is a very different possibly critical and full-of-methodological-negotiation-situations (or frames), which is different from collaboratively exploring and experimenting (see section on Frames above).

Similar to how I have proposed it, Brendon Clark also uses the term ‘format’ (Clark, 2007). He uses it to capture the rules, physical materials (or what he calls artefacts), comments and questions both by participants and the ‘facilitator in a workshop’. To him, all together the format is working as a structural guide for the interaction (ibid:112). In different situations during ‘a workshop’, he explains how there was one format for collaborating in the groups – in his example they were working with ‘A-frame’-cards as the format, and then there was another format for the performance of presenting. With these specified formats, Clark observed that during the event there were no discussions of the rules of the activity, but that the stakeholders participating stayed focused on exploring the content, viewing it from new perspectives and not least preparing and rehearsed their arguments for what Clark calls ‘the delivery of the content’ in the final presentation (ibid:112). However, Clark uses the term at a more overall level, as a score, but without going into the details of distinguishing between the different materials in the complex assemblage – for example between *delegated formats* and *content materials* – which I continue to propose.

To summarize, within PS, inspired by others, Richard Schechner has suggested ‘scores’ to be a way of staging explorative collaboration during ‘workshops’. This is one example of what he means by ‘...staged in a focused manner...’ (Schechner, 2006:225) - ‘scores’ I largely view as similar to what I in Part B called *formats* and *formatting*; and to repeat, scores or *formats* are in my view very important materials to acknowledge, delegate and (co-) design as event organizers, as they no matter the term can assist in ‘setting the scene’ for co-designing. Still, instead of changing to the performative concept and term ‘scores’, as Brendon Clark has done, I continue to use the concept/name of *formats* and *formatting*.

Summary / Chapter 7

In this chapter, in addition to the Part C / Introduction, I have briefly laid out other core performative views and concepts of performance studies (PS) research. Further I have acknowledged the work of other co-design researchers (and colleagues), who already have applied performance studies perspectives for understanding co-designing practices. Part C / Introduction

Without a strong focus (in the writing) about materiality, the main PS views and concepts discussed are generally considering interaction as performance, viewing co-design events as ‘ritual performances’, acknowledging and staging the middle ‘liminal’ period of transition processes / events, recognizing the situated and staged interplay between ‘ritual’ and ‘play’ of performing – also at co-design events - and acknowledging and emphasizing materially staging in relation to overall encompassing and situated frames of performing.

Additionally, I have opposed using the term ‘props’ about non-human materials in co-designing, and related the concept of *formats* to the practice in PS of working with ‘scores’.

The above are views and concepts that I, in the remainder of this Part C, refer to and apply in my analysis and explorations of understanding co-designing as (*staging and formatting of*) performance processes.

Chapter 8 / Co-designing as Performative Processes

*With Richard Schechner's views of
time-space sequences*

Chapter 2
Chapters 6, 9
Foreword: Program

As most stakeholders in distributed projects are physically present during the project co-design events, the collaborative processes of *materializing* and *rematerializing* during these events often gain much value, as these collaborative experiences also tend to help foster engagement and ownership of the project. To repeat from the Foreword: Program, this is the main reason why I made the constraint in this thesis to mainly focus on co-design events.

Part B / Introduction
Part C / Introduction

Of course, during longer co-design projects, I am fully aware, that all the (explorative) *materializing* does not only happen during the quite explicitly scheduled and staged (frontstage) co-design events, but also (often less scheduled and staged) in between the co-design events – throughout the long co-design process. I clearly acknowledge that a lot of *materializing* and many decisions are made (backstage) before, after and in between events. Still, co-design events have a prominent role, and in this chapter, as yet an alternative to understanding co-designing as ‘methods’, I explore structures of and around co-design events.

In his work of aiming to grasp performances, Richard Schechner has suggested that it is important to understand: ‘...how performances are generated, how they are staged in a focused manner, how they are nested within larger events, and what their long term effects are’ (Schechner, 2006:225).

In this chapter, with his suggested time-space sequence framework for understanding performance processes, I will be exploring how co-design events (viewed as performances) can be understood in these ways. More specifically, co-design events will be related to Schechner’s concepts of ‘proto-performance (proto-p.) › performance › aftermath’, as well as the performance being composed of ‘warm-up’, the ‘actual performance’ and ‘cooldown’.

Performance processes – Richard Schechner’s view

One of Schechner’s practice-oriented concepts for understanding how performances are generated and staged in a focused manner is his ten-part view on performance processes, also called a ‘time-space sequence’.

Of course, it is important to keep in mind that apart from being a researcher, Schechner is also still an active practitioner directing public performances. The structure of performance processes that he proposes, relates to his practice of doing public artistic performances before and/or with an audience; yet, he does emphasize that the structure can also be used for both understanding and setting up other types of performances.

Schechner views the performance process as a ‘time-space sequence’

Generally, he proposes performance processes to be divided into three main activities further split up into ten different parts.¹¹¹ He calls them:

- Proto-performance (proto-p.)** 1. training 2. workshop 3. rehearsal
Performance 4. warm-up 5. public performance 6. events/contexts sustaining the public performance 7. cooldown
Aftermath 8. critical responses 9. archives 10. memories (ibid:225)¹¹²

As a way of understanding (co-) designing processes, this focus on time-space sequence, is yet an additional alternative to ‘only’ understanding (co-) designing as methods. A design method focus could be understood more as a time-logic process –towards a product more than a focus on process. Interaction design is generally concerned with and focuses on (user) experience and relations in time and space (e.g. Buxton, 2007 / Mazé, 2007 / Jacucci, 2004). Therefore, with this general focus on time-space, methodologically, in a sense, it is in an odd why that this field largely has borrowed ‘methods’ from more product-oriented design disciplines.

P&A
Part B / Introduction

P&A

Anyway, back to Schechner’s ten parts of performance processes:

.....

¹¹¹ In 1992, Schechner first published this framework, but then it was only composed of the following seven parts: training, workshop, rehearsal, warm-up, performance, cool-down and aftermath (Schechner, 1992). This Clark has related to in his analysis of socio-political navigations around co-design projects (Clark, 2007) – see Chapter 7.

¹¹² Schechner clearly emphasizes that this framework should not be viewed as a ‘prescriptive straitjacket’, but as an aid for understanding and grasping performances (Schechner, 2006:225).

Box:

Schechner's ten-part performance process

In the list above, parts 1, 2, 3, 4, 5 and partly 7 can be viewed as activities or situations with a time-wise quite clear beginning and ending, whereas 6, 8, 9 and 10 in principle can be extended in content and can last indefinitely (Schechner, 2006;225). In my words, briefly Schechner views the different parts like this:

To Schechner, the following three are considered parts of what he phrases the proto-performance (proto-p.): 'training' (1) is mainly about practicing skills; 'workshop' (2) is mainly about exploring and experimenting with various approaches and ideas; and 'rehearsal' (3) is mainly about planning, preparing and practicing a coming performance.

Then, as a part of the actual performance: 'warm-up' (4) is mainly about leaving the everyday getting in the mood (and sometimes into the role) for the performance – this can happen both privately and publicly; 'public performance' (5) is the 'real', actual process of performing (in my examples e.g. process of *materializing* and *rematerializing*); and as the last quite clearly time-constrained activity, 'cooldown' (7) is mainly about immediate (critical and/or positive) reactions and reflections of what has just been experienced and about returning to oneself and everyday life – the opposite of the warm-up.

The part 'events/contexts sustaining the public performance' (6) is of another kind, as it is about reminding us to apply a holistic view of understanding and viewing the performance in relation to the larger network of events and contexts that it is unavoidably a part of. (However, it is not the main focus in this part of the thesis, so in the following section I will not treat this as a separate time-space sequence, but use it as a reminder to still have the holistic view on the specific examples I discuss).

The last three parts of the aftermath I read like this: 'Critical responses' (8) is to Schechner about the public reviews and critics e.g. in newspapers as well as word-of-mouth comments and feedback – this is typically most intense shortly after the actual performance and a part of what Schechner coins the 'short-term aftermath'; 'archives' (9) is mainly about the different self-generated and public documentations of the performance like photos, videos, booklets, the reviews, notes, etc. etc., which are stored about the event (of course, to me a highly relevant part as these often have material characters, and are used to help evoke and recall what happened) –parts of the long-term aftermath; and to Schechner lastly 'memories' (10) is about the personal and collective emotional and experience-based memories about the event. Schechner comments that even memories of performances tend to fade away quite quickly.

To summarize, Schechner emphasizes that performances are temporal and can be hard to grasp, so as mentioned, this should be viewed as a means to help understand different parts of a whole time-space performance process. He acknowledges that a performance process often is a lot more complex than this, for example when several of the parts are performed during the same instance or situation, and when ‘a group may collectively devise or enact all of the processes’ (ibid:225). – This makes a better fit with co-design processes.

In the following explorations of relating Schechner’s performance structure with my exemplary co-design events, I will briefly start with (materiality of) proto-p., before I more extensively explore the time-constrained parts of the actual performance: warm-up, performance and cooldown.

Proto-performance (of co-design events)

What Schechner calls proto-performance (proto-p.), captures the period prior to the actual performance / the co-design event, and materials play a role here too. During the proto-p. event, organizers often plan and prepare the coming co-design event, which is an important part and includes the gather of core ‘materials’ of being a co-designer.

Yet, for these preparations to not only happen quite secretly (backstage) among event organizers, as I will show in Exemplars 03 and 06, other stakeholder can also participate in preparing *content materials* for a co-design event.

Part C/ Introduction
Exemplars 03, 06

As soon as stakeholders have been invited to a co-design event, more or less explicitly their proto-p. starts. Stakeholders are often busy people too, but as in everyday life, ownership and engagement is often tied to material things. With a similar view of co-design projects as a very hands-on concept, this practice of preparing materials can in addition help create engagement and ownership of the co-design project and event.

Roughly this resembles what Sleeswijk, Sanders and colleagues call ‘sensitization’, in a process of working with ‘contextmapping’ (Sleeswijk et al., 2005). To them, typically this is staged with a ‘sensitizing package’ of exercises, and to ‘sensitize’ means for participants to individually prepare, be triggered and motivated for co-design situations, through previously exploring and reflecting upon one’s own personal context for several days or weeks. This also overlaps engaging with ‘probes’ (e.g. Mattelmäki, 2006).

P&A

Prior to the Kick-off event, in an email, all stakeholders were asked to ‘bring three things’ (on the way to the trash bin, new uses, or?), which everyone did. These *content materials* fruitfully fed into and participated in the first explorative co-design situation of the project: ‘*Things on their way*’, (where they merged with the pre-designed physical *formats* prepared by the event organizers).

Exemplar 03 /
circle 01

Exemplar 03 /
circles 03-05

Chapters 5, 6

- Exemplar 06 / circles 03 Likewise, for the Future Architects' Lab, the landscape architects engaged in pre-workshops and received an envelope of materials making them able to start their 'real' job of making a proposal for a re-design of the courtyard prior to the actual event. At the event, their pre-designed materials were intertwined in the first situation '*Presentations & introductions*', in a way assisting the architects in moving from their common practices and commonly used architectural materials (hand-sketched site analysis and moodboards / in 2002), to start exploring with the new materials (e.g. technologies) available in this future 'Design studio of 2008'.
- Exemplar 06 / circles 04
- Chapters 6, 9
Exemplar 06 **This relates to what is materialized and rematerialized at a co-design event**, which often plays a role in the aftermath of that event. Yet, as I have also shown with the Design Dialogue event series, the aftermath of one event is the proto-p. of the next in the series of events in a co-design project. In other words, the materials of the proto-p., and who prepares them, are just as important as the materials of the aftermath.¹¹³ Lastly, such proto-p. preparations by stakeholders, in a sense also work as individual (Exemplar 03) and collaborative (Exemplar 06) warm-ups of the event, starting several days or weeks prior to the actual event.
- Exemplar 03
Exemplar 06

To summarize, materials play important roles in the proto-p. of a co-design event. They participate with event organizers in planning and preparing the *staging* and *formatting* of the coming co-design event, which is an important part and core 'materials' of being a co-designer. However, in this section I have also suggested that other stakeholders fruitfully can prepare e.g. *content materials*, to assist them in engaging in the project and event also prior to it actually happening.

Warm-up, Performance and Cooldown of Co-design Events

In the following subsections from various angles I will explore the performance (after the proto-p. and before the aftermath) of the three-step performance sequence, and propose the three sequences of *warm-up*, *performance* and *cooldown*, as a fruitful, overall structure for understanding and staging co-design events and situations.

- All Exemplars Looking at the agendas of all the Exemplars, they started with a slot called something as 'Presentations and introductions' or 'Welcome'. These are time-space sequences, which could be viewed as *collaborative warm-up* where everyone briefly introduced themselves, where the proposed schedule of the day was explained by one of the organizers and where one of the organizers also made a brief introduction to the theme(s) and focus(es) of the event.

.....

¹¹³ I do not specifically address the aftermath in this chapter, as it has its own Chapter 9.

Likewise, in all the Exemplars, the events ended with a more or less formalized *collaborative cooldown*. During Per:form, there was first a half hour slot (14:30-15:00) called ‘Individual Video Reflections of experiences’ for everyone to video-record their personal story of what had just happened, followed by a two-hour slot called ‘Debriefing and Post-Reflections in plenum’. This took about 1/3 of the day, whereas during the three Design Dialogue-events, they ended with 10-15 minutes left for immediate questions and comments after the round of group-presentations. This is considered the formal cooldown, with that specific time for looking back and reflecting-on-actions that just had taken place; this differed a lot between these two events.

Exemplar 04 /
circles 09, 10

Exemplar 05 /
circles 08, 13

Chapter 1

In between these often *collaborative warm-up* and *collaborative cooldown* sequences at co-design events, is the *actual (middle) ‘liminal’ performance* – to intertwine Victor Turner’s ritual concept as Schechner also does.

Chapter 7

Related to this, Maria Foverskov and Thomas Binder (colleagues in the DAIM project) have also briefly proposed Schechner’s overall three-step structure (proto-p., performance, aftermath) as a relevant structure for understanding co-design events (Foverskov and Binder, 2009). As they argue, I agree that the actual performance of co-designing is when issues, scenarios, proposals, etc. are collaboratively being explored, negotiated, co-designed and somehow captured. At an overall level, this liminal and (playful and explorative) phase or sequence happens at the middle of the event, and typically also is mainly where engaging with various (new) materials occurs. However, instead of viewing the beginning of an event as warm-up they call this proto-performance (which they also recognize as including the one month project prior to the event), and instead of viewing the ending of the event as cooldown, they call it aftermath.

Appendix 05

Chapters 5, 6, 7, 9

To summarize, I stick to Schechner’s ten-part sequence including warm-up and cooldown, but despite the choices of words, also building upon Joachim Halse’s views, again as an alternative to applying ‘methods’, with these colleagues, generally I recommend viewing and staging for co-design events as performances with an overall structure of a beginning (*collaborative warm-up*), middle (*actual performance*) and ending (*collaborative cooldown*).

Chapter 7

Co-Design events and situations ‘staged in a focused manner’

One of the main parts making co-design events different from the everyday practice of co-designing is that the event – and often every situation – is quite explicitly planned and ‘staged in a focused manner’, again as Schechner has phrased it (Schechner, 2006;225). With the overall structure of ‘warm-up’, ‘actual performance’ and ‘cooldown’, in this section I will further explore how this is practically and materially staged.

The (middle) ‘liminal’ performance sequence of co-design events is composed (and staged) as a series of what I call quite explicitly staged *co-design situations* – a series, which often is structured and timed quite clearly by a pre-written *agenda*. Of course, as Lucy Suchman has pointed out, the plans made before actual situated actions never fully prescribe what happens in the specific situations – luckily – because the stakeholders engaged in co-

Chapter 7

Chapters 1, 3

Chapter 5

Chapter 3

All Exemplars	designing have not rehearsed their roles and quotes explicitly beforehand, but generally because something always arises in the unique situation that has not been predicted. Anyway, at all the events I report from, we did have explicit plans captured in an agenda (and many other materials prepared beforehand by the event organizers, and such agendas are at an overall level structuring or staging what takes place. At most of the exemplary co-design events this was not changed dramatically at the actual events.
All Exemplars	Looking across the Exemplars , the (middle) exploratory performance during these co-design events roughly followed the agenda, but were staged differently and the performing also differed. During the middle sequence of Per:form, there were three main situations of <i>collaborative materializing</i> : The ‘Silent Brainstorming’ (10:45-11:45), the ‘Mapping/organizing all proposals’ (11:45-12:30) and – after lunch – the ‘Silent decision of which concept to detail › Manufacturing the chosen concept’ (13:15-14:30).
Exemplar 04 / Agenda	
Exemplar 05 / circles 05, 06, 12	During all three Design Dialogue-events, after the quite similarly staged (but in the situation quite different) ‘warm-ups’, these events mainly contained one (about) two-hour <i>co-design situation</i> called ‘design game’ or ‘dialogue’. This was where temporary groups were exploring the current version of (future) floor plans made beforehand by the hosting architects.
Exemplar 06 / Agenda / circles 04-14	Again, and differently, during the two-days Future Architects’ Laboratory, similar to the slots in the <i>agenda</i> , at this event there were all together a series of eight main situations of co-designing. As it shows in that <i>agenda</i> , each situation was staged and focused around a previously specified scenario, a previously specified indoor or outdoor physical place, a previously created list of participants and a set of previously specified technologies.
Chapters 5, 6, 9 / Part C / Introduction	In these three different exemplary event sequences or structures, changing from one kind of co-design situation to another was quite clear as it roughly followed the structure outlined in the written and timed agendas and also (mostly) involved changing or re-arranging the material setting, roles, formats, etc.
Chapter 5	To summarize , with Lucy Suchman, I still acknowledge that plans are not like the situated actions; by briefly studying the agendas of three of the exemplary events, I have shown how these pre-defined time-space sequences largely also were what was performed at the actual events. In other words, these agendas can be seen as one of the participating materials in the assemblage assisting in staging a co-design event in a focused manner.
Chapter 6	Co-design situation warm-up and cooldown From the various exemplary co-design situations I have studied, I have found quite explicit <i>staging</i> and <i>formatting</i> as important to assist transitions of changing from one situation with one overall (planned) focus and intension to the next often with a (slightly) different overall focus and intension.
	At some events, the situations of co-designing are merging in a flow, while they at other events are more separated. Still, when one co-design situa-

tion is ending and another beginning, very often the process of *materializing* is changing. To get closer at these changes, in this section I propose to also apply the practical performative concepts of *warm-up* and *cooldown* to every co-design situation with its specific overall (by the event organizers' planned) focus and intension.

Chapter 6

The three main co-design situations during the Per:form event, all the different planned scenario-situations during the Future Architects' Laboratory, and the approximately two-hour group-work or 'design dialogues' during the Design Dialogue-events, all had more or less explicit structures of *situation warm-up*, *explorative performance* and *situation cooldown*.

Exemplar 04

Exemplar 06

Exemplar 05

All Exemplar /

Agendas

As an example the details of the 'Design Dialogues' happened roughly like this: The beginning – or *collaborative situation warm-up* – of the 'design dialogue' started in plenum. During the first event, 'Workshop 1', directly following an inspirational slideshow, here the hosting architects, assisted by projected slides and a set of their prepared and pre-designed physical materials (board with floor-plans and box with small pieces), briefly explained how and what to do in the groups during the coming approximately two hours.

Exemplar 05 /

circle 04

Additionally, the five different groups were created by randomly counting among the participants from each department, and it was practically explained that there was no break planned, but they were just expected to bring the available drinks and sandwiches to the group-work. The architect asked if there were any questions of what to do. People started getting up, and suddenly a lot of movements – the *collaborative warm-up* for the 'design dialogue' had come to an end. Two in the group I followed brought the map and other materials to the table, where this group decided to sit, and they each brought a sandwich and drinks. While still standing, eating and briefly introducing themselves to one another, they started leaning over the board placed in the middle of the table, and immediately started their dialogue.

Exemplar 05 /

circle 05

In this group, one started by repeating and reading out loudly the different questions printed by the architects in the upper right corner of the board, and another said, "What does this color-coding mean...?" Collaboratively they were starting to understand the information on the map, and they were trying to figure out how to read the map to make sure they were referring to the right places. These different activities could be viewed as still *collaboratively warming up* in the group, but it intertwined with the beginning of co-designing as *materializing* (the actual performance). As shown in the Exemplar, the dialogue of discussing and imagining what their shared future would be like in these environments continued and continued.

Exemplar 05 /

circle 05

Chapter 6

Part C / Introduction

First, when one of the architects came by and said they should make a presentation in ten minutes, then everyone got up, one opened the box with little foam pieces, and in different areas of the board, in parallel, they glued on selected pieces to merge and mark their different wishes and proposals. Even though they were in a hurry, they were collaboratively cooling down in the co-design situation and preparing for the following presentation in plenum.

Exemplar 05 /

circle 07

Exemplar 05 /

circle 08

Chapters 1, 6 By the explicit guidance of the architects and partly implicitly by the participants in the ‘design dialogue’ the situation had been smoothly divided into a collaborative warm-up of practically understanding what to do and settling in, intertwining into collaborative explorations (as *materializing* mainly with the drawings and talk as materials in the situation). Then probably provoked by the 10-minute time constraint, a quick process of
Chapters 6, 9 further *materializing/rematerializing* occurred by literally gluing their shared and individual wishes and proposals onto the map, which also can be understood as a short collaborative situation cool-down process.

Chapter 7 **To summarize**, viewing a whole co-design event as a performance with its opening *warm-up* and closing (reflective) *cooldown*, as Foverskov and Binder also suggested, is an important insight for understanding how stakeholders act during co-design events e.g. if they are in the mindset or frame of warm-up, exploration or reflective cooldown. Adding to this, I have argued that there are also elements of *warm-up* and *cooldown* in the different quite explicitly staged co-design situations within the (middle) ‘liminal’ performance of co-design events. These overall views make me understand – and propose – these as an overall quite generic but useful sequence or structure of co-design events.

In addition to Schechner’s overall sequence (of co-design events), in this section I have also suggested to view – and acknowledge when practically staging – that *co-design situations* (or series of situations) also have a *warm-up*, *actual performance* and *cooldown* sequence.

Breaks sometimes cause cooling down

Chapter 7 Combining Turner’s understanding of *frames*, with this sequence of *warm-up*, *performance* and *cooldown*, I will also briefly explore how breaks can be considered as possibly challenging the explorative frame or mindset of the event.

Appendix 05 During none of the co-design events captured in Exemplar 04, 05 and 06 did we actually schedule 15-minute coffee-breaks, so there (to keep the levels of blood-sugar up) people had coffee and other refreshments as they pleased along the way. During these full-day events we only had about one-hour lunch breaks. Yet, breaks are a quite typical activity during co-design events, which we usually scheduled during the DAIM project.

Chapter 7 **Why bother with the breaks?** Because, in one view this ‘free time’ is used for a variety of activities possibly pulling attention away from the exploratory workshop-frame and engagement with the invited (having) materials. Depending on how well people know each other already, apart from going to the toilet and having a cup of coffee, breaks are often used for individually talking on the phone or checking something on the computer, talking about what just happened or what is going to happen, or about more personal topics such as “How are you doing – are you busy at the moment?” or “How are your kids?” During a break, when individuals or a group attend to or talk about completely different issues or start reflecting upon what has just happened, they are likely to get into a different mindset

Part B / Introduction

e.g. than the exploratory frame (which I at least encourage establishing during the middle actual performance of co-design events).

Chapters 6, 7

This cannot be avoided. The informal dialogues and networking during breaks are of great importance for building personal relations in projects running for longer periods of time; however, with Schechner’s performative perspective, breaks contain elements of cooldown (e.g. immediate reflective reactions or jumping to everyday life through the question “How are your kids?”). This might be fine if the next collaborative situation is of a more reflective (cooldown) character, and it might be fine to return with somewhat fresh eyes, but if the participants are intended to continue with explorative *materializing*, a new short collaborative warm-up for the next co-design situation might be needed, to overcome responses in groups like “Ehh, where were we?” or “What is it we are going to do now?”

During Per:form when everyone was back in the studio after lunch, I very briefly refreshed what was now going to happen during the coming approximately one hour and fifteen minutes of ‘Building one shared proposal’. I introduced the one new material part that had to be engaged (a 40 x 40 cm white foam board) and again during that particular event, silence was called – which also meant that this last situation of really co-designing, one shared proposal was beginning. There was no other *collaborative warm-up* for getting back into the explorative and experimental frame, and personally some seemed to spend more time warming up again than others.

Exemplar 04 /
circle 08

Exemplar 05 /
circle 08

To summarize, I have briefly addressed how breaks during co-design events have elements of *cooldown*, and suggest that after a break, when starting the following co-design situation there should be a new period of warming-up for getting back into the desired collaborative frame or mind-set – whether this is exploratory and experimental or more reflective.

The actual performance at co-design events – Intertwining Schechner’s experimental ‘workshop’ and practicing ‘rehearsal’

Co-design events and co-design situations are, of course, more complex than only having a clear sequence of warm-up, performance and cooldown. Rather, they are often merging or intertwining practices of exploring (Schechner’s ‘workshop’), practicing (Schechner’s ‘rehearsal’), performing (Schechner’s ‘public performance’) and reflecting (Schechner’s ‘cooldown’ and ‘aftermath’). In the following section, an exploration of how the processes of Schechner’s ‘workshop’ and ‘rehearsal’ can be viewed as intertwining.

See Box above

See Box above

Within PD, while ‘participatory workshops’ often are viewed as central events during co-design projects and processes, Schechner’s positioning of ‘workshop’ as a part of proto-performance can cause some confusion in

Foreword: Program
/ Chapter 2

relation to understanding co-design processes, so first here is a more detailed understanding of how he views the sequence ‘workshop’.

In Schechner’s view ‘workshops’ are sequences of experimentation, exploration and exchange – or what he calls ‘active research’ mainly looking towards ‘the new’ (Schechner, 2006:233-234). Workshops are, in his view, where possibilities are explored e.g. sometimes processes, sometimes techniques, sometimes ideas, sometimes existing practices, etc.

He also pinpoints how explorations often are done collaboratively, by bringing persons from different cultures and/or genres together. Further he states: “What qualifies....activities to be called workshops is that they are used to “open people up” to new experiences, helping them recognize and develop their possibilities (...) both personally and artistically” (ibid:234).

These exploratory and experimental characteristics are very much in line with how I – mostly in collaboration with others – at an overall level have intended to organize and stage the co-design events (or ‘workshops’) I have been engaged in (e.g. Eriksen, 2009 / Halse et al., 2010 / Binder et al., 2011). In various documents, proceeding the Future Architects’ Laboratory, the word ‘experimentation’ was explicitly mentioned both to capture some of our preparations and the kind of co-designing we would like to happen during the actual event. Likewise in the open, widely distributed call for the Per:form event, it was also clearly stated that the participants were invited to take part in collaborative experimentation.

Exemplar 06 /
Introduction /
circle 01

Exemplar 03 /
Introduction /
Appendix 04

However, during these exemplary events, we were not only experimenting and opening up, but we were also exploring proposals for possible futures – e.g. by *materializing* different issues, scenarios, stages, etc. Brendon Clark describes how Schechner, through relating to Victor Turner’s three-phase process of rituals, actually does view the two parts consisting of workshop and rehearsal together (Clark, 2007:57). In his book *Between Theatre and Anthropology*, Schechner described the relationship between these two parts like this:

Chapter 7

‘Workshop is a deconstruction process, where the ready-mades of culture (accepted ways of using the body, accepted texts, accepted feelings) are broken down and prepared to be “inscribed” upon (to use Turner’s word).

Workshop is analogous to the liminal-transitional phase of rituals. Rehearsals are the opposite of workshops. In rehearsals, longer and longer strips of restored behaviour are arranged to make a new unified whole: the performance’ (Schechner, 1985:99).

That workshop – understood as deconstructing or experimenting with current practices – is viewed as the transitional ‘liminal’ period of rituals; this clearly overlaps with my views also of co-design events, but again co-design events also sometimes include ‘rehearsing’ possible futures, as described in the Part C / Introduction as taking place during the Future Architects’ Laboratory.

Chapter 7

Part C / Introduction
Exemplar 06

In the DAIM project, during co-design events, we were also intertwining elements of Schechner's 'workshop' and 'rehearsal'. Fundamentally we worked with a participatory, experimental and exploratory approach, but with the book, *Rehearsing the Future*, manifesting our ways of suggesting how to do design-anthropological work, the term 'rehearsal' is used to capture our claim that 'user-driven innovation is about rehearsing the future' intertwined with an understanding of current practices (Halse, et al., 2010:14). In the book, the intertwining is for example phrased this way:

Appendix 05

'In the early stages of explorative design (...): We need to take concrete interaction as the starting point for our design work. Instead of postponing the reality check of ideas for products and services, we can powerfully position it right there where lived life meets imagined artefact (...)' (ibid:14).

To summarize, with these insights and views of the DAIM project, I will re-emphasize that (user-driven or design-anthropological innovation or co-designing is practically about intertwining practices of 'workshop' (deconstructing and experimenting with current everyday encounters) and practices of 'rehearsal' (practicing or rehearsing new possible futures by interacting with 'material articulations', as Halse phrases it, in the world of the present stakeholders) (ibid:14).

Appendix 05

Different situations of performing – during co-design events

Lastly, further relating to my proposed focus on situations and particularly *co-design situations* during co-design events, again I have found a 'family resemblance' of situations across the Exemplars. Of course, still acknowledging that every situation is unique, with 'family resemblances', overall various situations of performing at co-design events are roughly: *warm-up situations* and *cooldown situations* (see both above); and then here I will go further into plenum presentations and group-work situations.

All Exemplars

Chapters 1, 3

Additionally, in this section I will further position my view of what the actual, transformative or 'liminal' period of co-design performance events are.

Performing in plenum presentation situations

Doing presentations is an integral part of co-design projects and most co-design events.

In the WorkSpace project, we were largely working towards developing and refining our demonstrators for an open conference exhibition at our yearly project review with a team of European Commission reviewers. The Future Architects' Laboratory was an important event in this work, with the review happening about half a year later. *Making Things Public* – to use Latour and Weibel's claim (2005) – is an important part of co-design projects, and this exhibition and review could be viewed as a public

Appendix 01

Exemplar 06 /
Afterwards

performance-presentation of displaying all the interesting technologies, ideas and emerging practices we had developed since last year's review similar to the Atelier and PalCom projects. However, such public presentations are not what I am after here; here the focus is on presentations happening during co-design events, following group-work.

By presentations during co-design events I neither mean the situations where typically one person, supported by a slide-show, tells a (to the event-theme probably relevant) pre-designed story; such presentations I view as part of the 'warm-up' either of the whole event or of specific situations. The presentations I consider here are similar to what Brendon Clark describes as the 'actual performance' of co-design events, as culminating in the situation when a person or a smaller group presents what they have done and discovered during the previous exploratory group-work situation (e.g. workshop-rehearsal), either to the 'audience' of others in their group or in plenum to the 'audience' of all the other stakeholders at an event (Clark, 2007:113-114).

Exemplars 03, 05, 06

Chapter 4

Exemplars 01, 04

With the 'audience' as an important actor in performance processes, I agree with Clark, that the presentations during co-design events are special situations staging special kinds of performing. The awareness of knowing that a presentation eventually has to be made, makes it work as a deadline and thus motivates the stakeholders to prepare – and I can also use the term 'rehearse' (e.g. practices or arguments) – before the public (frontstage) display of their new insights and proposals. In several of the Exemplars, we had different presentation-performances working as deadlines either along the way and/or towards the end, and clearly it did make the participants act – to use Bruno Latour's phrase. For example, at the Service Project Landscape and the Per:form events no such presentations were staged or took place, but from my various experiences, these are very common at co-design events.

Exemplar 06 /
Agenda / circle 24

At the Future Architects' Laboratory 'Presentation' was included as an official slot in the agenda, even though everyone participated in most activities. However, this was not for the purpose of summarizing insights, but because making convincing 'sales-pitch' presentations is a central part of the practice of landscape architects. Therefore, all the different participating WorkSpace-technologies should also be able to support such (current and future) situations of performing in architectural practices. At the event, when doing their final presentation of their courtyard-proposal, from working in this future studio for two days, the architects demonstrated how smoothly they had now learned (and rehearsed) to work with the technologies. Also, during this situation there were no interruptions by researchers e.g. of helping them navigate on the large displays.

Exemplar 06 /
circle 14

While exploring and discussing the technologies along the way, during the two days this deadline towards the end also kept the architects from doing their professional 'real' job of making a serious proposal for a new courtyard design outside the door. At the same, time the 'Presentation' also marked the end of the largely exploratory and experimental *frame* of the

whole event, and the opening for the reflective (and at this event not it turned out to be short) cooldown-slot ‘Evaluation’, during which next steps and main insights were briefly discussed based on immediate reactions to the technologies and experiences at the whole event

Exemplar 06 /
circles 15, 16

At the Design Dialogue-events the purpose of the final quite short presentations in plenum was different. As shown in the Exemplar, here all the groups were to distill and share their main wishes and proposals, so the architects had this as a material in their (backstage) design processes in their studio

Exemplar 05 /
circles 08, 13, 14

Such presentation-performances before a smaller or larger audience of the other event participants, Clark views as, ‘the exposure of the details from and rationales for what was discovered during the group’s backstage process’ (Clark, 2007:113). Thus, to Clark, these presentations are considered as frontstage performances, and what happens in the smaller groups – during group-work – he considers as ‘backstage processes’.

Part C / Introduction /
Chapter 7

Part C / Introduction

Yet, viewing what happens in the smaller teams only as ‘backstage processes’ –this I do not fully agree with, as stakeholders at co-design events, with Goffman’s understanding of performing, also are performing during the often quite explicitly staged, (complex!) explorative, liminal, workshop-rehearsal, group-work co-design situations.

Performing in ‘Group-work’ situations

As I have acknowledged with Bruno Latour, there are no stable groups, only temporary ‘group formations’. Still, in co-design projects ‘group-work’ is very common, and very practically by ‘group work’ situations I mean when stakeholders split up and work in parallel at a co-design event. With my various experiences, these group-work situations are largely where stakeholders and non-human materials intertwine in shared experiences and in negotiations of meaning (which often does not happen so much during plenum presentations – where the insights in a sense have hardened and *materialized*. These (complex!) explorative, liminal, workshop-rehearsal, group-work co-design situations, are also what I more overall view as the quite explicitly staged processes of co-designing as *materializing, relating* and *rematerializing* at co-design events.

Chapter 4

Part B / Introduction

Chapters 2, 6, 9

All of Part B /
Chapter 9

Similar to all the other exemplary events, at the Design Dialogue events, the transformative, exploration-rehearsal parts where ‘the new’ was experienced did not really happen during the concluding presentations in plenum, but during the processes of design dialogues or co-designing in the smaller groups.

Exemplar 06 /
circles 05, 06, 12, 14

At other events, the stakeholders were not split up, but were all working as one temporary ‘group formation’. It is this performing during these liminal and playful situations of workshop/rehearsal – to still use Schechner’s phrases, again where new materials are engaged and added meaning in co-designing, which I suggest to pay close attention to both when aiming for understanding and staging co-designing.

Chapter 4 /
Exemplar 01, 03, 06

Part B / Introduction

- Chapters 2, 3 **To summarize**, of course lots of small, unplanned unique situations take place during co-design events. Yet, with the ideas of ‘family resemblance’ of situations, in addition to *collaborative warm-up* and *cooldown situations* at co-design events, in this section I have especially discussed performing in plenum presentation-situations and in groupwork-situations.
- Chapter 7 With ties back to Chapter 7 and the previous sections of this chapter, it is especially these groupwork or quite explicitly staged situations of co-designing that I view as the exploratory ‘actual performances’ of co-design events, and to repeat, what I suggest to call and view as quite explicitly staged *co-design situations*.
- Chapters 1, 3

Summary / Chapter 8

As a part of viewing co-designing as performing, with Schechner’s terminology and time-space sequence understanding of performative processes, in this chapter, I have explored and shared what I suggest as a fruitful vocabulary for co-designers for practically understanding and staging co-designing.

- Chapter 6 /
Part C / Introduction With Schechner’s views I have emphasized, the quite generic sequences of ‘proto-performance’ > ‘performance’ > ‘aftermath’, as well as the sequences largely during the performance/co-design event of ‘warm-up’ > ‘actual performance’ > ‘cooldown’. Additionally, this has contributed to a further understanding of the quite generic intertwining in co-design practice of experimental and explorative ‘workshop’ and practicing ‘rehearsal’ in the processes of collaboratively *materializing* and ‘rehearsing’ possible futures.

- Chapters 1, 3 Further, with these views, and with ties to my suggested focus on *co-design situations*, I have also been drawing together different situations of performing with family resemblances during co-design events: *collaborative warm-up*, *collaborative cooldown*, plenum presentations and groupwork situations. I have emphasized that I view the group-work situations largely as the ‘actual, transformative or liminal performances’ during co-design events, and I have suggested to also view (group-work) co-design situations as having a sequence of *situation warm-up*, actual performance and *situation cooldown*.

- Chapter 7 Altogether, quite practically, partly following the work of different PD/ interaction design colleagues, these views of co-design events as time-space sequences, I propose as important ‘materials’ of the co-designer engaged in *staging* and *formatting* co-designing processes.

Chapter 9 / Rematerializing for Aftermath

And briefly on co-designing formats at co-design events

In this last chapter of Part C and of exploring and understanding material matters in co-designing, I will relate the process of aftermath with several of the other theories discussed throughout the thesis. Intertwined in this, I will emphasize how materiality also plays an important role in shaping the aftermath of a co-design event. Particularly building upon and drawing together insights from Chapters 3, 6 and 8, here I will focus on how *materials*, *materializations* and *rematerializations* move from the actual event into the *aftermath* – as ‘responses’, ‘archives’ and ‘memories’ of that event, to use Richard Schechner’s terms (2006:225).

Chapters 3, 6, 8

Chapter 8 / Box

The third sequence of performance processes is what Schechner calls ‘aftermath’. To refresh, in Richard Schechner’s framework, in addition to the actual performance, ‘proto-performance’ (before) and ‘aftermath’ (after) are both considered as inseparable sequences of a performance process. To Schechner, the aftermath is both short-term and long-term periods after an event, largely composed of what he calls ‘critical responses’ (8), ‘archives’ (9) and ‘memories’ (10) (Schechner, 2006:225).¹¹⁴

Chapter 8 / Box

Further, when engaging in a series of co-design events, contents of the archives of one event are likely to become ‘mediators’ in the proto-performance of the next co-design event. Broadly, this also ties back to the relational characteristics of any network or community. Practically, as argued in Chapter 6, during co-design events stakeholders engage in co-designing as quite explicitly staged *materializing*, and sometimes also in what I have suggested to view and call *rematerializing*. – As something different from ‘mere’ documentation, it is especially the processes of *rematerializing* that I will revisit and further emphasize here, as it is often the *rematerialized* outputs from this process that feed into the ‘aftermath’ of a co-design event.

Foreword: Program
Chapter 4

Chapters 2, 4
Chapter 6

¹¹⁴ The numbers (8), (9) and (10) here correspond with the list included in Chapter 8 / Section: Schechner views the performance process as a ‘time-space sequence’.

Connections to perspectives by Bruno Latour and Etienne Wenger

- Chapter 4 Latour (2005) does not particularly emphasize events and the processes of events in which relations are reassembled, but he emphasizes mediators and a focus on the traces human/non-human actors are leaving in networks. This relates to the idea of aftermath. The traces from a co-design event and from the co-designing processes of *materializing* and *rematerializing* during (or after) an event, capture who and what get to play a role at a co-design event and in the aftermath of that event. It captures who are mediators leaving traces, and it captures, which are the important non-human actors over time.
- Chapter 6
- Chapter 2 With Wenger (1998), I have emphasized the intertwining relationship between participation and reifications in (co-design) communities of practice. This also relates to the idea of aftermath. The process of negotiating reifications in a project (community of practice), strongly influences which *materialized* or *rematerialized* reifications come out of an event and play a mediating role – what Wenger and many other PD researchers call ‘boundary objects’ and ‘brokers’. These capture negotiations, explorations, critical views, aha-experiences – and again are the non-humans feeding into the archives and memories of an event.
- Chapter 2

Contents for co-design aftermath archives

- Part C / Introduction / Box on PS In co-design projects, the contents for aftermath archives about an event are largely negotiated, *materialized* and *rematerialized* during or just after the event among the present stakeholders. In opposition to ‘artistic public performances’, during co-design events there are rarely external observers and reviewers who document what is made and happens and who make critical responses after an event (which is common e.g. of theatre performances).
- Chapter 8
- Chapter 8 Rather, here the participants’ personal memories and responses – critical or positive – are largely what shape the *aftermath*. Of course, these personal reflections and responses relate to and (partly) depend on personal previous experiences and ways of working; yet, these memories and responses are also intertwined with what is captured for and in these collaboratively made non-human *materializations* ending up in the aftermath archives.
- Part C / Introduction Chapters 7, 8 Even though Schechner does not (in his writing) particularly emphasize the materiality of performing, to him the archives are of a very material character (Schechner, 2006:225), which of course is highly important in relation to my broad explorations of materiality in co-designing. The personal and collaborative archives of an event contain the stored documentations of what happened e.g. photos, videos, documents, annotated documents, published stories or resumes, diagrams, sketches, prototypes, bullet-point lists, notes, booklets, agendas, presentations, models, etc. etc.
- Chapter 6 They are all specifically tied to the unique event and mainly *materialized* and *rematerialized* by (some of) the participating stakeholders. As Schechner also acknowledges, memories quickly fade away and all these various kinds of materializations thus get to play roles as reminders of what happened (ibid:225).
- Chapter 8

In Chapter 6 there are various examples and a discussion of <i>formatting</i> processes of <i>materializing</i> during co-design events, so here I will focus on the material process of <i>rematerializing</i> among a series of events.	Chapter 6
The Design Dialogue event series captures how materials are materialized, travel, are rematerialized and are transformed in a process. All the six exemplary co-design events included in this thesis happened in series of events, where similar processes have happened in some, but not necessarily as materially clear as in this example. In the Design Dialogues series, the pre-designed architectural drawings of floor plans worked as specific content to meet around, and their many modifications or transformations of the drawings play a very central role in this series of events. These physical maps and the annotations made on them – unique for each group – were during the aftermath of the event (and the proto-performance of the next event) assisting the architects in remembering what the groups had emphasized as important to them. But, the maps were not the only material that fed into the archives; during the group's presentations at the end of all the events, one of the architects was also video-filming the presentation and taking still images	Exemplar 05 All Exemplars Exemplar 05 / circles 06-08, 10-14 Exemplar 05 / circles 08, 13
In their archive after the first event, the architects had different rematerialized materials , to continue to work with. They had: 5 x boards with colorful foam-pieces glued onto them, still images from the processes of creating them, personal hand-written notes in their notebooks, still images of the <i>materialized</i> boards and video of the five presentations made with the boards – some mostly 'mere' documentation. All together these various non-human <i>materializations</i> merged into the architects' archives and memories of the first event, and parts of it merged into their process of creating their first proposal of floorplans presented at the second event ('Workshop 2'). – Likewise, from the second to the third event in the planned series of three Design Dialogue-events.	Chapter 6 Exemplar 05 / circle 10
Exactly how they in practice engaged and merged these – which materials had a mediating role – unfortunately I do not have knowledge of, as this happened in their (backstage) studio. Yet, as shown in the Exemplar, at the next event, before introducing their new proposal of the floorplan, they went through all the boards/drawings from the previous event, with a text-based overlay highlighting which inputs marked on the slide they have paid special attention to.	Chapter 4 Part C / Introduction Exemplar 05 / circle 10
This process of <i>rematerializing</i> happened as a part of the architects' professional job of making proposals – happening between the events. In their studio they merged their various <i>materialized</i> reminders of the previous event into the new design proposals of floorplans. In this Exemplar, they were the ones <i>rematerializing</i> and condensing into new materials during this time between the events. The new materials invited into the next event were visually projected there. – This was not without tensions, for all the student and staff stakeholders who had not engaged in the transforming design process in the architectural studio, and who now saw the first concrete proposal for their future work and study environment.	Exemplar 05 / circle 11

Exemplar 05 / circle 12 However, with the initial walk-through of the last event's work, it practically seemed to assist them in moving from their previous, recognizable collaborative work capturing in *materialized* forms their initial wishes, to the new proposal of a floorplan now presented by the architects – and as it was staged – still open for inputs through a new round of groupwork.

Actual performance, cooldown and rematerializing not as mere documentation

Chapter 6 In Chapter 6, I have emphasized that *rematerializing* should not be understood as mere documentation. This relates to the sequence of the co-designing/performance process that I, with Schechner, call the 'actual performance' and 'cooldown'. From Chapter 6, as *materializing*, *rematerializing* should also happen while in an explorative (play), yet reflective-
Chapter 8, 6
Chapter 7, 8 'frame', during the actual 'liminal' performance of an event.

Chapter 7 In other words, it matters when or in what frame this is done, because
Chapter 8 the contents of the aftermath archives to a large extent are created during the event. Thus, if a lot of materializations are created during the last few minutes, when participants are in a cooldown-frame and on their way home, it of course influences the content of the *materialized* or *rematerialized* outputs from the event. A lot of the materials in the architects' available archives after the first as well as the other events, could be considered mere documentation, and having been captured quite quickly towards the end when stakeholders were tired after a long day and were in the process of cooling down (partly during plenum presentations).
Exemplar 05 / circles 08, 13

Developing formats for rematerializing during the event – among the stakeholders

Chapters 2, 5, 6 In this thesis, I have mainly been exploring and exemplifying roles of physical *formats* for processes of *materializing* and *rematerializing*, which were (co-) designed by the event organizer(s) (often also the project managers). Throughout this thesis, I have also argued that engagement and ownership of the co-design project can be tied to the non-human materials.

Chapter 2 One of the recommendations by Wenger and his colleagues (2002), for ways of 'cultivating' communities of practice is that the (human) participants/stakeholders – 'oldtimers' and 'newcomers' – engage in negotiating and making the core ways of reifying (or *materializing* and *rematerializing*).

Appendix 03 As the last examples in this thesis, I add and discuss two extra situations from the PalCom project. In these examples, the situated *staging* and *formatting* included that we collaboratively were negotiating and co-designing the *formats* for *rematerializing* during the co-design event.
Chapters 5, 6

The first example is from an 'Assembly-workshop'

Appendix 03 This happened at a 1-day cross-partner co-design event during the Palcom project (Sept. 2004 / 9 months into the project). Starting from various

presented examples of assemblies, the event was intended to identify good examples of ‘palpable assemblies’, connect these to the software being developed and identify more overall themes for the conceptual framework. This happened through a mixture of plenum presentations and group-work discussions around one of the presented examples. At the end of that event one and a half hours was allocated in the groups for ‘Documentation – mock-ups and pictures’, which then lastly were to be presented in plenum. It was open how to do this ‘documentation’. One group made a video-prototype (e.g. Buxton, 2007).

In my group, on the spot we decided to wrap-up and do this documentation or *rematerializing* of our mainly verbal discussion by mocking-up and capturing the different arising issues and themes with workshop leftovers such as empty coke-bottles, bottle lids, plastic tea-spoons, and color-coded post-its (Figure 21a-d).



Figure 21/ This groupwork focused on a current example of palpable assemblies at a hospital ward with incubators for premature babies (described on a poster on the white board turned around and below the various materials). **a/** When wrapping up collaboratively we mocked up and rematerialized the arising issues and themes with workshop leftovers. **b/ c/** These core issues were captured as negotiated close-up still images. **d/** Then cleaning up as the whole event was coming to an end. **e/** Afterwards, based in agreements, this was further rematerialized by me in a document also with written explanations.



This process of wrapping up, was all done so we could take specific detailed still images to capture the different main points identified (b/ c/), before it was all cleaned up at the end of the event (d/). This was our documentation and the *rematerialized* outputs. The specific close-up images and our negotiated meaning of what they captured was what we brought from the event. Before we split up, we agreed that I should make a resume afterwards in the *format* of a 'traditional' document, combining these images with texts overlaying the images and short written explanations (e/).

Chapter 4 By using these workshop-leftover materials, it became an energetic and explorative situation of collaboratively documenting – in a sense intertwining processes of *materializing* and *rematerializing* in one. Compared with similar set-ups at other co-design events I have experienced, if this had not been done, the interesting arising issues from the group-work, would very likely not have played a role in the ongoing process. This (non-human) document did, as it became a material at later events too – making the stakeholders act.¹¹⁵

The second example is from a 'Toolbox Exploratorium 2'

Appendix 03 This too happened at a 1 ½-day cross-partner co-design event during the Palcom project (Aug. 2006 / two and a half years into the project). I roughly staged this smaller event in collaboration with one of the present project managers. During the first day of this event, as we had been doing many times before, we split up into smaller groups and by making mock-ups we explored how the future practice might be – in this case for emergency staff such as doctors and firemen in a major incidents situation. On the second day, we were heading towards the end of the event, as many had other meetings scheduled in the afternoon, but we were still struggling with how to merge the work from the first day and grasp, work with and talk about our PalCom Toolbox in a new and more integrated and communicative way, than we had done so far in the project. This was one of the larger challenges at that time well into the PalCom project.

The metaphor of a 'toolbox' was challenging, as the simple parallel to a box with spaces for hammers, screwdrivers, saws, etc. at least here was not very useful for connecting specific use-situations (despite our participatory approach – so far in the project mostly done by the sociologists, ethnographers and interaction design researchers) and specific technical software specifications (mostly done by the low-level software programmers and prototype developers engaged in the project). However, we knew that in the toolbox these needed to merge for us to be able to communicate them clearer on the project website, in the final deliverables, etc.

We discussed back and forth how to do this, and with a rough sketch on the whiteboard, we finally reached a rough *format* of how to do it.¹¹⁶ In every scene of a storyboard/use example, we would sketch a specification matching the software and hardware set-up in that particular situation. We agreed

.....

¹¹⁵ This text is modified from: (Eriksen, 2006).

¹¹⁶ At that time e.g. working with service blueprinting was not familiar to us (P&A).

on the specific situation, and in one of the groups we created the contents (detailed hand-sketched scenario frames and visual software diagrams) for a way of capturing and communicating our toolbox (Figure 22a-e).

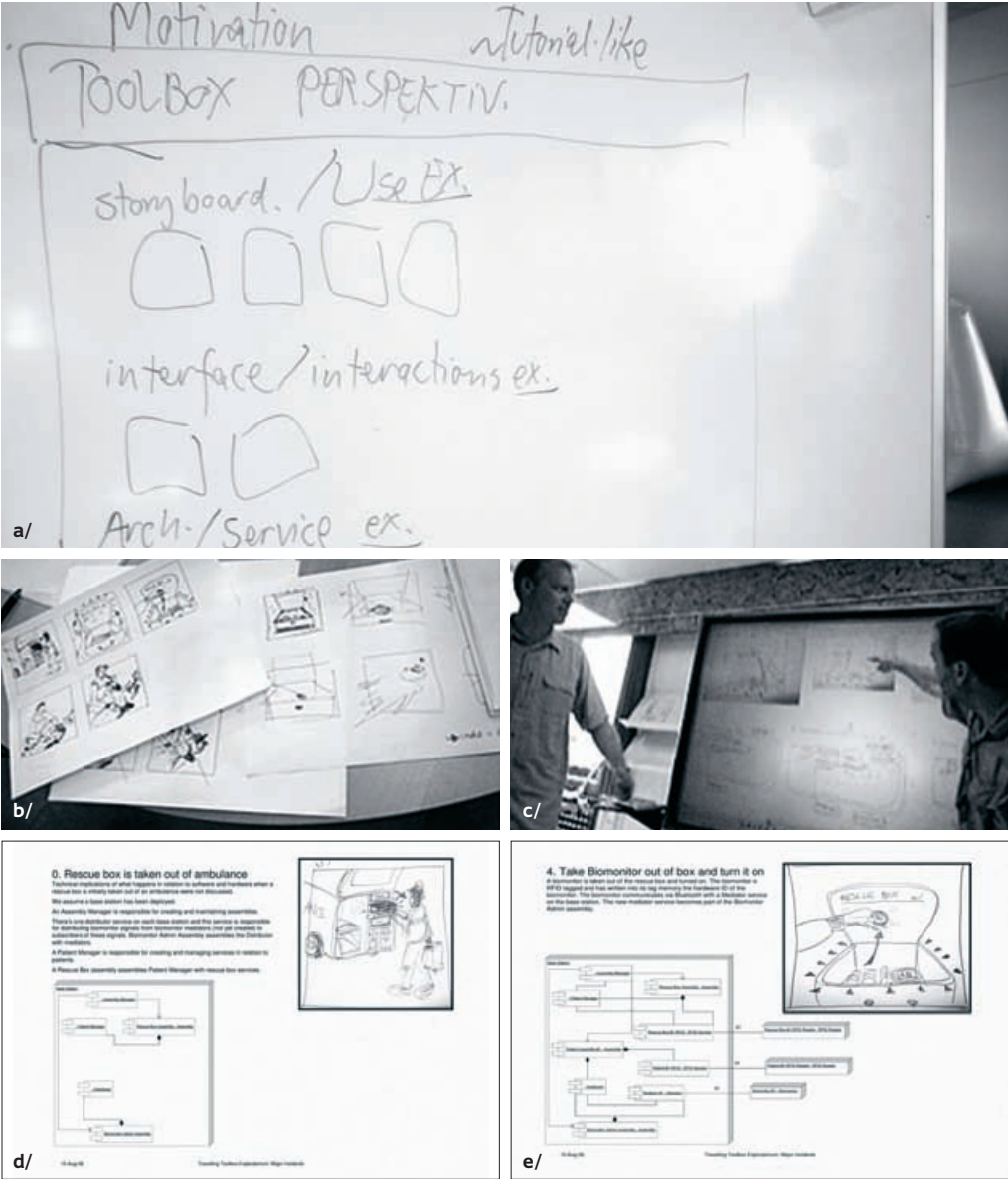


Figure 22/ a/ The sketch capturing the co-designed format of both materializing and re-materializing toolbox examples in the PalCom project – It was negotiated and co-designed by the participating stakeholders at the ‘Toolbox Exploratorium 2’-event. **b/** Hand-sketched scenario-scenes as one part of the content for making a toolbox example were done in parallel with visual software and hardware specification diagrams. **c/** At the end of the group-work, these were quickly merged into our group-work presentation – here made by some of the project managers. **d/ e/** A few days after the event, this content was slightly refined by one of the participants into a coherent story. Here are two selected pages out of eight in the first example in the Palcom project of capturing and communicating toolbox stories.

Chapter 2 **Intertwined in the co-designing at this event, we had co-designed a format for both materializing and rematerializing**, which the software developers, sociologists, interaction designers and project managers could relate to and contribute to - a shared 'language design game' to also draw connections to Pelle Ehn's work (1988).

A few days after the event, because we had negotiated and produced all the specific contents collaboratively, it was easy for one of the stakeholders, a prototype developer, to put it all together in an 8-slide presentation (e/) - without any needs for further changes as this was what we (the other stakeholders) all had expected it would be. It was easy for him to create what became the *rematerialized* output of this event.

Chapter 2 With different use sites and situations in focus, this *format* was also used at several later yet resembling toolbox events. It was easiest to use and engage with by those of us who had been participating in developing the *format*, and more challenging for other colleagues - similar to Björgvinsson's (2007) observation about 'hardened' and 'defrosting' of reifications and to Iacucci's (2004) argument for reaching a level of completion. Still, this first *rematerialized* version entered the project website, a magazine about the project insights, and surely left traces in the project as it assisted us in communicating what the specific PalCom toolbox was, and how it was intended to be used.

(Plans for) participation of contents of co-design event archives

Lastly, sometimes it is and can be planned in the situation what contents of an event's archive are going to be participating afterwards, sometimes not.

Chapter 3 Of course, as acknowledged with Lucy Suchman, it cannot (luckily) fully be predicted when planning, *formatting* and *staging* a co-design event, what the *rematerialized* results or insights of a co-design event are going to be - or be used for. Yet, looking across the different projects, sometimes the material from a specific event has been used for sharing snapshots of what happened during an event on a website, assisting a participant in telling his/her stories about insights from an event - e.g. as a part of teaching or other project work, integrating in academic publications, feeding into later design proposals as during the Design Dialogues-series, etc.

Some material become academic 'data', some must fit the 'real-world', some are more 'open'

Some material gathered in archives will very likely be 'data' in later academic publications, when events are carried out as a part of (co-design) research projects. In relation to academia, materiality and what ends up in the archives of an event thus also relates to the issue of validity of data for research. Therefore, it is quite likely that what is *rematerialized* for the archives also becomes a target for negotiations among the multidisciplinary

group of stakeholders, because some (forms of) reifications or *materializations* are more useful and respected as data in some research communities than others.¹¹⁷ However, this is only one need from co-design events. Chapter 2

At the same time, when a research project is practical, experimental and related to ‘real-world’ contexts, as in all the co-design projects, many of the insights are also integrated in the on-going design-oriented co-designing processes related to these ‘real’ and rich everyday or work environments. So, this intertwining with design practice, and the *staging* and *formatting* of interaction at events, of course affects what is *materialized* and *rematerialized* because it is relevant for those processes. Still, in the *formatting* of *rematerializing* for aftermath therefore, it is recommended to acknowledge these different needs by different stakeholders, so everyone afterwards has the material needed to continue the individual and collaborative work. Appendices 01 – 07

At least when happening within research projects – which are expected to discover and contribute with new knowledge – it is not always clear what insights and *rematerialized* archive materials will be used for when they are made (except publishing). Likewise, when happening in quite open-ended social innovation / service co-design projects, where there is no clear final product, but where the negotiated and continually *materialized* and *rematerialized* process and changing practices in a sense is the evolving outcome. This is some of the work I expect to be exploring further in my future research. Forwards: Reprogram

Summary / Chapter 9

In this last chapter of exploring *Material Matters in Co-designing*, also drawing connections to most other chapters throughout the thesis, I have connected concepts and processes of *aftermath* and *rematerializing*, to further emphasize how I propose for both of these to be important for understanding and staging co-designing. Chapters 8, 6

I have emphasized that when *staging* and *formatting* co-designing during an event, awareness of when, what and how is being captured and *materialized* or *rematerialized* is of great importance to what (non-humans) feeds into the archives of the event aftermath, and thus what materially assists in recalling memories of what happened and was discovered, also is likely to mediate the ongoing process and project. Chapter 8
Chapter 4

Hinting at my expected future work, this chapter and Part C concludes with two new examples from the PalCom project, in which the *formats* of *rematerializing* were co-designed by the stakeholders during the co-design events. Forwards: Reprogram

.....
¹¹⁷ On my data – see Appendix 09.

Part C / Summary

Materially staging performing in co-designing

Acknowledging that people as well as materials continuously perform (frontstage & backstage) in co-designing, and that a special kind of performing take place at staged co-design events...matters

Accepting that choices of invited materials can be distributed among (designers as) co-design event organizers and other stakeholders, both before, during and after events...matters

Viewing a series of situated co-design events as (time-space) sequences of proto-performance – actual performance – aftermath...matters

Understanding how (material) staging and formatting is crucial for establishing a shared, situated, explorative frame of co-designing...matters

Acknowledging that the overall encompassing project frame, as a research-, teaching- or implementation-frame, influences the material practice in the situation...matters

Acknowledging that every staged co-design event and situation has its warm-up and cooldown...matters

Understanding how negotiated materialized and rematerialized outputs, often become traces, memories, actors in the aftermath archives of an event...also matters

These are the main programmatic statements explored in this Part C. With the different vocabulary used by performance study researchers, generally with this Part C I have added an understanding of co-designing as performative processes.

Part C / Introduction Part C started with a positioning of the field of performance studies (PS), to emphasize similarities and differences with the theories in Parts A and B. Next, based on Erving Goffman's classic arguments about understanding interaction e.g. as acting on 'frontstage' and 'backstage', I established the broad position that co-designing is *performing*. Further, also with Richard Schechner's concept of 'restored behaviors' and with an extra example

from PalCom, I further discussed how stakeholders' previous experiences and practices influence how they engage with invited materials in the co-design situation. Lastly, I also showed and emphasized that a special kind of co-designing as performing happens at co-design events and reemphasized the importance of materiality of *staging* and *formatting* through discussing Exemplars 02, 05 and 06 as material situations staged for 'role-playing', 'imagining' and 'rehearsing' possible futures. From this starting point, the three chapters of Part C were briefly about the following.

In Chapter 7, first I acknowledged the work of various (co-) design researchers (and colleagues) who already have applied performative perspectives for understanding (co-) designing and brought with me ideas of the importance of completion, socio-political navigation around co-design projects and views of co-design events as ritual processes. Then especially with Richard Schechner and Victor and Edie Turner, I suggested to further understand co-designing with various other concepts and views within PS such as: co-design events as performances, interplay among ritual and play especially with a focus on the 'liminal phases' of ritual performances/events, 'overall encompassing' and other (especially explorative) 'frames' of projects and performances/events, as well as views on materiality especially 'props' and formats as 'scores'.

Chapter 7

In Chapter 8, inspired by Joachim Halse's suggestion to view co-design events as ritual performances, with Richard Schechner's views of performance processes as time-space sequences, I explored and suggested different quite generic performative characteristics of *co-design events and situations*. As yet an alternative to understanding co-designing not 'only' as methods, with detailed explorations mostly of Exemplars 05 and 06, these characteristics were quite closely related to Schechner's overall sequences and concepts of: 'proto-performance > performance > aftermath'. With a main emphasis on the actual event, I added the phrase 'collaborative' to Schechner's views of sequences during the performance, where I have discussed: *collaborative warm-up > actual (liminal, workshop/rehearsal) performance > collaborative cooldown*.

Chapter 8

Additionally, with my focus on the quite explicitly staged *co-design situations*, I also proposed that these co-design situations roughly have a sequence of: *situation warm-up > actual performance > situation cooldown* sequence. Lastly, I discussed situations of performing with family resemblances – particularly plenum presentations and group-work situations. Altogether, building upon the work of others, these sequences I suggested as fruitful 'material' for co-designers engaged in *staging* and *formatting* co-designing processes.

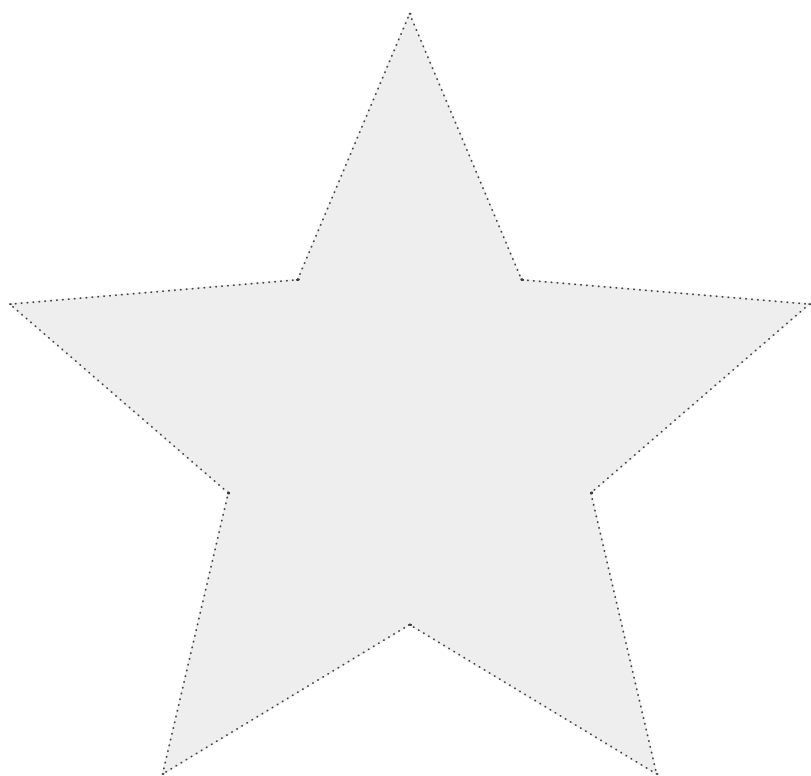
In Chapter 9, I combined a focus on the event 'aftermath' with my suggestion made in Chapter 6 to view *formatting* of processes of *rematerializing* as important in co-designing. Here, I argued that the (non-human) *rematerialized* outputs feeding into the event archives, are likely to play important mediating roles onwards in the project and in the co-design network, because these materials help refresh memories of what happened. Hinting

Chapter 9

at my expected future work, this chapter and Part C concluded with two new examples from the PalCom project, in which the *formats of rematerializing* were co-designed by the stakeholders during the co-design events.

With an understanding of co-designing as performativity and processes, Part C is now concluded, and my exploration of the overall research program and topic of this thesis, *Material Matters in Co-designing*, have now also come to an end. In the last Part D I will be drawing together the insights from this Part C with the insights from Parts A and B.

This could
be a format



Part

D

*Drawing
Material Matters
Together*

Drawing Material Matters Together

Introduction / My co-design researcher ways of ‘drawing together’

Throughout the thesis I have introduced, addressed, exemplified, and discussed different aspects both for understanding and for staging co-designing, with a particular focus on materiality and how material matters in complex, situated event-driven processes. The intention of this last Part D of the thesis is, to use Bruno Latour’s phrases, to ‘draw things together’ by re-assembling all the materials laid out so far in the thesis (Latour, 1986/2008).

P&A

Rather than providing definite answers and clear-cut definitions about co-designing, this concluding Part D seeks to draw together this work through a collection of visualized, theory- and example-based, somewhat open-ended, materiality- and performativity-oriented issues and challenges concerning practices of co-designing.

I draw together the core points related to my program *Material Matters in Co-designing*, by intertwining my final program and programmatic statements, the six Exemplars, other examples and the various theories I have used. With this Part D, I seek to draw some conclusions at least temporarily finalizing my work with this program...

Foreword: Program
Exemplars 01-06
P&A
Parts A, B, C

As a co-design researcher, I will be drawing material matters together in three related, albeit different, relatively practice-oriented ways:

First, I draw together in an ‘Emerging Material Landscape of Co-designing’ intended as a catalogue¹¹⁷, where theories, examples and suggestions are merged and captured in commented and referenced landscape materialization. Zooming in and out from A to V in this landscape, I emphasize what I suggest are core materials of the co-designer participating in the complex material and performative ecology composing a co-design project.

Chapter 10

Second, with the visuals from the emerging material landscape, and through a series of short scenario-like situations, I provide a guided tour briefly suggesting one way of how the landscape could be practically engaged in (staging and formatting) future co-designing practices.

Chapter 11

¹¹⁷ Not intended to be read from A – V in one flow.

Third and last, I draw together ‘11 Challenges with Material Matters in Co-designing’. The 11 challenges are related to various (still) common practices in (co-)design projects, which I am concerned about and suggest to critically reflecting upon. Along with the details in the emerging material landscape, these are the main issues and challenges I suggest to consider and be aware of when (moving from practices of designing *for* others) engaging in and staging for co-designing *with* others.

Chapter 10 / Emerging Material Landscape of Co-Designing

A catalogue for understanding and staging co-designing

Throughout the PhD project and in Parts A, B and C, I have developed, added to and nuanced what I now merge and call an ‘Emerging Material Landscape of Co-designing’. It is intended for understanding and staging practical co-designing, especially in co-design projects, events and situations. This is the first of my three suggested ways of ‘drawing material matters together,’ illustrating how *Material Matters in Co-designing*.

One could question why I do not call this landscape ‘a material and performative landscape’. Reflecting my broad perspective of materiality, the title ‘an emerging material landscape’ is a deliberate choice, encompassing the ways in which performative structures are established and integrated by continually engaging and transforming with materials.

People, human actors, stakeholders are inseparable in co-designing too

As illustrated in all the Exemplars, there is no co-designing without people! However, in this 3D-landscape or diagram, ‘people’ have almost been left out. This is to emphasize the various materials - non-human participants - often with situated ‘delegated roles’, and the performance-like structures or ‘co-design rituals’ that I have found to be intertwining and participating in co-designing.

Chapter 5
Chapters 7, 8

‘Drawing material matters together’ in a landscape

The 3D-landscape should not be viewed as a re-constructed materialization of a previous real situation, but as a constructed materialization or conceptual journey of some otherwise abstract terms and concepts addressed and explored in Parts A, B and C (I emphasize that scales in the 3D-landscape differ).

When zooming in on the constructed close-up images, at first glance they could be viewed as an attempt to analytically extract and simplify practice; however, the intention with these is not to pull out separate parts for

the purpose of extracting (simplified) academic concepts. Rather, inspired by Bruno Latour's suggestions of reassembling, and partly as I have been dissecting Schön's sentences, zooming in and emphasizing material and performative details serves to trace and acknowledge complex relations in co-designing. In other words, what I emphasize below, can all be seen as parts of the complex and continually transforming ecology that makes up a co-design project.

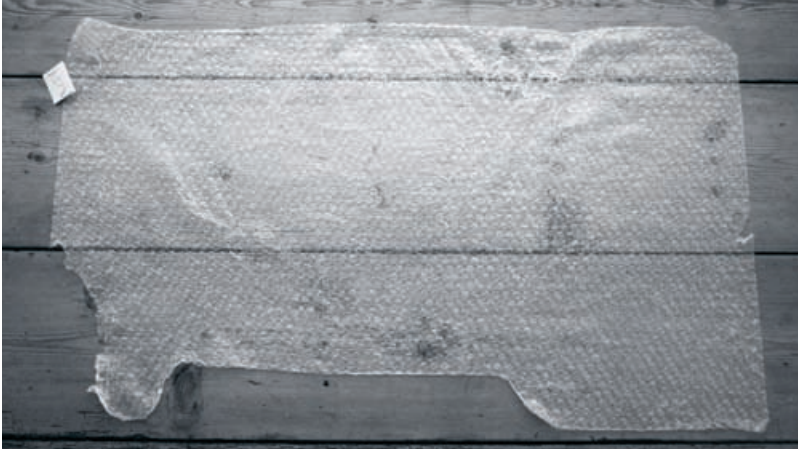
A brief note before embarking on the trip through the landscape: As I have discussed throughout this thesis, *staging* and *formatting* are integral and important elements of co-designing practices, but since these practices encompass many of the other elements and issues in the landscape, they do not have their own separate section/letter.

As my first way of drawing material matters together, in the following chapter, we will visit my catalogue, from A through V, starting from the outside moving into the 3D-landscape:



Overview of Emerging Material Landscape of Material Matters / This quite complex, layered and constructed yet abstracted 3D-landscape is my suggested materialization of a landscape grasping core 'materials' of co-designing practices.

(Research) Project Program (and Frame)



The bubble wrap with uneven edges is captured with the little white paper and is built on top of and with the wooden underlying structures.

When a co-design (research) project is approved (= the little white paper), a more or less explicit project (research) program also emerges (= the bubbles plastic). The *program frames the main aims, topics, issues, concerns, perspectives (WHAT) and approaches (HOW)*. It does not come out of nowhere, but builds upon previous projects, experiences, experiments, (research) interests in research, consultancy, teaching environments, etc. (= the underlying wooden vertical structures). Working with a 'programmatic approach' is inspired by architecture practices and the XLab-project.

Reflecting Turner's idea of encompassing frames of performances (no. V), the program captured with the approved project proposal is partly stable: e.g. researching 'Disappearing-computers' as in the WorkSpace and Atelier projects.

Yet, at least in research projects, many views and approaches continue to bubble, to be explored through co-designing as materializing (no. S) and rematerializing (no. U), e.g. at co-design events (no. B, F). Some aspects of the program get more attention than others and perspectives, issues, topics are continually re-framed; what Donald Schön terms reflective (co-) designing. In the Atelier project, for instance, our focus drifted (=the uneven edges of the bubble wrap) from architecture and technologies in inspirational learning environments to also focus on creative processes 'out of the box'.

For more details:

**Foreword: Program
Positions & Approaches**
Part A / Chapters 1, 2, 3

Part C / Chapter 7
Part D / Chapter 11, 12 -
Challenge no. 2, 5, 6

Exemplar no. / All mainly 04
Appendix no. / 01, 02, 04, 10
Forwards: Reprogram

B /

Series of Performative Co-design Events

The differently shaped white boxes for example established with the little white papers on top of each box and with its unique edges and spatial qualities.

Furthermore, they are connected by white threads and fill out different areas of the underlying bubble wrap.



Practically, co-design (research) projects can be organized as ‘workshops’ or a *series of co-design events* (= the white boxes), as I recently have re-argued with Eva Brandt. With Joachim Halse, additionally co-design events can be viewed as (ritual) *performative events*, where diverse stakeholders (and materials) meet face to face to participate in co-designing (no. F).

In relation to the project program (no. A), *each co-design event usually has its own additional focus and topic framings* (= edges of each event-boxes). In the DAIM-project, e.g. we had the ‘Kick-off’-event several ‘Toolbox seminars’ and a ‘Heroes of Waste-workshop’. These different focuses are partly captured in the official invitation or call for participation (= white ‘invitation/topic’-letter on top of each event-box). Co-design events create shared experiences and can help drive the co-design process forward by fostering shared ownership and engagement among stakeholders; yet, *this needs staging and formatting, and various materials participate in doing this*, e.g. *agendas, formats, content materials, guides and the physical location* (no. L, N, P, Q, O, E).

Lastly, events can gather stakeholders in the ‘fuzzy front end’ as well as throughout the project process (= simplified by white threads). Normally, few people participate in the same process in between events; instead, smaller local teams focus on different issues and *work in parallel processes* (= two parallel threads between two event-boxes), as was the case in the WorkSpace, Atelier and PalCom-projects, with people working all over Europe.

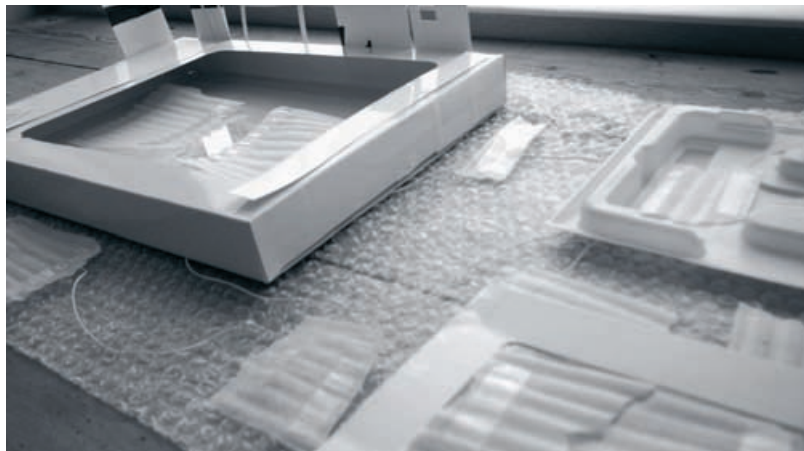
For more details:

**Foreword: Program
Positions & Approaches**
Part A / Intro / Chapters 1, 2

Part B / Chapters 5, 6
Part C / Chapters 7, 8
Part D / Chapter 11, 12 -

Challenge no. 1-3, 7-9, 11
Exemplar no. / All
Appendix no. / 01-03, 05, 08

Series of (Staged & Framed) Co-design Situations



The uneven striped plastic pieces each with its unique edge are within the white bubble wrap sometimes between but especially within the white boxes.

Sometimes almost invisible almost overlapping but the glossy stripes mark some beginning and ending.

Co-design projects and co-design events are *series of situations*. Inspired by Lucy Suchman's emphasis on 'situated actions' and Donald Schön's focus on the unique and complex 'design situation', in addition to events, I suggest focusing on *co-design situations* (=uneven striped plastic pieces). Co-design situations happen during the ongoing, sometimes messy, co-design process (= in between event-boxes) or within co-design events (= inside the middle of the event-boxes). Especially during co-design events, *co-design situations are often quite explicitly staged* (no. M).

As in everyday life, every situation is unique. Yet, as recognized by Pelle Ehni, many co-design situations have similarities or 'family resemblances'. Also, inherent in the situation is a mix of frames (e.g. ritual & play-frames) as argued by Victor and Edie Turner.

The project program captures the overall issues and frames to explore in the unique project (no. A, V). Within it, each event has its own additional focuses and frames (no. B, F). Likewise, e.g. within an event, every (subtle series of) *staged co-design situation also has its own additional issues and frame* (= the unique edge of every uneven striped plastic piece). During the Architects' Future Laboratory, the various slots around different scenarios could be seen as a series of co-design situations, staged for exploring different technologies and landscape architect's future practices.

Exemplar 06 /
Agenda

For more details:

**Foreword: Program
Positions & Approaches**
Part A / All

Part B / All
Part C / Intro / Chapters 7, 8
Part D / Chapter 11, 12 -

Challenge no. 1-5, 7,8,11
Exemplar no. / All

D /

Physical Locations as Event Setting(s) or Stage(s)

The window
– like the rail
the lighting – and
other spatial qualities
are parts of making
each white box
different.



The choice of physical location or setting(s) or stage(s) (= the three event-boxes with window, rail or lighting qualities) is part of shaping a co-design event and affects what can happen (no. E).

Exemplar 06 /
circles 02, 05, 06

With my background in architecture, and inspired by Per Linde and Giulio Iacucci, I find place-making to be an integral part of interacting and performing. Additionally, with Erving Goffman the place in which performing happens is understood as a metaphorical stage (frontstage and backstage) – e.g. including the physical location(s)/context(s)/environment(s) where co-designing occurs. During the WorkSpace-project and the Architects' Future Lab-Exemplar, the landscape architect's indoor and outdoor everyday working environments and the labs/meeting rooms where we explored the project in different ways influenced how we were co-designing.

For more details:

Positions & Approaches
Part A / Chapter 3
Part B / Chapters 5, 6

Part C / Intro / Chapters 7, 8
Part D / Chapter 11, 12 -
Challenge no. 2, 7

Exemplar no. / All
Appendix no. / 01-03, 06

Configuring the Spatial Stage of a Co-design Event



The black, white and window-like surfaces the cut-out movable shapes lighting and dark corners are all parts of making the unique white box.

The spatial arrangements or *physical-material setting or stage* (= the cut-out table, chair, wall-spaces, projection-surfaces, windows, lighting and darkening, and other indoor and outdoor possibilities, etc.) affect how co-designing happens during a co-design event and situation (no. D, F, M). The physical location and stage is composed of walls, floor, ceiling and stable or movable furniture, and the flexibility or configurability of these in use is part of staging co-designing. This we explored in the Atelier project and at the Service Project Landscape event where we rearranged the furniture during the lunch break to mark a change from lectures to the students' own standing co-designing.

Exemplar 01 /
circle 01

Even though the environment has inherent spatial qualities, these are not always (staged to be) actively participating in the co-designing process. This is what happened at the Rehab Future Lab event that took place at the materially very rich hand rehabilitation department, but in a quite typical meeting room in a hallway.

Exemplar 02 /
circles 01, 02, 03

Additionally, over time (different areas of) the physical stage(s) can also play different roles during and around a specific co-design event (no. B, D). At the Per:form event, we literally established a (backstage) 'Confession booth'.

Exemplar 04 /
circles 04, 08

For more details:

Positions & Approaches

Part A / Chapter 3

Part B / Chapters 5, 6

Part C / Intro / Chapters 7, 8

Part D / Chapter 11, 12 -

Challenge no. 2, 7

Exemplar no. / All

Appendix no. / 01-03, 06, 07

F /

Overall Performative Structures of a Co-design Event

The white box is made in a setting and is roughly made of different parts a left upper a middle lower and a right upper level

Additionally, within the underlying bubbles wrap tied to the white box is something before – on the left of it and something after – on the right of it.



A co-design event (no. B) can be viewed as ‘performative’, because it is structured or sequenced much like a performance. This view is strongly inspired by Joachim Halse and Brendon Clark’s performative perspectives on co-designing and Richard Schechner’s ‘time-space-sequence’ descriptions of transformative (artistic and everyday) performance processes.

Within Schechner’s framework, the structure of co-design events can be described as:

proto-performance (*Proto-p.*) (= before/on the left of the event-box) (no. G)

performance (= the whole event-box) (no. I, J, K)

aftermath (= after/below and on the right of the event-box) (no. H).

All the Exemplars, for instance, have had a process of doing, planning and preparing before the event. Then the actual co-design event took place, and finally afterwards the experiences and insights from the event were more or less integrated into the co-design processes.

All Exemplars

Using Schechner’s and Victor Turner’s views of (performative) ritual processes, the actual co-design event can be further described as consisting of three main sequences:

warm-up (=the left white upper and back space on the event-box) (no. I);
actual performance (= the in-between, lowered area in the middle of the event-box) (no. J)

cooldown (= the right and back upper space on the event-box) (no. K).

.....

Again, all the Exemplars have had some kind of ‘Introduction’, then various co-designing activities, perhaps concluded with presentations, before ending with some kind of collaborative ‘Next Steps’.

All Exemplars

.....

For more details:

**Foreword: Program
Positions & Approaches
Part A / Chapter 2**

**Part B / Chapter 6
Part C / Chapters 8, 9
Part D / Chapter 11, 12 -**

**Challenge no. 2, 5, 7-11
Exemplar no. / All
Appendix no. / 01-05, 08**

.....

Co-design Event Proto-Performance

Different papers
with different texts
different hands-on
materials
in different shapes
are all parts of
making
the bubble wrap
in the left area
of the white box



Before an actual co-design event takes place (no. B, F), a sequence, which I with Schechner call the *co-design event proto-performance* or *Proto-p.* (= the area on the left of the event-box within the bubble wrap-project program) (no. F, A) occurs. Also with Schechner, together the time-space sequence of proto-performance, actual performance and aftermath reveals my understanding of co-designing as performance processes (no. F, H).

During Proto-p. of the co-design event, various *materials* (= drafts of the invitations/calls, agendas, to-do-lists, design of format-suggestions, content materials-possibilities, etc.) are engaged in planning and preparing how to be stage, format and collaborate during the actual event (No. L, N, P, O, Q). Before the Kick-Off-event, the organizing core team explored the use of plates and white foam-board squares as *formats*, while other stakeholders were asked to prepare and gather ‘things-on-their-way’ and presentations of previous experiences and challenges before coming to the event.

Exemplar 03 /
circles 01, 06

Additionally, using Goffman’s terms, the actual performance can be viewed as *frontstage*, while the concept of *backstage* can be used to capture the often (at least to some stakeholders) more hidden Proto-p. activities before the upcoming co-design event (in practice, however, these ‘stages’ complexly intertwine also during the Proto-p.).

For more details:

Part A / Chapter 3
Part C / Intro / Chapters 8, 9
Part D / Chapter 11, 12 -

Challenge no. 2-5, 7, 9, 10
Exemplar no. / All
Appendix no. / 01-07

H /

Co-design Event Aftermath



Videotape and stick written cardboard lists here elk and two-surface construction are all filling out and making the bubble wrap in the right area of the white box.

Further, they are parts of connecting to the next white box.

After a co-design event (no. F, I, J, K) comes a sequence, which I, with Schechner, call the co-design event aftermath (= the area on the right and below the white event box within the bubbles wrap project program) (no. F, A). Again with Schechner, together the time-space sequence of proto-performance, actual performance and aftermath reveals my understanding of co-designing as performance processes (no. F, G).

To Schechner, there is short-term and long-term aftermath, but *generally a performance aftermath has no clear time-constraints, but includes ‘critical responses’, ‘archives’ and ‘memories’*. In the aftermath, material participants (= e.g. here video and still images on USB, written lists and selected elk and construction re/materializations, etc.) (no. T, U) can become engaged in refreshing the experiences and memories of the actual performance. After the Kick-off event, the various images, presentations, video-clips, and blog-posts with questions were stored on a server, shared on the project blog and saved on shelves in the studio of the core team, to be used later for an exhibition and for making a book.

Exemplar 03 /
Afterwards

This relates to Bruno Latour / ANT’s emphasis on the ways in which human and non-human actors or mediators leave traces in a (co-design) network. At a co-design event, from co-designing as *materializing* and *rematerializing* (no. S, U), what gets *materialized* (no. T) or *rematerialized* (no. U) is important for what and who get to play a mediating role in the event *aftermath* - the Proto-p. of the next co-design event (no. G).

For more details:

Part A / Chapter 3
Part B / Chapters 4, 6
Part C / Chapters 8, 9

Part D / Chapter 11, 12 -
Challenge no. 1, 2, 4, 8, 11
Exemplar no. / All

Appendix no. / 01-05

Onwards mainly
concerning what
happens during
co-design events >

I /

Collaborative Warm-up of a Co-design Event

Connecting to the bubble wrap on the left the edge and the upper left and back level is the way into the white box.

For example coffee cups different paper one called 'AGENDA' three light-spots on the back surface the cut-outs in the back are all parts of shaping this side of the white box.



The process of starting and opening a performative co-design event (no. F) is a sequence, which I with Schechner call *collaborative event warm-up* (= the edge, left and back white upper space on the event-box) (no. F). The collaborative warm-up takes place before moving into the actual collaborative performance/the explorative, liminal phase of the event (no. J). *During the warm-up, stakeholders leave the everyday behind and, often with the use of different materials; they get into the frame(s), focus(es), topic(s) and approach of the event.*

Exemplar 03 /
circles 01, 02

Co-design event warm-ups can last between a few minutes and several hours. Often, similar materials participate, as at the Kick-Off event where name tags, coffee cups, prints of the agenda and slide-presentations refreshing the workshop-call, the project description, what had happened since the project started, etc. were all materials participating in setting the stage for co-designing.

Exemplar 06 /
circles 03, 04

Additionally, what is staged to happen before the event, during the Proto-p., can also be considered a part of collaborative or individual *Proto-p. warm-up*. Before coming to the Future Architects' Laboratory the landscape architects prepared their first proposal for a courtyard design as well as inspirational image 'moodboards'.

For more details:

Part A / Chapter 3

Part B / Chapter 6

Part C / Intro / Chapters 7, 8

Part D / Chapter 11, 12 -

Challenge no. 1, 2, 4, 5, 7-10

Exemplar no. / All

J/

Explorative 'Liminal' Performance of a Co-design Event



The middle, lowered area of the white box has light and dark areas in this in-between space.

It includes and is made with the uneven striped plastic pieces and the other different materials as well as the setting.

The middle part of a performative co-design event is a sequence, which I with Schechner call the actual collaborative 'performance' (= the middle lowered area of the event-box) (no. F). Merged with Victor Turner's three-phase transitional ritual performance, this can also be viewed as the '*liminal*' phase or space of a co-design event.

In a co-design project, this middle part of a co-design event is often *where collaborative designerly inquiries, experiments and explorations take place*. During the Future Architects' Laboratory, the participating landscape architects together with various IT-researchers explored technologies while at the same time rehearsed or simulated being themselves in the future.

Exemplar 06 /
circles 05-14

In other words, this is where new collaborative experiences, shared materializations and insights are often made and gained (no. S, T). During the middle liminal part of the Service Project Landscape-event, the students made their first collaborative inquiries of sustainable transportation while creating their shared service landscape; at the Kick-off event, important waste and innovation issues were *collaboratively materializing* (no. S) and *materialized* (no. T) as different tables.

Exemplar 01 /
circles 03-05

Exemplar 03 /
circles 04-11

Collaborative exploring does not just happen in this open middle space of the event, but in often quite explicitly staged co-design situations (= the uneven striped situation-plastic pieces on the bottom of the lower part of the

box) (no. C, M). Based on the work of Tine Damsholt et al. and Elisabeth Shove et al., I argue that stakeholders engage in a special kind of doing or materializing with differently delegated materials in these staged co-design situations (= the different materials on top of and by one of the uneven striped situation-plastic pieces) (no. N, L, O, P).

Exemplar 05 /
circles 07, 08

Liminal explorative co-design situations (e.g. group work) often end with plenum presentations, or *frontstage* performances, to use Goffman's concept and follow Brendon Clark's work. For instance, during the first Design Dialogue-event wishes and proposals quickly materialized to end the group-work explorations, and prepare for sharing these in a plenum presentation.

Such presentations are central activities at most (co-design) events; however, to me these situations make up a different kind of performance from the explorative, liminal, actual collaborative performing (as materializing and rematerializing – no. S, U) that takes place during the middle liminal phase of an event.

All Exemplars

Lastly, various kinds of *staging* and *formatting* are needed to establish this collaborative, in-between space, with an explorative frame (no. V). As demonstrated in all the Exemplars, a complex continually transforming assemblage of materials is engaged in such *staging* and *formatting*.

For more details:

Part A / Chapter 3
Part B / Intro / Chapter 6
Part C / All

Part D / Chapter 11, 12
- Challenge no. 1-5, 7, 8,
10, 11

Exemplar no. / All

Collaborative Cooldown of Co-design Event



Connecting to the bubble wrap the edge and the upper right and back level is the way out of the white box.

Also connecting to the various materials in the lower area of the white box video-tape one light spot on the back surface cardboard saying 'INSIGHTS' a series of dots 'NEXT STEPS' 1. 2. 3. - are all parts of shaping this right side of the white box.

The act of ending and closing a performative co-design event (no. F) with Schechner I call collaborative co-design event cooldown (= the right white upper and back space and edge on the event-box). *Co-design event cooldown can last a few minutes or much longer.* In fact, breaks during an event can also have cooldown characteristics.

It is during the collaborative cooldown that participants prepare for their return to everyday life, taking with them the experiences of the collaborative performance; but this is also when shared wrap-ups and initial reflections are often made.

This is the time when initial 'reflections-on-actions' – to use Donald Schön's phrase – are expressed and future processes are addressed. At the Future Architects' Laboratory, for instance, 'Evaluation' and 'Plans' were scheduled and very briefly discussed, and at the Kick-Off event 'Next Steps' were briefly addressed.

Exemplar 06 / circles 15, 16

Exemplar 03 / circle 12

If this has not happened along the way, cooldown is often when documentation is materialized and collaborative *preparations for the aftermath* happen (= e.g. video-tape and cardboard with 'INSIGHTS' and 'NEXT STEPS') (no. H).

Some similar materials often participate in the co-design event cooldown e.g. as at the Rehab Future Lab – personal notebooks, cameras for taking

Exemplar 02 / circle 06, 07

.....

still/video images and flip-over papers or white boards for collaboratively listing or sketching summaries.

Let me emphasize that the collaborative cooldown of a co-design event is not the same as, but relates to, what I call *rematerializing* (no. U).

.....

For more details:

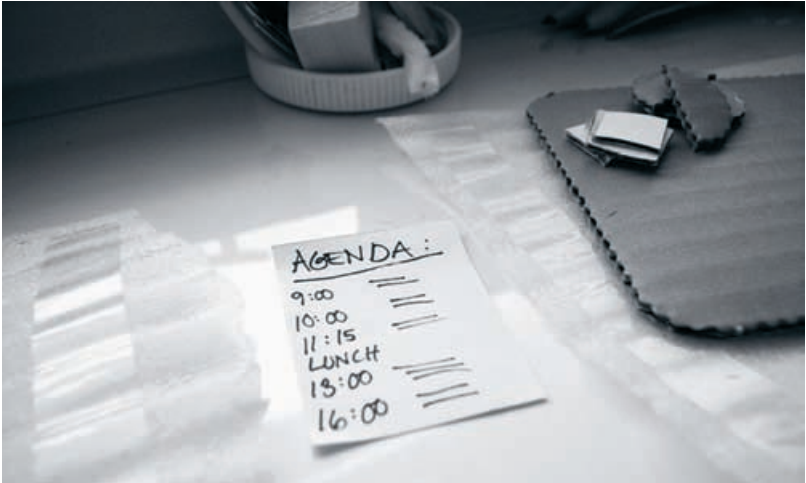
Part A / Chapters 2, 3	Part D / Chapter 11, 12 -
Part B / Chapter 6	Challenge no. 1, 2, 4, 5, 8, 11
Part C / Intro / Chapters 8, 9	Exemplar no. / All

.....

L /

Agenda /

‘Delegated Time & Topic Keeper’



The paper saying
'AGENDA :'
'9:00 10:00 11:15'
'LUNCH'
'13:00 16:00'
is
together with other
materials
making
the uneven striped
plastic pieces
in the (here glossy)
lower area
of the box

Co-design events (= the glossy bottom) (no. B, F) and co-design situations (no. C, M) happening during events, are often quite explicitly staged and formatted, and *the printed and/or displayed agenda is a central part of this staging* (= miniature ‘AGENDA’-paper). The agenda or schedule of a co-design event has often been distributed beforehand. During the event, it is also often displayed on the tables in various (shared or personal) A4-print-outs. It is frequently referred to throughout the event. At the event, *the agenda is participating and assisting* – with the organizer(s) and sometimes on its own in a group – in staging the duration and overall topic(s) of each co-design situation.

As recognized by Lucy Suchman, plans are made in many ways, and they are not the same as the unique, lived situated actions, but rather should be understood as ‘a resource among many’ in the particular situation. As the event, its *agenda* is also unique.

More generally, and building on Bruno Latour’s concept of ‘delegated roles,’ one could argue that *a non-human agenda can be viewed as a ‘delegated time-and-topic-keeper’*. At the Kick-off event, the project manager would refer to our previously made schedule and the clock, when breaking the discussion with the landscape of waste and innovation, because we already was half an hour late for ‘Next Steps’.

Exemplar 03 /
circles 11, 12

For more details:

Part A / Intro / Chapter 3
Part B / Chapters 4, 5, 6
Part C / Chapters 7, 8

Part D / Chapter 11, 12 -
Challenge no. 1, 2, 3, 5, 8,
10, 11

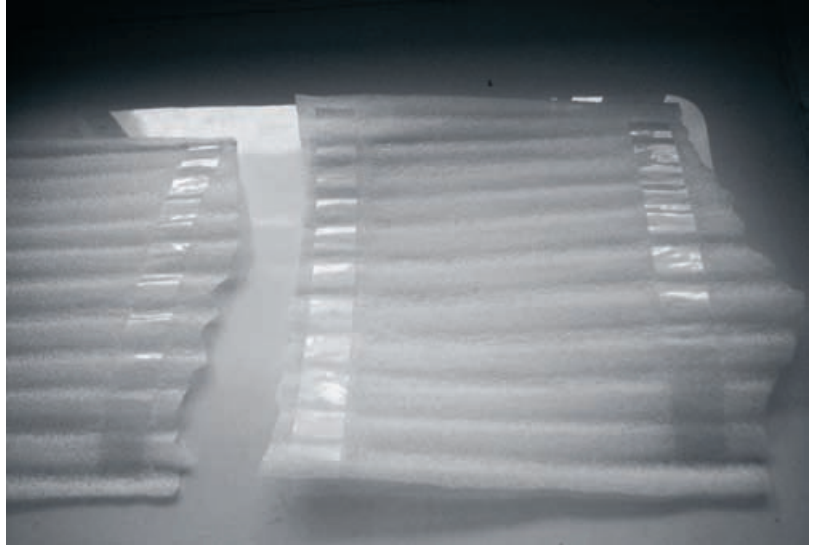
Exemplar no. / All
Appendix no. / 01-07

M /

Co-design Situation – Staging, Warm-up & Cooldown

Each striped plastic
piece within the
lower area
of the (here glossy)
white box has a
unique uneven shape
and edge

Within each piece
the glossy, vertical
area on the left
subtly or clearly
marks a start
and the glossy,
vertical area
on the right
subtly or clearly
marks an ending



Life happens in unique situations (no. C), and in co-designing practice I too propose *focusing on co-design situations* (= striped uneven plastic pieces) *during co-design events* (no. F). *Co-design situations during co-design events are often quite explicitly staged and formatted* – they are previously planned and prepared; they have a quite clear beginning and ending and they are staged and formatted in the situation, primarily by event organizers and assisted by an assemblage of materials (no. B, C, N, O, P).

Exemplar 04 /
Agenda

For example, during the Per:form event roughly one co-design situation was staged for ‘Silent Brainstorming’, another for ‘Mapping’ and a third for ‘Creating one shared proposal’.

Staging and formatting a co-design situation during a co-design event can, in addition to what is being said (talk-material), involve an assemblage of various materials with different ‘delegated roles’, such as *agendas, formats, guides, content materials* and the *physical location* (no. L, N, O, P, Q, E).

Exemplar 01 /
circle 05

Also, *staging transformation among different co-design situations* can be marked by (staged) changes in time, topic-(re)framing, place, materials, or groups of people. During the Service Project Landscape-event, small white cards were introduced, when moving from the situation of materializing the project landscape to the situation of identifying overall topics of interest.

With Richard Schechner’s framework of performance sequences, events include warm-up and cooldown (no. I, K). In a similar way, every staged

co-design situation – or a grouped flow of co-design situations – also starts and ends with what I suggest to call *co-design situation warm-up and cooldown* (= the glossy, vertical areas on the left and right of the striped plastic-situation piece).

Partly building on Donald Schön's views of designing as naming, framing and reframing the problem or focus to address, when *warming-up for a co-design situation*, the (organizer's) staging includes framing the overall topic and focus and setting the stage for *HOW* to be co-designing in the coming situation, e.g. through explicitly delegating roles to non-human participants such as *content materials* or *hands-on formats* (no. P, N). As a tutor at the Service Project Landscape event, I was staging a collaborative warm-up by briefly explaining what to do with the new materials available after lunch and by suggesting various issues to address. This worked as a way of getting into or warming up for the coming explorative situation of creating the landscape.

Exemplar 01 /
circle 01

Cooling down in a situation includes initial reflections of what has just been co-designed and of how this merges into coming situations or later work. For instance, towards the end of the 'Things-on their way'-situation at the Kick-off event, by all standing around the *materialized* (no. T) waste-cake landscape and the project manager briefly commenting on this, collaboratively we were cooling down in this situation, before moving on to the next quite different co-design situation and slot on the agenda.

Exemplar 03 /
circle 05

For more details:

Foreword: Program	Part B / All	Challenge no. 1-5, 8, 10, 11
Positions & Approaches	Part C / Intro / Chapters 8, 9	Exemplar no. / All
Part A / Intro / Chapters 1, 3	Part D / Chapter 11, 12 -	

The large rounded
cardboard
With a zig-zag edge
the pile of stars
the stacks of
cardboard squares
and circles
the cut-outs in the
back
the three light spots
on background
surface
the ‘GUIDE’-paper
etc. are all parts of
making
the uneven striped
plastic piece and
the flow between
two
uneven striped
plastic pieces



Staging has always been considered a central part of participatory design practices, and I suggest to also view staging as formatting. In co-design situations (no. M, C) at co-design events (no. F, B), physical, hands-on formats (= e.g. the rounded card-board, silver stars, etc.) are central in staging and formatting transformative co-designing. *Formats* set the situation approach, structures, grids, formulas and/or guides for HOW to engage with people and materials in specific co-designing (no. O). *Formatting* and *formats* can practically assist event organizers in formatting, to prevent precious time during an event from being spent on discussions along the lines of ‘How are we going to collaborate or do this...?’

As a part of *formatting*, these *formats* are inspired by ‘grids’ and ‘formats’ used in graphic design. They relate to what Richard Schechner refers to as ‘scores’ of acting. Generally, with performance study perspectives, *formats* can be seen to set the ritual structures, e.g. in co-designing for collaboratively playing with and exploring the invited *content materials* (no. P). Using Bruno Latour’s concept of ‘delegated roles’ to non-humans, *formats* can broadly be characterized as ‘delegated coach assistants’.

Exemplar 04 /
circles 02, 03

At the Per:form event, a combination of the words ‘brainstorm’ and ‘silence’, and the white foam-board squares assisted us as event organizers in *formatting* and *staging* the situation. As exemplified across the Exemplars, in the specific co-design situation, *formats* are very often made up of an *assemblage of materials* that take many forms and that need explicit staging.

Since they cannot speak themselves, the physical parts of the *formats* are highly dependent on the human organizer clearly delegating them a role as a *format*. This should happen during the specific situation warm-up (no. M), before stakeholders engage in co-designing as *materializing* (no. S). When working with physical materials, hands-on *formats* are essential in staging and can work as a base (= e.g. the cardboard with a zig-zag edge, the pile of little square and round cardboards, the little stars), for instance, in the warm-up of the ‘Things-on-their-way’-situation where second-hand plates were delegated the role as formats holding collections of things capturing an issue, and the large white foam-board at the Service Project Landscape event is delegated to be a landscape base-format to fill with negotiated content (no. P).

Exemplar 03 /
circle 03, 05
Exemplar 01 /
circles 01, 02

Examples of explicit formatting can also specify whether to work in full-scale or small-scale or be a focus on telling stories, etc. Various other materials are also a part of the assemblage of non-humans assisting in formatting a co-design situation, including the *agenda* (no. L) and printed and/or projected (and spoken) *guides* (no. O).

Lastly, *the delegated roles of physical formats and content materials (no. P) are very different*. Yet, as soon as they are both engaged in co-designing through *materializing* (no. S), they often merge and eventually change roles when *materialized* (no. T). Thus, it is *necessary to stage continual transforming while co-designing with new (hands-on) formats along the way*. For instance, at the Per:form event, the white 20x20cm foam-boards were explicitly specified as base-formats during the ‘Silent brainstorming’ situation, yet, when they had merged with materials from the buffet to become specific materialized proposals, the black table top and small post-it notes were staged as the new tangible formats in the following ‘Mapping’-situation.

Exemplar 04 /
circles 03, 06, 07

For more details:

Foreword: Program
Part A / Chapter 3
Part B / All

Part C / All
Part D / Chapters 11, 12 -
Challenge no. All

Exemplar no. / All
‘This could be a format’

O / Guides / ‘Delegated instructors’

The ‘GUIDE HOW TO’

WHY

HOW

WITH

sometimes also with
the three light spots
on background
surface and with
other surrounding
materials are all
parts of making
the uneven striped
plastic piece within
the lower area of the
white box



The *staging* and *formatting* of co-design events (no. F, B) and co-design situations (no. M, C) are often quite explicit, and *guides are a part of the formats for doing this* (no. N). As a part of the hands-on *formats*, *guides* (= miniature ‘GUIDE – HOW TO’ paper and the three-dotted light ‘wall-projections’) capture how to practically collaborate during group-work co-design situations. Guidelines take many forms; sometimes they are spoken out loud by an event organizer, sometimes integrated in the *agenda* (no. L), sometimes available as separate prints, sometimes displayed as a part of a presentation (= the dotted light wall-projections) – and often a combination of the above materials is used.

With Victor and Edie Turner, guides can also be viewed as parts of setting the (e.g. explorative/play) frame of the co-design situation. Building on Bruno Latour’s concept of ‘delegated roles’ to non-humans, *guides can be characterized as ‘delegated instructors’* assisting the event organizer(s) in setting the stage for co-designing. As such, they are part of the plans for staging the event, but again as Lucy Suchman argues, they are only a resource in the situated action, not the actual action. At the Service Project Landscape event, a projected list of suggestions of what to include in the shared landscape remained visual all the time while the students were co-designing their shared transportation-landscape. Or at the Future Architects’ Laboratory, where every situation described in the agenda included an indication of the planned persons and technologies participating, as well as a brief description of the scenario to explore.

Exemplar 01 /
circle 01.

Exemplar 06 /
Agenda

For more details:

Positions & Approaches

Part A / Chapters 1, 3

Part B / Chapters 5, 6

Part C / All

Part D / Chapters 11, 12 -

Challenge no. 1-5, 8-11

Exemplar no. / All

Appendix no. / 06, 07

Content Materials / 'Delegated Playmates'



The round lid contains the top of a disposable fork
wooden shapes
a pipe cleaner
a barcode
cut-out images
silver shapes – like an elk
– a selected collection.

Together with the other surrounding materials they are parts of making the uneven striped plastic piece within the lower area of the white box.

In the unique co-design situation (no. M), along with the differently delegated *formats* (no. N), *content materials* are also central in the co-designing processes of *materializing* (no. S) and *rematerializing* (no. U).

Content materials (= the physical materials in the round lid) can take many forms and have many different characteristics when participating in co-designing. The available or 'invited' (by event organizers or other stakeholders) *content materials* are a resource of materials related to the content or topic of the situation – they are NOT engaged in setting the stage of how to collaborate (as the *formats* are – no. N). They are generally open-ended, and I suggest describing them with terms such as 'generic', 'field-related', 'project-related', 'pre-designed', etc. Pre-designed materials can be topic/field/project-related, but there is also a special kind – the pre-designed proposals – which often plays a very different role in the situation (see more on how I distinguish these in no. Q).

To broadly use Bruno Latour's concept of 'delegated roles' to non-humans, *content materials* can be characterized as 'delegated play-mates', as they might participate in collaborative experimentation, exploration and negotiation of issues, expressions and proposals.

As Donald Schön has emphasized, 'talk' – be it a story, a question, a viewpoint or a critique – is also an essential part of the 'materials' of the reflection.

Exemplar 01 /
circle 04

tive conversation. Yet, in the concrete situation, the various kinds of talk often intertwine with other participating materials, e.g. physical content *materials*. For example, as tutor at the Service Project Landscape event, I posed the question “*What would you do when bringing a lot of things to the beach in the summer?*” and the students ‘replied’ by verbally discussing and by making additional materializations in their landscape.

With Elisabeth Shove et al., I acknowledge that there is a *clear relationship between ‘having’ (= the available materials) and ‘doing’ or materializing* (no. S).

Exemplar 01 /
circle 04

Among these ‘invited’ and available ‘having’ materials in the co-design situation, some are usually chosen to participate in the unique process of *co-design materializing* (no. S). Echoing Etienne Wenger, in this situated process, I find that stakeholders *add negotiated meaning to them*. At the Service Project Landscape event, pipe-cleaners were manipulated into bikes, and a few long wooden coffee-stirring pins were placed next to each other, which came to mean ‘bike trails’.

Lastly, it is important to acknowledge that during co-designing as *materializing, content materials* usually merge with tangible *formats* resulting in new negotiated and *materialized outputs* (no. N, S, T).

For more details:

Part A / Chapters 1, 2, 3

Part B / Chapter All

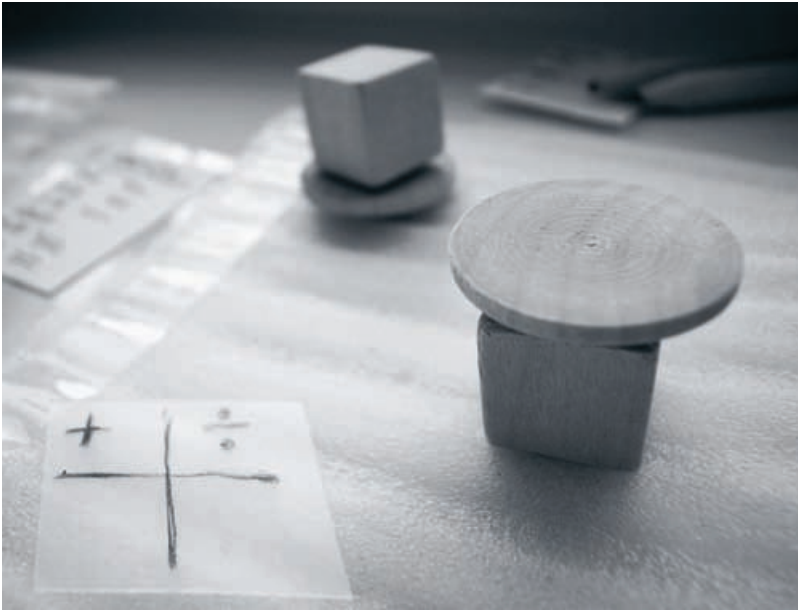
Part D / Chapter 11, 12 -

Challenge no.1-6, 8-11

Exemplar no. / All

Q/

Pre-designed Proposals / 'Delegated Advocates'



In the front
a wooden round
shape
on top of a wooden
square
behind
A wooden square
on top of a wooden
round shape.
- two variations
together with the
other surrounding
materials
are making
the uneven striped
plastic piece
within the lower area
of the box.

In co-designing, the *pre-designed proposal* is a special kind of content material (= 2 variations of a construction with a wooden square and a round piece) (related to no. P). Pre-designed proposals are proposals for a future product, service, system, space, etc. Design-wise, they present a classical kind of tangible material, and are (still) what designers are primarily trained to create.

If invited for a co-design event and situation, the proposals will have been prepared or pre-designed by one or a few people before meeting with the other stakeholders. At the hand-surgery Rehab Future Lab event, the main tangible pre-designed materials were two different versions of hard-foam mock-ups (together with detailed written scenarios of use), made by the local team of researchers and were invited into the group-work situations by them.

Exemplar 02 /
circles 02-05

Having something concrete to collaborate around and with is usually useful in collaborative work, and how pre-designed proposals are engaged – and if they cause tension – depends very much on the unique situated staging and formatting (no. N). Yet, using Bruno Latour's concept of 'delegated roles' to non-humans, may be pushing it a bit to the extreme and *pre-designed proposals can be viewed as 'delegated advocates'*. Insofar as they, in the (at least temporarily) stabilized or *materialized* state (no. T, U), *very often get to play the role of mediators, as they subtly create a situation of de-*

Exemplar 06 /
Introduction /
circles 02, 04

fense/attack – a situation in which the producer(s), at least to some extent, defend the proposal, and where others, at least to some extent, criticize or question the proposal. However, as mentioned, their role depends on the staging and formatting of their engagement. At the Architects' Future Lab, several technological prototypes had been pre-designed before the event too, but here they were staged to intertwine in actually rehearsing possible future architectural practices; these tensions were fruitful for future work on the prototypes and academic research.

For more details:		
Foreword: Program Positions & Approaches	Part B / Intro / Chapters 4, 5	Challenge no. 1-6, 9, 11
Part A / Intro / Chapters 1, 2	Part C / Intro / Chapters 7, 9	Exemplar no. / 02, 05, 06
	Part D / Chapters 11, 12 -	Appendix no. / 01, 02, 03, 07

Manipulation & Connectors / 'Delegated Handymen'



A pair of scissors
a screwdriver
pencils
tape
elephant snot
and the like
are almost invisibly
merging with other
physical materials
in the uneven striped
plastic piece
within the lower area
of the white box.

At co-design events and situations, we also find *another collection of materials*, which often participate (if available or 'invited' in) – and could be called 'manipulation & connectors' (= scissors, pencils, screwdriver, tape, elephant snot... or glue sticks, whiteboard markers, cutting knives, glue guns, cutting board, other office equipment, etc.)

Using Bruno Latour's concept of 'delegated roles' to non-humans, *these materials can be characterized as 'delegated handymen'*, as they blend into the situation while subtly assisting stakeholders in processes of *materializing* (no. S) and *rematerializing* (no. U). They are usually only noticed if missing, but one is easily substituted by another – tape can often substitute for elephant snot, for instance.

If a co-design event happens in a new place (no. D, E), these delegated handymen often need to be 'invited' e.g. by the event organizers. Lastly, sometimes a manipulation or connector material (or tool) in the situation can change into a *content material* (no. P) or *format* (no. N).

In the process of co-designing a shared proposal during the Per:form-event, pins (normally used for pinning papers on a bulletin-board) were added in one of the brainstorm proposals for a 'decision-making device' to randomly mark different elements of a story related to collaborative decision-making.

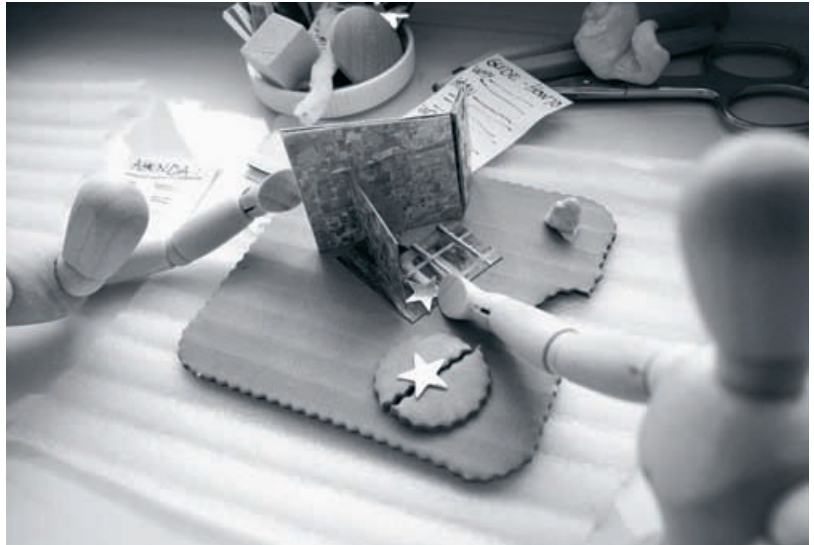
Exemplar 04 /
circle 07

For more details:

Part B / Chapters 5, 6
Part D / Chapters 11, 12 -
Challenge no. 1, 3, 4, 11

Exemplar no. / 01, 03, 04
mainly

Within the uneven
striped plastic piece
with the wooden
dolls
and different
other surrounding
materials
the flat and round
board
with zig-zag edges
and stars
are merging with
other materials
from the round lid.



With the broad view of materiality proposed with Daniel Miller, Tine Damsholt et al. and Elisabeth Shove et al. or recent material culture studies perspectives, it is important to acknowledge how we are continuously *doing* and *materializing* – in everyday life and in co-designing. However, in co-design projects and during co-design events, *in the quite explicitly staged co-design situations, a special kind of co-design materializing takes place* (= wooden dolls and all the other materials / also talk, which is not visible here).

In addition to the skills and working tools needed, Elisabeth Shove et al. emphasize that there is a clear relationship between *having* and *doing* or *materializing*. Here, *having* largely refers to the available or 'invited' physical *formats* (=board with zig-zag edges, stars, etc.) (no. N, O, L) and *content materials* (= in the round lid and manipulated on top of the board with zig-zag edges) (no. P). Here, *doing* refers to the act of co-designing as *materializing*.

Formatting of processes of materializing, largely means staging a merge of *content materials* and (physical) *formats*. In other words, in the staged co-design situation, after the situation warm-up (no. M), stakeholders engage in co-designing as reflective conversations with the (available and invited) materials of the co-deign situation, as I have done by roughly reformulating Donald Schön's phrase. In co-design situations, where available (*having*) *content materials* contain enough field- or topic-related content (e.g. through images, stories, or visualizations of current settings); this can be more than enough to get explorative co-designing going.

At the Kick-off event, stakeholders were getting into and engaging in the topic of waste-handling with the different ‘things brought along’ and with the field-cards pre-designed by the organizers. And at the Design Dialogue events, the printed, place-related, architectural scale-drawings sparked lots of dialogue. However, if there is *no format*, it can be challenging to get into (explorative) co-designing.

Exemplar 03 /
circle 04
Exemplar 05 /
circles 05, 06

The dialogue and explorations with e.g. field and topic-related materials can potentially go on forever – e.g. until an event organizer sets a time-constraint. At the first Design Dialogue event, the group first changed their way of co-designing, when one of the hosting architects had said something along these lines: “In ten minutes, you should make a presentation with your board”.

Exemplar 05 /
circle 07

Differently, at the Service Project Landscape event, after the verbal and projected *warm-up staging* and *formatting* had happened (no. M), the students engaged in *collaborative materializing* of their shared service-landscape. At this event, this happened by very quickly merging the differently delegated materials including the white foam-board *base-format* and the different generic and topic-related *content materials* from the ‘buffet’.

Exemplar 01 /
circles 02-04

Additionally, according to Etienne Wenger and his colleagues, in the situation and integral to the process of reifying (related to materializing) is *the negotiation and adding of meaning to (non-human) reifications among stakeholders*. In the co-design situation, negotiations are often about the meaning of the present content materials.

Actually, *co-design materializing* does not go on forever but roughly to the end of the staged situation. At a certain point (only sometimes pushed by the organizer saying “You have 10 more minutes”), materially a negotiated state is reached, and *the engaged materials are stabilized – or materialized* (no. T).

So to put it simply, there is *a sequence from the having-materials (content materials and tangible formats) › through the (explorative) process of doing co-design materializing › to an (at least temporarily) materialized state* (no. T). At the Design Dialogue events, glued-on pieces were quickly added to the architectural drawing to mark specific places, wishes and proposals for future solutions, before the drawing was brought – now materialized – to the other room and engaged in the plenum presentation.

Exemplar 05 /
circle 08

For more details:

**Foreword: Program
Positions & Approaches**
Part A / Chapters 1, 2

Part B / All
Part C / All
Part D / Chapters 11, 12 -

Challenge no. 1-8, 10
Exemplar no. / All

T /

Temporarily Materialized Outputs

The wooden doll
hand
marks:
A construction of
a star
an image on the
bottom
three connected
vertical shiny
surfaces
and the cardboard
with zig-zag edges.



From a process of materializing (no. S), e.g. during a co-design situation (no. M) at a co-design event (no. F), *at least temporarily stabilized and materialized outputs often capture what has been negotiated* (= here, the three connected vertical shiny surfaces, the image below and a star).

Building on Susan Leigh Star's concept of 'boundary objects', Jane Lave and Etienne Wenger's views of practice as intertwining participation and reification, with Erling Björgvinsson's work, these *materialized* and *stabilized* outputs can be viewed as 'hardened'. Then in the co-design process and practice at the next co-design event (no. B, F), if/when this is invited along and re-negotiated, it may get 'defrosted' again. According to Björgvinsson, this process of defrosting is easiest for those who initially participated in making the materialized output. In other words, with Bruno Latour / ANT views, these materialized non-humans *might become actors mediating further actions and thus leaving traces in the project network*. As was seen at the Per:form event, 28 stand-alone proposals had been hardened/materialized after the 'Silent Brainstorming', but many of them were then 'defrosted' and split up again during the later situation of building one shared 'decision-making device'.

Exemplar 04 /
circles 07, 08

Guilio Jacucci further emphasizes the importance of reaching a level of completion, which again relates to the views that these non-human *materialized outputs are largely what feed into the event aftermath* (no. H, U). Often it is not the real materialized output that feeds into the aftermath, but an image of what was co-designed. However, as a continuation of the *materializing* process (no. S), documentation is not the same as what I suggest calling *rematerializing* – from which *collaboratively reflected, hardened rematerialized outputs* are made (more no. U).

For more details:

Positions & Approaches
Part A / Intro / Chapters 1, 2
Part B / All

Part C / Chapters 8, 9
Part D / Chapter 11, 12 -
Challenge no. 1, 3, 4, 6, 8, 11

Exemplar no. / All
Appendix no. / 01-07

Collaborative Processes of Rematerializing



The pointing wooden
doll-hands
capture
through an unclear
surface with a hole
in focus
here
a silver star
and an elk
on opposite sides of
a vertical surface.

Preferably, when in an explorative frame, as a continuation of a process of co-design *materializing* (after some materials have merged in a *materialized* state) (no. S, T), I suggest continuing collaboratively *rematerializing* (= the focusing on the star and elk in the hole of the unclear surface).

The term ‘rematerializing’ partly builds upon processes of materializing as laid out by Tine Damsholt et al. (no. S). This also points to Bruno Latour’s concept of ‘circulating references’ and his recent suggestion for designers to ‘rematerialize’. But mostly, this comes out of my own practical experiences (some described in previous publications).

Rematerializing is not ‘just’ documentation of what happens and what has been *materialized*, e.g. as still images (no. T); it is in part an explorative yet more reflective frame or mindset. It is a filtered, selective process of *rematerializing for continual design-oriented transforming*. It is a continual process of reflectively exploring in the situation, and – to merge Donald Schön’s concepts – it is partly reflections-on-but-still-in-the situated action.

Yet, in order to stage transformation and a series of co-design situations from *materializing* to *rematerializing*, new formats are needed (no. N). At the service project landscape event, after a while the landscape reached a materialized state. Assisted by new little cards and paper-pieces (physical formats – no. N), as a tutor I then staged a move from *materializing* and making the landscape, to ‘naming’ the main issues just explored and *materialized* in the landscape (no. T). This I suggest to view as an explorative collaborative process of *rematerializing*.

Exemplar 01 /
circle 05

Exemplar 01 /
circle 05

In other words, *from processes of rematerializing something new is rematerialized* – in this particular situation it was a hand-written yellow piece of paper with a list of the initial co-designed topic names and a group of students tied to (assigned to) each topic.

Exemplar 03 /
Afterwards

What is *rematerialized* (or *materialized* – no. T) is often *what materially feeds into the aftermath of the event* (no. H). Richard Schechner emphasizes how ‘archives’ are a central part of capturing memories of an event; however, in such archives, *mere documentation of what happened or copies of the materials engaged are not the same as something that is rematerialized*. For instance, after the Kick-off event, the agenda and presentations were uploaded to the shared DAIM project blog. These represented central materials, which had been engaged in the event, but could not be characterized as *rematerializations*. On the blog, we also uploaded a selection of images of close-up images with plates of waste-cake issues – here commented and named. These images can be said to be *rematerialized* (but done after the event by one person).

Exemplar 04 /
circle 10

Lastly, one could argue that rematerializing happens during the event cooldown (no. K); however, here stakeholders are in the process of leaving the event, so to really be engaged in processes of *collaborative rematerializing I suggests these must also take place during the explorative space* – the actual performance of a co-design event (no. J). During the Per:form event, after the shared proposal had *materialized*, we spent the last two and a half hours individually and collaboratively rematerializing and reflecting. This process was staged and formatted so that each participant would write down three main issues on a piece of paper, and with a video camera record a five minute tour and story of what had happened and been collaboratively materialized and what were important insights to bring along.

For more details:

Part A / Chapters 1, 2

Part B / Intro / Chapters 4, 6

Part C / Intro / Chapters 8, 9

Part D / Chapters 11, 12 -

Challenge no. 1-8, 10, 11

Exemplar no. / 01, 04, 05

The Overall Encompassing Project Frame



The bubble wrap is uneven where bubbles have been squeezed but the outer edge builds upon and merges with the wooden fairly stable underlay

Zooming out again, a co-design project has an *overall encompassing frame*, *within which it is nested* (= the edge of the bubbles project program-plastic / as bubbles are squeezed and the shape of the space is changing but the edge roughly remains).

As a part of viewing co-design events as ritual performances (no. B, F), with Victor and Edie Turner, a specific event is composed of frames (within frames). Further, they argue that no matter the *staging* at the situated event, the *overall encompassing frame* remains – whether it is: a ‘teaching’-frame, (e.g. Appendix 07 / Exemplar 01), an ‘IT-design research’-frame (e.g. Appendices 01, 02, 03 / Exemplars 02, 06) or an ‘economy/towards architectural implementation’-frame (e.g. Appendix 06 / Exemplar 05).

Appendix 07
Exemplar 01

Appendices 01, 02, 03
Exemplars 02, 06

Appendix 06
Exemplar 05

This is a view of *frames* that adds to Donald Schön’s classic understanding of design as *framing* and *reframing* a particular problem. Rather, *the encompassing frame is shaped by and depending on surrounding conditions*, for example, the background of previous projects and experiences, the research/consultancy/teaching environment, financing, etc. (= the wooden underlay). Co-design projects become and last for a certain amount of time and these are all parts of establishing the project’s *overall frame*.

Still, the *overall encompassing frame* influences the situated actions. For example, in the two architecture-related Exemplars: In the Design Dialogue series the place in question had to be rebuilt within five months, which forced the architects to work in quick cycles of updating their proposals to quickly end with drawings for the builders; and even though we attempted to simulate possible future architect’s practices, in the Work-

Exemplar 05

Space-project, the practical landscape architecture work with new technologies was mainly done for the purpose of developing (academic) knowledge. Thus, on one hand, the concept of overall encompassing frames is quite abstract, but on the other hand it becomes very concrete in the *co-design situation*, where the level of material detail in the materialized outputs differed e.g. because of these different *overall encompassing frames*.

From another view, co-design research projects (or any other project) are of course not isolated or stable entities in the world – they are temporary group formations of previous experiences, interests, materials, relations, etc., as Bruno Latour / ANT stresses. In other words, this too relates to viewing co-design projects as platforms for stakeholders from different communities of practice to meet and, to some extent, merge.

Materially, the overall encompassing frame of a project is manifested in the approved (programmatic) project description (no. A), but also throughout the project in the ways various materials are engaged in the specific co-design events and situations (no. D, E, G, H, I, K, L, N, O, P, Q, R, S, T, U). Further, what is materialized or rematerialized for aftermath (no. S, U), also relates to interests tied to the overall encompassing frame (no. T).

For more details:

**Foreword: Program
Positions & Approaches
Part A / Chapters 1, 2, 3**

**Part B / Chapters 4, 6
Part C / All
Part D / Chapters 11, 12 -**

**Challenge no. 1-3, 5, 6, 9-11
Exemplar no. / All
Appendix no. / 01-07**

Chapter 11 /

Guided Tour through the Emerging Material Landscape of Co-designing

One way of engaging the landscape in (staging) future co-designing

In the previous chapter, ‘Emerging Material Landscape for Co-designing’, with the materialized 3D-landscape, I sought to draw together all the theories, examples, insights and issues I have discussed throughout the thesis.

The emerging material landscape is my suggestion of how materiality can be understood and staged in complex event-driven co-designing. The landscape is intended both for understanding and staging co-designing, yet as it is drawing together from the preceding chapters, it can be viewed as mainly being about understanding co-designing.

So, in this second way of drawing material matters together, I focus on how to possibly engage and make the landscape travel into future practice. Since I obviously have no example to illustrate this yet, I will instead illustrate it by combining the visuals with short scenario-like stories, suggesting one possible way of using the ‘Emerging Material Landscape of Co-designing’ in (staging) future co-designing practice.

Scenarios are often told and read from A to Z (or here V), and with the letters dividing each part in the landscape, this could be done here too. However, instead of moving onwards from A in a chronological order, I have deliberately mixed the parts here, seeking to encourage you, the reader, to jump in and out of the story and landscape reflecting your particular interests and concerns.

Lastly, as the format of this book (unfortunately) cannot be staged for you to really experience the following situations, you will have to make that happen yourself...

For example, imagine...

..being invited to participate in the formulation of a new co-design project...

..being engaged in planning how to collaborate in a co-design project...

..being responsible for staging and engaging others at a co-design event...

..being in charge of formatting and framing the next situation of co-designing within the coming hour at a co-design event...

V /

The Overall
Encompassing
Project Frame

With the approval of a multidisciplinary co-design (research) project and program, a quite stable overall encompassing project frame is established too. In relation to this frame of research, I aim to understand the reflective and material practices of the other stakeholders, for these to supplement and merge in our new, shared program and practice...



A /

(Research) Project
Program (and Frame)

When formulating and participating in a new co-design (research) project and program, I am fighting for openness to experiment and explore different corners of it - to collaboratively be open for surprises and new insights. At least in the fuzzy-front end of projects, I suggest focusing on issues, concerns, challenges and intentions rather than only on pre-defined goals & ideas...



B /

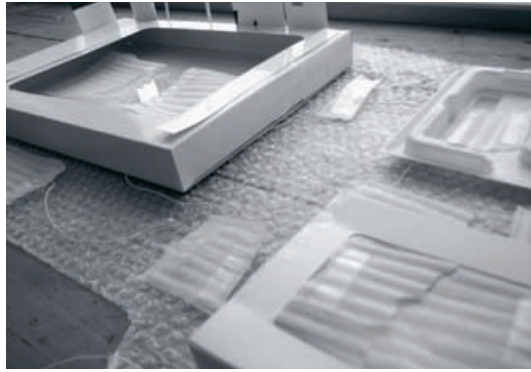
Series of
Performative Co-
design Events

In the project formulations I am closely engaging in how the co-design process is (intended to be) practically laid out. I am fighting for a series of explorative co-design events building upon each other - events in which the overall event frame is not just for talking, but explorative yet with clear staging and formatting of different playful ways of co-designing...



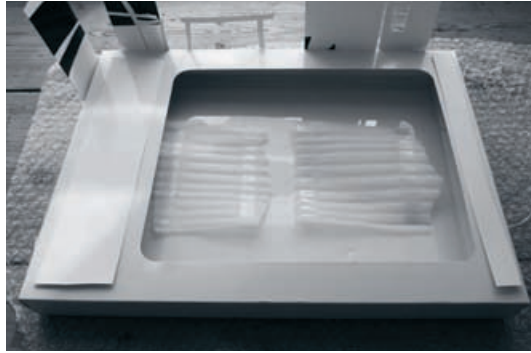
C /
Series of (Staged &
Framed) Co-design
Situations

In the project set-up, the possibility for a series of (staged) co-design situations during events and in smaller teams in between events is something I am keeping an eye on and aiming to do and stage. I am struggling for transparency of these different (often parallel) processes to ensure engagement in and ownership of the same program and project...



F /
Overall Performative
Structures of a Co-
design Event

When planning and preparing a co-design event, I am very aware of how materiality is intertwining in both the proto-performance (or Proto-p.) before, the actual performance during, and the aftermath after the event. At the event the staging of the opening warm-up and the closing cooldown also get lots of attention...



D /
Physical Location as
Event Setting(s) or
Stage(s)

The physical locations of a project influences how we will be co-designing. So, when planning and preparing the staging and formatting of a co-design event, I am carefully considering the spatial possibilities in the choice of location, so it matches what will be staged and is intended to happen...



E /
Configuring the
Spatial Stage of a
Co-design Event

When staging an event, I am fully aware that the details of the physical location can influence how co-designing will play out at the event. I usually argue for locations with flexible furniture etc. so it is easy to re-configure the place during the event to practically match the different co-design situations...



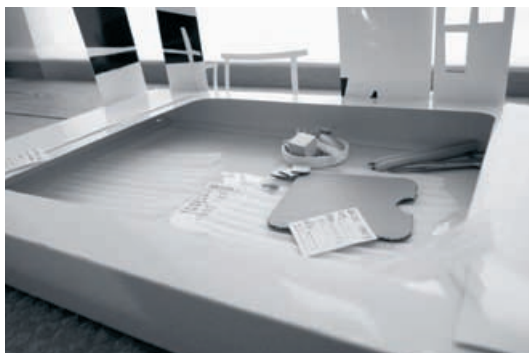
G /
Co-design Event
Proto-Performance

Before the first or any co-design event – during the 'proto-performance' – I am very aware of how different materials such as the tone and style of the invitation, the agenda sent out beforehand, suggestions of ways to prepare and what to bring, all are engaged in setting the scene and frames of the event – and can assist in creating engagement among stakeholders before meeting...



J /
Explorative 'Liminal'
Performance of a
Co-design Event

At any co-design event, in-between the collaborative event warm-up and cooldown, I acknowledge that it is the 'liminal' time for explorative co-designing. We are always performing, but the middle of an event is especially where many stakeholders can get shared experiences of co-designing as doing and materializing – and here I encourage an explorative and playful frame...



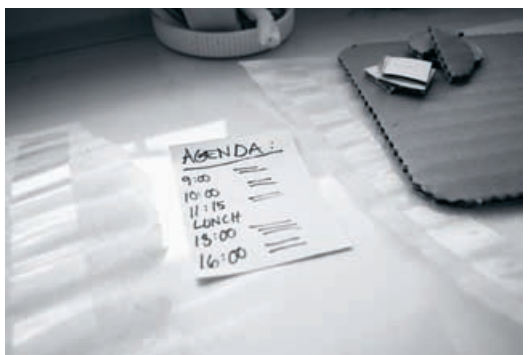
H /
Co-design Event
Aftermath

After the first or any co-design event – during the 'aftermath' – I am very aware of how different materials in the event archives can participate in keeping memories of the event alive – both short-term and long-term. Therefore what gets materialized or rematerialized for the aftermath is what I am clearly staging and engaging in...



L /
Agenda
/ 'Delegated Time
& Topic Keeper'

When meeting in co-design projects, there is very often an agenda about overall topics and what to do when. I am aware that the 'design' of that schedule is a central part of staging and formatting every performance-like co-design event. I also acknowledge that it assists event organizers (and other stakeholders) in structuring time and topics at the event...



I /
Collaborative
Warm-up of
Co-design Event

It takes some time for everyone to meet and get warmed-up at a co-design event, and I know that staging this with various materials such as coffee, nametags, walk-through of the agenda as well as stories related to the topics and issues of the day are assisting in doing this and setting the scene for co-designing....



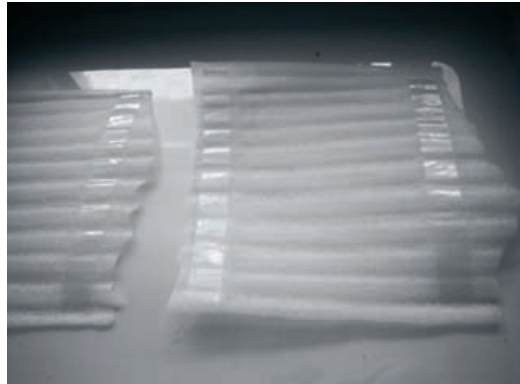
K /
Collaborative
Cooldown of
Co-design Event

When a co-design event is ending, I know that collaboratively cooling down is important because what is recorded and agreed here e.g. about insights and next steps influences what happens afterwards. However, I also know this is not like reflective yet explorative rematerializing, as people already are on their way home...



M /
Co-design Situation –
Staging, Warm-up
& Cooldown

Like in everyday life, co-design events are made up of lots of situations, but I recognize that at events, co-design situations are often quite explicitly staged; for instance, to address a central topic in the project. Related to this, I know that every staged and formatted co-design situation in a sense has its own situation warm-up, middle part of collaborative materializing and situation cooldown...



Q /
Pre-designed
Proposals
/ 'Delegated
Advocates'

I know that designers are largely trained in making proposals for solving design problems, but when engaging in co-designing, I also know that ownership of ideas, proposals and solutions is closely tied to being engaged in making these. Therefore, if I or we pre-design proposals, I carefully stage their participation for instance at co-design events...



N /
Formats
/ 'Delegated Coach
Assistants'

When preparing for staging co-designing at events, I fully acknowledge how formatting and formgiving tangible formats are important parts of the practice of event organizers. I recognize how formatting often is composed of an assemblage of materials with differently 'delegated roles' as tangible parts, on paper, projected, spatial arrangements and verbal (like question) materials...



O /
Guides as parts
of Formatting
/ 'Delegated
instructors'

In the situation at a co-design event, I know an integral part of formatting and staging is being clear on guidelines of HOW to be co-designing – e.g. within the next 45 min. I also know, that guides, like strict recipes, not necessarily foster lots of exploration, so I argue for guides to subtly frame the co-designing while still being open for collaborative experimentation in the situation...



R /
Manipulation &
Connectors
/ 'Delegated Handy-
men'

Locations of co-design events often have to be cleaned up afterwards, for example meeting rooms rarely include very many tools for manipulating and connecting physical materials. As an organizer of co-designing I therefore remember that this needs to be brought along too, so missing these will not be what is keeping us from co-designing with participating materials...



P /
Content Materials
/ 'Delegated
Playmates'

Various materials are participating in materializing during co-designing, and while some have delegated roles as formats setting the scene, I also carefully acknowledge how others (are staged to) play roles of e.g. 'generic' and 'field- or topic-related' 'content materials'. With these we can play, explore and negotiate meaning, interests and new insights in the situation...



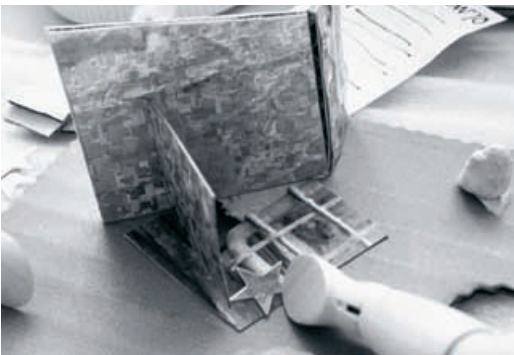
S /
Collaborative
Processes of
Materializing

Often during the middle part of events, I know how co-designing as materializing often includes making. While making, I know battles of interests and ideas are often played out. To stage for such negotiations to be fun too, I am fully aware that formatting this process also means staging a merger of tangible formats and relevant content materials and how introducing new formats can assist in moving on...



T /
Temporarily
Materialized Outputs

From processes of co-designing as materializing, I see how 'materialized' outputs often capture what has been addressed and negotiated – this can for instance be in 3D form, written in a document or sketched in other ways. I am also fully aware that these 'materialized' or temporarily stabilized non-humans can play an important role on-wards in the project...



U /
Collaborative
Processes of
Rematerializing

When something has been materialized, I know exploratively reflecting upon what has been done and made is also very important in co-designing. Staging this to happen collaboratively at events as processes of 'rematerializing', resulting in new 'rematerialized' outputs, is a way I will suggest to negotiate and get some shared ownership of what feeds into the aftermath of an event...



Overview /
Emerging Material
Landscape of
Co-designing

I know I here have zoomed in on how materials (broadly understood) are participating in co-design projects, events and situations. Zooming out again, of course, I and other people are intertwining and engaging in co-designing too. With materials, we all participate in setting up and making the co-design project, events, situations and with that hopefully fruitful networks and relations...



Chapter 12 /

11 Challenges with Material Matters in Co-designing

Relating to various (still) common design and co-design views, processes and practices

In the first and second ways of drawing material matters together, I intertwined and reassembled Exemplars and the core theoretical references laid out in Parts A, B and C in ‘Emerging material landscape of co-designing’, and I proposed one possible way of making it travel into future practices. In yet a different way, this third and last way of drawing material matters together, draws the different examples and theories together in ‘11 challenges with material matters in co-designing’. The 11 challenges summarize my suggestions for staging, *formatting* and participating in co-designing. As the other ways of drawing together, the 11 challenges are also intended for both understanding and staging co-designing.

All Exemplars
Part A, B, C

11 challenges build upon Exemplar and co-design project experiences and observations

Of course, challenges of engaging in co-designing and co-design projects, events and situations do not get resolved with the landscape; these challenges or this thesis, as every project, every event and every situation of co-designing is unique. Yet, there are many similarities and family resemblance across different co-design projects too. At least there are surely similarities among the different co-design projects in which I have engaged and report from in this thesis.

The stories reported in the Exemplars all happened during some of these projects and other activities I have been engaged in, so what happened there has been a part of the co-designing practices in these projects. Most of the situations and experiences in the Exemplars and other examples I suggest as fruitful ways of staging in future co-design projects, of course appropriated to the situation there. But, several of the Exemplars and co-design projects also included various practices I experienced and observed, which in my views, often very materially were contradicting stated aims and intensions in the project of really co-designing. This of course concerns me, when my intensions are to cultivate co-designing.

All Exemplars

11 challenges with concerns and suggestions

P&A As expressed in Positions & Approaches on my research approaches, I have been inspired by Bruno Latour's suggestion to trace and share so called 'matters of concern' (rather than 'matters of facts') (Latour, 2004), but I have chosen to call the following 'challenges'. These challenges both include concerns of mine about (still) common (co-) designing practices, which I have observed and experienced (The 'From...' -phrases and sections). In each challenge, the concern is followed by my suggestions of how to approach and engage in future co-designing, with the broad perspectives of materiality and performative views of co-designing practice laid out in this thesis (The 'To...' -phrases and sections).

11 challenges capture similarities across different co-design projects and tie back to my final program

Foreword: Program
Part A, B, C As I have shown throughout the thesis, there surely are similarities or family resemblances across different co-design projects. These are intertwined in my programmatic statements. At the end of Part A, B and C I have summarized the main programmatic statements addressed there. In the following 11 challenges, I return to and restate these statements and recommendations. In each of the 11 challenges, I revisit and merge two of the programmatic statements, with three selected Exemplary examples, the core theoretical perspectives related to that challenge and with links to the most central sections (A-V) in the 'Emerging Material Landscape of Co-designing'.

Chapter 10

Foreword: Program Overall – cutting across all the 11 challenges, two repetitions from my final program emerge:

First – Recognizing that designing and co-designing are different (organizational and socio-material) practices...matters

Overall – Viewing co-designing largely as reflective conversations with the materials of the co-design situation...matters

And finally, to my (at least in this thesis, stabilized and rematerialized) still open-ended but drawn together and somewhat concluding '11 challenges with Material Matters in Co-designing':



Challenge 1 is for example based on insights from Exemplar 02



From Exemplar 03



From Exemplar 05

For more details:

**Foreword: Program
Positions & Approaches**
Part A / All

Part B / All
Part C / Intro / Chapters 7, 9
Part D / Chapters 11, 10 -

Landscape no. B, C, H-V

Challenge 1 /

From Views of Materials as ‘just’ Prototypes and Methods – to Participating Actors in Co-design Situations and Networks

From views of materials as ‘just’ prototypes and methods

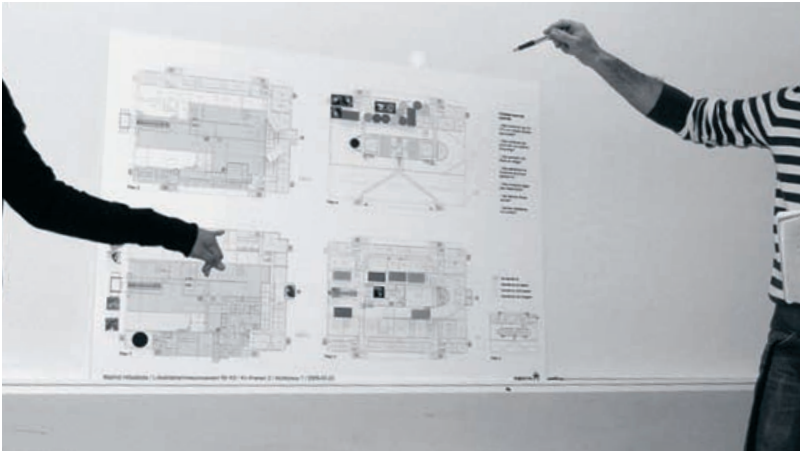
In many (co) design communities, during processes of (co-) designing, materials are often ‘just’ viewed as a part of a method, tool, sketch, model or prototype. This is despite general awareness in the participatory community of the socio-material richness of everyday practice. With this view, non-humans as emails, agendas, event documentations, etc. as well as the situated reconfiguring of relations among people and materials are left out, I suggest including these. I suggest also, a broad view of materiality and materials in co-designing.

– to participating actors in co-design situations and networks

Working with (lo-fi and hi-fi) mock-ups and prototypes as central materials is common practice in (co-) design work. Some of these too often get to play a central role in (co-) design projects as ‘boundary objects’ intertwining in language design games. Other tangible materials (e.g. field images or more generic materials) are also often a part of how stakeholders collaborate e.g. during co-design event. Yet, initially with Donald Schön’s ‘Designing as reflective conversations with the materials of a design situation’, ‘materials’ are not just prototypes or methods; they are parts of the unique situation. When applying a broad view of materiality, as I have established in this thesis, with Schön, recent material culture studies perspectives, and especially with Bruno Latour and Lucy Suchman’s views of relations in actor-networks, materials are participating and acting too. These authors all share a view of materiality as an integral part of living. For example, in Bruno Latour’s views both humans (people) and non-humans have the ‘agency’ to act, sometimes as actors mediating and staging others to act. Further, this leaves traces in the complex network of a co-design project. In other words, when invited in, an assemblage of materials is participating in staging what happens in *co-design situations* at a co-design event, other materials are made and over time some become actors in the co-design process - for example playing a role between two co-design events. So, when understanding and staging co-designing...

Broadly seeing materiality and materials – like people – as participating, relating and acting in co-design networks, projects, events and situations...matters

Understanding how a complex, continually transforming assemblage of materials (e.g. including talk as material) participates in situated co-designing...matters



Challenge 2 is for example based on insights from Exemplar 05



From Exemplar 04



From Exemplar 06

For more details:

**Foreword: Program
Positions & Approaches**
Part A / All

Part B / Chapter 6
Part C / All
Part D / Chapters 11, 12 -

Landscape no. A-Q, S, U, V

Challenge 2 /

From Designing in Implicit Roughly Phased Design Processes – to Staging Performing in Co-design Events and Situations

From designing in implicit roughly phased design processes

(Co-) design processes are often visualized as if participants are performing in linear or iterative design processes roughly split up in different phases such as research › idea generation › conceptualization › implementation. However, in co-design projects much work is often done in parallel not following this path in practice, so in co-designing quite explicit staging of processes and performing is essential to align what different stakeholders do. I suggest focusing on staging and transforming between *co-design situations* – for example, during co-design events.

– to staging performing in co-design events and situations

Stakeholders participating in co-designing are not only performing when giving a groupwork presentation, roleplaying scenarios or when rehearsing being oneself in the future. With Erving Goffman's classic views of interaction, people are always performing in the situation (sometimes frontstage, sometimes backstage). Thus, in co-design projects stakeholders are always performing too, and the above mentioned examples are specially staged ways of performing in co-designing. So, in relation to traditional often quite implicit one-designer processes, quite explicit staging and *formatting* of co-designing is essential in co-design projects. People cannot always be present, so as an explicit structure, with Eva Brandt, recently I re-established her point about co-design processes staged as a series of co-design events. Events that in their structure have much resemblance to (ritual) performances, and which I, with Richard Schechner, view as a sequence of proto-performance › performance › aftermath. From Donald Schön's emphasis on '...the design situation', I add a focus on the staging of and transitions between what I coin the *co-design situation* during such events. Because, from studies of the various Exemplars, I have found that it is largely during these situations, during the performative event, explorative and experimental co-designing with physical materials take place. Eventually staging co-designing during an event and *co-design situation*, calls for awareness of both material assemblages and performative structures. So when understanding and staging co-designing...

Acknowledging that people as well as materials continuously perform (frontstage & backstage) in co-designing, and that a special kind of performing take place at staged co-design events...matters

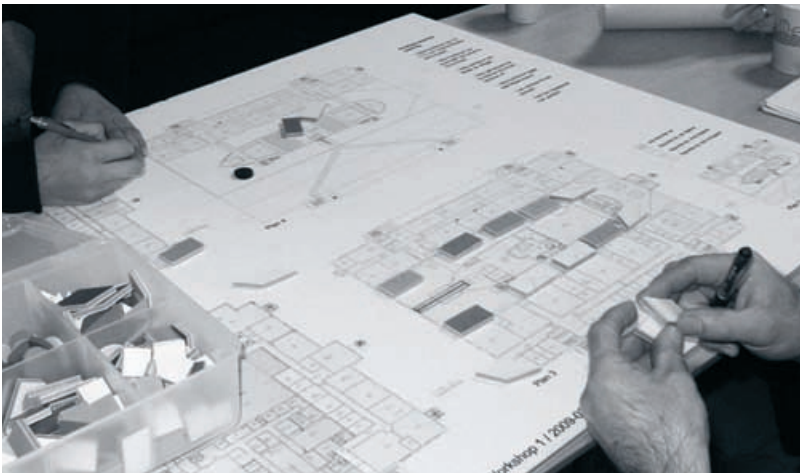
Viewing a series of co-design events as situated performances and (time-space) sequences of proto-performance – actual performance – aftermath ...matters



Challenge 3 is for example based on insights from Exemplar 02



From Exemplar 04



From Exemplar 05

For more details:

**Foreword: Program
Positions & Approaches
Part A / All**

**Part B / Intro / Chapter 5
Part C / Chapter 9
Part D / Chapters 11, 10 -**

Landscape no. B, C, G, J, L-V

Challenge 3 /

From Designers Mainly Pre-Designing Form and Proposals – to Largely Making Formats and Staging Co-designing

From designers mainly pre-designing form and proposals

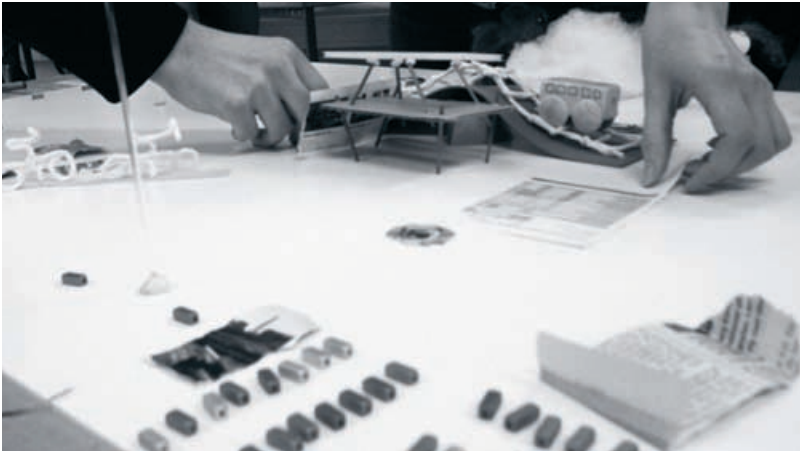
In ‘classic’ designing, giving form, visualizing and making (e.g. aesthetic and functional) proposals or solutions *for* others is the main job of designers. However, in co-designing to foster engagement, shared author and ownership of issues, ideas and solutions among stakeholders is essential. This is, to a large extent, changing how designers’ visualization and materialization competences are to be/being used. I suggest using these skills especially when preparing *formats* for staging and engaging in co-designing *with* others.

– to largely making formats and staging co-designing

As clearly stated, already in 1991 in the book *Design At Work*, to increase chances that an IT-system or a service concept will fit the practice it is being designed for, from day one in a project, issues and proposals for solutions have to be co-designed. However, as it was also clearly stated in that book, and which the performative perspectives I apply in this thesis also emphasize, co-designing needs staging. And integral in staging is *formatting*. Of course, solutions still have to be well-designed. Yet, from studies of many *co-design situations* I have found that unless it is very carefully staged, bringing or inviting pre-designed proposals to *co-design situations*, very often implicitly create a critique/defence situation, which is not very fruitful if the intension is co-designing. To emphasize, this role of proposals I therefore call ‘delegated advocates’. Staging co-designing is a complex, subtle and very material practice (calling for additional skills to visualizing and materializing). Core materials of the co-designer are e.g. listening, drawing together, respecting others’ practices and sharing responsibilities (and fame). Throughout this thesis, I have exemplified and discussed how staging co-designing practically can be done by making and inviting (carefully co-designed) assemblages of materials. This includes: choosing and setting the stage(s), planning agendas with transitions of *co-design situations*, making tangible and guiding formats of how to collaborate, preparing or selecting *content materials*, etc., then invited into a specific co-design event and situation. So when understanding and staging co-designing...

Recognizing that the role of designers largely changes from mainly designing forms and proposals for others, to (co-) designing formats for staging co-designing with others...matters

Acknowledging that formatting is an essential part of staging co-designing...matters



Challenge 4 is for example based on insights from Exemplar 01



From Exemplar 04



From Exemplar 03

For more details:

Foreword: Program Positions & Approaches
Part A / Chapter 1

Part B / All
Part C / Chapter 9
Part D / Chapters 11, 10 -

Landscape no. C, G-U

Challenge 4 /

From Ideas of Inherent Affordances and Semantics – to Delegating Roles to and Negotiating Meanings with Materials

From ideas of inherent affordances and semantics

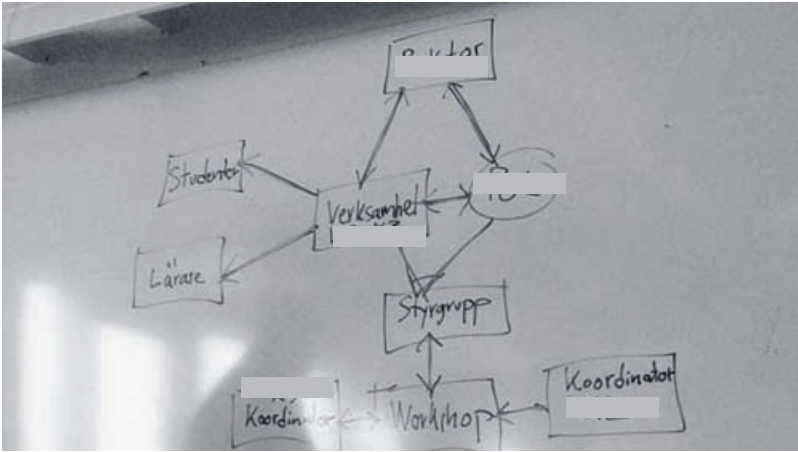
In some design (research) fields and various other disciplines, many consider things and materials as having pre-assigned or inherent affordances. Tied to its intended use, within industrial design, this is often called product semantics (e.g. a button that in its material shape is clearly indicating if it is for pushing or turning). However, with broad views of materiality, combined with intensions of really co-designing solutions with materials, I argue that these ideas do not fit well with co-designing. When staging co-designing, I rather suggest delegating roles to and inviting (tangible) *formats* and *content materials* for stakeholders to negotiate meanings in the situation.

– to delegating roles to, and negotiating meanings with materials

As exemplified and discussed throughout this thesis, practically staging and *formatting* co-designing can be done with *formats* and *content materials* (e.g. generic or field-specific). I call these ‘delegated coach assistants’ and ‘delegated playmates’. Yet, the same material, for example a square piece of 5mm foam board, can be one or the other, so inspired by but much less stable than Bruno Latour’s example of hydraulic door pumps as ‘delegated doormen’, these ‘roles’ have to be explicitly delegated in each situation. In the situation, materials as *formats* assist event organizers in staging and *formatting* how to be co-designing, while other invited materials – ‘delegated playmates’ – engage in negotiations of meanings of issues, focuses and proposals among stakeholders. In extension to Donald Schön’s focus on ‘Reflective conversations with the materials of the design situation’, this awareness of how meanings of materials are negotiated is intertwined with ideas of situated participation and reification in communities of practice. In a *co-design situation*, starting with separate *formats* and *content materials*, these merge in collaborative processes of *materializing*, ending with new *materialized* outputs, which again might get new delegated roles in the co-design project. This has been a part of the practices of all the co-design projects I have been engaged in. So when understanding and staging co-designing...

When formatting, acknowledging how the invited materials in the material assemblage have ‘delegated roles’ when participating in the co-design situation (e.g. as agendas, content materials, formats, guides and the physical location)...matters

Recognizing that the negotiation of meanings, especially of participating content materials, takes place among stakeholders in the situation...matters



Challenge 5 is for example based on insights from Exemplar 05

10:00	<i>Welcome</i> Short overview of the project (Landscape no. 1) <ul style="list-style-type: none"> • objectives • time plan • deliverables • organization 	
10:30	<i>Things on their way (a first encounter with the world of waste)</i> Questioning categories searching for meaning (Landscape no. 2)	
	Hands-on exercises	
11:00	<i>Experiences and challenges, inspecting the common toolbox</i> Bringing together a bow tie and a spiral (Landscape no. 3) Partner presentations	
12:30	<i>Lunch</i>	
13:00	<i>Mapping a landscape of waste and innovation</i> Brief reports from the field (Landscape no. 4) Building a landscape in three steps (group exercise)	

From Exemplar 03



From Exemplar 06

For more details:

Foreword: Program Positions & Approaches
Part A / Chapters 1, 2

Part B / Chapter 5
Part C / Chapters 7, 8, 9
Part D / Chapters 11, 10 -

Landscape no. A, C, F, G, I-R, U, V

Challenge 5 /

From Mainly Managing Time, Money & Organizational Plans – to also Staging Encompassing & Situated Shared, Explorative Frames of Co-designing

From mainly managing time, money and organizational plans

As co-design (research) projects are becoming more and more complex, project management is increasingly becoming a part of co-design practices. This is necessary and important, but in complex co-design projects, it is not enough to manage time, money, official documents, organizational plans, etc. For shared ownership and engagement among stakeholders, establishing and staging shared collaborative *frames* of co-design doing is needed too; this is tied to materials. I suggest establishing shared *overall, encompassing and situated frames* with an assemblage of materials.

– to also staging encompassing and situated shared, explorative frames of co-designing

In *Design At Work*, staging is emphasized, which relates to Etienne Wenger et al.'s work on not only effectively managing, but also 'cultivating communities of practice'. Additionally, I have found this related to what Victor Turner calls frames of ritual performances. *The overall encompassing quite stable frame* of a project, such as a research-frame, teaching-frame or implementation-frame, also affects the acting in the situation, as different expectations, interests, goals and *materialized* outputs are tied to this. Different from Schön's use of the terms 'framing' and 're-framing' of problems, for fruitful situated co-designing, it matters if some are in a *frame* (or mindset) of critically judging, while others are in an *explorative and experimental frame*. To some extent there is a need for a shared situated frame of doing for co-designing to be fruitful. In this thesis, I have especially focused on establishing and staging such 'an explorative frame' for the whole and particularly the middle 'liminal' phase of a performative event, to keep Turner's phrase. From studies of the Exemplars, I have found this tied to the participating assemblage of materials, for example, in the attitude of the (emailed) call for participation, in the agenda and in the materials engaged in the situation. An exemplary attitude of project managers is also important here towards exploring and transforming with new materials. So when understanding and staging co-designing...

Understanding how (material) staging and formatting is crucial for establishing a shared, situated, explorative frame of co-designing...matters

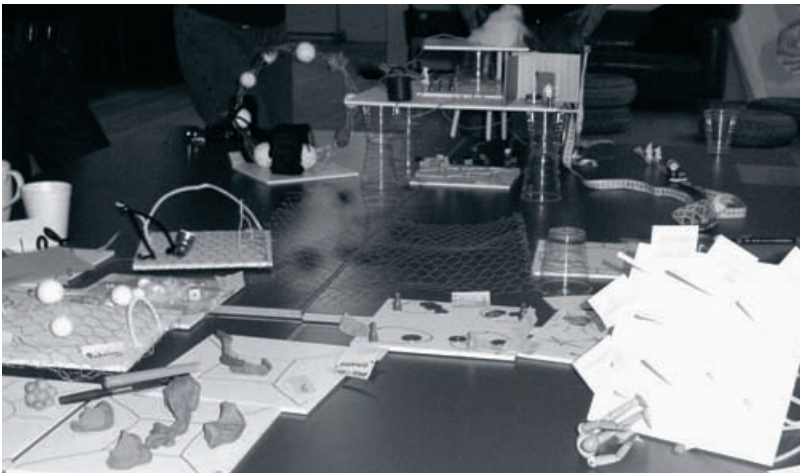
Acknowledging that the overall encompassing project frame, as a research-, teaching- or implementation-frame, influences the material practice in the situation...matters



Challenge 6 is for example based on insights from Exemplar 01



From Exemplar 03



From Exemplar 04

For more details:

Foreword: Program Positions & Approaches

Part A / Intro / Chapters 1, 2

Part B / Intro / Chapters 4, 6

Part D / Chapter 15, 16 -

Landscape no. A, N, P, Q, S-V

Appendix no. / 04

Challenge 6 /

From (Co-) designing Mainly with Problems and Questions – to also Tangibly Exploring Programmatic Issues and Concerns

From (co-) designing mainly with problems and/or questions

(Co-) design projects are (still) often initiated by goal-oriented briefs with requirements and problem-formulations, and (co-) design research projects by research questions and project methodology and intension formulations. A few stakeholders often create these before or in the beginning of the project. However, with the increasingly complex challenges of today's co-design projects, and with the increasing number of different stakeholders engaging along the way, this can be a constraining practice. At least in research projects, I suggest tangibly exploring issues as parts of an experimental programmatic approach.

– to also tangibly exploring programmatic issues and concerns

When complex challenges are being explored, and when many different stakeholders engage at different times and in various intensities during co-design projects, events and situations, new issues to consider (hopefully) show up along the way, especially when working in the fuzzy front end of projects, as Liz Sanders et al. has emphasized. Further, Donald Schön's description from 1983 of how situated professional practice includes continually reframing which problems - or I prefer challenges, issues and concerns - to address while designing, is also still highly relevant in co-designing. What we in the XLab project and I, as my second research approach, phrase as 'an experimental programmatic approach' in many ways relates to this view. To me, this approach does not mean stating explicit questions to answer, nor does it mean making everything into problems to solve, but rather it means engaging with openness in exploring challenges, uncertainties, concerns, issues and possible networks of solutions for addressing these, at least a while into the project. The idea of working with a 'program' is also inspired by architectural practices and by the work of Redström and Hallnäs. Practically exploring issues of a project can be done in a variety of ways, in addition to written descriptions. As exemplified in several Exemplars, making 'Landscapes' with materials such as images and three-dimensional materials can add concreteness to this otherwise partly abstract, strategic practice in co-design projects. So when understanding and staging co-designing...

Acknowledging that tangible materials can be used for collaboratively exploring and capturing programmatic issues, focuses, questions and concerns of a co-design project...matters

And I repeat – Recognizing that designing and co-designing are different (organizational and socio-material) practices...matters



Challenge 7 is for example based on insights from Exemplar 02



From Exemplar 04



From Exemplar 06

For more details:

Foreword: Program
Part A / Intro / Chapter 2
Part B / Chapter 5

Part C / Intro / Chapter 7
Part D / Chapter 15, 16 -
 Landscape no. B-G, I, J, N,

S, U

Challenge 7 /

From Booking a Meeting room – to Selecting and Setting Spatial (Front & Back)-stages for Co-designing

From booking a meeting room

Today, meetings and workshops, co-design events, are integral in most (co-)design projects and processes. In large and international co-design projects, two to three days conference-like events are quite common too, as face-to-face meetings are important for stakeholders to get to know each other, align resources and get a shared sense and ownership of the project. The agenda and assemblage of other materials brought or invited along, influence what happens at the event; likewise does the physical location. I suggest to view selecting and setting of the spatial stage(s) as integral in staging and *formatting* (for) co-designing.

– to selecting and setting spatial (front & back)-stages for co-designing

In 1991, in *Design At Work*, the phrase ‘setting the stage’ of participatory/co-design projects and events was established as central in (staging) co-designing. Additionally, with Erving Goffman’s views, we are always performing, in co-designing too, in what he phrased the ‘frontstage and backstage’. To him, these stages are both viewed as mental and physical; here I mainly emphasize the physical location and it’s often shifting front- and backstages. Most stakeholders have previous experiences of performing in ‘classic’ meeting room setups almost everywhere with a table in the middle, chairs around it, possibly a whiteboard and markers, projector, maybe a flip-board and post-its, coffee and cups, etc. This kind of stage is good for some ways of co-designing, but not for all, for example not necessarily very good if the *formatting* of co-designing aims at roleplaying or rehearsing possible future practices, actually intended to happen in other kinds of environments. As shown in the Exemplars, at co-design events stakeholders mainly stay in and use what is available in the event location. When event organizers at the beginning of, or during, these events introduced how different parts of the environment was intended to be used for different purposes, this was usually followed by the other stakeholders too. Thus, selecting and delegating roles to the spatial environments should also be viewed as a part of staging for co-designing. So when understanding and staging co-designing...

Viewing the spatial environments of a co-design event as stages affecting the collaborative performing...matters

And, I repeat: When formatting, acknowledging how the invited materials in the material assemblage have ‘delegated roles’ when participating in the co-design situation (e.g. as agendas, content materials, formats, guides and the physical location)...matters

EXERCISE

Format / Topics & Procedure

In random – The landscape is build by for example giving 2D/3D form to the following parts of the project...

- Different types of transportation tools and systems
- Different central places and situations
- Other key objects in the network
- Different Participants/actors/stakeholders
- The core topics of the project e.g. Sustainable
- Relations between different parts...
- Visions of the project
- Expected goals of the project
- Challenges of the project

Challenge 8 is for example based on insights from Exemplar 01



From Exemplar 06



From Exemplar 05

For more details:

**Foreword: Program
Positions & Approaches**
Part A / Chapter 1, 3

Part C / All
Part D / Chapters 11, 10 -
Landscape no. B, C, F, H-P,

S, U

Challenge 8 /

From Meeting Introductions & Quick Conclusions – to Time for Collaborative Warm-ups & Cooldowns of Co-design Events and Situations

From meeting introductions and quick conclusions

Co-design events (and meetings) in (co-) design projects mostly start and end with quick collaborative introductions and conclusions. Still, during co-design events sometimes it is as if stakeholders are thrown into doing something without really being ready for it, or have to leave something and quickly conclude, for example because the agenda indicates that it is time for a new topic or perspective (time for a new *co-design situation*). I suggest planning time for many collaborative warm-ups and cooldowns during co-design events as transitions between *co-design situations*.

– to time for collaborative warm-ups and cooldowns of co-design events and situations

With Richard Schechner's framework for understanding performance processes, co-design events are viewed as performances that he argues overall are composed of a warm-up, the actual performance and cooldown. During the warm-up, participants leave the everyday and enter this special performative space, and during the cooldown it is the other way around, also often including initial reflections of what has just been experienced; this also applies to co-design events. Related to this, also with Victor Turner's views of ritual processes, the actual performance is in many ways similar to what he views as the middle 'liminal' phase of a ritual; likewise this is true at co-design events. Further, from studying the sequences of the Exemplars, roughly like the slots in the agendas, I have also found this middle phase of these events made up of a series of *co-design situations*, during which collaborative and playful explorations or actual co-designing (often with physical materials) mainly have taken place. These exemplary situations were too composed of a situation warm-up – performance – situation cooldown structure, and were important in staging co-designing. The situation warm-ups included explicit staging by organizers introducing the focus, formats and other materials to be participating; and the situation cooldowns included groupwork presentations in plenum, before the next situation warm-up, etc. So when understanding and staging co-designing...

Acknowledging that every staged co-design event and situation has its warm-up and cooldown...matters

In addition to co-design events, focusing also on quite explicitly staged co-design situations...matters



Challenge 9 is for example based on insights from Exemplar 03



From Exemplar 06



From Exemplar 04

For more details:

Foreword: Program Positions & Approaches
Part A / Chapter 2

Part B / Chapters 4, 5, 6
Part C / intro / Chapter 8
Part D / Chapters 11, 10

- Landscape no. B, F, G, I, N-Q, V

Challenge 9 /

From Secret Backstage Preparations only by Event Organizers – to Proto-Performance Engagement through Materials by Stakeholders

From secret backstage preparations only by event organizers

It is sometimes argued by event organizers, that stakeholders do not have time to do anything before a co-design event. But is that really the case, or is it organizers wanting to keep control of the process by secretly planning and preparing everything (backstage, during the proto-performance)? In everyday life, ownership and engagement is often tied to material things. With a similar view on co-design projects, to foster engagement, I suggest *content materials* to be sometimes prepared by participating stakeholders.

– to proto-performance engagement through materials by stakeholders

With Richard Schechner's framework for understanding performances, I view the proto-performance (proto-p.), like the aftermath, as a part of the (co-design event) performance process. Proto-p. precedes the event, and in co-design projects organizers often use this time for planning and preparing a coming event. Then, in a sense, their proto-p. start earlier than for the other stakeholders. Yet, as soon as stakeholders have been invited to a co-design event, more or less explicitly their proto-p. starts too, and I have found this can be used fruitfully. When staging co-designing, (and not bringing pre-designed proposals), as shown throughout the thesis, the tangible materials invited into an event are often split up into *formats* and *content materials*. Generally, formats assist the organizers in staging how to collaborate, while the other materials can be viewed as capturing possibly negotiated content-specifics (e.g. related to the field and/or topic in focus). Stakeholders often have expertise content knowledge of current products, services and practices. Thus, when preparing for a shared co-design event, it can be divided among the different stakeholders to prepare different materials. (For non-organizers, this usually takes guiding *formatting* too – e.g. “Bring three things on their way”). While organizers usually prepare formats for staging and *formatting* co-designing at the event, sometimes letting other materials be prepared and brought by other stakeholders can be a way to establish their engagement in the event already during proto-p. So when understanding and staging co-designing...

Accepting that choices of invited materials can be distributed among (designers as) co-design event organizers and other stakeholders, both before, during and after events...matters

I repeat: Viewing a series of co-design events as situated performances and (time-space) sequences of proto-performance – actual performance – aftermath...matters



Challenge 10 is for example based on insights from Extra example in Part B / Chapter 6



From Exemplar 03



From Exemplar 01

For more details:

**Foreword: Program
Positions & Approaches
Part A / All**

**Part B / All
Part C / Intro
Part D / Chapters 11, 10 -**

Landscape no. F, G I, J, L-P,
S, U, V

Challenge 10 /

From Time Spent Methodologically Discussing “How do we do this?” – to Formatting Collaborative Materializing of Shared Materialized Insights

From time spent methodologically discussing “How do we do this?”

In co-design projects, events or meetings are organized, and the event organizers usually email agendas beforehand, but detailed plans of how to be collaborating during each slot of the agenda are not always made. Then, during the event discussions of how to collaborate frequently occupy precious time. To the table, stakeholders bring different experiences and professional practices of ways of working, and these often clash if it is unclear how to collaborate in the *co-design situation*. I suggest organizers explicitly *format collaborative materializing*, to use the time for new shared experiences and to make new shared *materialized insights*.

– to formatting collaborative materializing of shared materialized insights

With Richard Schechner, I acknowledge how people have their personal ‘restored behaviors’ of acting and with Etienne Wenger et al., I also see the need for establishing a shared community of co-design practice in a new project. Thus, establishing a new co-design team also inherently includes establishing new shared behaviors or ways of reifying and acting (co-designing).

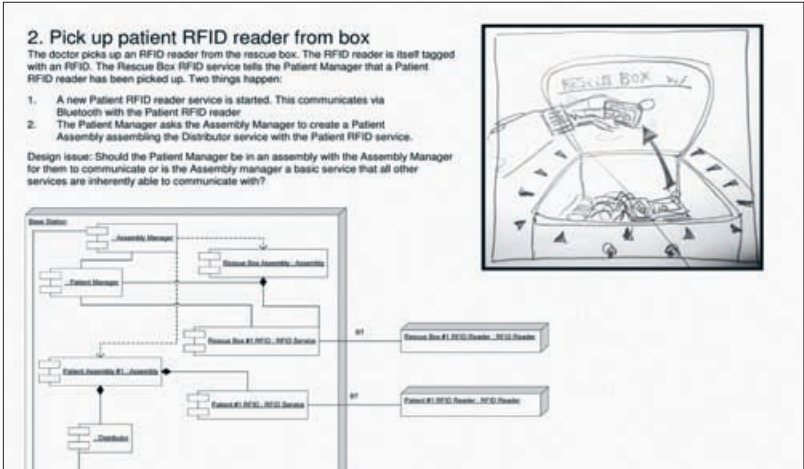
As visualization and materialization are important in (co-) design work, doing this from day one can just as well become a part of the shared team behaviours. This almost always challenges some stakeholders, and thus fosters an urge to discuss “How do we do this?” – but I suggest using the precious time at events for collaborative *materializing*. As Damsholt et al. emphasize, we are continually *materializing* in our daily lives, but as shown in the Exemplars, during staged *co-design situations* I have found a special *materializing* can take place. Also, with Elisabeth Shove et al., I argue that there is a clear relationship between skills and available ‘having’ materials (e.g. *formats* and *content materials*) › ‘doing’ / co-designing as *materializing* and negotiating › new shared *materialized* outputs capturing the negotiated insights, issues, proposals, etc. Further, with Lucy Suchman, I acknowledge that plans are not like the lived situated actions, so openness for appropriating plans of *formatting* in the situation is important when staging for fruitful co-designing. So when understanding and staging co-designing...

Acknowledging that quite explicitly staged processes of materializing – and also rematerializing – are important situations in co-designing...matters

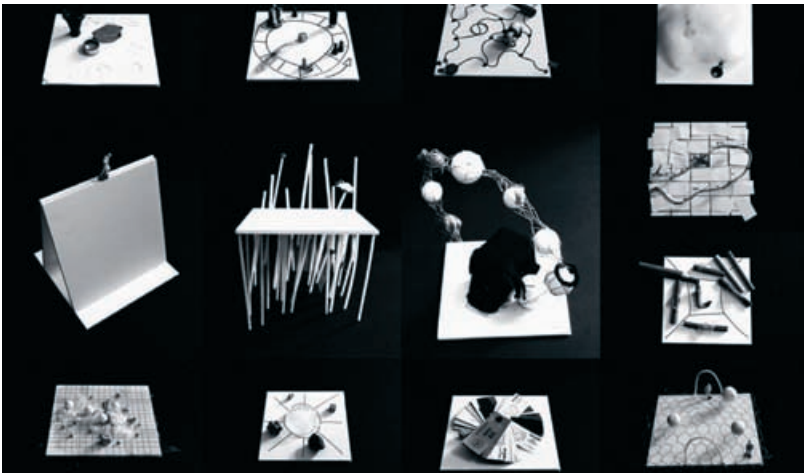
Understanding how negotiated materialized and rematerialized outputs, often become traces, memories, actors in the aftermath archives of an event...matters



Challenge 11 is for example based on insights from Exemplar 01



From Extra example in Part C / Chapter 9



From Exemplar 04

For more details:

Foreword: Program

Part A / Chapter 3

Part B / Intro / Chapters 4, 6

Part C / Chapters 8, 9

Part D / Chapters 11, 10 -

Landscape no. B, C, F, H, J,

K-R, T, U, V

Challenge 11 /

From Ending with Presentations & Documentation – to Shared Reflective Yet Explorative Rematerializing for Aftermath

From ending with presentations and documentation

Good quality images, videos and stories are becoming more and more important when sharing experiences, insights and proposals from a co-design event and project. However, at co-design events, filming and photographing is often considered as a job of mere documentation of what happens, an extra job for already busy organizers or a student volunteer (often without a stake in the project). Short deadlines during the event – e.g. when ending group-work with plenum presentations – also make stakeholders and groups focus on co-designing presentable materializations for that presentation-situation. It might work there to tell the story, but not very well after the event. I suggest integrating what I call shared reflective yet explorative *rematerializing*.

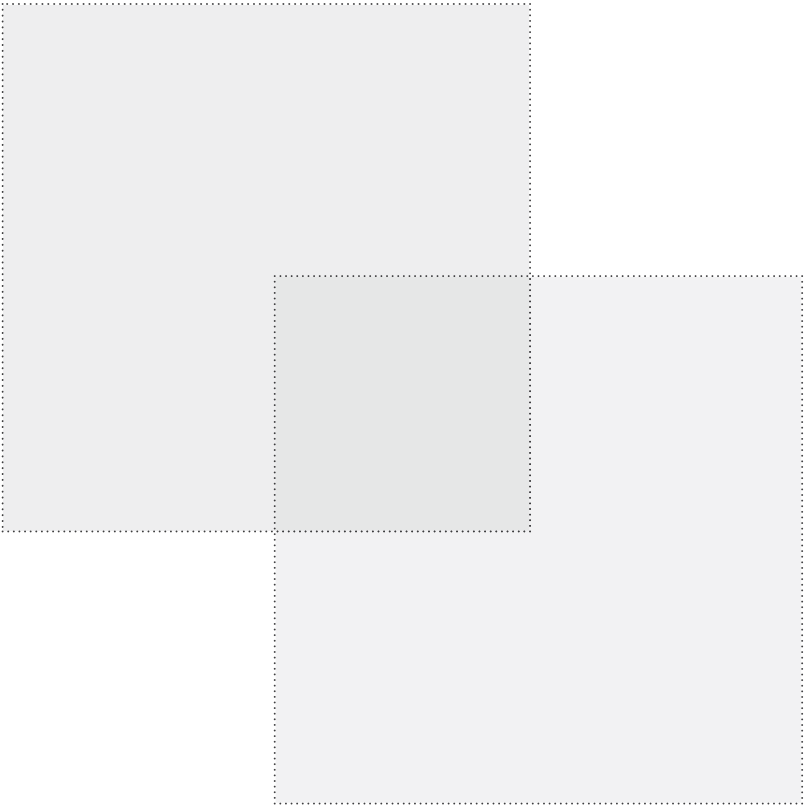
– to shared reflective yet explorative rematerializing for aftermath

Bruno Latour suggests tracing traces to understand which are the (human and non-human) actors in a network. I have found that *(re)materialized* outputs from co-design events often make traces over time in co-design projects. With Richard Schechner I also view the last sequence of a performance process as the event aftermath, potentially lasting forever. Central of the aftermath are ‘responses’ and ‘archives’ of documentation, which can help refresh ‘memories’ of the event, memories that otherwise quickly fade away. Together, these views place an emphasis on what is collaboratively made for the co-design event archives, including which design-oriented traces are started during co-designing. Co-design event archives are what appear on project blogs, websites, wikis, what is in event resumes, server-spaces with images and films, etc. Thus, instead of considering visual and material documentation as an extra job of the organizers (sometimes even done after the event has ended), I suggest integrating this in the explorative phase of events. After processes of *materializing*, instead of using a lot of time making groupwork presentations, I suggest staging for reflective yet explorative *rematerializing* and making *rematerialized* outputs. It can be challenging, but formatted playfully it too creates shared ownership of the visuals/materializations integrated in the event archives, further work and story-telling about the project. So when understanding and staging co-designing...

I repeat: Acknowledging that quite explicitly staged processes of materializing – and also rematerializing – are important situations in co-designing...matters

I repeat: Understanding how negotiated materialized and rematerialized outputs, often become traces, memories, actors in the aftermath archives of an event...also matters

This could be
a format





Forwards: Reprogram

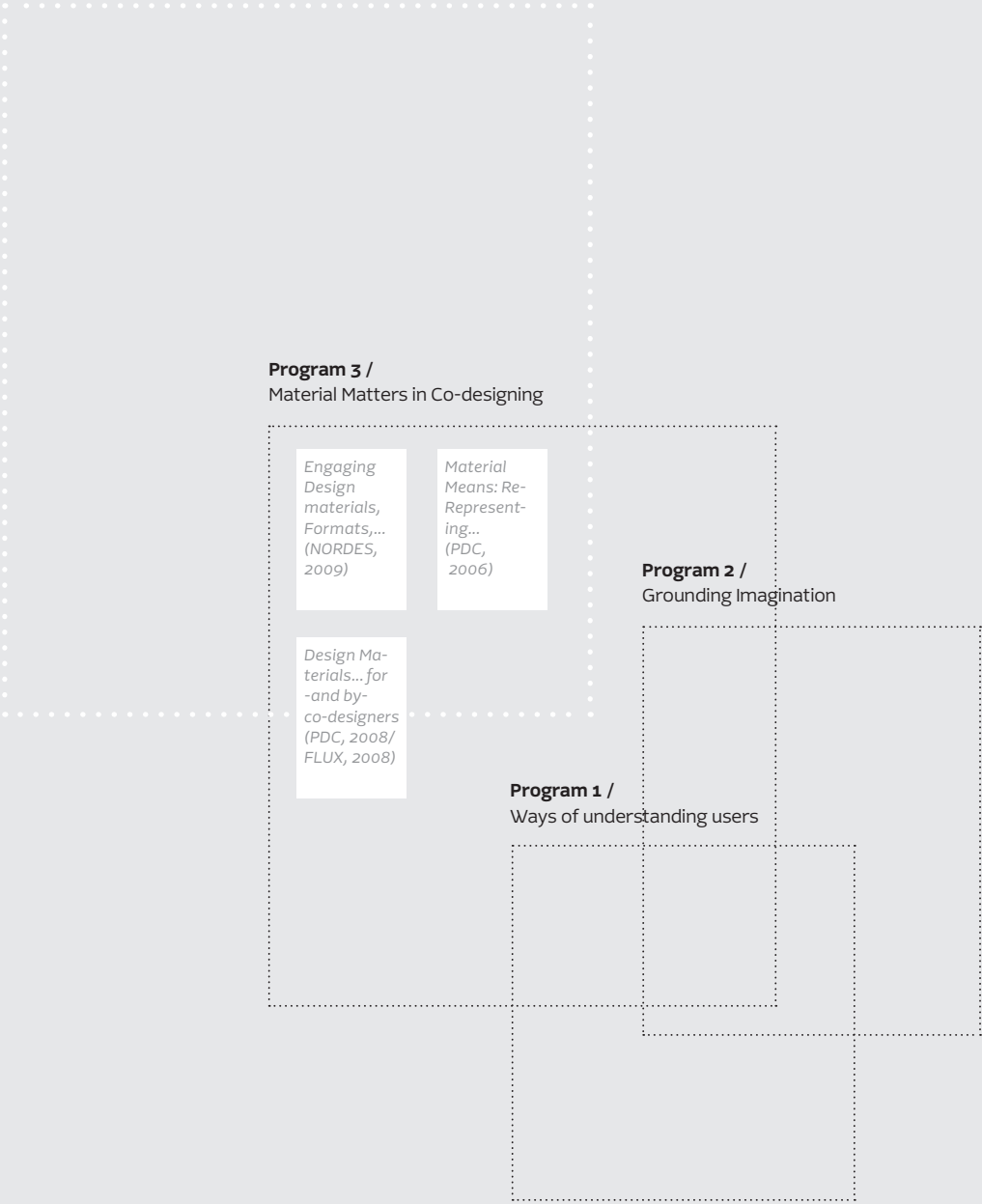


Figure 23/ Buidling upon my work in/around/with Programs 1, 2 and especially 3 (Rematerialized with this thesis) including the three included papers – some of the future work I expect to engage in is tentatively captured in this Program 4.

Forwards: Reprogram

Perspectives, possible future work and tentatively formulating my Program 4

Foreword: Program P&A
Part D / Chapter 12

With this thesis, my Program 3 / *Material Matters in Co-designing*, has now come to a closure and has at least temporarily stabilized and rematerialized. Yet, following Part D / *Drawing Material Matters Together*, and especially the 11 *Challenges* related to many current (co-) designing practices, I have identified a collection of challenges and issues that the suggestions in this thesis aims to address. Yet, some of these still concern me, and I suggest they should be further researched and elaborated also in practice.

New 'materials' in sustainable, open-ended co-designing (research)

P&A
Exemplar 01
P&A

Within contemporary design, in addition to interaction design and participatory design, this thesis is also intended to relate to and influence service design. The ways I so far have been practically working with and teaching service design have been intertwining with sustainability and social innovation (or transformation design) perspectives and approaches.

Exemplars 05, 06

Additionally, especially Exemplars 05 and 06 relate to architectural practices, but despite my MA-degree as an architect, this work has not been positioned and related to contemporary architecture and city planning practices. However, multidisciplinary collaboration, citizen involvement and 'workshops' are parts of many of these also largely open-ended processes. Therefore, I also wish for this work to inspire how to practically stage and format situated co-designing in these fields.

If more 'classic' design fields and processes of (co-) designing end with final products, related to sustainability, open-source and DIY movements, these fields, perspectives and/or approaches inherently include more open-ended outputs or rather continually changing networks and practices.

P&A / Part D
Part A
Part C
Part B

As many others are increasingly arguing, this calls for new ways of co-designing, new skills and new 'materials' of being a co-designer (and co-design researcher). This thesis includes various suggestions for practically doing this – for example: focus on *drawing together*; e.g. through *landscaping*; understanding of the time-space sequences of *co-design events* and *co-design situations*; (co-) designing of *formats* for collaboration; emphasis on the *delegation of roles* also to non-humans when materially *staging* and *formatting* co-designing and awareness of the materiality of frames fostering *explorative materializing* and *rematerializing* e.g. at co-design events. Yet, more work can of course still be done.

Future research / Program 4

My drifting towards a new program has tentatively started. Of course, alignment of financing, project and collaboration set-ups will influence my future work, but based on this thesis, content-wise I tentatively call my next research Program (4) *Rematerializing in open-ended co-designing*. My work with Program 4 will not be starting from the blank light-grey page; it will be building upon all the work of this Program 3 and several of the publications and co-design events and experiments upon which this thesis is also building. including some of the work in the three papers still included in Figure 23, and the extra two examples from the PalCom project included in the end of Part C / Chapter 9.

P&A

Appendix 03
Part C / Chapter 9

Program 4 would include further research of: Processes of *staging* and *formatting* – also for situated *co-designing of formats* for collaborative *re-materializing* and as a part of this (returning a bit more to people) looking closer at the material negotiations that this inherently includes. Also, as *materialized* and *rematerialized* outputs of events partly has special characteristics in open-ended co-designing, further exploring *delegated roles* of both *formats* and *pre-designed proposals* in such processes and networks, I expect is relevant too.

Wish to engage in building new co-designing (learning and research) environments

My explorations in this thesis of *material matters in co-designing* and ‘materials’ of co-designers, are all suggestions for which skills and materials this ‘new’ designer or rather co-designer needs to have in his or her repertoire. Part of my future work could desirably be to engage in building up learning environments and communities for becoming reflective co-design practitioners.

Chapter 1

Also, with my mixture of three intertwining research approaches, as a proposal for designers moving into research, another part of my future work could be to engage in further building up environments and communities for becoming and being reflective co-design researchers.

P&A

Wish to inspire other (non academic) practices

With talk and text on paper and screens as the main invited *material* at most meetings, broadly, I also hope for this work will influence the way meetings – also outside co-design fields – are viewed, framed, staged and formatted.

Lastly, with my discussion of methods versus approach and arguments for participating materials, I also wish to practically inspire and challenge consultants, design bureaus and other businesses coaching and assisting in various change processes, and saying they do co-creation or co-design, to reflect upon their own situated, socio-material practices when engaging *with* others (humans and non-humans).

P&A /
Part B/ Introduction

P&A
Part B / Chapter 4

This could be
a format

Appendices
References
My List of Publications

Appendices

Appendix 01 / Co-design project / WorkSpace

Appendix 02 / Co-design project / Atelier

Appendix 03 / Co-design project / PalCom

Appendix 04 / Co-design project / XLab

Appendix 05 / Co-design project / DAIM

Appendix 06 / Co-design workshop series / Design Dialogues

Appendix 07 / Co-design teaching

Appendix 08 / Co-design project characteristics

Appendix 09 / On my data, tracing and sharing concerns and challenges

Appendix 10 / Examples of PhD program drifts

Appendix 01 /

Co-design project / WorkSpace

Project title

WorkSpace - Distributed Work support through component based SPAtial Computing Environments

Time and duration

January 2001 – December 2003 (36 months)

My involvement September 2001 – June 2003 - with a break in the fall 2002.

Financing

From the European Future and Emerging Technologies (FET) activity of the Information Society Technologies (IST) research program, and a part of the Disappearing Computer initiative. [<http://www.disappearing-computer.net/>]

Project partners and management

- Aarhus University - Department of Computer Science, / Denmark (project coordinator)
- Lancaster University - Department of Sociology / UK
- Aarhus School of Architecture - Institute of Design / Denmark
- Lovejoy Landscape Architects - Edinburgh Office / UK (Landscape Architecture practice was the main site/field/case)
- + Envision (visualization specialist company)
- + Eyegonomic (display technologies company)

Project manager: Preben Mogensen, from DAIMI / Department of Computer Science / Aarhus University, Denmark.

Main use sites / people we collaborated with

Landscape Architects from the company Lovejoy (at the office and out on site – see above)

Approximate number of people involved in the project

Fifteen (Core team incl. landscape architects as 'users')

Project websites

<http://daimi.au.dk/workspace/index.htm> and EU Disappearing Computer-site with a project description: <http://www.disappearing-computer.net/>

Main project focuses and aims

'The main objective for WorkSPACE is to augment the work environment – whether it be the office, places encountered whilst on the move, or site locations – through spatial computing components, initially for members of the design professions, but with applicability to a wide range of work domains. (...) Spatial computing refers to technical possibilities as well as the social and spatial organization of people's activities. (...) To achieve these objectives and enable support for a diversity of work situations ranging from individual work, through local collaboration, to distributed collaboration, WorkSPACE brings together collaborative virtual environments, computational augmentation, hypermedial relationships, connectivity between devices, sensors, actuators, projection and display technologies, new interaction devices and metaphors.' (Copied from: http://daimi.au.dk/workspace/site/navigation/index_01.htm / 10. August 2011).

Overall methodology / approach

'WorkSPACE focuses on the working environment (including the field and mobile working environments) ... particular, we have chosen aesthetic design in architecture, landscape architecture and product design; (...) Complex relationships connecting diverse people, materials, objects and spaces mean that aesthetic design provides a strong test and strong opportunities, for technical support. To gain a closer understanding of practices in aesthetic design, we undertake ethnomethodological studies of work. (...) Yet, it is not enough to

study existing work practices to inform the design of technologies that aim to support and enrich future working cultures. Workplace studies must seek to understand evolving new ways of working as well as existing working practices. To address this demand, the WorkSPACE team has opted for an approach that combines ethnographic studies in real world work settings with experiments and attempts to promote the development of new work practices through 'bricolage' within the workplace and 'future laboratory workshops'. (Copied from: http://daimi.au.dk/workspace/site/navigation/index_03.htm /10. August 2011).

Demonstrators

Throughout the project the software 'Topos' was developed – and with this software infrastructure various demonstrators were designed mainly within the areas called:

- Collaboration
- Mixing Physical / Digital Objects
- Mixed Environments (see more on project website)

My main role(s) in the project

I joined the project about nine months after it started. I worked as a design research assistant – first as a part-time student job, then as a full-time job while on leave from my architectural studies, and lastly as a full-time job after graduating as an architect.

In the project I was mainly involved in doing some fieldwork, in proposing and visualizing new visions, in designing tangible interaction parts of some prototypes/demonstrators and in co-organizing our multidisciplinary collaboration. As a part of this, I had a lot of freedom to propose and (co-) organize co-design situations including new ways of collaborating among ourselves within the multidisciplinary project team. I was for example in the sub-groups working with: Mixing Physical/Digital Objects e.g. Tag-and-Track (T'n'T) and Playful Interaction.

Additionally, in parallel with the project Monika Büscher and I organized and carried out the Creativity2n workshop series and a Grounded Imagination conference-workshop. (further details – see below)

Additional activity / 'Creativity 2n' and 'Grounded Imagination' co-design workshop series

Related to the WorkSpace-project, in the fall 2002 and spring 2003, Monika Büscher and I initiated and organized a series of one and a half day hands-on Troubadour 'Speedays' workshops. They were also financed by the Disappearing Computer Initiative, and they were intended to foster collaboration between international and multidisciplinary researchers engaged in other ongoing European 'Disappearing Computer'-research projects (at that time).

The workshops took place at the following times, in the following cities between participants from the following projects:

- 1/ In September 2002 / in Malmö, Sweden / between some from the WorkSpace and Atelier projects.
- 2/ In October 2002 / in Limerick, Ireland / between some from the WorkSpace, SOB and Shape projects.
- 3/ In November 2002 / in Darmstadt, Germany / between some from the WorkSpace, Ambient Agoras and Feel projects.
- 4/ March 2003 / in Paris, France / between some from the WorkSpace and InterLiving projects.
- 5/ In March 2003 / in Stockholm, Sweden / between some from the WorkSpace and InterLiving projects.
- 5/ The workshop series ended with a one and a half day hands-on workshop with conference-participants at the Tales of the Disappearing Computer conference on Santorini, Greece, 1-4 June 2003. The topic of the workshop was 'Grounded Imagination' –which was practically explored through working with the theme of 'tourism'. The practical explorations at the workshop were based on fieldwork conducted by us as organizers the days prior to the workshop and by the workshop-participants during the workshop.

(For further details on all these workshops - see references below / Also see some of the images of the very first pages of this thesis).

Selected publications about (some of) this work (see References)

Büscher, M., Agger E., M., Kristensen, J.F., Mogensen, P. (2004) *Ways of grounding imagination...* Proceedings of the Eighth Conference on Participatory Design – PDC2004, pp. 193-203, Toronto, Canada, July 2004.

Grønbæk, K., Ørbæk, P., Kristensen, J.F., Agger Eriksen, M. (2003) *Physical Hypermedia: Augmenting physical material with hypermedia structures*. New Review of Hypermedia and Multimedia, Vol. 9, pp. 5-34, Taylor & Francis Group.

Agger Eriksen, M., Büscher, M., Christensen, M. (2003) *Grounded Imagination: Dialogue in Context*. Presentation at *Fieldworks: Dialogue between Art and Anthropology* - An international conference at Tate Modern, London, England, 26 - 28 September 2003.

Kristensen, J.F., Agger Eriksen, M., Sejer, O., Nielsen, C., Petersen, M.G., Kanstrup, AM. (2003) *Young People in Old Cars – Challenges for Cooperative Design*. Electronic Proceedings of the 26th Information Systems Research Seminar in Scandinavia/IRIS26, Finland, 9-12 August 2003. OBS! Awarded: 'Best Theme Article'

Grønbæk, K., Kristensen, J.F., Ørbæk, P., Agger Eriksen, M. (2003) *Physical Hypermedia: Organising Collections of Mixed Physical and Digital Material*. Proceedings of ACM Hypertext 2003, Nottingham, UK, August 2003.

Agger Eriksen, M., Krogh, P., Ludvigsen, M. (2003) *Playful Interaction*. Proceedings of the First International Conference on Appliance Design, Bristol, UK, 6-8 May 2003.

Büscher, M., Agger Eriksen, M. *Grounded Imagination – a workshop*. (2003a) Workshop-description in the Proceedings of the Tales of the Disappearing Computer, Santorini, Greece, 1-4 June 2003.

Agger Eriksen, M., Büscher, M. (2003b) *Grounded Imagination: Challenge, paradox and inspiration*. DC Success Stories in the Proceedings of the Tales of the Disappearing Computer, Santorini, Greece, 1-4 June 2003.

More publications on the project website (see above).

Spinn-off company

43D APS / see: <http://www.43d.dk/>

Appendix 02 /

Co-design project / Atelier

Project title

Atelier – Architecture and Technologies for Inspirational Learning Environments

Time and duration

December 2001 – April 2004 (30 months)

My involvement June 2003 – April 2004.

Financing

From the European Future and Emerging Technologies (FET) activity of the Information Society Technologies (IST) research program, and a part of the Disappearing Computer initiative. [<http://www.disappearing-computer.net/>]

Project partners and management

- Malmö University – Arts & Communication (K3) – Creative Environments / Sweden (Project coordinator)
- Interactive Institute – Malmö – Space & Virtuality Studio / Sweden
- Technische Universität Wien – Institut für Gestaltungs- und Wirkungsforschung / Austria
- Akademie der Bildenden Künste Wien – Institut für Kunst und Architektur / Austria
- University of Milan – Department of Computer Science, Systems and Communication (DISC) / Italy
- University of Oulu – Department of Information Processing Science / Finland
- + Imagination Computer Services GesmbH / Austria (visualization and experience design company)

Project manager: Pelle Ehn from K3/ Malmö University / Sweden

Main use sites / people we collaborated with

- Interaction Design Master Students at K3 - Malmö University / Sweden
- Architectural students at Institut für Kunst und Architektur - Akademie der Bildenden Künste Wien / Austria

Approximate number of project members

22 + Students ('Users').

Project website

This is not accessible anymore.

EU Disappearing Computer-site with a project description:

<http://www.disappearing-computer.net/>

Website of Creative Environments at K3 within which this project was managed:

<http://www.creativeenvironments.mah.se/>

Main focuses and aims

'The aim of the ATELIER project (Architecture and Technology for Inspirational Learning Environments) is to contribute to inspirational learning environments, which are grounded in an understanding of creative practices within design, architecture and art. The project starts out from interactions between people and material artefacts in physical places and asks how we should enhance such an environment with digital technologies to turn it into a resource for inspiration and creative learning by an integrated design of learning materials, interactive technologies and architectural space. The project will:

- *Develop, experiment with, and evaluate a design-oriented approach to inspirational learning, based on ethnographic research on creative design work in an architectural master class and an interaction design studio,*
- *Design, assemble and test architecture and technical components for such mixed*

media environments, based on ethnographic work on how learners interact with space, artifacts (tangible and digital, present and distant) and materials of mixed media origin and with co-present and distant people.' (Text from the project website / copied on 8th of February 2010 – not accessible now)

Overall methodology / approach

The project was a participatory IT- and interaction design research project. Collaboration with students was done by engaging in organizing and/or merging into their design projects – as a part of their curriculum. Either as intense workshops or as longer e.g. 7-weeks projects. Different students from different classes were engaged throughout the years. Work among the international partners was organized as a series of workshops of course also with cross-cutting collaborations in between these events (see timetable below). Yearly Disappearing-Computer project reviews called 'Jamborees', also turned out to work as useful shared deadlines among the different project partners. Administratively, as a European project, the work was also roughly divided and reported in six work packages (WP):

- WP1: Pro-searching practice;
- WP2: Concept design;
- WP3: Components of mixed media environments;
- WP4: Engineering infrastructure platform;
- WP5: Management;
- WP6: Dissemination and exploitation.

Demonstrators

Throughout the project an Atelier hyper-media database (HMDB) was developed – and partly with this software infrastructure various demonstrators were designed – they were called:

- Paint Brush
- Tangible Image Query
- The Game Table (see one of the images on the very first pages of this thesis)
- The Entrance
- Ubicom Building Blocks
- Tangible Archive / CoWall (see one of the images on the very first pages of this thesis)

My main role(s) in the project

I joined this project when there was little less than a year left. I first worked as a design research assistant – first as a part-time job, then as a full-time job. The last five months as a PhD Scholar.

In the project I was mainly involved in focusing on spatial architecture and industrial / interaction design issues, in designing tangible interaction parts of some prototypes/ demonstrators, and in co-organizing and tutoring during one 2-week workshop for K3 students called 'Ubicom Building blocks' and a 7-week project for Interaction Design master students called 'Semi-Public Places'.

I was for example mainly in the sub-groups working with the demonstrators: Ubicom Building Blocks and Tangible Archive/CoWall (including The Entrance).

Selected publications about (some of) this work

Binder, T., Ehn, P., Jacucci, G., Kuutti, K., Linde, P., Michelis, G.D., Niedenthal, S., Petterson, B., Rumpfhuber, A., Wagner, I. (2011) *Design Things*. MIT Press.

Binder, T., Ehn, P., Eriksen, M.A., Jacucci, G., Kuutti, K., Linde, P., Michelis, G.D., Niedenthal, S., Petterson, B., Rumpfhuber, A., Wagner, I. (2007) *Opening the Digital Box for Design Work: Supporting Performative Interactions, Using Inspirational Materials and Configuring of Place*. In Norbert Streitz et al. (eds.), *The Disappearing Computer Interaction Design, System Infrastructures and Applications for Smart Environments*, Springer. p.50-76.

Linde, Per (2007) *Metamorphing – The Transformative Power of Digital Media and Tangible Interaction*. PhD Dissertation. Blekinge Institute of Technology, Sweden.

Jacucci, Giulio (2004) *Interaction as Performance*. PhD Dissertation. Faculty of Science, Department of Information Processing Science, University of Oulu, Finland.

Appendix 03 /

Co-design project / PalCom

Project / consortium title

Palpable computing - A new perspective on ambient computing (initial title)

// Making computing palpable (final slogan)

Time and duration

January 2004 – December 2007 (48 months). My involvement was roughly in 2004 and 2006 – with breaks in 2005 and 2007 because of maternity leave.

Financing

'Primarily funded by the European Commission (Future and Emergent Technologies division of Information Systems Technologies within the 6th framework programme. EU Project code: IST 002057). The Swiss Government also made a significant contribution. In addition, all participating organizations contributed, either by only being partly funded for the work (industry) or by contributing person months from permanent staff (universities).' (Except for small modifications this text is copied from <http://www.ist-palcom.org/consortium/facts-and-figures/index.html> / 13. December 2011).

Project/consortium partners and management

- Aarhus University (AU) / Department of Computer Science / DAIMI / Denmark (Daily project coordinators)
- University of Siena / Communication Science Department / Italy
- Lund University / The Computer Science Department / Sweden
- Malmö University / K3 / Sweden
- Lancaster University / Department of Sociology / UK
- Aarhus School of Architecture / Institute of Design / Denmark
- London University / Kings College / UK
- EPFL / Distributed Programming Laboratory / Switzerland
- Siemens
- Whitestein Technologies AG
- The Alexandra Institute / Aarhus / Denmark
- 43D
- and some others (e.g. see contractors below)

Project managers: Morten Kyng & Preben Mogensen / DAIMI / Aarhus University / Denmark.

Additionally, more strategic issues of the consortium were addressed in the 'Programme Management Committee' and the 'Steering Committee' with representatives from all partners.

Subcontractors / application areas / people we collaborated with

- Region Midtjylland, Denmark ('Major Incidents' – mainly collaboration with people engaged in coordinating and handling emergency situations / Police, fire, ambulance staff and others. / 'Pregnancy and Maternity' – mainly collaboration with doctors, midwives and pregnant women)
- Edaw, Edinburgh, Scotland
- Lovejoy, Birmingham, UK ('On Site' – mainly collaboration with landscape architects)
- Malmö hospital, Sweden ('Surgical Rehabilitation' – mainly collaboration with hand surgery rehabilitation staff (physiotherapists and occupational therapists) and patient)
- Rehab, Sienna, Italy ('Community Care' – mainly collaboration with therapists and rehab staff working with children with disabilities e.g. in swimming pools)

Approximate number of people involved in the project/consortium

100+ (core multidisciplinary and international team of researchers and some industry representatives and subcontractors/'users' or rather use site stakeholders were mainly involved with the project participants in their country/region).

Project/consortium website

<http://www.ist-palcom.org/>

Main focuses and aims

'The term 'Palpable Computing' was coined when writing the application in March 2003. Palpable Computing denotes that systems are capable of being noticed and comprehended. Palpable systems support people in understanding what is going on at the level they choose. And they support control and choice by people. Palpable Computing is the next step after ubiquitous and ambient computing. (...) The PalCom vision is to produce the first version of a software architecture for palpable computing, i.e. an architecture that supports going beyond 'traditional' ambient computing. Where ambient computing sees invisibility of computing sources and automation of human tasks as ideals, we also insist on comprehensibility, user control and understanding. (...) The project consists of a consortium of European organizations collaborating to define software architecture and conceptual framework to support palpable computing in a variety of application domains.' (copied from <http://www.ist-palcom.org/consortium/facts-and-figures/index.html> / 13. December 2011).

Overall methodology / approach

'The project is dealing with a future scenario, namely that of a society where IT is pervasive and present in every aspect of our lives. The researchers of PalCom have taken up the challenge of designing for the future. Another challenge is to ensure internal collaboration and exchange in a very large, multidisciplinary project. (...) With 100 researchers and professionals involved in PalCom it demands an elaborate strategy to ensure fruitful collaboration among participants from many different disciplines. As a European Commissions project, it was organized in a series of so called 'Work packages. (...) Four principles are at the core of PalCom's design approach: Cyclic development, Interdisciplinary, End-user involvement, Knowledge sharing.' (with a few modifications - section copied from and for further details on the four principles see: <http://www.ist-palcom.org/approach/index.html> / 13. December 2011).

In the PalCom project, in addition to cross-cutting discussions and workshops e.g. during the quarterly 'Plenary meetings', working with 'demonstrators' was largely the approach applied to foster collaboration among the many different researchers and stakeholders. They were developed to continually prototype, explore, try out and present the current versions of the status of the new technologies being co-designed. Demonstrating these demonstrators was also very central at the yearly reviews with a panel of European reviewers. From 2005-2006, between the first and second review, we were doing 'Future Application Laboratories' (FAL) in the different use-sites, to explore the demonstrators / prototypes / applications / current ideas developed to suit the particular practice in each use-site. Under different names, this practice also continued during the remaining time of the project. Exemplar 02 is an example of a FAL. (This section is my views of the PalCom approach).

The results of the project include

- 'a conceptual framework for palpable computing
- a first version of the specifications of an open software architecture (see here: <http://www.ist-palcom.org/software-architecture/index.html>)
- a fundamental understanding of the application domains
- a range of visions for future palpable usages
- a toolbox for constructing palpable devices
- and a range of prototypes to concretize and experiment with those usages in order to inform software architecture'

(with a few modifications - section copied from <http://www.ist-palcom.org/consortium/facts-and-figures/index.html> / 13. December 2011)

The main prototypes for the different application areas were

- for 'Major Incidents' / Overview Application and Wireless biomonitors
- for 'On Site' / SiteTracker and SiteStick
- for 'Surgical Rehabilitation' / CARE
- for 'Community Care' / Incubator and Tiles
- for 'Transient Locations' / RASCAL

(For further details see: <http://www.ist-palcom.org/application-areas/index.html>)

My main role(s) in the project

My PhD project started with and was initially only financed by the PalCom project. Initially, I was mainly engaged in the local team at K3/Malmö University (50%) and – mostly at a distance - engaged with the daily managing team at DAIMI/Aarhus University (30%). From July 2006 I was only engaged in the project via DAIMI (still 30%).

In Malmö I mainly worked with the application area of "Surgical Rehabilitation" (Mainly in 2004 + February – June 2006). I was doing fieldwork at the hand surgery rehabilitation department, engaging in proposing and visualizing possible future scenarios, engaging in evaluating and testing ideas with staff and patients and in co-organizing how to collaborate in the local multidisciplinary team.

In Århus initially I mainly engaged in the work-package called 'Training' – intended to foster engaging collaboration between the very multidisciplinary team of partners and stakeholders especially at the quarterly Plenary Meetings. This was also done in collaboration with some researchers from Siena (Mainly in 2004). Later I mainly engaged in working with ways of collaborating in the making of the Palcom Toolbox for example at Toolbox Exploratoriums with participants from most partner institutions (Mainly in 2006).

In parallel with my engagement in this project, initially I was also engaged in the Atelier project (Appendix 02) and later in the Xlab project (Appendix 04).

My Co-authored Publications about (some of) this work

Sokoler, T., Löwgren, J., Agger Eriksen, M., Linde, P., Olofsson, S. (2007). *Explicit interaction for surgical rehabilitation*. Proceedings of the First International Conference 'Tangible and Embedded Interaction' (TEI '07). New York: ACM Press.

Eriksen, M. A. (2006) *Material Means: 'Re-Representing' – Important Explicit Design Activity*. Exploratory paper in Proceedings of the Ninth Conference on Participatory Design, PDC2006, Italy, July-August 2006.

Eriksen, M.A & Linde, P. (2006) *Design impulses: artefacts, contexts and modes of activities*. Working Papers in Art and Design 4 – online journal. ISSN 1466-4917. <http://www.herts.ac.uk/artdes/research/papers/wpades/vol4/amefull.html>.

Linde, Per; Olofsson, Stefan; Sokoler, Thomas; Löwgren, Jonas & Agger Eriksen, Mette (2005) *The CARE Paper – Collaborative articulation in rehabilitation after hand surgery*. Proceedings of the first Nordic Design Conference, NORDES'05, Copenhagen, Denmark.

For all the other publications on this work by other project members, see: <http://www.ist-palcom.org/publications/index.html>

Appendix 04 /

Co-design project / XLab

Project titles

XLab

XLab:DOCUMENTA

Time and duration

XLab / June 2006 – January 2007 (The actual project lasted these 8 months). My involvement was participation in some preliminary meetings during spring 2006, and then part-time participation in the core team June 2006 – January 2007.

XLab:DOCUMENTA / 2007 - December 2011. After the actual XLab project ended, in the core team we have continued to meet in this follow up project about publishing a book on the work (book reference listed below)

Financing

From Danish Centre of Design Research (DCDR).

Project core team, management and other participants

The core project team was of the four following people:

- Thomas Binder (from DCDR / also project manager)
- Johan Redström (from DCDR / and The Interactive Institute in Sweden)
- Eva Brandt (from The Danish Design School)
- Mette Agger Eriksen (at that time partly from DCDR and K3/Malmö University)

Additionally, various PhD and senior design researchers, working with design experiments at the core of their work, participated in the three main workshops (see below). They were e.g. Flemming Tvede, Anne-Louise Bang, Sidse Grandgaard, Jannick Sørensen, Mette Harrestrup and Liz Sanders.

Webpage about the project

<http://www.dcdr.dk/dk/Menu/Forskning/Forskningsprojekter/Projekter/XLab%3a+DOCUMENTA.+En+bog+om+eksperimenter+i+designforskning>

Main Project focuses, aims and methodology

'The project is concerned with methods and a foundation for experimental design research. It is as such a "meta-project" that is based on investigations and analysis of finalized and on going projects with an experimental approach. The work is centred on a series of thematic workshops, with the tentative titles:

- *Beginnings*
- *Per:form*
- *Intersections*
- *Practice as theory*

For each workshop a literature survey of relevant international research contributions will be made, which will be made available to the participants and which will be discussed in relation to the theme of the workshop. The participants will be encouraged to contribute with own project experiences and through a series of concrete experiments/exercises the relationship between experiments and knowledge production are explored.

The goal is to identify similarities and to contribute to a larger discussion about the role of the explorative experiment in design research, without considering it as an aim of establishing or highlighting one set of useful design research strategies.

Each workshop is documented and the documentation is made available to those interested. In parallel we will work on drafts and discussions for a series of texts, which will be included in a book publication about the project'. (From the accepted project proposal from May 2006 / Translated by me from Danish in December 2011)



Above poster with invitation for participation /shared in Danish Design Research environments in the fall 2006. The following is a translation of the lower left column on the poster:

'PER:FORM

- workshop on program and experiment

The first [XLab] workshop of the fall, PER:FORM, has the subtitle 'Silent workshop', and it addresses the relationship between program and experiment and collaboration. Participants are invited, in smaller groups, to work with a specified but open program, where they with different design materials are to explore design-decisions through a series of experiments. There will be a number of texts and a bit of preparations for the workshop.

At the workshop, first a short introduction, before the experimental parts of hands-on design work -these will primarily be explored in silence. We end with a collaborative reflection on the work of the workshop (...): (Translation by me from Danish / September 2011).

My main role(s) in the project

I was engaged as a PhD scholar and co-design researcher in the core team of the project (Duration see above). In the project I took active part in all the discussion in the core team. Practically, I engaged some in the organization of Workshop 1 / Beginnings. Together with Johan Redström I was mainly responsible for organizing, staging and documenting Workshop 2 / Per:form.

In the Xlab:Documenta follow-up project I was mainly engaged in how to visually communicate, how to structure the contents of the publication and in a reflective mail-correspondence in the third and last part of the book about the Xlab experiences and insights.

Introduction of the book Xlab / Description of the project from fall 2011

'About the XLAB

Over the last decade Danish schools of design and architecture have been embracing design research as a new venue for researchers, design educators and designers. The schools have moved slowly from the landscape of artisan professional educations towards a position within the larger landscape of academia and university research and education. Part of this movement has been concerned with adjusting and adapting educational programs to the standards required for university accreditation, exploring a.o. what it means to offer research-based education in design and architecture. Another part has involved a search for the kind of research inquiries that can give designers and design researchers a distinct and relevant voice in the larger choir of academic research.

Research at design schools or research conducted by people with a professional training in design or architecture is not necessarily different from research of for example art history, media studies or anthropology. Nevertheless we see new research topics and new research methodologies emerge as designers begin to employ their professional gaze within the world of research.

Research-through-design, practice-based research or design-led research are all among the new labels that characterize such research that strives to bring design competencies into play in design research. This book comes out of the XLAB project - one attempt to get hold of what such design research may be and how it can contribute to the production of knowledge. The XLAB project sought to capture design research and particularly the design experiment not though a theoretical or methodological approach, but through a practical exploration of the practice of design researchers.

Through a series of three one-day workshops, researchers and research students were invited to share and discuss the ways they each engaged with particular research topics. At the BEGINNINGS workshop the emphasis was on how research is initiated, and on what role programmatic considerations play in gaining momentum in design research. In part one of this book we present our understanding of the dialectics of program and design experiment as we have seen this evolve in our own work as in the work of the workshop participants.

At the PER:FORM workshop we staged a kind of metaexperiment, where participants were invited to collaboratively design a decision making device. This workshop aimed at creating a space for experimentation that went beyond words, and engaged work practices familiar to the professional designer. In part two of this book we provide a glimpse of the meta-experiment through photos and transcripts from the event, hopefully inspiring others to expand the concept of designerly experimentation.

Finally the INTERSECTIONS workshop invited participants to rehearse peer readings of doctoral dissertations in design research across a broad span of topics and methodologies. In part three of this book we give an outline of how such peer reading may be productive and stimulating for researchers even when they adhere to quite different bodies of academic work. We end the book in a conversation with four young design researchers who represent the new generation of researchers coming out Schools of design and architecture. We ask them how they see the role of experimentation and what challenges they today see for the field of design research.

Like the workshops this book does not attempt to give final answers or authoritative arguments on how to conduct design research. Instead it represents our attempt to contribute to research discourses that make us able to share our thoughts and our experimental practice as we move ahead in our different research projects. This raises the issue of form beyond conventional templates of research dissemination. A grant from the Danish Center for Design Research has made it possible for us to have an intense and innovative dialogue with Mads Quistgaard and Stefan Thorsteinsson from the Graphic Design Studio, Pleks, who have put their excellent skills in graphic design and visual communication to the task of making a book that discloses and evokes rather than argues and concludes. This should surely not be the only way to communicate among design researchers, but we hope that the book brings together form and content in ways that adds to the proliferation of formats needed to extend and enhance the dialogue among research peers. (...)' (see reference below).

Selected publications about (some of) this work

Brandt, Eva; Redström, Johan; Agger Eriksen, Mette and Binder, Thomas (2011) XLab. Kunstakademiets Designskoles Forlag.

Eriksen, M. A. (2009) *Engaging Design Materials, Formats and Framings in Specific, Situated Co-designing – A Micro-Material Perspective*. Proceedings of the Third NORDES Design Research Conference, Oslo, Norway, August 2009. (from XLab it includes Example: Project Landscape from Workshop 1 / Beginnings on p. 5 of the paper)

Eriksen, M. A. (2007) *Besøg i XLab: Designforskere på håndgribeligt & eksperimenterende værkstedsarbejde*. Årsberetning 2006, Eksempel på aktuel forskning ved centret, s 26-29. Center for Designforskning (CDF), Danmark.

Other references in the list of References.

Appendix 05 /

Co-design project / DAIM

Project title

DAIM – Design Anthropological Innovation Model

Initial title in Danish: Brugerdreven innovation på affaldsområdet

Time and duration

April 2008 – December 2009 (Conference and book launch in February 2010)

(My involvement mainly May 2008 – April 2009 and October – December 2009)

Financing

From the Programme for User-driven Innovation (2007-2010) / Danish Enterprise and Construction Authority / Denmark.

<http://www.ebst.dk/brugerdreveninnovation.dk/forside/0/2>

Project partners and management

- The Danish Design School (DKDS) / Co-design Cluster / Denmark (project coordinator)
- Vestforbrænding / Denmark (Public waste management company / this was the first main site/field/case)
- 3Part a/s / Denmark
- 1508 / Denmark
- Ergonomi design / Sweden
- MakeTools / US
- Sweco Architects / Sweden
- Mads Clausen Institute / SPIRE / Southern Danish University / Denmark

Project manager: Thomas Binder / DKDS / Denmark.

Main use sites / people we collaborated with

Waste handling management and practices – explored with staff from development units and daily routines departments at Vestforbrænding as well as staff and citizens from especially three Copenhagen region municipalities.

+ Training with Danish municipality employees in user-driven approaches (via KL in Denmark)
+ Technology

Approximate number of people involved in the project

20 (Core team) + about 150 others (incl. 'users') engaged for longer or shorter periods

Project blog and webpage

<http://chokobar.wordpress.com/>

http://www.ebst.dk/brugerdreveninnovation.dk/*projekterbrugerdreveninnovation/0/14/5067252 (on this site the project is entitled: 'Brugerdreven innovation på affaldsområdet')

Main project focuses and aims

'The overall objective of the project is to develop a design-anthropological model of innovation through a pilot project with key players in waste management. The project will create prototypes of tools and methods that can target, qualify and streamline user-driven innovation processes.'

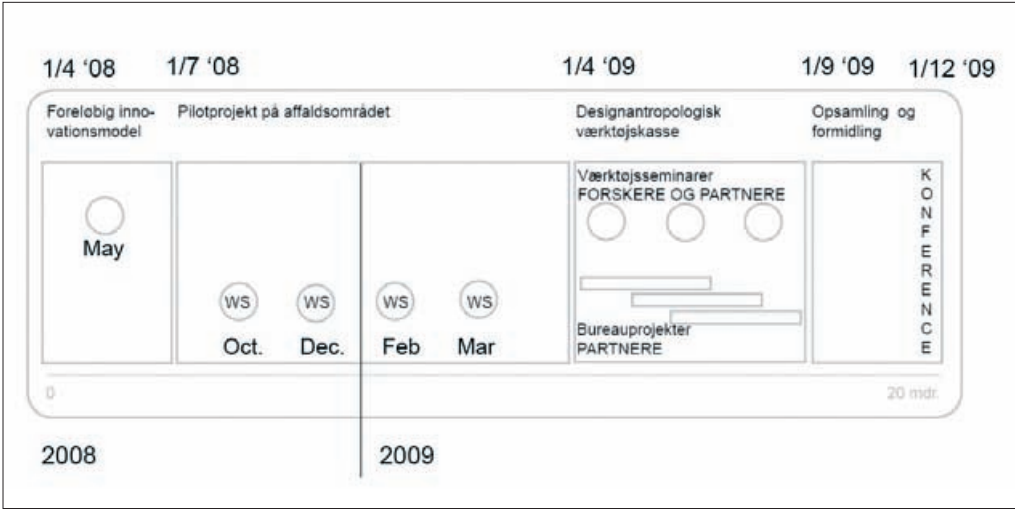
The project tackles one of the most challenging problems around user-driven innovation: The question of how to achieve collaborative development contexts where the user not only inform, but actively take part in open innovation processes.

The aim is to combine anthropological methods of exploring use and design practices of sketching visionary future concepts. Many are reluctant to create engaging innovation processes because they lack formats to manage these processes and ensure that resources

and schedules do get out of hand. Therefore obvious opportunities of breaking down barrier between user research and practical innovation are missed. The project aims to develop, pilot test and define a participatory model of innovation that brings together design and anthropological study of the everyday. A model where exploration and challenge of use may unfold in the same room as the exploration of new possibilities. In short, the aim is to develop new professional roles and competences for handling user-driven innovation. (...)’ (Translated by me from Danish / Copied from: <http://chokobar.wordpress.com/2008/04/> / 18. September 2011 / = in the accepted project proposal)

Overall methodology / approach

‘With the project a creative space for development is created, where some of the best agencies can collaborate with pioneering research- and teaching environments about developing and exploring new methods for user-driven innovation in collaboration with central actors in the community. The project is organized in four main activities and will be carried out during a period of 20 months:



Initially a preliminary innovation model is formulated, which is developed through a pilot-project on waste handling. Experiences from the pilot-project are further developed aimed at a design-anthropological toolbox through activities like: toolbox seminars and projects at the agencies.

As a communication on the project the results obtained are evaluated and documented, and the team of partners organize an open conference, aimed at communicating the experiences of the project to a wider audience’. (Translated by me from Danish / Copied from: <http://chokobar.wordpress.com/2008/04/> / 18. September 2011 / = in the approved project proposal)

Collaboration among and engagement by all project partners was found important in this project. On a slide displayed at the beginning of the Kick-off event on May 28. 2008, the core team specified the following expected commitments from the partners:

- Active participation in workshops and seminars (x 8)
- Steering committee meetings (x 7)
- Formulation of Design-Anthropologic Innovation Model and Tool Box
- Active participation in 1-2 projects within the pilot project
- Participate in planning and follow up on one tool seminar
- Try out innovation model and tool box in at least one commercial project
- Participate in propagation of results

(Further details on this workshop/event see Exemplar 03).

My main role(s) in the project

While the DAIM project was running, I was mostly situated at The Danish Design School in the daily working environment of the core team. Thus, I was able to participate in this project to the extent I found fruitful for my PhD studies and the project found it useful to engage me. I spent quite a lot of my time with DAIM. Initially I mainly participated as an observant (E.g. during Exemplar 03 /Spring 2008).

During the fall 2008 and spring 2009 I also engaged in co-organizing several ½ -1 day co-design events with waste handling professionals, project members and other stakeholders. In this period I also engaged in many of the discussions on core issues and approaches in the main team and at most of the partner workshops and tool seminars. I also took active part in the development of the box of inspiration targeted for waste handling professionals – mainly the tangible working tools in the box (see image below).

I engaged some in the design of the book reporting on the project. On my own and together with Eva Brandt, I have published about some of the insights from the project (see Publications below).

As a follow-up activity on the main case on waste handling, together with anthropologist Trine Paludan from the core team, I engaged in organizing and teaching a course about design/ anthropology approaches for waste handling professionals from/at Vestforbrænding. The course was aimed at giving the participants some theoretical background but mainly hands-on experiences of applying design-anthropological approaches in their ongoing work. The first course-workshop happened in January 2010 and the second in February 2010.

In between the two workshops the participants did their own fieldwork, which was intertwined in the analytic work at the workshop. / Because of the success of this activity, a second similar course was organized for other waste handling professionals – we were not able to organize this, so Via Design was responsible.

Outputs

As a methodological 'design-anthropological' project about practically doing user-driven innovation processes and projects, the main outputs are captured in the following three formats. They all capture and communication experiences and statements of positioning:

- A box of inspiration (see images below) (For details on exposure – see project blog e.g. post from 21. March 2011).
- A book / *Rehearsing the Future* (full reference below / more details see project blog)
- A conference: On 23.-24. February 2010 the project was concluded with a conference at The Danish Design School. The conference was also the book launch. Approximate number of participants: 120. (More details see project blog)



My/main publications about (some of) this work

Halse, Joakim, Brandt, Eva; Clark, Brendon & Binder, Thomas (eds.) (2010) *Rehearsing the Future*. The Danish Design School Press.

Brandt, Eva & Eriksen, Mette Agger (2010a) *Co-design Events*. In Halse, Joakim; Brandt, Eva; Clark, Brendon & Binder, Thomas (eds.) *Rehearsing the Future*. The Danish Design School Press, p. 70-73.

Brandt, Eva & Eriksen, Mette Agger (2010b) *From a Blank Slate or a Full Table?* In Halse, Joakim; Brandt, Eva; Clark, Brendon & Binder, Thomas (eds.) *Rehearsing the Future*. The Danish Design School Press, p. 74-79.

Eriksen, Mette Agger (2009) *Design-materialer – designet for og af co-designere / Design Materials - Designed for and by Co-designers*. FLUX – Research at The Danish Design School. The Danish Design School Press, p. 116-125.

Eriksen, Mette Agger (2008) *Design Materials Designed for – and by – Co-designers*. Workshop Position paper 'Designed for Co-designers'. The Tenth Conference on Participatory Design, PDC2008, Bloomington, Indiana, USA, October 2008. Available at: <http://mlab.taik.fi/co-design-ws/>

Appendix 06 /

Co-design workshop series / Design Dialogues

This appendix includes different additional background information on Exemplar 05.

Main Reason and focus / Financing

During the fall 2008, the management of a university in Sweden decided that one department 'X', within the faculty 'XX', was to be moved to another location on the campus – here I call this building 'K'.

The budget of rebuilding the areas of the 'K' building to accommodate this move was not fully set or communicated at the time of Exemplar 05.

At department 'X', the process mainly started when the employees received the following email from one of the Head of Department on January 16th 2009:

'Hi dear 'X',

Now it is official: 'X' is going to move. The current contract runs out at the end of 2010. Come at the information meeting Tuesday 20. January at 13:00 in the main lecture hall. 'xx' (Head of Faculty) and 'xx' (faculty-responsible for IT and infrastructure) will be there.

Why does 'X' have to move?

– The rent of our current premises is very expensive. The university will save between 40-50 mill. SKR over a period of five years.

What happens – where are we then going to be?

As a first step 'X' will move out to 'K'.

As a second step we will be moving back to a new and much better house (Better (...), abilities to show films, ventilation, heating, etc.). Here in our current area.

More info about when, whom, how, why, etc. will be answered by 'xx' and 'xx' at the meeting (...)' (Copied from an email I received as an employee. With slight modifications to erase specifics I translated this from Swedish in December 2011).

After this email series of mails and meetings followed. (see below in section on 'Procedure / approach').

Time and duration

January – August 2009. The process involving department 'X' and two other departments – here called 'Y' and 'Z' already in the building. In August 2009 the department moved into the 'K' building.

(Now in 2012 the current plans are to move into the new house in 2015).

Overall organization around the moving-process

The administrative unit – I call them 'Department of Facilities' - maintaining the buildings of the university were responsible for practically managing the moving process. In late January/early February 2009, an economically responsible steering-group for example including the leaders from the three departments, and contact-persons at each of the three involved department were identified and established.

Around this time, a contract with a local architectural company was made too. They were responsible for assisting the 'Dept. of Facilities' in organizing the process with the three departments, for making the drawings for the rebuilding and for managing the dialogue with the builders. From several years of experience, the architects proposed to work with the approach of 'Design Dialogues' during three workshops.

Throughout the process, most information to students and staff at department 'X' about the process was send through emails by the head of school or later also by the department contact person (see example above).

Procedure / approach

In writing, no description of the procedure or approach was shared with the participants. Below an insight into the procedure prior to the first workshop is captured by a series of emails, which I received as an employee at 'X':

'Hi all,

Thanks for good discussions at the breakfast meeting. ('X') is powerful, perhaps because we embody exciting encounters between people...

The following things have happened and will happen:

- Our criticism of the process has been put forward today in two forums: ('XX') Department Council by 'xx' and the Student Union by 'xx'; in the 'XX' management team by me. We will follow up by sketching a communication plan which requires direct contact with 'xx', director of 'Dept. of Facilities' and overall responsible for the process. (...)*
- 'xx' will obtain all documents on the move, for example the drawings from the 'Dept. of Facilities'. We will show these as soon as possible.*
- We will as soon as possible together with 'xx' and 'xx' display the long-term plan, including moving back. More information to come.*
- Tomorrow, an article in the newsletter tells more about the move.*
- There will be workshops on 'X's needs. The first one now on the 6. February at 9.30-15.*
- We will make an action plan for the move, including a person from 'X' to engage in the university working-group on the move, which will be shared latest at the next breakfast meeting.*
- We discuss the issue of relocation at a strategic level together and with the 'Department Board'. All comments are welcome, otherwise you with a warm hand leave it to us to protect 'X' in the resettlement issue.*

All the best from (...)' (Copied from an email I received as an employee from one of the Head of Department on 28. January 2009. With slight modifications to erase specifics I translated this from Swedish in December 2011). 'We' here covers the two Head of Department of 'X'. After this email a few other emails and meetings followed.

'Hello dear 'X',

Now on Friday, 6 / 2 9:00 to 15:00 pm, a first workshop on the move is to take place. The second workshop takes place 23 / 2 4 hours (no time specified yet). The method is "Design dialogue". Possibly also a reconciliation meeting 27 / 2 3 hours (no time yet).

It is important to be able to be present all events. It is also important to sign up. Do it to me by tomorrow Thursday at 12.00. You, who cannot or do not want to participate, but still want to make your voice heard, visit (here was a link).

Welcome!' (Copied from an email I received as an employee from one of the Head of Department on 4. February 2009. With slight modifications to erase specifics I translated this from Swedish in December 2011).

This event on 6th February turned out to be an initial info-meeting with the architects at 'X' and a similar event was also held at one of the other involved departments - some of the participants in the workshops reported in Exemplar 05 had been present on this day. Additionally other informing meetings of various kinds and with various groups were organized by the local coordinators - At 'X' this information was mainly passed on during Wednesday-morning staff meetings. Additionally some 'X'-staff members had been on a tour of the 'K' building before the first workshop (see Exemplar 05).

About a week before 'Workshop 1' some of the architects also visited 'X' for a day. Throughout the day, they were video-recording the tour by the main caretaker, observing the use of the many different semi-public workplaces in the open spaces, and informally interviewing different staff members in their current environments (The video was made into a 10 min video which was shown at Workshop 1 / Exemplar 05 / circle 02).

Five days before the first workshop, on 18th February 2009, the Head of Department emailed this information about the workshop-process to all staff. Apart from resumes of what had been discussed at the various meetings and was said during the tours of the 'K'-building, this was what the workshop-participants from 'X' had before joining the first workshop.

'Hi all,

Moving-news is back. Please note the revised list of participants for the workshops. 11 is the maximum number. I have decided so as many different perspectives as possible should be present. All those who have expressed an interest will not be able to participate.

In the Department Council we discuss all possible suspicions and opportunities. I have checked these with interested parties. What has become clear is the following.

The process is open to what emerges from the workshops. Nothing is done without it being anchored. The workshops are now based on co-location rather than a move of 'X'. Exactly this change shows a lot of will to make this fruitful for all parties.

Additionally, the steering committee for the move has now been established. Their main task is to make decisions about finances. The workshops will provide content and workshops are ruling there. The committees decisions about economy that has implications for the workshop contents, will and must be anchored.

The steering committee has set conditions (rules). Here you find clear signals from 'xx' and 'xx' that nothing is done without checking with 'X' (me!) so that it's okay. I am therefore quite confident (...) The rules shows the following:

- Start moving 1 August 2009. Renovations ready by the 31 / 7 Plan D
- The workshops will be held on 23 / 2 at 15-19, 2 / 3 at 15-19; coordination meeting 6 / 3 9-12, drawing delivery including room description 23 / 3. 'xx' start emptying Plan D and Plan A in February and are ready to 15 / 3. Dept. of Facilities' is providing relocation assistance. Demolition completed April 6. (A lot of specifics have been removed)

Now we come to the participants for workshops (...) We have a maximum number of 11 pieces. But there are 17 people who expressed an interest. Not easy to choose. (The list of specified people has been removed...)

All the best from (...) (Copied from an email I received as an employee from Head of Department on 18. February 2009. With slight modifications to erase specifics I translated this from Swedish in Dec. 2011).

Approximate number of involved participants

At the moving department 'X' there were the following number of involved people:

- Staff (administrative and teachers/researchers): approximately 70
- Students: approximately 600
- At the other two involved university departments already in the 'K' building: I have no knowledge of.

From the 'Department of Facilities': Mainly 1 employee as a project manager as well as the department manager.

From the local Swedish architectural company: The same 3 architects participated in all three workshops / additionally some of their colleagues at the company engaged in drawing their proposals and solutions and in dialogue with the builders.

See Exemplar 05 about the 29 selected people from the three involved departments participating in the workshop series.

My main role(s) in the workshop series

As the 'design dialogues' ways of working at the workshops were relevant to my research interests, I was allowed by the Head of Department and by the architects to participate mainly as an observant. I was observing and documenting at all the three workshops. At the first workshop I told everyone about my reasons for being there. When they split up in smaller groups I followed one group at each workshop -The choice of group was chosen randomly on the spot. I briefly confirmed with the people at the table that it was ok I was filming and talking still images of what they did - this was accepted in the three different groups I followed.

With my background in architecture, and with my interests in getting the best future teaching and researching working environment, at a few incidences I could not refrain from speaking out loud too! This happened at the concluding discussions of workshops 2 and 3.

Publications about (some of) this work

None prior to this.

Appendix 07 /

Co-design teaching

Overall on my teaching

From 2003 and onwards, I have been (co-) organizing and (co-) teaching many student courses, course modules and course lectures with workshops for example with the most relevance to my research interests: about the role of materials in (co-) designing, about practices of interaction design (since 2003), about service design (since 2008) and about working with a programmatic and experimental approach (since 2008). Working with 'Project Landscapes' has been a part of a lot of this teaching. Additionally, I have been tutoring several student exam-projects at K3.

I have especially been teaching at the following institutions and educational programmes:

- K3 / Malmö University / Interaction Design Master (international students/teaching in English) (since 2003 –) / I was the Programme Coordinator of this programme in the period July 2010 – October 2011
- K3 / Malmö University / Interaction Design Bachelor (in Swedish) (since 2003/Service Design since 2009 –)
- K3 / Malmö University / one-semester 'Design Theory' course (in Swedish) (1/2-1 day lecture/workshops in 2006, 2007, 2008, 2009, 2010)
- K3 / Malmö University / co-organization of 2-weeks workshops for all students as a part of the 'Designsport' collaboration and competition with the Danish Design School (2003-2004)
- ITU / Denmark / Digitalt Design og Kommunikation (in Danish) (1-day lecture/workshops in 2007, 2008, 2009)
- AHO / Norway / Industrial Design 5th year students (in Norwegian / English) (1-day lecture/workshops in 2005 and 2006)
- Designskolen i Kolding / Institut for Kommunikationsdesign (1½ days lecture/workshop in 2009)

My teaching in these different environments and programmes has worked as a fruitful platform for continuously having to communicate my research insights and for exploring new ways of engaging materials in workshop situations. Thanks to all you students who have participated!

From these various experiences one course has been included in this thesis as an Exemplar. The following are additional details tied to Exemplar 01:

Student project title, facts and brief / background information on Exemplar 01

Course: Tjänstedesign (in Swedish) / Service design

Syllabus-Course code at K3: KD203A

Credits: 7,5p

The students could choose between this and one other course of specialization.

Course responsible: My colleague Anders Emilsson / I was the only other teacher on the course. A couple others came in and did a ½-day lecture or participated in the final exams.

The context: The city of Malmö / Sweden.

'Brief: In this course we examine what the emerging discipline of service design means for designers, businesses and society. Today, services account for approximately 75-80% of production in Europe. But services have until now rarely been designed like industrial products. Therefore, the user's experience of services, both private and public, is often negative. Service Design aims to create services that are attractive and convenient for the user. The shift from consumption of products to services is also considered of great importance for achieving a sustainable development. Service designers have also contributed to the development of public services in health care and in processes for social change.'

Product service systems (PSS)

An easy way to understand the difference between a product and a service is for example

how we resolve the need to transport ourselves from A to B. We can do it by buying a car (product) or by taking the bus (a service), we can also rent a car (a service). In the two last cases, we only pay for the actual functionality of a mean of transport that we do not own. The last two can be called a product service system, in English Product Service Systems (PSS).

Many companies are now beginning to realize that they can make money by just selling the function through a product. An early example is Xerox, which no longer sells copiers, but the function copying. Contemporary examples are the many commercial car pools that are emerging internationally where you can book and get access to a car, when needed, without owning one. From an environmental perspective, it is good when the number of privately owned cars is falling as well as actual travelling by car. Often there is great money to be made for customers as well. Additionally, that you avoid the hassles associated with ownership (insurance, servicing, parking, etc.)'. (From the project brief handed out to the students / Translated by me from Swedish - December 2011).

Student project overall assignment, theme and context

'Assignment: Sustainable People-Transportation

Vision: a transport system for people which allows to "seamlessly" travel around the city by offering access to many different modes of transportation. A starting point is the shift from owned vehicles to shared ones. Another assumption is that today there are many resources that often are unused, such as cars and bicycles parked most of the day. By building a system where you can share these, they can be in use all day. This reduces the need for private-owned vehicles and consumption of resources, which is good from a sustainability perspective. What are the pros and cons of such a system? How do you make it attractive and easy to use? How to synchronize multiple services? What type of additional services can be linked to such a system? What does it mean to scale up grassroots initiatives to commercial services?' (From the project brief handed out to the students / Translated by me from Swedish - December 2011).

Number of participating students

14 x 2nd year Interaction design undergraduate students / working in 4 groups.

Time and duration

30. March – 30. April 2009 / 5-weeks full-time course for the students.

(This was the first time this or any course on service design was offered at K3).

Official course learning outcomes

'KNOWLEDGE AND UNDERSTANDING

After completing the course students should be able to:

- Describe what a service is and the role of services in economy, in sustainable development and in social change. (learning outcome 1)
- Describe how one with design methods can create attractive and functional services. (learning outcome 2)

SKILLS AND ABILITIES

After completing the course students should be able to:

- From a given situation, suggest how a service can solve a problem or satisfy a need (learning outcome 3)
- Develop proposals for a service in collaboration with others (learning outcomes 4)
- Analyze a users various moments in a service and map these in a user-journey (learning outcome 5)
- Identify important touchpoints between users and service providers and suggest how they should be designed (learning objectives 6)
- Gestalt and demonstrate how a service works through a prototype (learning outcome 7)

CRITICAL SKILLS AND APPROACH

After completing the course students should be able to:

- Reflect upon how the course content can be applied in practice (learning outcome 8)
- Apply the course knowledge to constructively tap and formulate new opportunities (learning 9) (From the official course syllabus/ Translated by me from Swedish - December 2011)

My main role(s) in the student course

My colleague had formulated the course syllabus before we started collaborating. The contents of the course brief we worked out together during the months before the course started. During the course we both engaged as tutors and examiners, yet in the teaching our division of work was roughly that he lectured and focused on the theoretical perspectives and international examples, while I focused on practical ways of working as an interaction/service designer. Thus, I was mainly responsible for organizing the co-design events and -situations included in Exemplar 01.

My Publications about (some of) this course

None prior to this.

Examples from some of my other teaching are included in the following

Eriksen, M. A. (2009) *Engaging Design Materials, Formats and Framings in Specific, Situated Co-designing – A Micro-Material Perspective*. Proceedings of the Third NORDES Design Research Conference, Oslo, Norway, August 2009.

Eriksen, M. A. (2006) *Material Means: 'Re-Representing' – Important Explicit Design Activity*. Exploratory paper in Proceedings of the Ninth Conference on Participatory Design – PDC2006, Italy, July-August 2006.

Linde, P., Eriksen, M. A., Lindsjö, J., Niedenthal, S. (2004) *Interaction design as understanding and transforming place*. Position paper / Workshop 'Cross Cutting', CHI2004, Vienna, April 2004.

Appendix 08 /

Different characteristics of the five co-design projects

In this appendix, I describe similarities, differences and characteristics of the five main co-design projects I have participated in and discuss in this thesis (Appendices 01, 02, 03, 04, 05).

Teaching (Appendix 07) and Design Dialogues (Appendix 06) were not officially financed as research projects, so they are not included here. These both had much shorter deadlines, and especially Design Dialogues differed, as the outcome there was implementation and re-building within five months of the concrete physical working environments being explored during the events (Exemplar 05).

All co-design projects have been multidisciplinary

WorkSpace, Atelier and PalCom were e.g. all IT-research projects with collaboration among computer scientists, programmers, sociologists, ethnographers, architects, interaction and industrial designers, etc. as well as the practitioners in their respective fields and sites (= the 'users' stakeholders) (Appendices 01, 02, 03). In the XLab-project, we were a core of four people and about 15 others with diverse, mainly design, backgrounds engaged in the project along the way (Appendix 04). We were 15 to 30 researchers in the distributed WorkSpace, Atelier and DAIM-projects (and in DAIM also design consultants), and all together about six architects were engaged throughout WorkSpace. There were about 40 students engaged along the way in Atelier and more than 100 professionals and everyday people were engaged for shorter or longer periods and parts of the DAIM-project (Appendix 05). The scale of the PalCom project was from 60 to 80 distributed researchers and about 100 different 'user' stakeholders from five different sites.

Quite 'fluid' co-design project organizations, ways of engagement and communication

Except for the PalCom project, in which I had my daily workplace in Malmö with the partners there, in all the other projects I have been a part of the core-team at the managing institution.

Generally for these research projects, there were no strong traditions of using classic means of reporting on activities like formally accepted meeting resumes. Project leaders did not take the role of a leader in the sense that they were dividing tasks among the participants. With the approved project proposal, work was sometimes organized officially in 'work packages' while also sometimes it was divided in more or less ad-hoc workgroups, which to a large extent prioritized and managed their own work. The work of the workgroups was then coordinated and merged along the way – e.g. during local daily/weekly collaborations and monthly or quarterly shared project meetings, workshops, seminars or events.

The XLab project had a quite different character, as the four of us in the core team were participating in almost everything. The exception to this was when the main practical explorations happened during three intense hands-on experiments/workshops. Here others were invited in to explore and experiment with us and with the pre-defined topics and materials specified for each workshop-experiment. Partly opposed to this, in the large networks of distributed people in the PalCom- and DAIM-projects, shortly into these projects there was a need for more structured ways of communicating and sharing knowledge other than only a website and e-mails. In PalCom the internal wiki was essential and in DAIM a blog created an important shared and public online forum.

Meeting face to face at co-design events tied each projects together

Across the different projects, there has been a tendency that the co-design events involving 'users' were (quite) well-planned and prepared in detail (or staged and formatted). Internal but still interdisciplinary meetings and workshops among the researchers from different institutions more tended to have a rough agenda either focused around planning other activities or focused around one or more pre-selected theme(s) or concrete prototypes open for discussion and sometimes exploration. Annual, half-year or quarterly one to three

day project meetings or workshops also played an important role for the distributed teams to get and keep a coherent sense of the project and in most of the projects to also actually do some of the concrete work together.

Related but different outputs of the projects in content and form

Being research projects, the main distributions of knowledge from these projects have been through academic papers and books. Yet, as all the projects have been explorative and participatory, they have also included co-designing very concrete examples relevant for the 'user' stakeholders. Working with technical prototypes was a central part of the IT-research projects, but again it differed. Within WorkSpace and Atelier 'proof of concepts' were accepted, whereas the aim of the PalCom-project was to develop an open-source 'software architecture' launched with an operational 'Toolbox', which called for more detailed software, practice experiments and prototypes. In the XLab and DAIM-projects the deliveries were of a more methodological character – DAIM was passed on with a box and a book of open-ended insights, recommendations and reflections e.g. including a graphical Design-Anthropological-Innovation-Model. After the DAIM project officially ended, at the organization of the waste insinuation plant, everyday practices have changed by working in multidisciplinary teams and with anthropological field research as a part of their projects. I also view this as research project outputs.

Appendix 09/

On my data, tracing and communicating concerns and challenges

While engaged in the different co-design projects, I have captured data in various ways

As I was often engaged not just as an observing PhD student but also as an actively participating co-design researcher, the data about the many specific co-design events and situations I have been involved in, is of a varied character. During the (Exemplar) events, with my various roles, the documentation or material created for afterwards is primarily:

- still images (both taken during and just after the event and situations)
- personal notes and sketches (both made during and after the event and situations)
- video recording of what happened (at some events) and also sometimes used as a collaborative way of recording insights
- the physical materials used at an event and the materialized and rematerialized outputs from these events (this I have kept when possible)
- annotated and quite informal reflections of what happened by other participants (about some events)
- event invitations, agendas, preparatory and summarizing documents - when they were made (filed in my mailbox, on wiki-project pages, webpages, project blogs or saved as printed paper documents)

Generally, when possible, the aim has been to capture the participating materials, the collaborative explorations and processes of materializing and rematerializing with these, the materialized and rematerialized outputs as well as the more overall intensions, aims and approaches of the specific co-design event and situation.

Tracing and communicating concerns and challenges

P&A Bruno Latour (2008) is asking designers for 'means' and 'tools' for 'drawing things together'. The following are my humble assembly of suggestions, for sharing and communicating co-designing issues, concerns and challenges:

- As a starting point, in addition to working with a drawing together approach, I suggest researching and working with an open experimental/programmatic approach rather than a one research question or hypothesis-driven approach, to exactly be open for new possible connections and surprises.

P&A

- Next, very simply getting fragments of issues, current practices, puzzles, illustrations, etc. up on the walls and unto the table, so they are in the workspace and literally can be physically related; this way I have also found fruitful and suggest.

E.g. Exemplars
01, 03, 04

- Collaboratively tracing issues, concerns and challenges by making '2D/3D Landscapes' is also one suggestion I have explored and refined with many diverse groups throughout my PhD studies.
- My PhD slideshow, developed over the years, has ended with a series of slides with one or two underlying exemplary images from a co-designing situation I had been involved in, and then with an overlaying associated textual statement such as '*No formats for explorations...matters*'. - These slides have been a useful way of sharing and refining the both exemplar-based and theory-based challenges, concerns and insights I have explored and found (slightly updated every time I made the presentation). / In the structuring of this thesis, as small cut-outs these have also been used several times (examples in Appendix 10).

Appendix 10

Part D

Chapter 10

Chapter 11

Chapter 12

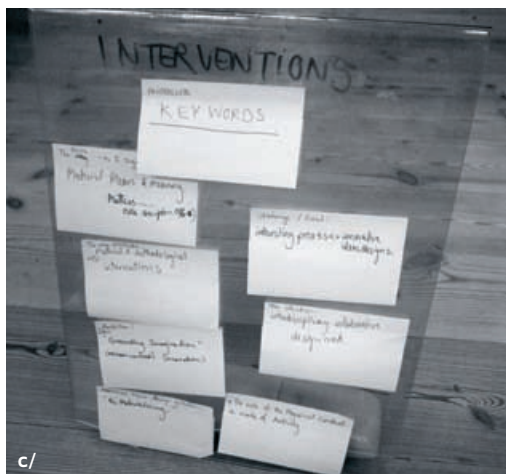
- Lastly, the three ways I have chosen to be 'Drawing material matters together' in Part D, as a catalogue-like 'Emerging material landscape of co-designing', as a 'Guided tour' of this landscape and as "11 challenges with material matters in co-designing" phrased as From...To... paragraphs - are my by now final suggestions of 'means' for drawing together - in a designery way (Part D).

Appendix 10 / Examples of PhD program drifts

A selection of central examples of how I have been working with my co-design research program throughout my PhD studies. Intertwined with experiments, these examples also capture programmatic drifts. Lastly they shows glimpses of how this programmatic work also has intertwined in the 'co-design' of this thesis.



a/



c/



b/



d/

a/ The first carefully selected keywords (spring 2004) and later additions and modifications (Fall 2005). As it shows in my Program 2 / *Grounding Imagination* stayed with me the first years of the PhD studies. **b/** My first individually published researchers statement, also emphasizing my focus on 'materially'. This practically worked as my first written program (Fall 2004). **c/** Selected keywords on notes from to the first Project Description & Program – and a reminder to myself about my (materially) interventionistic approach. **d/** Fragments of project descriptions glued together to compose what I called my first written Project Description & Program (Jan 2006).



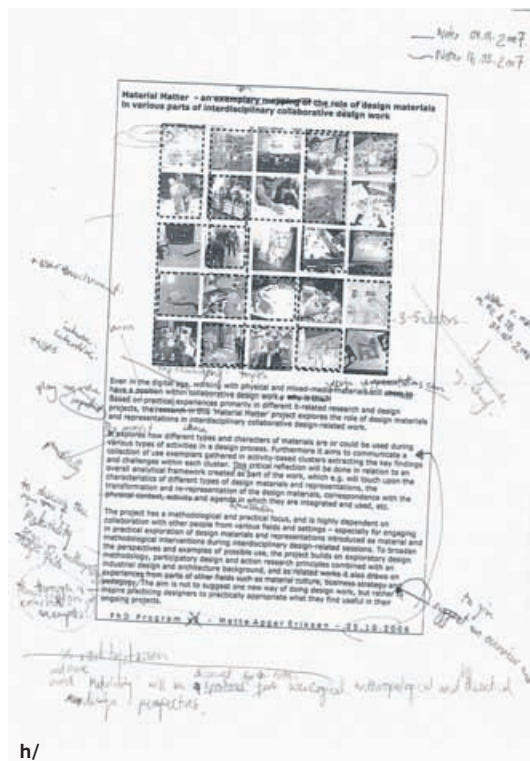
e/



f/

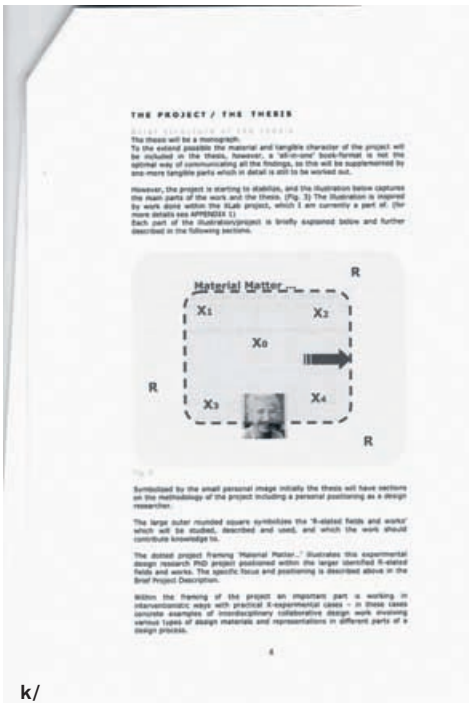
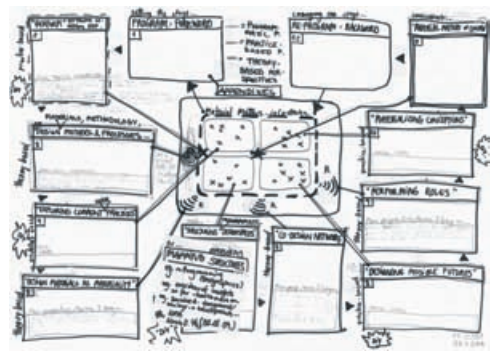


g/



h/

e/ A three-dimensional landscape with fragments of previous projects, design skills and PhD focuses – and a zoom into the landscape on the current formulations and focuses of my PhD project, which was closely coupled with this publication: (Eriksen, 2006a) (February 2006). **f/** The landscape was used to make a quite rough, first-shot recorded 'Dogme Portfolio'/CV, with a cover highlighting the different parts in still images and brief texts. Also materially this work manifested my emphasis on materiality and co-designing (leaving behind 'grounding imagination') (February 2006). **g/** A second edition of my Project Description & Program – Here more experiments have been added and 'Matters' is merging into the title. **h/** 1-page PhD Program v2 – where I with dashed lines above the experiment images indicate that I will be clustering these (fall 2006) – and with later annotated additions and changes (spring 2007).



I/ An example of a programmatic diagram called 'PhD-focus sketch', made with reflections on a collection of practical co-designing experiences/experiments (Sept. 2008) – this became the foundation of the following publication: (Eriksen, 2009) **j/** Working with the program has been closely intertwined with sketched 'experiments' of how to structure the contents of this thesis – here an example with shifts between Programmatic, Practice-based and Theory-based perspectives around the central program (Nov. 2008) **k/** Program-diagrams also illustrated my later Individual Study Plans – here R = various perspectives from R-related fields and C = Clusters of X's or co-design situations and events. Shortly after this I skipped the emphasis on clusters of related co-design situations, which led to yet a restructuring and reformulation of my program and of the contents of the thesis (Jan 2009) **l/** Lastly, fragments of experiment-images with overlaying matters-statements, possible diagrams, key texts-phrases, tentative chapter titles, published papers, etc. – all parts of physically and tentatively structuring the contents of this thesis (fall 2009) – With now six Exemplars and a few other examples included, many experiments have influenced the shaping of the program along the way, but have been left out in this thesis.

An example of a programmatic drift:

In 2006 I made a quite essential programmatic decision

Appendices
01, 02, 03

Exemplars 02, 06

At that time, reflecting upon the collection of co-designing experiments/ examples I already had gathered from my involvement in the three co-design projects WorkSpace, Atelier and PalCom, I realized, that I already had a large collection of experiments exemplifying co-designers working with various forms of mock-ups, prototypes and scenarios as useful collaborative ways of imagining and co-designing possible futures. – Generally, these are well-established and definitely very fruitful practices of engaging tangible materials in co-designing within interaction design, participatory design, IT research and service design. However, many others were researching this too.

At that time I had also changed my program title from *Material Means* (see Figure? c+d) to *Material Matters*, and by relating this both to the collection of experiments and to the large body of participatory design literature about these practice, it became clear that I had to make a choice and reformulate my program. Either, I could choose to narrow my focus and really study those materials in co-design situations, or I could aim for a broader collection of examples also addressing other materials and focuses engaged in co-design situations, events and projects. This decision was affecting the specific framing and focus of my coming co-designing experiments and interventions.

My rationale was that many others had/were already researching prototypes and prototyping; so as it shows by the content of this thesis, I chose the latter. This explicit choice and re-framing pushed me to practically (and interventionistically) explore different kinds of co-design situations where materials were engaged for different purposes than prototyping, intertwined with pushing me to explore broader perspectives of how materials are participating in co-designing.

References

In alphabetical order

Albert, Anni (1968) *Oral history interview with Anni Albert, 1968 July 5*, Archives of American Art, Smithsonian Institution.

Appadurai, Arjun (1986) *The Social Life of Things: Commodities in Cultural Perspectives*. Cambridge: Cambridge University Press.

Bechmann, Søren (2010) *Servicedesign*. Academica. (in Danish)

Bial, Henry (eds.) (2007) *The Performance Studies Reader. Second Edition*. Routledge.

Binder, Thomas; De Michelis, Giorgio; Ehn, Pelle; Jacucci, Giulio; Linde, Per and Wagner, Ina (2011) *Design Things. A.Telier*. The MIT Press.

Binder, Thomas; Brandt, Eva and Halse, Joachim (2009) *Design Laboratories*. In: *FLUX, Research at the Danish Design School*. The Danish Design School Press, p. 150-157.

Binder, Thomas and Brandt, Eva (2008) *The Design:Lab as platform in participatory design research*. In *CoDesign*, Vol. 4, No. 2, 2008, p. 115-129.

Binder, Thomas (2010) *Beyond Methods*. In *Rehearsing the Future*. Halse, Joachim; Brandt, Eva; Clark, Brendon and Binder, Thomas (eds.). The Danish Design School Press. p. 18-21.

Binder, Thomas, Ehn, Pelle, Eriksen, Mette Agger, Jacucci, Guilio, Kuutti, Kari, Linde, Per, Michelis, Georgios D., Niedenthal, Simon, Petterson, Bo, Rumpfhuber, Andreas, Wagner, Ina (2007) *Opening the Digital Box for Design Work: Supporting Performative Interactions, Using Inspirational Materials and Configuring of Place*. In Norbert Streitz et al. (eds.), *The Disappearing Computer Interaction Design, System Infrastructures and Applications for Smart Environments*, Springer. p. 50-76.

Binder, Thomas and Redström, Johan (2006) *Exemplary Design Research*. In *Proceedings of Wonderground, Design Research Society, Lissabon, Portugal, 2006*.

Bjerknes, Gro, Ehn, Pelle and Kyng, Morten (eds.) (1987) *Computers and Democracy – A Scandinavian Challenge*. Avebury, Aldershot.

Björgvinsson, Erling Bjarki (2007) *Socio-Material Mediations. Learning, Knowing and Self-Produced Media Within Healthcare*. Ph.D. Dissertation. K3 / Blekinge Tekniska Högskola (BTH), Sweden.

Blomkvist, Johan, Holmlid, Stefan and Segelström, Fabian (2010) *Service Design Research: Yesterday, Today and Tomorrow*. In Stickdorn, Marc and Schneider, Jacob *This is Service Design Thinking. Basics –Tools - Cases*. BIS Publishers, p. 308-315.

Botsman, Rachel and Rogers, Roo (2010) *What's Mine Is Yours – The Rise of Collaborative Consumption*. Harper Collins

Bowen, Simon (2009) *A Critical Artefact Methodology: Using Provocative Conceptual Designs to Foster Human-centred Innovation*. PhD Dissertation. Sheffield Hallam University, England.

Brandt, Eva; Redström, Johan; Eriksen, Mette Agger and Binder, Thomas (2011) *XLAB*. The Danish Design School Press.

Brandt, Eva and Eriksen, Mette Agger (2010a) *Co-design Events*. In Halse, Joachim; Brandt, Eva; Clark, Brendon and Binder, Thomas (eds.) *Rehearsing the Future*. The Danish Design School Press, p. 70-73.

Brandt, Eva and Eriksen, Mette Agger (2010b) *From a Blank Slate or a Full Table?*. In Halse, Joachim; Brandt, Eva; Clark, Brendon and Binder, Thomas (eds.) *Rehearsing the Future*. The Danish Design School Press, p. 74-79.

Brandt, Eva (2010) *Playing Design Games*. In *Rehearsing the Future*. Halse, Joachim; Brandt, Eva; Clark, Brendon and Binder, Thomas (eds.). The Danish Design School Press. p. 130-133.

Brandt, Eva; Messeter, Jörn and Binder, Thomas (2008) *Formatting design dialogues – games and participation*. In *CoDesign* Vol. 4, Issue 1, March 2008, p. 51-64.

Brandt, Eva and Binder, Thomas (2007) *Experimental Design Research: Genealogy – Intervention – Argument*. In Proceedings of International Association of Societies of Design Research, The Hong Kong Polytechnic University, 12.-15. September 2007.

Brandt, Eva (2006) *Designing Exploratory Design Games: a framework for participation in Participatory Design?* In Proceedings of the ninth conference on Participatory Design – Expanding boundaries of design, Trento, Italy, August 2008; p. 57-66.

Brandt, Eva (2004) *Action research in user-centered product development*. *AI and Society*, 2004:18, pp. 113-133.

Brandt, Eva (2001) *Event-Driven Product Development: Collaboration and Learning*. PhD Dissertation. Dept. of Manufacturing Engineering and Management, DTU, Denmark.

Brandt, Eva and Grunnet, Camilla (2000) *Evoking the future: Drama and props in user centred design*. In Proceedings of the sixth conference on Participatory Design – PDC'00, New York, Nov. 2000, p. 11-20.

Brox, Shane (2008) *Shanes Verden*. DR.

Buchenaus, Marion and Fulton Furi, J. (2000) *Experience Prototyping*. In Proceedings of Designing Interactive Systems. New York: ACM Press. P. 424-433.

Buchli, Victor (eds.) (2002) *The material culture reader*. Berg.

Burns, C., Cottam, H., Vanstone, C and Winhall, C. (2006) *Red Paper 02: Transformation Design*. Design Council, London.

Buur, Jacob and Mitchell, Robb (2011) *The Business Modelling Lab*. In Proceedings of PINC'2011, Sønderborg, Denmark, January 2011; p. 368-373.

Büscher, Monika; Agger Eriksen, Mette; Kristensen, Jannie F. and Mogensen, Preben. (2004) *Ways of grounding imagination...* Proceedings of the Eighth Conference on Participatory Design – PDC2004, Toronto, Canada, July 2004, p. 193-203.

Businessweek:

http://www.businessweek.com/innovate/content/may2008/id20080519_851847.htm

Buxton, Bill (2007) *Sketching User Experiences – getting the design right and the right design*. Morgan Kaufmann.

Bødker, Keld, Kensing, Finn and Simonsen, Jesper (2004) *Participatory IT Design. Designing for Business and Workplace Realities*. MIT Press.

Bødker, Susanne, Greenbaum, Joan and Kyng, Morten (1991) *Setting the stage for Design as Action*. In Greenbaum, Joan and Kyng, Morten (eds.) *Design at Work – Cooperative design of computer systems*. Lawrence Erlbaum Associates, Inc., Mahwah, NJ., p. 139-154.

Bødker, Susanne and Grønbaek, Kaj (1991) *Design in Action; From Prototyping by Demonstration to Cooperative Prototyping*. In Greenbaum, Joan and Kyng, Morten (eds.) *Design at Work – Cooperative design of computer systems*. Lawrence Erlbaum Associates, Inc., Mahwah, NJ., p. 197-218.

Capjon, Jan (2004) *Trial-and-Error-based Innovation – Catalysing Shared Engagement in Design Conceptualisation*. PhD Dissertation no. 14. AHO – Oslo School of Architecture, Norway.

Carlsson, Marvin (1996) *What is Performance?* In Bial, Henry (eds.) (2007) *The Performance Studies Reader. Second Edition*. Routledge. p. 70-75.

CoDesign (2008) *Design Participation(s)*. Special Issue. International Journal of CoCreation in Design and the Arts. Vol. 4, Issue 1, 2008.

Clark, Brendon (2007) *Design as Sociopolitical Navigation. A Performative Framework for Action-Oriented Design*. PhD Dissertation. University of Southern Denmark.

Damsholt, Tine, Simonsen, Dorthe Gert and Mordhorst, Camilla (eds.) (2009) *Materialiseringer. Nye perspektiver på materialitet og kulturanalyse*. Aarhus Universitetsforlag, Danmark. (in Danish).

Dant, Tim (2005) *Materiality and Society*. Open University Press, Maidenhead Berkshire.

DDA – copenhagencocreation:

Website last checked 31.January 2012 at <http://copenhagencocreation.com/>

Dourish, Paul (2001) *Where the Action Is. The Foundations of Embodied Interaction*. MIT Press.

Ehn, Pelle (1988) *Work-oriented design of computer artifacts*. Arbetslivscentrum, Sweden.

Ehn, Pelle and Kyng, Morten (1991) *Cardboard Computers: Mocking it up or Hands-on the Future*. In Greenbaum, Joan and Kyng, Morten (eds.) *Design at Work – Cooperative design of computer systems*. Lawrence Erlbaum Associates, Inc., Mahwah, NJ., p. 167-195.

Ehn, Pelle and Sjöberg, Dan (1991) *From System Descriptions to Scripts for Action*. In Greenbaum, Joan and Kyng, Morten (eds.) *Design at Work – Cooperative design of computer systems*. Lawrence Erlbaum Associates, Inc., Mahwah, NJ., p. 241-268.

Eriksen, Mette Agger (2009) *Engaging Design Materials, Formats and Framings in Specific, Situated Co-designing – A Micro-Material Perspective*. In the web proceedings of NORDES / Nordic Design Research:
<http://ocs.sfu.ca/nordes/index.php/nordes/2009/paper/view/286/141>

Eriksen, Mette Agger (2008) *Design Materials designed for – and with – co-designers*. Position paper for Workshop 'Designed for Co-designers'. The Tenth Conference on Participatory Design – PDC2008, Bloomington, Indiana, USA, October 2008.
Available at: <http://mlab.taik.fi/co-design-ws/>

Eriksen, Mette Agger and Linde, Per (2006a) *Design impulses: artefacts, contexts and modes of activities*. Working Papers in Art and Design 4 – online journal.
<http://www.herts.ac.uk/artdes/research/papers/wpades/vol4/amefull.html>.

Eriksen, Mette Agger (2006b) *Material Means: 'Re-Representing' – Important Explicit Design Activity*. Exploratory paper – in Proceedings of the Ninth Conference on Participatory Design – PDC2006, Italy, July-August 2006.

- Fischer, Gerhard (2001) *Communities of Interest (Cols): Learning through the interaction of multiple knowledge systems*. In IRIS (24th Annual Information Systems Research Seminar in Scandinavia), 1-14. Bergen: Department of Information Sciences.
- Floyd, C. (1984) *A Systematic Look at Prototyping*. In Budde, R., Kuhlenskamp, K., Mathiassen, L. and Zullighoven, H. (eds.) *Approaches to Prototyping*. Springer-Verlag: Heidelberg, 1-17.
- Foverskov, Maria and Binder, Thomas (2009) *Rehearsing the Future: In and Out of Scenarios in a Reflective Practicum*. Workshop-position-paper. In the web proceedings of NORDES / Nordic Design Research: <http://ocs.sfu.ca/nordes/index.php/nordes/2009/>
- Frayling, Christoffer (1993) *Research in Art and Design*. Royal College of Art Research Papers 1 : 1-5.
- Friedman, Ken; Smith, Owen and Sawchyn, Lauren (eds.) (2002) *The Fluxus Performance Workbook*. Performance Research e-Publications. <http://www.thing.net/~grist/ld/fluxusworkbook.pdf>
- Fällman, Daniel (2007) *The Interaction Design Research Triangle of Design Practice, Design Studies, and Design Exploration*. Design Issues: Volume 24, Nr. 3, Summer 2008.
- Fröst, Peter (2004) *Designdialoger I tidiga skeden - arbetssätt och verktyg för kundengagerad arbetsplatsutformning*. PhD Dissertation. Arkitektur, Chalmers Tekniska Högskola, Göteborg, Sweden.
- Gaver, Bill, Dunne, Tony and Pacenti, Elena (1999) *Cultural Probes*. Interactions. January + February 1999 p. 21-29.
- Gehl, Jan and Gemzøe, Lars (2001 – Original 1971 in Danish) *Life Between Buildings. Using Public Spaces*. 4th Edition. Arkitektens Forlag.
- Gehl, Jan (1996) *Byens Rum Byens Liv*. Arkitektens Forlag, Kunstakademiets Forlag. (in Danish)
- Gibson, James (1977) *The Theory of Affordances*. In R. Shaw and J. Bransford (eds.), *Perceiving, Acting and Knowing*. Hillsdale, NJ: Erlbaum.
- Goffman, Erving (2005 / original from 1967) *Interaction Rituals. Essays in Face-to-Face Behavior*. Transaction Publishers, New Brunswick, New Jersey.
- Goffman, Erving (1974) *Frame Analysis. An Essay on the Organization of Experience*. In Lemert, Charles and Branaman, Ann (eds.) (1997) *The Goffman Reader*. Blackwell Publishing. p. 149-166.
- Goffman, Erving (1959) *The Presentation of Self in Everyday Life*. Penguin Books.
- Greenbaum, Joan and Kyng, Morten (eds.) (1991) *Design at Work – Cooperative design of computer systems*. Lawrence Erlbaum Associates, Inc., Mahwah, NJ.
- Habraken, John; Gross, Mark; and Anderson, James; Hamdi, Nabeel; Dale, John; Palleroni, Sergio; Saslaw, Ellen and Wang, Ming-Hung. (1987) *Concept Design Games. Book One: Developing. Book Two: Playing*. Report to National Science Foundation. Department of Architecture, Cambridge: MIT.
- Hallnäs, Lars and Redström, Johan (2006) *Interaction Design Foundations, Experiment*. University College of Borås. The Swedish School of Textiles. The Textile Research Centre: <http://hdl.handle.net/2320/1554>
- Halse, Joachim; Brandt, Eva; Clark, Brendon and Binder, Thomas (eds.) (2010) *Rehearsing the Future*. The Danish Design School Press.

Halse, Joachim (2008) *Design Anthropology: Borderland Experiments with Participation, Performance and Situated Intervention*. PhD Dissertation. IT University of Copenhagen, Denmark.

Heape, Chris (2007) *The Design Space: the design process as the construction, exploration and expansion of a conceptual space*. PhD Dissertation. Mads Clausen Institute, University of Southern Denmark.

Holmlid, Stefan (2007) *Interaction design and service design: Expanding a comparison of design disciplines*. First Nordic Conference on Service Design and Service Innovation / ServDes, Oslo, Norway.

Holmlid, Stefan (2009) *Participative, co-operative, emancipatory: From participatory design to service design*. Nordic Design Research Conference, NorDes 2007, Stockholm, Sweden.

Jacucci, Giulio (2004) *Interaction as Performance –Cases of configuring physical interfaces in mixed media*. PhD Dissertation. Faculty of Science, Department of Information Processing Science, University of Oulu, Finland.

Jégou, François and Manzini, Ezio (2008) *Collaborative Services: Social innovation and design for sustainability*. Edizioni Poli. Design. p. 31-43.

Jones, John Chris (1992) *Design Methods. Second Edition*. John Wiley and Sons, Inc. NY.

Binder, Thomas and Brandt, Eva (2008) *The Design:Lab as platform in participatory design research*. In CoDesign, Vol. 4, No. 2, 2008, p. 115-129.

Kaprow, Allan (1997) *Just doing*. In Bial, Henry (eds.) (2007) *The Performance Studies Reader. Second Edition*. Routledge. p. 159-163.

Kensing, Finn and Madsen, Kim Halskov (1991) *Generating Visions: Future Workshops and Metaphorical Design*. In Greenbaum, Joan and Kyng, Morten (eds.) *Design at Work – Cooperative design of computer systems*. Lawrence Erlbaum Associates, Inc., Mahwah, NJ, p. 155-167.

Kirshenblatt-Gimblett, Barbara (2002) *Performance Studies*. In Bial, Henry (eds.) (2007) *The Performance Studies Reader. Second Edition*. Routledge. p. 43-55.

Koskinen, Ilpo; Zimmerman, John; Binder, Thomas; Redström, Johan and Wensveen, Stephan (eds.) (2011) *Design Research Through Practice*. Morgan Kaufmann.

Koskinen, Ilpo; Binder, Thomas; and Redström, Johan (2008) *Lab, Field, Gallery and Beyond*. Artifact Vol. 2 Issue 3-4, 2008, p. 46-57.

Krippendorff, Klaus (2006) *The Semantic Turn: A new Foundation for Design*. Taylor and Francis.

Krippendorff, Klaus (1990) *Product Semantics; a triangulation and four design theories*. In S. Väkevä (eds.) *Product Semantics '89*. Helsinki, University of Industrial Arts, pp. a3-a23. Design Issues, 5 (2).

Krippendorff, Klaus and Butter, Reinhart (eds.) (1989) *Product Semantics*. Design Issues, 5 (2).

Krippendorff, Klaus and Butter, Reinhart (1984) *Exploring the Symbolic Qualities of Form*. Innovation 3(2): p. 4-9.

Latour, Bruno (2008) *A cautious Prometheus? A few steps toward a philosophy of design (with special attention to Peter Sloterdijk)*. Keynote paper in Proceedings of the 2008 Annual International Conference of the Design History Society (UK), p. 2-11.

Latour, Bruno and Weibel, P. (eds.) (2005) *Making Things Public: Atmospheres of Democracy*. (Catalogue of the exhibition at ZKM – Center for Art and Media – Karlsruhe, 20. March-30. October, 2005). Cambridge, MA: MIT Press.

Latour, Bruno (2005) *Reassembling the Social. An Introduction to Actor-Network-Theory*. Oxford University Press.

Latour, Bruno (2004) *Why Has Critique Run out of Steam? From Matters of Fact to Matters of Concern*. *Critical Inquiry*, Vol. 30, No. 2 (Winter, 2004), pp. 225-248. The University of Chicago Press.

Latour, Bruno (1999) *Pandora's Hope – Essays on the Reality of Science Studies*. Harvard University Press.

Latour, Bruno (1994) *On Technical Mediation – Philosophy, Sociology, Genealogy*. In *Common Knowledge*, Vol. 3, Number 2, p.29-62.

Latour, Bruno (1992) *Where are the Missing Masses? Sociology of a Few Mundane Artefacts / Sociology of a Door*. In Bijker, Wiebe and Law, John (eds.). *Shaping Technology/Building Society: Studies in Sociotechnical Change*. Cambridge Mass.: MIT Press p. 255-258.

Latour, Bruno (1986) *Visualisation and Cognition: Drawing Things Together*. *Knowledge and Society Studies*. In *Sociology of Culture Past and Present*, Jal Press, Volume 6, p 1-40.

Lave, Jean and Wenger, Etienne (1991) *Situated Learning: Legitimate Peripheral Participation*. In *Learning in Doing-series*. Cambridge University Press.

Linde, Per (2007) *Metamorphing. The Transformative Power of Digital Media and Tangible Interaction*. Ph.D. Dissertation. K3 / Blekinge Tekniska Högskola (BTH), Sweden.

Livework: *Service Thinking*. Link copied on 31. January 2012:
<http://www.livework.co.uk/articles/>

Löwgren, Jonas and Stolterman, Erik (2007 /hardback in 2004) *Thoughtful Interaction Design: A Design Perspective on Information Technology*. Cambridge, MA: MIT Press.

Löwgren, Jonas (2007) *Interaction design, research practices and design research on the digital materials*. (translated from Swedish: *Forskning om digitala material*). In Sara Ilstedt Hjelm (eds.) *Under ytan: Om designforskning*. Raster Förlag, Stockholm.

Margolin, Victor and Buchanan, Richard (eds.) (1995) *The Idea of Design - A Design Issues Reader*. The MIT Press.

Manzini, Ezio (1993) *Il Design dei Servizi. La progettazione del prodotto-servizio*. *Design Management* (7).

Mattelmäki, Tuuli (2006) *Design Probes*. PhD Dissertation. University of Art and Design Helsinki, Finland.

Mazé, Ramia (2007) *Occupying Time: Design, Technology, and the Form of interaction*. PhD Dissertation. Blekinge Institute of Technology, Sweden / Axl Books.

McCullough, Malcolm (2005). *Digital Ground: Architecture, Pervasive Computing, and Environmental Knowing*. Cambridge, Mass., MIT Press.

Meroni, Anna and Sangiorgi, Daniela (2011) *Design for Services*. GOWER.

Messeter, Jörn (2009) *Place-Specific Computing: A Place-centric Perspective for Digital Designs*. *International Journal of Design*, Vol. 3 (1), p. 29-41.

Miettinen, Satu and Koivisto, Mikko (eds.) (2009) *Designing Services with Innovative Methods*. University of Art and Design in Helsinki.

Miller, Daniel (eds.) (2005) *Materiality*. Durham. Duke University Press.

Mitchell, Robb and Buur, Jacob (2010) *Tangible Business Model Sketches to Support Participatory Innovation*. In Proceedings of DESIRE'10, Aarhus, Denmark, p. 29-33.

Mogensen, Preben (1991) *Towards a Prototyping Approach in Systems Development*. Scandinavian Journal of Information Systems, vol. 3, p. 31-53.

Moggridge, Bill (2007) *Designing Interactions*. The MIT Press.

Morelli, Nicola (2002) *Designing Product/Service Systems: A Methodological Exploration*. Design Issues 18(3): p. 3-17.

Morelli, Nicola (2003) *Product-service systems, a perspective shift for designers: A case study: the design of a telecentre*. Design Studies 24: p. 73-99.

Müller-Brockmann, Josef (2008/original 1981) *Grid systems – in graphic design. A visual communication manual for graphic designers, typographers and three dimensional designers*. 6th edition. Niggli.

Nielsen, Lene (2011) *Persona – brugerfokuseret design*. Aarhus Universitetsforlag. (in Danish).

Norman, Donald A. (1998) *The Design of Everyday Things*. The MIT Press.

Nygaard, Kristen and Bergo, O. T. (1975) *The Trade Unions – new users of research*. Personal review, no 2.

Pacenti, E. and Sangiorgi, D. (2010) *Service Design research pioneers: An overview of Service Design research developed in Italy since the 90's*. Design Research Journal 2010 (1), p. 26-33.

Paludan, Trine (2010) *Go for Situations*. In Halse, Joachim; Brandt, Eva; Clark, Brendon and Binder, Thomas (eds.). *Rehearsing the Future*. The Danish Design School Press. p. 150-156.

Prahalad, C.K. and Krishnan, M.S. (2008) *The New Age of Innovation: driving cocreated value through global networks*. McGraw-Hills Books.

Prahalad, C.K. and Ramaswamy, Venkat (2004) *The Future of Competition*. Harvard Business School Press.

Prahalad, CK and Ramaswamy, Venkat (2002). *The Co-creation Connection, Strategy and Business*, Vol. 27 pp.50-61.

Prahalad, C.K. and Ramaswamy, Venkat (2000) *Co-Opting Customer Experience*. Harvard Business Review, January-February.

Proceedings of the Participatory Design conferences e.g. 2008 / 2010: <http://dl.acm.org/results.cfm?h=1andcfid=75570461andcftoken=73821470>

Rasmussen, Steen Eiler (1957) *Om at opleve arkitektur*. G.E.C. Gads Forlag København, Denmark (in Danish).

Saffer, Dan (2007) *Designing for Interaction: Creating Innovative Applications and Devices*. New Riders.

Saffer, Dan (2010) *Designing for Interaction, Second Edition: Creating Innovative Applications and Devices*. New Riders.

- Sanders, Elisabeth B.-N. and Stappers, Pieter Jan (2008) *Co-creation and the new landscapes of design*. In *CoDesign*, 4: 1, 5-18.
- Sanders, Elisabeth B.-N. (2000) *Generative Tools for Co-designing*. In Schrivener, Ball and Woodcorck (eds.) *Collaborative Design*. Springer-Verlag London Limited.
- Sanders, Elisabeth B.-N. (1999) *Postdesign and Participatory Culture*. The Useful and Critical: The Position of Research in Design. Conference at the University of Art and Design in Helsinki, 1999. www.maketools.com
- Schechner, Richard (2006) *Performance Studies – An Introduction. Second Edition*. Routledge: Taylor and Francis Group.
- Schechner, Richard (2003 / 1988) *Performance Theory*. Routledge Classics.
- Schechner, Richard (1992) *Drama Performance*. In Bauman, R. (eds.) *Folklore, Cultural Performances, and Popular Entertainments*. Oxford University Press. p. 272-281.
- Schechner, Richard (1985) *Between Theatre and Anthropology*. University of Pennsylvania Press.
- Schuler, Douglas and Namioka, Aki (1993) *Participatory design – Principles and Practices*. Lawrence Erlbaum Associates Inc., Publishers.
- Schön, Donald (1983) *The Reflective Practitioner – How Professionals Think in Action*. Basic Books, USA.
- Schön, Donald (1987) *Educating the Reflective Practitioner*. San Francisco, Jossey-Bass.
- Schön, Donald (1992) *Designing as reflective conversation with the materials of a design situation*. Knowledge-Based Systems, Volume 5, Number 1. Butterworth-Heinemann Ltd. March.
- Shove, Elisabeth; Watson, Matthew; Hand, Martin and Ingram, Jack (2007) *The Design of Everyday Life*. Oxford: Berg.
- Simonsen, Jesper and Robertson, Toni (eds.) (forthcoming) *International Handbook of Participatory Design*. Routledge.
- Simonsen, Jesper; Bærenholdt, Jørgen Ole; Büscher, Monika and Scheuer, John Damm (eds.) (2010) *Design Research – Synergies from interdisciplinary perspectives*. Routledge.
- Sleeswijk Visser, Froukje; Stappers, Pieter J.; Van der Lugt, Remko and Sanders, Elisabeth (2005) *Contextmapping: experiences from practice*. In *CoDesign*, Vol.1, No.2.
- Star, Susan Leigh (1989) *The structure of ill-structured solutions: boundary objects and heterogeneous distributed problem solving*. In *Distributed Artificial Intelligence* (Vol. 2). Morgan Kaufmann Publishers Inc., USA, p. 37 – 54.
- Stickdorn, Marc and Schneider, Jacob (2010) *This is Service Design Thinking. Basics – Tools – Cases*. BIS Publishers.
- Suchman, Lucy (2007) *Human–Machine Configurations. Plans and Situated Actions. 2nd Edition*. Cambridge University Press.
- Suchman, Lucy and Trigg, Randall (1991) *Understanding Practice: Video as a Medium for Reflection and Design*. In Greenbaum, Joan and Kyng, Morten (eds.) *Design at Work – Cooperative design of computer systems*. Lawrence Erlbaum Associates, Inc., Mahwah, NJ, p. 65-89.
- Suchman, Lucy (1987) *Plans and situated actions: The problem of human-machine communication*. New York: Cambridge University Press.

Thackara, John (2006 / Hardback in 2005) *In the Bubble – Designing in a Complex World*. The MIT Press.

Turner, Victor (1987) *The Anthropology of Performance*. PAJ Publications, New York.

Turner, Victor and Turner, Edie (1986) *Performing Ethnography*. In Bial, Henry (eds.) (2007) *The Performance Studies Reader. Second Edition*. Routledge. p. 323-336.

Turner, Victor (1969) *Liminality and Communitas*. In Bial, Henry (eds.) (2007) *The Performance Studies Reader. Second Edition*. Routledge. p. 89-97.

Turner, Victor (1967) *Betwixt and Between: The Liminal Period in Rites of Passage*. In Mahdi, Louise Carus; Foster, Steven and Little, Meredith (eds.) (1987) *Betwixt and Between: Patterns of Masculine and Feminine Initiation*. Open Court Publishing Company. p. 3-19.

VanPatter, GK (2009) *DESIGN 1.0 2.0 3.0 4.0. NextD FUTURES / ReReThinking Design*, Design Thinking Conference, Swinburne University / School of Design. Link copied on 10. June 2010: <http://issuu.com/humantific/docs/nextdfutures09>

Wallace, Jamie (2010) *Different Matters of Invention: Design Work as the Transformation of Dissimilar Design Artefacts*. Ph.D. Dissertation. The Danish School of Education (DPU), Aarhus University, Denmark.

Ward, Matt and Wilkie, Alex (2010) *Made in Criticalland: Designing Matters of Concern*. In *Studies in Material Thinking*. [http:// www.materialthinking.org](http://www.materialthinking.org)

Weiser, Mark (1991) *The Computer for the 21st Century*. Scientific American, September 1991, p. 94-104.

Wenger, Etienne; McDermott, Richard and Snyder, William M. (2002) *Cultivating Communities of Practice – A Guide to Managing Knowledge*. Harvard Business Press.

Wenger, Etienne (1998) *Communities of Practice – Learning, Meaning, and Identity*. In *Learning in Doing-series*. Cambridge University Press.

Westerlund, Bo (2009) *Design Space Explorations – co-operative creation of proposals for desired interactions with future artefacts*. PhD Dissertation. Kungliga Tekniska Högskolan (KTH), Sweden.

Whyte, William. F. (eds.) (1991) *Participatory Action Research*. Newbury Park, California. Sage Publications.

Winograd, Terry and Flores, F. (1986) *Understanding Computers and Cognition: A New Foundation for Design*. Norwood, NJ: Ablex.

Winograd, Terry (eds.) (1996) *Bringing Design to Software*. Addison-Wesley.

Wynn, Elenor (1991) *Taking Practice Seriously*. In Greenbaum, Joan and Kyng, Morten (eds.) *Design at Work – Cooperative design of computer systems*. Lawrence Erlbaum Associates, Inc., Mahwah, NJ., p. 45-64.

Zimmerman, John; Forlizzi, Jodi and Evenson, Shelly. (2007) *Research through design as a Method for Interaction Design Research in HCI*. Proceedings of the CHI 2007 Conference, San Rose, California, USA.

Zimmerman, Mary (2005) *The Archaeology of performance*. In Bial, Henry (eds.) (2007) *The Performance Studies Reader. Second Edition*. Routledge. p. 310-319.

1508 (no year of publish): *Kan man designe en Service?* (in Danish). Booklet. Downloaded on 31. January 2012 from: <http://www.1508.dk/tilgang/bestil-viden.aspx>

My List of Publications

Most references match with Figure 1 in Foreword: Program

Most of these publications are included in Figure 1 in the Foreword: Program, including a mapping of my Program 1, 2 and 3 'filled out' with these publications.

The publications I refer to the most throughout the thesis are both here and in the previous list of references in the following list. The first reference mentioned in each category is the last published. Please be aware, as it appears sometimes I am Agger, sometimes Eriksen and sometimes Agger Eriksen!

Co-authored books and book chapters

Brandt, Eva; Redström, Johan; Agger Eriksen, Mette and Binder, Thomas (2011) *Xlab*. Konstakademiets Designskoles Forlag.

Brandt, Eva & Eriksen, Mette Agger (2010a) *Co-design Events*. In Halse, Joakim; Brandt, Eva; Clark, Brendon & Binder, Thomas (eds.) *Rehearsing the Future*. The Danish Design School Press, p. 70-73.

Brandt, Eva & Eriksen, Mette Agger (2010b) *From a Blank Slate or a Full Table?*. In Halse, Joakim; Brandt, Eva; Clark, Brendon & Binder, Thomas (eds.) *Rehearsing the Future*. The Danish Design School Press, p. 74-79.

Binder, Thomas, Ehn, Pelle, Eriksen, Mette A., Jacucci, Guilio, Kuutti, Kari, Linde, Per, Michelis, Giorgio D., Niedenthal, Simon, Petterson, Bo, Rumpfhuber, Andreas, Wagner, Ina (2007) *Opening the Digital Box for Design Work: Supporting Performative Interactions, Using Inspirational Materials and Configuring of Place*. In Norbert Streitz et al. (eds.), *The Disappearing Computer Interaction Design, System Infrastructures and Applications for Smart Environments*, Springer. p. 50-76.

Peer-reviewed conference articles

Eriksen, Mette Agger (2009b) *Engaging Design Materials, Formats and Framings in Specific, Situated Co-designing – A Micro-Material Perspective*. Proceedings of the Third NORDES Design Research Conference, Oslo, Norway, August 2009.

Sokoler, Thomas; Löwgren, Jonas; Agger Eriksen, Mette; Linde, Per and Olofsson, Stefan (2007) *Explicit interaction for surgical rehabilitation*. Proceedings of the First International Conference 'Tangible and Embedded Interaction' (TEI '07). New York: ACM Press.

Eriksen, Mette Agger (2006a) *Material Means: 'Re-Representing' – Important Explicit Design Activity*. Exploratory paper - in Proceedings of the Ninth Conference on Participatory Design – PDC2006, Italy, July-August 2006.

Eriksen, Mette Agger and Linde, Per (2006b) *Design impulses: artefacts, contexts and modes of activities*. Working Papers in Art and Design 4 – online journal. ISSN 1466-4917. <http://www.herts.ac.uk/artdes/research/papers/wpades/vol4/amefull.html>.

Agger, Mette; Linde, Per; Löwgren, Jonas; Olofsson, Stefan and Sokoler, Thomas (2005) *The CARE paper - Collaborative articulation in rehabilitation after hand surgery*. Proceedings of the First Nordes Design Research Conference, May 2005, Copenhagen, Denmark.

Büscher, Monika; Agger Eriksen, Mette; Kristensen, Jannie Friis and Mogensen, Preben (2004) *Ways of grounding imagination...* Proceedings of the Eighth Conference on Participatory Design – PDC2004, pp. 193-203, Toronto, Canada, July 2004.

Linde, Per; Eriksen, Mette A.; Lindsjö, Janna and Niedenthal, Simon (2004) *Interaction design as understanding and transforming place*. Position paper - Workshop 'Cross Cutting', CHI2004, Vienna, April 2004.

Agger Eriksen, Mette; Krogh, Peter and Ludvigsen, Martin (2003) *Playful Interaction*. Proceedings of the First International Conference on Appliance Design, Bristol, UK, 6-8 May 2003.

Agger Eriksen, Mette; Büscher, Monika and Christensen, Michael (2003c) *Grounded Imagination: Dialogue in Context*. Presentation at Fieldworks: Dialogue between Art and Anthropology - An international conference at Tate Modern, London, England, 26 - 28 September 2003.

Kristensen, Jannie F.; Agger Eriksen, Mette; Sejer, Ole; Nielsen, Christina; Petersen, Marianne G. and Kanstrup, Anne Marie (2003) *Young People in Old Cars – Challenges for Cooperative Design*. Electronic Proceedings of the 26th Information Systems Research Seminar in Scandinavia/IRIS26, Finland, 9-12 August 2003. (Awarded: 'Best Theme Article').

Grønbaek, Kaj; Kristensen, Jannie F.; Ørbæk, Peter and Agger Eriksen, Mette (2003a) *'Physical Hypermedia': Organising Collections of Mixed Physical and Digital Material*. Proceedings of ACM Hypertext 2003, Nottingham, UK, August 2003.

Grønbaek, Kaj; Kristensen, Jannie F.; Ørbæk, Peter and Agger Eriksen, Mette (2003b) *'Physical Hypermedia': Augmenting physical material with hypermedia structures*. New Review of Hypermedia and Multimedia, Vol. 9, pp. 5-34, Taylor & Francis Group.

Reviewed articles, researchers statements, workshop descriptions

Eriksen, Mette Agger (2009a) *Design-materialer – designet for og af co-designere / Design Materials - Designed for and by Co-designers*. FLUX – Research at The Danish Design School. The Danish Design School Press, p. 116-125.
(Rewrite of the below paper from 2008)

Eriksen, Mette Agger (2008) *Design Materials Designed for – and by – Co-designers*. Workshop Position paper - 'Designed for Co-designers' at the Tenth Conference on Participatory Design – PDC2008, Bloomington, Indiana, USA, October 2008. Available at: <http://mlab.taik.fi/co-design-ws/>

Eriksen, Mette Agger (2007) *Besøg i XLab: Designforskere på håndgribeligt & eksperimenterende værkstedsarbejde*. Årsberetning 2006, Eksempel på aktuel forskning ved centret, s 26-29. Center for Designforskning (CDF), Danmark.

Eriksen, Mette Agger (2004a) *Design <reflect> Research*. In *Design <x> Research – essays on interaction design as knowledge construction*. Ehn & Löwgren (eds.), p. 37-54, Studies in Arts and Communication #3, Malmö University, Sweden.

Eriksen, Mette Agger (2004b) *The role of materials for knowledge sharing and collaborative design work*. Creative Environments – Learning, Projects and researchers' statements, pp. 32-33, Arts & Communication, Malmö University, Sweden.

Büscher, Monika and Agger Eriksen, Mette (2003a) *Grounded Imagination – a workshop*. Workshop-description in the Proceedings of the Tales of the Disappearing Computer, Santorini, Greece, 1-4 June 2003.

Agger Eriksen, Mette and Büscher, Monika (2003b) *Grounded Imagination: Challenge, paradox and inspiration*. DC Success Stories in the Proceedings of the Tales of the Disappearing Computer, Santorini, Greece, 1-4 June 2003.

Agger Eriksen, Mette (2002) *Legoklodser – vejen til slutbrugernes verden*. ARKITEKTEN 28, p. 12-13, november 2002.

Agger Eriksen, Mette (2002) *Fagets Grænser*. ARKITEKTEN 28, pp. 16-17, november 2002.

Other early writings

The following are from my time as an architecture student and as a co-establisher og co-editor of the magazines FORUM AAA and [KÅRK] at Aarhus School of Architecture in Denmark. (Selected examples in Positions & Approaches / Figure 3h).

Agger Eriksen, Mette, Rasmussen, G. S. (2000) *Forskningens ABC*. [KÅRK] #4, Theme: Forskning (Research), p. 06-14, Arkitektskolen i Aarhus & Kunstakademiets Arkitektskole.

Agger Eriksen, Mette (1999) *Arkitekten som konsulent*. Interview. [KÅRK] #1, Theme: Er der brug for os (Is there a need for us), p. 28-31, Arkitektskolen i Aarhus & Kunstakademiets Arkitektskole.

Eriksen, Mette Agger (1999) *Strøtanker*. Forum aaa no. 06, Theme: metode (methodology), p. 08, Arkitektskolen i Aarhus.

Eriksen, Mette Agger (1999) *Et opgaveforløb. En arbejdsgang. En evaluering*. Forum aaa no. 06, Theme: metode (methodology) p. 20-21, Arkitektskolen i Aarhus.

Eriksen, Mette Agger and Sørensen, Lene (1999) *>Kommentar<*. Interviews. Forum aaa no. 06, Theme: metode (methodology), p. 22-24, Arkitektskolen i Aarhus.

Eriksen, Mette Agger; Lundström, Anna and Winding, Ole (1998) *MeasureTaking*. Leder. Forum aaa no. 04, Theme: skala (scale), p. 05, Arkitektskolen i Aarhus.

Eriksen, Mette Agger and Sørensen, Lene (1998) *>Kommentar<*. Interviews. Forum aaa no. 04, Theme: skala (scale), p. 35-36, Arkitektskolen i Aarhus.

Lundström, Anna and Eriksen, Mette Agger (1998) *Dokumenta X / Sansernes rumlighed*. Forum aaa no. 02, Theme: Kunst & arkitektur (Art & Architecture), p. 15-16, Arkitektskolen i Aarhus.

Eriksen, Mette Agger and Winding, Ole (1998) *Relationer mellem kunst & arkitektur*. Forum aaa no. 02, Theme: Kunst & arkitektur (Art & architecture), p. 21-23, Arkitektskolen i Aarhus.

Agger, Mette and Kirring, Christian (1997) *Fra førstedelen – en ny undervisers sigtelinier*. Forum aaa no. 01, p. 21-22, Arkitektskolen i Aarhus.

*Dissertation series in New Media, Public
Spheres and Forms of Expression, Faculty of
Culture and Society, Malmö University*

- 1/ Denward, Marie. Pretend that it is Real!: Convergence Culture in Practice, 2011.
- 2/ Memmott, Talan. Digital Rhetoric and Poetics: Signifying Strategies in Electronic Literature, 2011.
- 3/ Eriksen, Mette Agger. Material Matters in Co-designing. Formatting & Staging with Participating Materials in Co-design Projects, Events & Situations, 2012.

MATERIAL MATTERS IN CO-DESIGNING

Participation in design is broadening, and there is a movement away from designing to co-designing. They are related, but the little co- makes them different organizational and socio-material practices. Practically, co-designing typically takes place in multidisciplinary, distributed, complex projects, where people – and invited materials – only occasionally meet, align and make each other act, in the situation at quite explicitly staged co-design events.

With a broad view of materiality and focus on co-designing as processes, this work suggests ways of understanding and staging a co-designing practice, which entails a move away from a focus on methods and pre-designed proposals, towards an acknowledgement of participating materials and formatting co-designing. This calls for additional 'material' (broadly understood) of the co-designer, including skills of drawing together and delegating roles to non-humans as parts of staging co-designing *with* others. Further, it necessitates a different understanding of co-design processes from what can be efficiently managed to materially staging performative co-designing.

This practice-based, programmatic and materially interventionistic work builds upon and draws together about ten years of engaging with hundreds of people and materials in many co-design networks, projects, events and situations, through five experimental, participatory design research projects, teaching and other co-design 'workshop' series. Partly in opposition to the 'classic' design field of industrial design, the thesis intends to contribute to the (co-) design fields of interaction design and especially participatory design, but also to co-creation and service design.



ISBN: 978-91-7104-432-7



AARHUS
UNIVERSITY
DEPARTMENT OF COMPUTER SCIENCE

Danish Centre for Design Research



The Royal Danish Academy of Fine Arts
Schools of Architecture, Design and Conservation
The School of Design