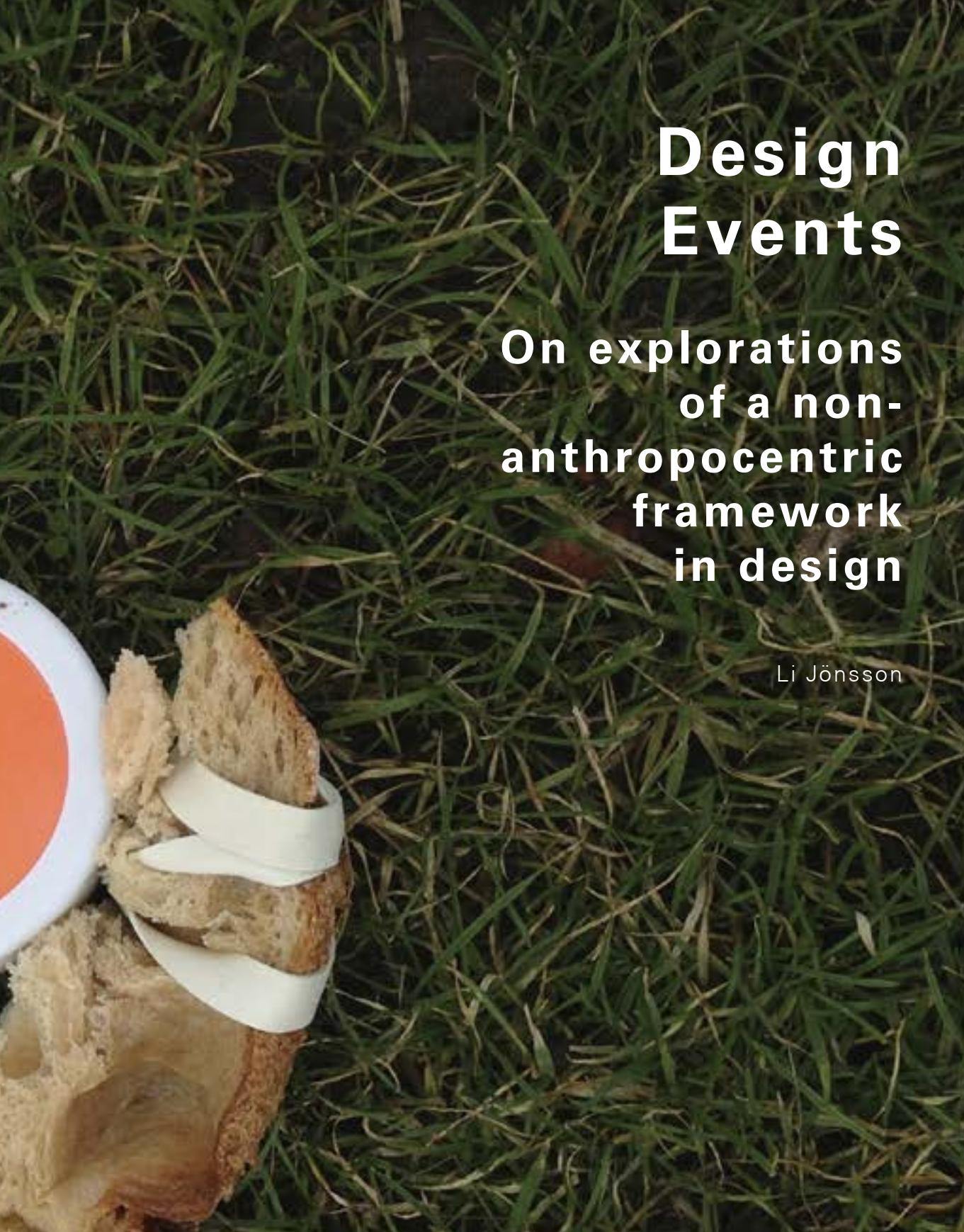

Design Events

On explorations of a non-anthropocentric framework in design

Li Jönsson

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PhD Dissertation
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Contents

Abstract

In this thesis events are introduced as a way of focusing away from traditional approaches to the objects of design. By that, the aim is to find better ways and give more justice to the interchanges and mutual transformations going on between various material bodies such as nonhuman artefacts and humans. But how do we actually go about this? How can we afford these 'nonhuman others' the opportunity to give us the chance to talk differently about them? How do we move the static design objects to becoming moving entangled things?
I argue that through an event framing we have to pay particular attention to how objects and materials have powers of their own far beyond the intention of the designer and thus allow us to keep the doors open for potentialities. In other words, I suggest the event to be a non-anthropocentric design approach that supports us in practicing ways of placing the hybrid collective in centre.

By theoretically drawing primarily from Science & Technology Studies (STS), feminist theory and from traditions of experimental design I explore what particularities such an event framing can help bring to the table through a series of practice driven design projects that encounters issues such as energy, ageing and co-habitation through the design experiments Watt-lite, Invite! and Urban Animals & Us.

Reading Instructables

As production of knowledge and questions of how we bring the world into being certainly is non-linear, so have I tried to make this thesis different chapters weave into each other. To read this thesis I ask you to imagine colour patches on a weaved quilt where the yarn overlap each other to both create patterns but also to keep the big piece together. It seems it is often in those overlaps that you find the most interesting and surprising, non-linear patterns. To allow for such overlap to happen in my thesis the different chapters overlap each other in this book - one chapter will start inside the previous one. Another important and perhaps obvious point is that the images and photographs are extremly important elements that extends and strenghen both the quilt and the patterns. They are not decorations, but part of the pattern that makes the piece. And in regards to calling this 'instructables', I am only trying to point out that it is up to you as a reader to figure out the best way to read such weaves.

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What you are holding in your hand or screen right now, my thesis, has been made possible through lots of different actants. I would like to extend my gratitude to some of them here.

First of all, thank you to my supervisor Thomas Binder. Without your support this would really not happened. As it should be with a supervisor, our views of how to go about things is sometimes rather different, but you have kept the door open for me and my interests in the co-design cluster. I hope you have found it as rewarding as I have. Thank you for being there when needed, both at crucial points and everyday work life.
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A big thanks to those students that I have met through this journey (you know who you are, like A-K & Grit). A lot of the work written in this thesis is also for you. You have inspired me, and now I hope this thesis allow space for continuing more explorative design and some explanations that might also support your work.
And friends and colleagues, thanks! You who have engaged in my work through reading, discussing and making, like Tau Ulv Lenskjold.

Thanks for the brilliant team work, I hope we get the chance to continue and explore discussions and materials around design that we only seem to just have started. It would be a shame otherwise. And, when mentioning teamwork I also really want to send the biggest of thanks to Kalle Jorgensen for spending and contributing so massively to Urban Animals & Us. And the same goes for Sebastian Thielke. Without the two of you, your brilliant skills and bright heads, it simply would not have been such a pleasure to make it happen. In regards to the same project I also want to thank Carsten Illsoe, afsnitsleder plejehjemmet Gronnehaven and Lene Ljungqvist from Frivilligcenter Helsingor.

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chapter 1

Introduction

Humanity and nonhumanity have always performed an intricate dance with each other (Bennett, 2009).

1.1 Prelude

I seem to always have struggled with design ever since I chose it as a profession. The reasons for my struggle are mostly based on the fact that I (and as it later turns out, many others) never subscribed to what I was told a designer should be good at. Pardon me, for being a bit simple in my description of this profession, but a designer was at that time in the late nineties described to me as a form-giver, problem-solver, and forecaster of certain future aesthetics. This conception of a designer role was nonetheless more or less eradicated during my later design education at Goldsmith, University of London. Here I was taught an explorative approach to conceiving my design project, guided by the fact that I should *never* ever define what I was about to design. Instead, we were taught that process was *everything*, and the process would lead to conceiving a finished project. Instead we were encouraged to frame a designerly brief around issues of interest. Design was not only a way to make and do things, as a set

of distinct practical skills; it was a way to understand and engage with the world. At the time, we as students always debated our lack of designerly skills. We were supposed to be designers, but felt we had little knowledge of how to construct a chair or use a 3-D computer program.
Even though our role as designers at that point seemed unclear, I am today glad that my definition of design and how to be entangled in a socio-material world got challenged, because this is probably the most important lesson I have carried with me from my early education in design. This was also what gave me motivation to leave my first 'skilled' design-related job in the busy advertising industry in London. Because here, I ended up working as a form-giver and problem-solver responding to the needs of a client, developing skills on how to master computer programs like Photoshop and Illustrator. Nonetheless, it left me (and lots of my former colleagues) with the frustrations of not contributing to something of a more worldly account. Fortunately, my next set of jobs moved me away from this position. When I arrived at Interactive Institute in Sweden in 2008, which in some ways makes the start for this thesis, the client was replaced with a public administration.

Today, the change of the designer role is partly visible in whom we work with, our partners. This thesis is just one of many examples of this. Designers are now invited into working in innovation processes and with public institutions like municipalities and other public administration groups rather than manufacturing industries. Through those new invitations, the challenges we are facing,to an extent, seem more complex than those visible when working with manufacturing industries. If nothing else, the challenges are different and have changed. And respectively, the outcome of design proposals also has to change to correspond with these new challenges. One

of those challenges is that we are now facing problems that are not up to design to solve, which actually represents a challenge to the very foundation of design. To take on the challenges to initiate change towards complex issues such as sustainable consumption, we need more than better products and simple answers. Complex problems such as for example sustainability do not have a bullet-proof efficient solution and suggest that the designer role needs to move from one that gives a solution to a problem, to one that attempts to accommodate the world's ever growing complexity in a set of different ways. I will here propose to you one way of doing this and show you the journey that makes up this proposal.

1.2 Aims

This PhD thesis is a search to accommodate a designerly engagement that does not contribute to quick solutions to a problem, but a practice that opens up for alternative ways of understanding, intervening, and expanding issues. To better understand what values a non-solution driven design practice can contribute within the explicit constellation of things and practices, this work explores the figuration of 'event'. As explained by sociologist Mariam Fraser (2006), the event is a process in which entities (human and nonhuman actors) come together, and in the coming together they become different, they become something else, they condition an issue.

At times where issues such as how human activity is threatening biodiversity and is argued to cause severe climate change, natural and artificial systems can no longer be conceived in isolation but only in relation to each other. Hence, the gathering I will discuss in this thesis is the design event, where a hybrid of entities (human and nonhuman actors) come together, enquire into issues, even inhabits them, and

where the making is in the partly unforeseen, unpredictable and improvised encounters between the socio-material entities. The aim is to sketch up the design event as a non-anthropocentric design approach, as a constitutive material mode of adding that puts the hybrid collective in the centre. This event, deals less with future-making, and more with making ways of materially expanding the present by inhabiting issues.

Too often, it seems, we tend to divide objects and subjects, and things become considered as either merely symbolic and representative entities or just as means to an end. To complicate the picture, Science & Technology scholars have suggested that *things* cannot be likened by artefacts or physical devices. Instead, they are socio-material assemblies in which the design artefacts are participating representatives in a heterogeneous 'public' coalescing around an issue. In such views, accurate representation of singular subjects and objects with specific qualities is replaced with questions that relate to how to engage in affective relations that bring, or enact worlds into being. In extension we can ask, why do I 'just' not then encounter design *things*? Where my reply is that the event-framing extends the design *things* description by emphasising and putting pressure on the more material aspects and contributions of the sociomaterial gatherings. By that, I do not argue for a return to consider design as only a material form-giving practice but that we need to get better at practicing how not to divide design into questions of users or objects, and to better recognize what and how these materialities contribute and participate in issue formations. Through the PhD project I explore what particularities the event framing can help bring to the table through a set of practice-driven design projects that intervene in the everyday as a means to allow issues to be opened up, to re-articulate the issue at stake, described

and explored through the empirical, sometimes 'idiotic' design experiments of Watt-lite, Invite! and Urban Animals and Us and issues such as energy, ageing and co-habitation, which in extension, both as an aim and motivation means that the material experiments have played a vivid role throughout this thesis.

1.3 Motivations

As you might have already gathered, this thesis is motivated by trying to position the designer role away from a 'problem-fixer', towards a more speculative, explorative position. While much product design might still be dependent upon systems of finance and power and qualified by market value, my drive has been (along with that of others) to questions how our designerly contributions may acquire participatory capacities, or powers of engagement. This is a shift away from understanding the physical manifestations as outcomes of design work, to instead give rise to new modes of relations, of different ways of being in the world. That is to say, human and nonhuman actants, are all entangled in this world, as we affect and are affected by each other, where the artefact and the user are not 'separate' or merely 'interacting', but affect and transform each other in subtle as well as substantial ways. Hence, humans are not the only things in the world with agency, with transformative powers. Designing in this constellation opens a variety of questions and issues. First of all, the genius of designer is eradicated, because creativity does not reside within one actor, but is hybrid and distributed. Secondly, to assume that an alternative present is possible requires more than the creation of solutions for pre-existing problems. At the same time, the question for design is not just describing what kind of socio-material arrangement we participate in, but also to consider what kind of ways of being we want to make

possible through our constructions. To allow for enchantment. But how do we do this? New ideas, concepts, and paradigms are fine, but how do they get actualized, and how do we allow for other ways of being together? And how do we intervene cautiously without radically trying to break from the past? As articulated by Callon, design should participate by shaping or re-configuring new agencies - rather than responding to demands or to 'just' satisfying needs. Other worlds are possible, but only if we exercise the proper care towards its emergence.

1.4 Positions & Challenges

Within the landscape of design research, this thesis is meant to contribute to the broad field of interaction design. More specifically, I will further contextualise the research in relation to participatory design (PD) as well as speculative design (SD), where scholars and knowledge of science and technology, sociology, anthropology, ethnology, feminist technoscientists, new materialists amongst others, meet.

Interaction design is in itself a fairly young discipline that first emerged as a term in the late 1980s, which combined disciplines of human-computer-interaction (HCI) industrial design with the traditions of behavioural science and engineering. It clearly owes part of its heritage to HCI, but unlike the HCI community, interaction design fully recognizes itself as a 'design discipline' (Fallman, 2008, p. 4). There is no clear and agreed definition on interaction design, but most people in the field would probably subscribe to it as a general orientation towards the practice of shaping and designing digital things. Other related institutions around me such as the design led research centre Medea define interaction design "as a

fusion of multiple academic and practice-dominated disciplines" (Research Overview: Interaction Design. Retrieved 15/2 2014, from http://medea.mah.se/interaction-design/). The newly started MA in Interaction Design at Goldsmiths defines it as a way "to allow us to better understand people in complex socio-cultural settings and what effects design can have therein"(Goldsmiths launches new MA in Interaction Design. Retrieved 15/2 2014, from http://www.gold.ac.uk/news/homepage-news/goldsmithslaunchesnewmaininteractiondesign.php). And finally, interaction design is described by Bill Moggridge at the design consultancy IDEO as a way to "not design objects, but for interactions" (Designing Interactions. Retrieved 15/2 2014, from http://www.ideo.com/by-ideo/designing-interactions). From those definitions, interaction design is put into practice by a variety of different methods and concerns.

In extension to Moggridge's definition, already in 2006 Redström articulated how through interaction design there has been an increased focus on developing 'experience design' and in designing the 'user experience'. If design used to be a matter of physical form and the material object it has through interaction, design becomes increasingly about the user and the user experiences. But as Redström points out: "People, not users, inhabit the world" (ibid. p.129). Hence, the concept of 'User-Centered Design' is rather problematic, since a 'user' is something that designers create. This has led to the problematic development in which the use and experience of designs become over-determined. In extension, Redström encourages us to address a new agenda for design, one that focuses away from 'designing users' and instead on designing things, but from a different point of view from the static criteria of the design of the industrial era. However, as Wilkie recently points out, over the past decade the discipline of interaction design has both matured and evolved to an expanded view of the end-user.

Principles and practices of interaction design have been mobilized and have contributed to novel engagements among design and social, technological, and political conditions. Such engagement can for example be seen in new collaboration with design and the biotech industry, the public understanding of science, activism, and issue-based politics (Wilkie, 2014. Inventing the Social. Retrieved 15/4 2014 from http://www.alexwilkie.org/?p=1209).

Participatory / Co-Design

In relation to interaction design, one very different way of figuring and expanding the traditional user role in design comes from what is referred to as the Scandinavian Participatory Design tradition, where the main objective is to reduce the distance between designers and users. The original motivations of researchers in the early Scandinavian projects were explicitly to counteract the dehumanizing effects of an increasing technological presence in the workplace and were concerned with empowering workers whose jobs would otherwise be replaced by technology (Ehn 1988), (Danholt, 1996). Today, PD activities are no longer confined to a specific worksite or a specific organization but have entered into new areas such as explorations of how to democratize innovation (Björgvinsson et al. 2010). At its heart, Participatory Designs user-centered focus on collaboration concerns the politics of democratic questions. However, it ought to be obvious that this is rather different from the Swedish furniture company Ikea's version of democratic design. While Ikea figures cheap furniture for 'everyone' as democratic, the great innovation of participatory design and co-design is the plethora of methods and tools that enable designers and users to 'design together'. As explained by Brandt; "The dogma of Participatory Design is the direct involvement of people in the shaping of future artefacts. Thus central for designers within this field are the staging of a design

process involving participation of people" (2006, p. 1); and by Sanders, to, "harness the collective and infinitely expanding set of ideas and opportunities that emerge when all the people who have a stake in the process are invited to play the game" (2002, p. 6).

While PD practices tend to be very user-centered, they do differentiate themselves from 'User-Centered Design' because the aim is not to design the user, but rather design with the user. As a result, the role of the designer has through PD-practices shifted to become a form of facilitator. This facilitating role is often characterized by designers organizing workshops bringing together a set of 'rough materials', such as paper, pipe-cleaners, clay, and tape, which allow stakeholders to brainstorm and discuss future coming services with the help of these materials. In my local design research cluster at the Royal Danish Academy, School of Design the Co-design group has developed a certain approach that typically engages with a more anthropological and performative perspective to Participatory Design. This as explained in DAIM (Design Anthropological Innovation Model), is user-driven innovation about rehearsing the future (Halse. et al., 2010, p. 13). Instead of targeting generalized individuals and perceived needs, and envisioning attractive future possibilities the classic design studio is abandoned. The design interventions take place among people in everyday environments such as shopping-centres and kindergartens to drive innovation forward. What this is clearly pointing out, is that there is not one manifested way to consider what PD is, but it is an ongoing exploration of better ways to get to grips with how to practice participation in and through design.

Speculative Design

Another body of work that grounds the practice in this thesis is Speculative Design (SD). The origins of SD have grown from the field

of Critical Design (CD), often connected to the works of Anthony Dunne and Fiona Raby from the Royal College of Art, London (2001). This is a kind of design practice that is very object-centered, but without the aims to fulfil specific functions or to meet particular needs. Instead, the focus is often to critique contemporary ways of living with technologies, where objects literally become a physical hypothesis used as a way of "provoking complex and meaningful reflection" (Dunne, 1999). Design is used as a critical language in which the objects of design are used as a form of inquiry in societal, technological, and disciplinary discourse. Methods used to expose controversies and allow for debate within CD draw heavily on art practice. Accordingly, critical design objects and the accompanied fictional scenarios tend to be exhibited in galleries.
Dunne & Raby's prescription that was introduced almost fifteen years ago has continued to resonate by practicing designers and within the design research world. But as explained by Malpass (2013), while PD has been absorbed into the disciplinary discourse through the efforts of theorists, commentators and practitioners, CD has suffered from oversimplification: "This oversimplification is a symptom of dissemination in gallery and magazine contexts where work is presented with short, digestible captions and in some cases misrepresented and lacking scrutiny" (2013, p. 335). In relation, SD, which is typically connected to the engagements at the Interaction Research Studio at Goldsmiths London (where I have been a guest visiting during my PhD) also typically produces objects that are obliquely functional in order to provoke reflection on the complex roles of new technology and/or social realities (Michael, 2012).

The major difference compared to CD seems to be that SD does not position itself critically against particular sociotechnical futures and tends to have interest in more ethnographic approaches.

Speculative prototypes are for example implemented and installed in users' homes to encourage novel relations amongst participants and prototypes to potentially reconfigure what the very 'fact' or 'problem' might be. Through the works of Gaver, Beaver, and Benford (2003), one of the main topics of concern has been ambiguity of information. However, situated in the emerging scientific discourse and material culture, SD seems to have become more absorbed into design research practices and beyond. For example, Michael (2012) suggested speculative design objects as contributing to doing 'live sociology' through engaging in both empirical and practical nonsensical enactments. However, such engagements between design and scientific and material discourse are not the only happening from the perspective of sociologists. Excitingly, frontiers from both participatory and speculative design traditions seem to fold into each other and merge in the recent interest of a turn towards 'STS-Design' (Andersen, 2013). To give you an idea of this emerging field, I will present some sentences from the feature online discussion I took part in during September 2011 called; 'Is there a Post-Critical Design?'[1] as moderated by Carl DiSalvo:

Carl (DiSalvo): *So, when I used the phrase post-critical design it was not to signal a move to a more pragmatic end. Rather, it was to consider whether critical design should be thought of as an ongoing and developing practice or a term that labels something quite specific.*

Alex (Wilkie): *And, in response to your question about what comes*

1 *Participants in the online feature discussion excluding myself were: Simon Bowen, User Centred Healthcare Design, National Institute for Health Research, UK. Carl DiSalvo, Georgia Institute of Technology, USA. Tobie Kerridge, Goldsmiths College, UK. Tau Ulv Lenskjold, The Danish Design School, Denmark. Ramia Mazé, Interactive Institute, Sweden. Regina Peldzus, Kingston University, UK. Alex Wilkie, Goldsmith College, UK. Organized by Katharina Bredies, Manager, Design Research Network.*

after CD - one answer is engagements between design and STS where the explicit techniques of future visions/fictions are replaced with more sustained and nuanced perspectives on practice and the social.

Me: *Alex, I curiously ask if you can give an example of what a sustained and nuanced perspectives on practice and the social might be?*

Alex: *Li, probably not the best descriptions but what I was trying to get at is some of the work done by my and your colleagues where CD/SD intersects with developments in participatory design and STS.*

Carl: *This then still makes me think we might want to begin to speak of things other than critical design, particularly when they do intersect with PD and STS (as the work of many on this list does). (…) the notion of sustained practice and engagement with the social suggests we are exploring new methods of CD/SD. This is precisely what interests me. For example, how do we support participation in speculation? I'm not sure of the answer to that question, but it is one of the questions that is currently driving a lot of my research.*

Tobie Kerridge: *"How do we support participation in speculation?" - there's lots of participation methods stuff, Rowe and Frewer have a good overview (…). I expect we would not be very excited by much of this though. As Alex and Li are discussing, it's perhaps something more "sustained and nuanced" that design is looking for, rather than specific methods.*

As the session comes to an end, we are left with a slightly unfinished thread with lots of discussions of which we all agree we want to

see a continuation. This continuation was never done online, but the text you are holding in your hand partly accounts for my follow up. Which, obviously does not account for any of the others, because, our intentions and backgrounds are of course different. Wilkie, with his design background has over the years drawn more and more towards sociology, which is manifested in his thesis of making an ethnographic account of user assemblages in design. DiSalvo with his background in digital media seems to have moved closer and closer towards design, but with a specific focus on participatory public programs and technology platforms that foster critical engagements with the likes of robotics. And finally Kerridge, who has a specific interest in getting biomedical and cybernetic technology out of the labs, to encourage public engagement with science and technology through design. Many of their engagements of course also blend in with mine. But typically my work is not driven by emerging technologies, but rather by how to support collaborative speculation by standing firmly in the grounds with a background in making and design. That is, haptic materials like metal, wood, and textiles have stood as a base, and have later become mixed with more digital mediums and of course with later STS readings.

STS - Design

By drawing on post-human theory and performative ontology such as actor–network theory and later writings in Science and Technology Studies (STS), this PhD is positioned within the emerging field of combining STS and design in new modes of research (Andersen, 2013), (Lindström & Stahl, 2014; Kimbell, 2008; Wilkie, 2010; Disalvo, 2012; Michael, 2012). Recently, there seems to be a lurking and growing interest from both STS scholars and design researchers to work together to explore potentials of more artistic, material, and

messy processes in research. Researchers from both sides are showing interest in each other's practices, skills, and philosophical offerings. These empirical interest in materials, technologies, and settings of public engagement are closely linked to a wider 'object' or 'material turn' in recent social, cultural, and political theory. As explained by Marres: "This field of work finds its starting point in the rejection of the critique of objects that have been dominant in twentieth century social science: The idea that things, technology and materiality render engagement impossible, (…) and proposes what could be called an 'object turn' in social, political, and cultural research: We must recognize that material entities equally make an important positive contribution to the organization of social, political, and moral life in industrialized societies (2012, p. 6)

The online discussion 'Is there a Post-Critical Design?' is far from the only example of new engagement among SD, PD, and STS. It is also evident in seminars, conferences, and papers, such as the 2010 EAAST conference (European Association for the Study of Science and Technology), which organised tracks such as 'Design, Performativity, STS' as well as 'Speculation, Design, Public and Participatory Technoscience: Possibilities and Critical Perspectives', and in the more recent sociology research project 'Transmissions and Entanglements' that started 2013. In this project, which I recently

attended to, materials, making, and crafty skills take a central position in the research as a way to offer new ways of understanding the social world. More locally, to which I also attend, the seminar series 'Design and the Social' at The Danish Design School discussed the role of design research in participatory and speculative design projects. Further folds and merged interest took place in the discussions among my PhD peers at the Swedish Design Faculties after attending seminars at Goldsmiths, University of London called 'Social Innovation and Critical Design' (2011). Some of those discussion originated from the 2010 'Nordic Design Research' (NORDES) summer school 'The doing of Design Things'. In the dark woods of Sweden a whole week was spent reading, discussing, and making performances in themes related to a performative ontology from science and technology traditions of Bruno Latour, Annemarie Mol, Susan Lee Star, and others. Further connections can also be seen in the above-mentioned texts about design, and from a more sociological methods perspective on materials (Wakeford & Lurry, 2012; Jungnickel & Hjort, 2014; Bennett, 2010; Knappett & Malafouris, 2008; Law, 2004).

However, beyond such new engagements between speculative and more participatory practices, there is also a challenge in the foldings of STS and design. As pointed out by Andersen (2013), few engagements of collaboration and making use of each other in practice, have resulted in a tendency by social scientists to treat design as a topic for description and for design researchers to handle social science as a resource for design. So, while more and more designers are familiar with STS literature and participate in the community through conferences and publications the knowledge engagements seem to have been treated half-heartedly within design. Problematically, all too few are asking questions of what we enact and how we intervene through the design proposals. On the other

side, STS scholars are for sure developing a greater awareness of the practices of design by describing and analysing 'stuff'. They have spent a considerable amount of effort studying engineering designer and scientists and the product that come out of these. But it seems that few have grappled with traditions in design and arts that are open to speculation, serendipity, and things being messy and unfinished. STS research talks about studying performativity and materiality but still tends to fall back on written texts for producing and disseminating research. Design attends in detail with its skill to the material, but seems to struggle to describe and account for what they are busy doing. Given the active focus on material culture in design, strange as it seems, little focus has been put on describing the 'active' nature of the material culture that is so prominent in our material practice. This might to an extent be a result of the user-centred anthropocentric developments within our own practice.

And this is pretty much where this thesis is positioned: attempting to move beyond the anthropocentric positioning in design by linking discussions between more recent materialist approaches where much has been done to reconfigure concepts of political communities. This is done in ways that recognize the active political agency of animals, ecosystems, 'other' entities, objects and technologies (Bennett, 2010). This argument will grow more vivid in material engagements that I account for in this thesis, from Watt-Lite, through Invite! to Urban Animals & Us.

1.5 Methodological bricolage

Many recent discussions of design research have been inspired by Frayling's paper 'Research in Art and Design' (Frayling, 1993). The paper outlines a distinction among different types of research

related to arts and design, defined through three different modes. Firstly, there is research into design, e.g. historical studies and different economic, cultural, and political perspectives of art and design. Secondly, research through design, defined by investigations into properties of physical materials, or development work like customizing technology. This is where research is communicated and explored through art, craft, and design. And finally research for art and design where the end result is "embodied in the artefact" (Frayling, 1993, p. 5). The goal is not to verbally communicate the result, but to produce visual, iconic materials more connected to traditions of fine art. Those concepts have later been developed, as a step towards a more distinctive description by Koskinen et al. suggesting constructive design research as an all-inclusive label for a method of doing research through the process of making (2011). Here the design researchers engages in a process of design to become knowledgeable about the world through constructions such as products, systems, space, scenario, mock-ups, media etc. (ibid, p. 5). This approach is based on the kind of creative design research practice that is coming out of the tradition of art and design schools. It explores the relationships between people and the physical world through design experiments carried out as part of the research. Most importantly, research employing design practice as a means to inquire into some phenomenon is becoming an established mode of doing interdisciplinary research. And while there might not be an absolute guideline to how this is done, this thesis is situated in this emergence of design research practices; this means to produce knowledge through a certain designerly engagement with the world, by taking part and engaging with messy practices in the everyday. And this way of knowing assumes that things are not stable, closed, or settled - and therefore it is possible to make changes.

The Forming & Framing of Programs & Experiments

In order to work and frame designerly inquiries, Brandt et al. (2011) suggest 'programs' and 'experiments' as a method to put a process in motion to form critical questions about the present and make suggestions for how to do things in an alternative way. The program works as a provisional knowledge regime and can take many different forms. It ultimately functions as a hypothetical worldview that makes the inquiry relevant. The experiments in the design research process might be considered to be material manifestations, in my case that is Watt-Lite, Invite! and Urban Animals & Us. With great attention the authors ask us to consider the experiments not as a way to test the program, but state that the attention should be focused in the exchange and relation between the program and experiments. Hence, we cannot say that the program suggests an approach, and the experiments test and explore it. This would be to simplify the picture of programmatic research because programmatic statements do not necessarily appear top-down.

Referring to the ancient Greek philosophical practice the authors remind us: "In the dialectic, participants typically start with different views, but unlike debate, in which the participants typically remain with their original opinions trying to win each other over, what then happens is a matter of reaching a deeper understanding by using the opposing views to discover shortcomings and flaws in the original argument" (Brandt et al. 2011, p.32). Hence the program and experiment is dialectic, and it is in the interdependency of the two where the important knowledge is gained that moves the object of design forward during an iterative process. However, in those exchanges, the initial program is more abstract and the process of experimentation is more concrete.

chapter 2

Experiments in the Design Landscape

In this chapter, we will get to know the design experiments that I have actively engaged in during the timely travel between 2010 and 2013. I will describe how the local and material entanglements have given new insight and have accordingly been brought into the next micro program and experiments. As the program has developed iteratively over time, so have the experiments unfolded, challenged, and nourished the program in new directions. Below I will give you a description for each experiment and what we enquired into as well as how the micro-program came about and unfolded. I will

The over-arching program of exploring a design event framing as encounters among diverse actants, some human, some not, all thoroughly material will take us through a journey of a set of three experimental projects. Each experiment has what we can call its own 'micro-program', a matter of concern that is staged and enacted through the experiment. The micro-program indicates an inquiry and concern closely tied to the experiment, and has importantly fed into the over-arching program of the event. For example, the micro-program for Watt-Lite concerns how to find ways of making electricity more tangible without charging the information with specific morals of what could be considered to be corrects energy behaviour.

Simply put;

Uncertainties of Energy: re-materializing electricity as an actant.

The design proposal then 'talks back' and should allow the program to be reformulated and negotiated. As the experiments unfold materially (Watt-Lite), parts of the program are carried further in the next design experiment. However, in the next experiment Invite! the program

was not concerned with energy, but with issues of aging and health technologies. The micro-program then become:

> *Uncertainties of healthy aging: working with issues of staging alternative health-terminologies from a material point of view.*

Invite! concerned how we could extend and materialize shared viewpoints and terminologies used within the collaborative innovation project. As you can see, the program has already changed, and does so again in relation to Urban Animals & Us:

> *Uncertainties of Cohabitation: working with issues of making relations between humans and non humans (more specifically wild urban animals and seniors).*

As mentioned, some of these reformulations of the program can only be traced through how the experiments unfold. In other words, there are also exchanges between the experiments that also account for the coming together of the experiment, and of how the physical proposals took form in relation to the micro-program.

But before we venture farther in this chapter I'd like to mention that this journey is my written account of the process. Simply, there is nothing general about what you will read below. I have consciously positioned myself (and colleagues) as design researcher as a very central part of this story. This positioning could of course be discussed, but my groundings for such a move are based on, as Latour would say, 'research is uncertainty', implying that we all take part in what is very

then feedback into the program. Such an example can be found in how wild urban animals both participate in Invite! and later in Urban Animals and Us (something I will further unfold in the next chapter). However, the program even as micro, suggests a direction. But as explained by Brandt et al. (2011) it is in the combination of the two that the research question comes to be addressed. However, the program of exploring the design event has in this PhD taken the position of the one traditional research question and has iteratively come into being through the journey with human and nonhuman, verbal and material, micro-programs and experiments over these past PhD years. However, I ought to say that I have had many questions down the road. Some of these that have guided my research include: - What are the characteristics of an event? - What does a design event spark into being? What 'other ways of doing', new actors, technologies, and skills can emerge from our design events? However, programatically the event framing explore

local and ranges from high to lowbrow concerns. And indeed, this is the only way we can engage. We as researchers are *engaged* and *engage* - we stand on the inside and not on the outside looking in. Hence, I try to account for how this journey and those exchanges are influenced by a broad range of factors such as research milieus, personal stories, influences from other designers and design researchers etc. The following text is a perspective from a 'within' position of the unfolding of programs and experiments, rather than seen from a distance from 'without'.

how design can intervene and allow for different hybrid formations to emerge by moving away from a purely humanistic focus. It is a way to invent polite ways of entering into new relationships with nonhuman others, from electricity to gulls. It is a material addition that makes possible, and that gives chance to expanding the repertoire of possible choices. It is an attempt to stake out paths that allow for enchantment,

where designers do not act to facilitate language among humans, but more as a curator who brings together a diversity of materials that allow for improvisation to take place.

The point is that material things are performative and not passive; they are matter and they matter. They act together with other types of things and forces to exclude, invite, and order particular forms of participation in enactments also through their 'object-ness', as not entirely reducible to the contexts in which (human) subjects set them. Hence, the event framing is an attempt to reconfigure design as a 'co-llaboration', where human and nonhuman agencies are figured as a vernacular ecology that allows for an enlivened and enchanted process, that is a process that arises not from a pre-existing human vision in design but from relational engagements among human, nonhuman, and more-than-human agents. But we will again return to the over-arching program towards the end of this thesis journey (in chapter 5).

2.1 Watt-Lite

Watt-Lite is a set of three oversized torches projecting real time energy statistics in the physical environments of its employees. The size of the light beam projected from the torches indicates the workplace electricity consumption by expanding and contracting. The dark grey Watt-Lite, with a white light beam, is a real-time electricity meter that loads new information every 30 seconds, providing almost instant feedback of electricity usage. If the light spot is small, the electricity consumption at the factory is low and if the light spot is large the electricity consumption is high. The lighter grey torch with a blue beam and cable visualizes the smallest amount of electricity (minimum) used during the day. The other light grey torch with an orange beam and cable visualises the highest amount of electricity (maximum) used during that day. The three different torches and their different colours, allow the real time consumption to be compared to the value of maximum and minimum usage. Complementary to the torches, a web service was developed to compare historic electricity using the same metaphor of expanding and contracting light spots.

As part of the Industrywise project developed at Interactive Institutes studio Energy Design in 2010, the aim was to engage employees in the electricity usage since industries consume a considerable amount of energy through their technologies, buildings, production, and different activities. The project included eight industries and a community education college (in Swedish; 'Folkhögskola') in mid-Sweden. The Watt-lite was designed by me and my colleauge Loove Broms, a fellow PhD scholar with interest in the design of artefacts used to create engagement, meaning, and alternative values applicable to the discourse of sustainable behaviour (Broms, 2014).

2.1.1 The Forming of a Micro-Program

As mentioned, the micro-program for Watt-lite was 'Uncertainties of Energy: re-materializing electricity as an actant'. However, such a program obviously does not appear out of nowhere. As a broad background, and seen from less of a 'within' position, there are clear reasons for why we need to engage in and understand energy consumption. Simply put, electricity use has been rising significantly in the western world, which affects our environment negatively. Electricity use has become embedded in our daily lives and practices (Shove & Southerton, 2000) and is predominantly accessed when being transformed into a foreground commodity in terms of light and heat, or through a small switch of a button to turn a product on or off. The function is accessible to everyone and the machinery is known by nearly no one. If we, as suggested by Redström deconstruct an ordinary power plug, we can see how "the socket is not simply a source of electricity; it is an interface to vast and complex systems acting behind" (2010, p. 28). It does directly connect to a distribution system's network that carries electricity from the transmission system to its consumers, but the power plug has no communicative

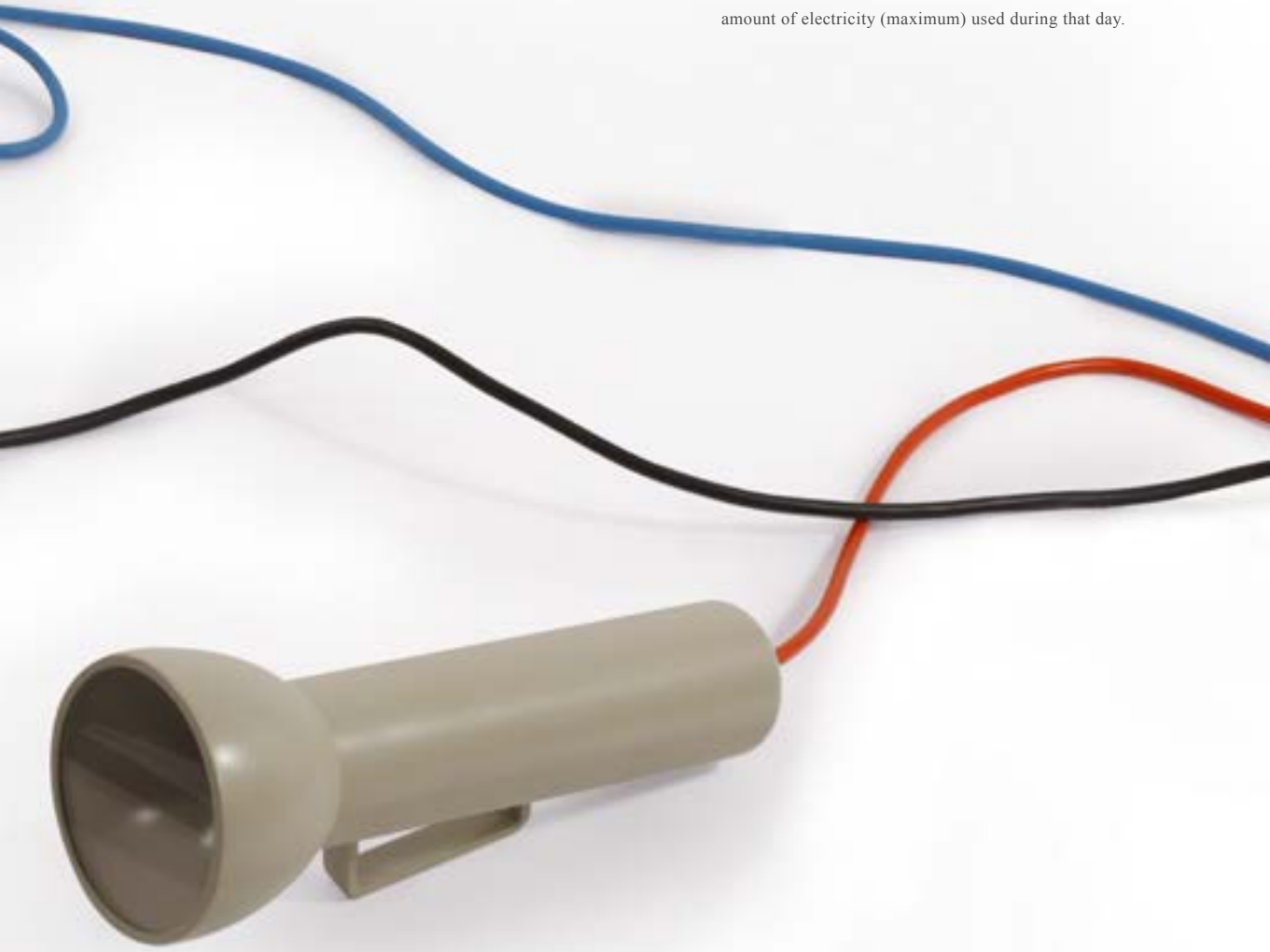


IMAGE: The dark grey Watt-Lite with a dark cable, is the real-time electricity, providing almost instant feedback of electricity usage. The lighter grey torch with a blue light projection and cable visualizes the smallest amount of electricity (minimum) used during the day. The light grey torch with an orange beam and cable visualises the highest amount of electricity (maximum) used during that day.

or expansive relation to the energy networks, such as power plants, which the plug 'runs' or operates 'upon'. So how can we get closer to this hidden infrastructure that makes up and supports so much of our daily practices? Clearly, there is no bullet-safe solution, but to support more sustainable lifestyles means rethinking our forms of socio-cultural, environmental, and economic exchanges. Watt-Lite is one attempt to do so; it is an example of a device that aims to mediate electricity by plugging into the system to at least show parts of the machinery normally known by very few.

The industries participating in the project were already part of an energy-reducing scheme run by the local municipality, which was giving hands-on consultations for energy reduction. Such consultations would be focused on for example identifying unnecessary light bulbs or air-pressure leakage. Since the municipalities' project was aimed towards the management, and on behavioural change, our focus for Industrywise was to consider how not only make energy visible to the management, but how to make energy statistics more collectively available and accessible in the everyday. This became an important standpoint to move the project forward, that is, working with energy that was not necessarily a problem that was to be acted on, or where people should be tricked into having to change their behaviour. In an extension of this, Industrywise's aim became to involve and engage the employees who typically 'run the floor', i.e. the staff employed to use the machines that produce what the industry manufactures, from cutlery, newspaper printing presses, to heavy industrial pipe-lines. In relation, the program was influenced by what Gaver (2006) has suggested as 'ludic design', which "is not just a matter of entertainment or whimsy, but focuses on providing resources that encourage people to explore, speculate, and wander, finding new perspectives on potentially serious issues" (p. 199). Instead of emphasising the more utilitarian

versions of work, ludic design is less purposeful, more exploratory, and focuses on designing for people as playful creatures. While Gavers suggestions is heavily related to Human Computer Interaction (HCI) and meant to illustrate alternatives to more traditional and rational views of technology's role in home environments, our concern was more related to how to think of what ludic design might be in relation to electricity.

The program for Watt-lite partly also came into being as a continuation of previous energy related projects conducted in the design research milieu at Interactive Institute. Such examples where programs as Static!, which developed design examples such as the Power Aware Cord that shows energy being consumed in a power cord by glowing pulses of light, and the Energy AWARE Clock, an electricity meter that resembles an ordinary kitchen clock but shows electricity use over time. Furthermore, energy visualisation products such as Wattson, a portable home energy monitor had just emerged on the market *(http://www.diykyoto.com/uk/ retrieved from 10/05 2014)* when Watt-lite was taking form. More specific to Watt-lite, to explore how to go about a re-materialization of energy, we developed a set of three enquiries as a guide. Those enquiries were what later grew into actually be the program:

1. *Making energy statistics more tangible*
2. *Transferring connotations of use*
3. *Encouraging an exploratory, open-ended and social type of interaction*

The enquiries were further nurtured by a field study made at the eight industries in mid-Sweden. Here, information about the work environment was collected through questionnaires and cultural

camera probes (Gaver, et al., 1999). The probes gave an overview of the participants' attitudes and relation to electricity usage in their domestic setting, as well as their workplace. The questionnaires gave us a clearer picture of how ownership of artefacts is viewed very differently in domestic spaces, entailing a larger degree of ownership and actions. Because who possesses the right to interfere and control energy consuming objects in a shared space to for example switch products on and off? (Katzeff et al., 2013), it became clear that there was a detachment for being in control of energy consuming objects in the workplace.

The material generated through the cultural probe and the questionnaires was used as a starting point for two workshops that included one to three people from each of the eight industries. In the workshops, issues such as ownership were further discussed and other new issues were identified. One example was how industrial production imposes a dichotomy of the notion of electricity consumption. On the one hand, electricity consumption carries negative connotations as being expensive or ruining the environment, but on the other hand, in the specific production contexts at the factories high-energy consumption entails high production - which in turn means that the industries are making profit and the employees will keep their positions during unstable economic times. Another question raised had to do with ability; how can one act upon electricity when it's invisible? And finally, the camera probes suggested the importance of the physical spaces for breaks since these provided opportunities and room for socializing. Discussions from the workshop indicated that the places at work where participants enjoyed being, were those that allowed for socialization. Typical places included the canteen, by a coffee machine, or in the changing rooms. The insights from the workshops formed important

input for us to better understand the local culture at the industries, guiding the design process through imagining how to better materialize some of the above issues through the three enquiries.

The first enquiry – *Statistics Made Tangible* – was our attempt to materially respond to the emerging issue and question of how one can act upon electricity when it's invisible. The intention was to materialize the statistical energy data to enter the physical space of the factory workers by turning the results of electricity use into something more physical and highlighting the constant flow of energy. Before electricity, one would have a more direct relation to energy in the form of, for example, wood where trees had to be cut down, chopped, and carried into the house for heating and cooking. Heating water would be in relation to a certain amount of wood needed for making it boil. Labour input would be in a more direct relation to the energy output. In relation, we envisioned Watt-Lite as an extension of the electrical system in the workplaces highlighted through using the same colour cable as the projected light circle that allowed the electricity to "spill out" onto the floor. Our aim was to visualize the flow of electricity as a visible material extension to the actions of the employees. We sought to make statistics more tangible and allow the work related behaviour at the factories to become more integrated into the social interplay between the factory workers and their environment.

The second design enquiry – *Transferring Connotations of Use* – was an attempt to respond to how the camera probes had suggested the importance of the physical social spaces for breaks. It was furthermore an attempt to respond to the detachment of being in control of energy in relation to one's workplace. We sought to reproduce the sensation of a portable and resistant tool that could

be knocked about, carried around, or plugged in wherever it possibly made sense. We consciously designed it to be larger than a standard torch, relating to the scale of measurement, the whole of the factory. The added handle suggests that the object can be carried and moved about, inscribing the message of use into the structure of the object, while leaving the meaning of the electricity statistics to be determined by whoever would use Watt-Lite.

The final enquiry - *Encouraging an Exploratory, Open-ended and Social Interaction* - the intention was to design for an active engagement that explored and brought about questions without having the intention of saying what is right or wrong in terms of electricity usage. Numeric representations as in watt were intentionally left out. Instead the real-time consumption could easily be compared to the value of maximum and minimum usage during a day. The intention was to avoid passing any judgment upon certain behaviours. Instead, we hoped that the Watt-Lite could bring about questions without having the intention of saying what is right or wrong - to be open-ended, not in terms of the function and form of the three torches, but in terms of how the electricity information is appropriated and possibly acted upon.

The design inquires functioned as inputs for how to materialize (some of) the emerging issues that were discussed in the workshop. At the same time, trying to materialize such issues was in constant confrontation with the technical possibilities of *how* to actually make them work. Electrical transmission lines and grids are technocratic in the sense that they forms a kind of government in which engineers, and other technical experts are in control of the maintenance, knowledge, and decision-making. Hence, 'plugging into the electricity system' is far from straightforward and was in this project attained by different team members juggling among many unknown factors,

Image: (left) Watt-Lite can be hung from the cable projecting on a horizontal surface. They can also be placed on the tilted handle, projecting unto a vertical surface such as a wall.

involving many socio-material entanglements such as requiring knowledge about different electricity meters in different industries or requiring electricity readings from the energy companies. To develop the technicalities for making the Watt-Lite function included first of all many discussions between the electro-engineer Jonas and me, and secondly, by many visits, emails, and phone calls to the different industries and the local energy company that would provide us with electricity readings. The final solution was a purpose built electronic pulse reader, a kind of parasite that is attached to the original electricity meter. Each flash from the original meter is detected by the parasitical electronic pulse reader and sent to a server that stores the data. The data is collected and then a wireless transmitter sends the electricity data to the destination of the Watt-Lite.

2.1.2 The Coming Together of an Experiment

Trying to translate the discursive insights into some kind of materialized inquiry that later became Watt-Lite was done by juggling among different social, material, technical, and imaginary qualities. Through discussions with my colleague Loove, we were clear that we wanted to avoid 'yet another screen-based electricity meter'. While we live in an increasingly digital and screen-based world, it was not enough for the 'hidden' electricity system to be conveyed through a website. Instead we aimed to embrace a more three-dimensional, direct and physical experience of electricity. The referencing form of a Maglite meant to hint towards treating Watt-Lite as an explorative device similar to a detective's tool that can show what might otherwise be hidden. A regular torch highlights what is hidden in the dark, while Watt-Lite highlights the hidden use of electricity - making the invisible more visible.

The dark grey 'master' Watt-Lite, which was showing the real-time energy consumption, was inspired by the sleep indicator light on a Mac computer. But rather than sleeping, the master Watt-Lite and its contracting and expanding light was meant to be the pulsating heart of the factory, that which support the system to carry out the daily task. The two other lighter grey 'referencing' torch lights projected blue and orange and were chosen because they seemed less likely to indicate certain qualities that indicate positive or negative values. We consciously avoided green that could signal 'environmental', 'go', or 'positive', or red, as 'danger' or 'stop'. To better convey the Watt-Lite as an extension of the electricity system, the cables and the projected light were in the same colour. We imagined that the electricity would be coloured as it ran through the cable of Watt-Lite and then spilled out onto the floor.

Furthermore it was important to allow the Watt-Lite to fit into a wide range of different arrangements. Each of the workspaces looked very different from each other both socially and spatially. Hence, the Watt-Lite could be hung from the ceiling, and the handle could then be used to move the Watt-Lite around allowing the three different projections to overlap each other to compare them. Furthermore, the handle had yet another function, as a support that allowed the Watt-Lite to stand and project onto a vertical surface.

2.1.3 Handing Over an Experiment

Watt-lite was introduced to the different industries and the community college by my colleagues Sara and Jonas who held an introduction meeting that took around 20-45 minutes. Here they would explain the basic function of Watt-Lite and answer questions related to it. I did not take part in those introduction meetings; my role and

responsibility as a designer was over at that point. I had already done my share of the deal. Or, had I really? At least this is what I came to question through deploying Watt-lite. We had handed over a fairly experimental interface to a group of people who we partly had worked with to develop Watt-lite. We had made the Watt-lite as a proposal, both in response to the discussions with the participants from the workshops as well as other inspirations. Up until now we had only imagined what it would be like to try to allow energy to be lifted out from the walls, highlighted as part of the everyday routines. It had been a proposal, a kind of projection, an imagination; but this was all changing when Watt-lite was handed over. This is where it all seemed to start to become interesting. Watt-lite was becoming actual rather than projectile and the industries and the community college were exploring this specific proposal, the ones doing, tweaking and at times refusing the proposal. It seemed that I was standing on the wrong side, or at least that I was missing something.

But what is it you are missing my colleagues asked me, as I struggled to pin point my issues. Getting the same question today I would answer that I was missing out on the doings of Watt-lite. I was missing out seeing how the social and material cannot stand as two separate entities if we are to propose things slightly differently. And I was missing out on understanding how electricity potentially performed very differently through the intervention of Watt-lite. During the time Watt-lite was deployed I came to realise that it truly was a collaborative exploration of electricity, not only among us humans, but also among a diverse set of actants such as electricity, energy grids, energy companies, energy consuming devices, and of course Watt-lite. Hence the question of collaboration and the micro-program concerned with re-materialisation came into being at around the same time. That is, when standing in the end of what we normally consider the end of the design process, but what seemed to be the

midst of the ongoing exploration of how to re-materialize electricity as an actant. Which means that the experiment in a certain way actually came before the program. The program, as informed by the enquiries was rather a hypothetical result and outcome of the design experiment. So, the micro-program that grew out of Watt-lite was naturally slightly unexplored, and was carried forward in the next micro-program and experiment of Invite! And the two of them, the question of collaboration, and the micro-program came to travel with me from Interactive Institute in Sweden to perhaps one of the epicentres for design and collaboration, the Co-Design cluster in Denmark. Interestingly, from having been the one taking about collaboration and exploration (of electricity), my role came to change in my new environment. Suddenly it seemed I was the one who would constantly bring forth questions related to the material importance and crafty skills.

2.2 Invite!

An older lady is smashing crockery against a wall in a sunny garden in Copenhagen. Someone is laughing at a large gull hopping around only a few meters from him. A postcard is received and describes how someone has planted flowers in the close-by roundabout in reaction to there only being cars, asphalt, and grass.

Four design experiments took place, which responded to specific and emerging themes within the larger innovation project Lev Vel. The aim of the innovation project was to develop meeting places for seniors to motivate mental and physical strength. It brought together municipalities, research institutions, hospitals, and other organisations that shared an interest in promoting health, fitness, and active living. The design experiments took place in the midst of the innovation project and

IMAGE: The Agressive Kitchen

unfolded through inviting participating seniors to engage in practices such as guerrilla gardening. Basically there was a series of questions that was further populated with materials that would support different practices and activities to be tried out and enacted in response to emerging themes in Lev Vel. This was an attempt to further explore and extend the notion of 'meeting-places' and 'senior health-technologies'.

On a more general and broadly defined notion, with an aging population in the western world, a series of societal challenges and questions is raising, such as how we can sustain and enable a good quality of life. Many of the proposed solutions to the problems involve restructuring healthcare services to emphasis prevention rather than cure (Blythe et al., 2010). In relation, the Lev Vel project that included 16 different stakeholders aimed to develop and evaluate new services and technologies that could encourage people to remain active, engage in regular exercise, and refrain from behaviours that could have a detrimental effect on their health. Some of the stakeholders brought tangible development work, prototypes that ought to be tested by participating seniors. One was a robot developed by Japanese researches, re-interpreted as a 'skype-doll'. Another was a physical phone with human-like expressions meant as a channel for relatives and friends to stay in contact. While another prototype to be tested within the project was a large human sized interactive brick-game, meant to encourage movement and exercise through play. Others were to develop prototypes and innovations during the project, which later resulted in outcomes such as digital Nordic walking sticks and yoga-mats.

2.2.1 Materializing Health Terminologies

The micro-program for Invite!, which concerned and explored the uncertainties of healthy aging by working with issues of staging alternative health-terminologies from a material point of view was an obvious reference to some of the leanings and insights from Watt-lite. However, as always, one does not make, create, or think in an empty void but is influenced by the networks that surround us. In many ways both the program and the experiments in Invite! genuinely mirror this. After recently having landed in the research environment at the co-design cluster, discussions about design and collaboration with my new colleagues certainly influenced and nourished the evolving exchanges between the program and experiments. But while the notion of collaboration often in the co-design clusters design experiments aimed to facilitate discussion, the four design experiments in Invite! instead took their starting point in the joint discussions already taking place within the Lev Vel project. So rather than facilitating discussion and seeing it as an output of the design process, we used the discussions as input to continue the design process in Invite! Those discussions actually became the foundation for how me and Andrea (an MA-student from the Danish Royal Academy of Fine Arts, School of Design who worked as my research assistant in the Lev Vel project for six months) framed each experiment to investigate our collective terminology.

By gathering a set of terms repeatedly used at one of our joint Lev Vel workshops, each experiment came to investigate and unfold our collective terminology. Themes discussed during the workshop, such as ‘un-wanted alone’, ‘health technologies’, and ‘busy pensioners’ seemed to have started to become the scaffolding for our common understanding of the meeting place within the project. As we were slightly uncomfortable with the idea of health technologies being

IMAGE:Some of he different terminolgies repeatedly used by us during a LevVel workshop.

so focused on the development of computational technologies - using the specific terms we carefully tried to imagine how we could potentially populate the Lev Vel project through a set of different standpoints. Through a similar approach to how Watt-Lite was developed through a set of enquiries, the four design experiments were developed through a series of *'What if…?'* questions. The 'what If' questions created a way to programmatically structure our enquiries and respond to some of the collective terminology that started to frame the Lev Vel project.

The what if-questions asked in response to the Lev Vel terms were:
1. *What if* exercise is moving yourself through the city instead of going to the gym. And, what if public spaces can be a meeting place when travelling through the city?

2. *What if* we do not know at all what interests our seniors but are stuck with our own prejudice? Our aim was to explore how to challenge some of our own preconceptions of what it is like to be a senior, and what kind of activities that might keep one physically fit.

3. *What if* we got it all wrong? Rather than 'us' (the Lev Vel collaborators) teaching technology to the seniors, we imagined to twist the perspective and look at the seniors as technology experts with skills and knowledge that may benefit us.

4. *What if* health technologies are something that helps spur a collective concern, something you take care of together, rather than something that takes care of measuring your health.

What if- questions are used both by more participatory design driven projects and critical design projects. In the co-design cluster it has been explored in projects like DAIM, which concerns waste handling. Here the experimental design enquiry acts as a series of *rehearsals of the future,* usually staged as workshops with (rather than for) stakeholders. Through different formats, participants gather in the design laboratory and new concepts are conceived that help articulate and enable participants jointly to explore where new promising futures are going for waste handling. "The modus operendus is the playful *what happens if we do it this way…?*" (Halse et al. 2010, p. 20). Furthermore, the likes of Dunne & Raby (2011) have made use of the same question by applying counter mainstream views in, for example, exhibition catalogues, concerning hypothetical products, systems and services. In other words, asking a what-if question is to concern design proposals in spaces between reality and the imaginative. Supposedly, Invite! was a fair mix of both perspectives. It was meant to be playful and engaging at the same time as it had some critical

perspectives in regards to how technology was discussed in the Lev Vel constellation.
In relation, by means of new technology, Blythe et al. (2010) described a risk within the field of HCI to "produce numerous smart home technologies and innovative means of keeping older people in touch with their families" (Blythe et al. 2010, p. 161). They oppose that a good quality of life when aging can be enhanced through technological interventions that identify specific needs and goals. Instead, they argue that the form of responses from the design community should be less of a solution, and more of a gift that focuses on lived experiences by e.g. establishing relationships that can support the meaningful dialogue, empathy, and shared learning. While Blythe et al. work with an older generation than those involved in the Lev Vel project, similar concerns were considered in the three design experiments. The more critical perspective formed as an input to the development of Invite!

At the same time we tried to explore and propose what such a gift might be, and do. The four design experiments materialised the terms and what if-questions as socio-material enacted responses by using pre-existing practices and activities already taking place in the society over a short time process and using inexpensive materials. They were never thought to be considered as outcomes of the Lev Vel project, but rather as 'part of' - as responses to unsettled issues and discussions within the project. In many ways Invite! was positioned as what Lenskjold et al. (forthcoming) define as minor design activism. That is a particular mode of engagement that denotes collaboration rather than persuasion and positions co-design to maintain experimentation to challenge a more stabilized program around unified agendas. So in relation to Lev Vel, rather than agreeing upon our shared terminologies that had developed within the project, Invite! intended to be an activist demonstration by attempting to stage the problem in new ways.

2.2.2 Four Different Experiments

In *Paint the City Yellow, Blue, and Red* we introduced the activity of guerrilla gardening for the seniors, an activity that has existed since the 70s. But as a design experiment, or as materialised enactment meant to populate the Lev Vel project it became a way to respond and populate the first 'what if'-question with more standpoints. Many discussions and parts of the fieldwork within the Lev Vel project where formed around how to engage seniors in physical activities, or how to motivate them to got to the gym. In extension, instead of assuming that the gym is the only way to engage in physical desirable activities Andrea and I tried to consider how we could explore health from a more holistic perspective - where things like living plants and surrounding environments also have an effect on how to define health. In what we called 'sustainable and innocent graffiti', Paint the City Yellow, Blue and Red consisted of a small kit that includes flower seeds on a stick, a postcard, and some simple directions. Seniors were invited to act as guerrilla gardeners - an activity that encourages unauthorized cultivation of plants to improve neglected or overgrown spaces. The seeds handed out are attached to a stick painted the same colour as the flower that one day will/might spout. When handed out, the addressee also received a postcard upon which they were asked to note down what part of the city they 'painted', with an explanation of why they want to paint it. The flower seeds are attached to a wooden stick with an imprint of the project blog that would regularly get updated with the different postcards sent to us. Materials: Seed-sticks, post cards, map, plastic folder.

In the *Aggressive Kitchen*, smashing fine porcelain was used as a way to explore questions of how to challenge the preconceptions of what it is like to be a senior. The activity of smashing crockery and turning them into bits of precious jewellery was originally developed by a designer-duo for a fair at the V&A museum in London, but was appropriated by us to

IMAGE: whole, broken and flying china.

explore assumptions of 'appropriate activities' for seniors. Similar to how Blythe et al. (2010) describe problems of how aging results in stereotyped representations of seniors - the act of brutally breaking precious porcelain through physical strength together with invited seniors was our way to explore how to challenge such negative representations.
Materials: Porcelain, needles, sandpaper, paint, glue, pens

In *SkillShare,* the materialized question we aimed to explore was how we could avoid the 'us' (the Lev Vel stakeholders) teaching 'them' (the seniors) technologies. The technologies developed within the project were seen as a solution that would support the elders, and accordingly had to be taught how to be used. But many of the seniors were already engaging in lots of activities in which different technologies were constantly being deployed in a number of different ways, all from dj-ing, knitting, and other making practices like wood, textile, and metal-craft to playing poker. Furthermore, when seeing and visiting the different senior activity centres it became very visible that some of those activities were practiced to perfection by very highly skilled people. Somewhere, it seemed that 'they' had a lot more skills to teach 'us'. In extension, our proposed question became: Can we use the existing knowledge and activities that already exist within the senior communities to strengthen relations as a meeting place between different generations? The aim was to get different generations to exchange skills and knowledge among each other, a meeting place that would not happen at a specific place, but rather spontaneously by letting the skills and knowledge within the senior communities travel and be shared by a younger generation. Unfortunately no one of the partners signed up for the Skill-share. But as a way to quickly materialize the concept we mocked up a suggestion for what we imagine a senior skill-share notice would look

Image: (top) Seed sticks from guerilla gardening.

(middle) The note for Skillshare.

(bottom) Urban Bird Spotting.


VIMALERBYENGUL.COM

Image: The kitchen table 'factory' of making the seed sticks for Paint the City Yellow, Blue, and Red (from Andrea's dining room). The stamped web-address is for the joint blog that we regularly would update with postcards and different news from the project.

like and brought it around to some design students to enquire about the concept. The note was in this case seeking a knotting exchange between skills of different generations.
Materials: Pen, scissors and a paper note.

Finally, *Urban Bird Spotting* was put into practice as a way to explore the concept of meeting places related to health technologies. By making use of that which is already outside the window we wanted to suggest urban bird spotting as an activity that potentially would allow both birds and seniors to gather. As most bird spotting engages recognizing rare birds out in the forest and other 'wild' areas, urban bird spotting could rather be seen as a gathering that allows for more unexpected encounters between the animal and human citizens. As many discussions within the project revolved around how to make use of social media, we wanted to propose less screen-based solutions for ways of socializing, a meeting place as a very physical place. In extension, we decided that health technologies would be simple materials made out of bird-food, paper, and binoculars. Urban Bird Spotting consisted of small roughly made wooden 'DIY-bird trees' with attached bird food as well as a selection of materials that could support the activity (such as binoculars).
Materials: DIY-bird, bird food, large print of a tree, cut-outs of different birds (some are blank) that can be attached to the print, a bird spotting book, a blank notebook, pens, bird food and a pair of binoculars.

2.2.3 Inviting In & Exiting Out

To host the design experiments we sent out invitations to all the participating stakeholders. In the invitation we described the design experiment briefly and asked whether they would be interested in co-hosting the activities with Andrea and me. We then met up with the stakeholders who replied and discussed further possibilities, as

well as more detailed plans of how, where, and when to carry out and invite seniors to collaborate in the design experiments. The only one that never got a response was the SkillShare experiment. For Paint the City Yellow, Blue, and Red we jointly decided with Dansk Fitness that we would just show up in the gym. With Gladsaxe library we decided to spend some afternoons in the entrance to the library. The small kits were handed out and discussed with by-passers and gym-members. In the Aggressive Kitchen, seniors were invited via a simple paper notes at the entrance of the Deaconess Hospital. The 11 women who turned up showed us playful strength and capacity; it did not take many seconds before the porcelain was flying through the air. In Urban Bird Spotting the activity café Kram hosted the DIY-bird and the different props.

By disbursing into the activity of trying to materialize and stage a selection of health terminologies we wanted to raise questions and issues from the workshop to jointly speculate on possibilities for the meeting place. We consciously tried to avoid being too critical, since the aim was to nourish the Lev Vel project and allow for issues in the project to be raised, not to scrutinize anything. Our way of introducing already existing practices and re-shuffling them to introduce them to new actors was an attempt to connect and create conditions for the existence of issues to be discussed within the project. However, this turned out to be harder than we imagined. After the design events had taken place, we gathered the material, the stories, and the questions in a presentation and a small leaflet to hand out to the 16 participating stakeholders. But after the presentation was held, the questions and the issues raised through design experiments faded away with my voice after the thirty minutes ended. It was clear to us that if we were to consider the design experiments as a kind of gift that could feed back into Lev Vel - a PowerPoint presentation was not sufficient to enact such perspectives.

Image: The Invite! book that was produced to travel within the Lev Vel constellation.

To hand it over differently, we proceeded by making the book Invite!, which essentially represented the four different design experiments as a graphic novel responding to the specific emerging themes in the larger Lev Vel project. The book took us longer time to produce than the design experiments. Its carefully crafted layout was assembled in the care of a small local bookbinder, and was in the end handed out to all the involved stakeholders to travel as a form of anecdotalized design experiments. The layout of the book was designed by Andrea to have a gift-like character, where the cover folds around itself, as a package that has to be un-wrapped to find the secret inside. Using images of post-its, we tried to highlight a scribbly, in the midst of the process that was the definition of the design experiments. Each staged design experiment got its own descriptions of questions posed and raised along with many photographs from the activities.

This issue, and learning of a staging gone slightly off track (as in the presentation) was then something that I tried to carry further and explore into the next micro program. This was done by further considering how to invite a broader range of actants to participate in the interventions and experiments. But the succeeding micro program was not only analytically developed from the 'mis-re-presentation', but was also carried further through material entanglements and my interest in crafty skills. Such entanglements were some of the rather enchanted moments and unexpected meetings between human and non-human urban citizens that happened through urban bird spotting. Again, the unfolding experiments came to form important insights for the forming of the next micro program. But it was not only the learnings that were brought further into the next exploration. It was also, as mentioned before, the continual discussion among my peers and me. And naturally through the PhD program there was a stronger attachment and relation to theoretical influences. Evidently, this can be seen in the micro-program and experiment for UA & Us, where the notion of collaboration in design is to an extended pushed to new limits.

2.3 Urban Animals & Us

Urban Animals and Us (UA & Us) is a project into the 'terrain vague' between people and (other) animals with whom we share urban spaces. Through three different design experiments, we attempted to bring 'wild' urban animals into a domestic area of a senior retirement home to explore what new practices can arise between (otherwise) unconnected life-worlds. Each experiment was made to further explore the field of cross-species communication among the likes of magpies, gulls, and the residents of the senior retirement home Gronnehaven in the Danish city of Helsingor. The aim was to let 'them' intervene, as much as 'we' intervene in each other's every day. The three design experiments were guided by the question of how we nurture relationships that enable communication and new relations among species such as, how do we take a 'not-quite' companion species perspective into account? And, in the forming of new interspecies behaviours, how do we foster relationships that enable communication among species?

The project was initiated as an invitation to us from one of the stakeholders from the Lev Vel project (Helsingor volunteer centre) and was accommodated and deployed at the retirement home Gronnehaven. Additional participants were us, two design researchers (Tau Ulv Lenskjold, a fellow PhD scholar at the Royal Royal Danish Academy of Fine Arts School of Design and close collaborator in UA&Us experiments, and me), an interaction designer (Sebastien Thielke), and an architect with specific interest in urban animal housing (Kalle Jorgensen) in an on-going collaborative process.

2.3.1 Cohabitation

To form the micro-program, uncertainties of cohabitation and to consider how to work with issues of making relations between

Image: BirdCam in flight outside Gronnehaven

humans and non-humans (more specifically wild urban animals and seniors) I started to look into how current urban biodiversity and habitation often come together in areas like city parks. Such spaces constitute a scale and level of multi-species complexity in which species and humans co-exist side by side. Consequences of rapid urbanization means that handling biodiversity in urban areas has been recognized as an increasingly important issue. In Denmark, a study found that the urban area of Copenhagen, with its parks, forests, lakes, beaches, wildlife refuges, and other green areas, hosts a wide variety of species and in fact is one of the richest localities of biodiversity in the country. But many wildlife species that already live in urban areas are often seen as undesirable by people, resulting among other, in things like pest control. But as expressed by Haraway, species can be understood as a philosophical category by which we define difference. Hence rather than co-existing, Haraway suggests that we become companions: "To hold in regard, to respond, to look back reciprocally, to notice, to pay attention to, to have courteous regard for, to esteem: all of that is tied to polite greeting, to constituting the polis, where and when species meet. To knit companion and species together in encounter, in regard and respect, is to enter the world of becoming with" (2008, p. 19). In relation to contribute to biodiversity, urban living spaces can then be seen as involving much more than human worlds - and are often prime sites for human and nonhuman ecologies.

Secondly, to knit companions and species together - equating cross species relationships - we need to engage in new entanglements. Hence, the research agenda was to conceptualise the neighbourhood of Gronnehaven as an urban ecology that we co-inhabit with many different species. But, how do you make relations and entanglements between humans and nonhumans?

In 2011, a group of researchers from the human-computer interaction community (HCI) published an animal-computer interaction (ACI) manifesto in the ACM Interactions journal (Mancini, 2011). Some of the central questions for a new research agenda proposed in the manifesto are: (i) How do we involve animals in a design process, and (ii) How can we develop a user-centred design approach towards animals? Other questions are: (iii) How can we elicit requirements from nonhuman users and (iv) With what criteria do we evaluate the technologies we develop for animals?

To a large extent these questions are mirrored by the interests put forth in UA & Us - there are however, differences. Perhaps this is most evident in the questions of evaluation of technologies developed for animals and the categorisation of non-human animals as 'users'. The objective here seems to be in line with the main directions of human-computer interaction research - the primary difference being the substitution of humans with animals. This marks a divergence with respect to the experimental approach Tau and I proposed in UA & Us. The gulls and crows, as significant others, are not perceived as non-human users for which we have located a specific problem to be met through means of design and technology. Rather, they are primarily co-constituents of a common urban context surrounding the nursing home Gronnehaven, with the potentiality of entering into new relations through designed interactions based on imaginative speculation rather than science facts.

Furthermore, similar to previous unfolding experiments, the micro-program was also influenced by other artists, designers, and makers. From the adjacent field of Bio Art, the Brazilian artist Eduardo Kac has among others created and exhibited a florescent green rabbit (GFP Bunny, 2000), by infusing DNA from a jellyfish into the rabbit's

Image: Traces of birds and wo/man a snowy day outside Gronnehaven

gene pool. British designers Auger and Loizeau, and Dunne and Raby, have respectively incorporated living entities in a number of speculative and critical design projects. The former duo made use of flies and rodents to power a microbial full cell in order to run a series of domestic robotic prototypes. Here, the aim was to challenge preconceived notions of the domestic utility of robots (Carnivorous Domestic Entertainment Robots. Retrieved 10/05 2014, from http://www.auger-loizeau.com/?id=13), (Lenskjold, forthcoming). The latter investigate speculative energy futures in, amongst other scenarios, one entitled "Meat Eating Products" commissioned by London Science Museum as part of the exhibition "Is this your Future? (2004). The scenario, aimed at children ages seven to fourteen, envisions children using an existing technology - in this case also microbial fuel cells – to harvest energy by killing off their pets. Both projects briefly sketched out above denote an investigation and extrapolation of emergent technologies by way of speculative design scenarios and prototypes. What the two projects have in common, and where they clearly stands apart from the investigation undertaken in UA & Us, is that the animals and biology play a supportive role in speculative design tactics pertaining primarily to investigations of novel scientific and technological territories (Lenskjold & Jonsson, 2014).

Closer to the interest and aims of UA & Us is the floating installation Amphibious Architecture in New York's East River that collects information on pollution levels and the presence of fish in the river, and it enables public inquiry into these matters via text messages. Glowing lights on the surface relegate the interaction and activities to below the surface in real time. As David Benjamin from the architectural firm The Living explains, one of the most important results stemming from the interaction was that "when people decide to ask a question about their environment through our SMS system

the river becomes a contact on their phone. And when people start talking in a smart way to objects and public places in the city, all kinds of new things become possible" (Ahoy Anchovy!, Retrieved 17/3 2014, from http://www.wired.co.uk/news/archive/2011-08/26/amphibious-architecture 2011). What is shared by these objects and animals is proximity and the co-habitation of an urban context.

To further guide the micro-program and to explore the potential interspecies, a set of enquiries was developed into specific relations.

1. The first enquiry explored the notion of *exchanges*

2. The second enquiry explored *communication as translations*

3. The third enquiry explored *power relationship*s

When developing UA & Us, Tau and I were influenced and inspired by the increasing interest in bridging human-animal studies, environmental humanities, creative and biological arts, feminists and performativity. Highly influential in various academic disciplines and beyond the central question of Haraway in a 'The Companion Species Manifesto´ (2003) is "how might an ethics and politics committed to the flourishing of significant otherness be learned from taking dog-human relationships" (p. 3). This emphasis of question of animal rights, or rather otherness, has grown in order to discuss issues of sameness and difference. But the notion of a companion species does not only include pets but denotes an extensive category including entities like "rice, bees, tulips, and intestinal flora, all of which make life for humans what it is – and vice versa" (2003, p. 15). This brings us to a simple yet crucial aspect of companion species: namely that it always requires a minimum of two species to enter into a relation (Haraway, 2002, p. 12). But as the animals surrounding

Gronnehaven, such as gulls and crows, often seemed difficult to categorize as companions, even though we co-inhabit the same (urban) space, we came to propose the prefix *not-quiet* to companion species. The *not-quiet* became reinforced when analysing the photographs from the several field visits conducted at Gronnehaven and its surrounding neighbourhood.

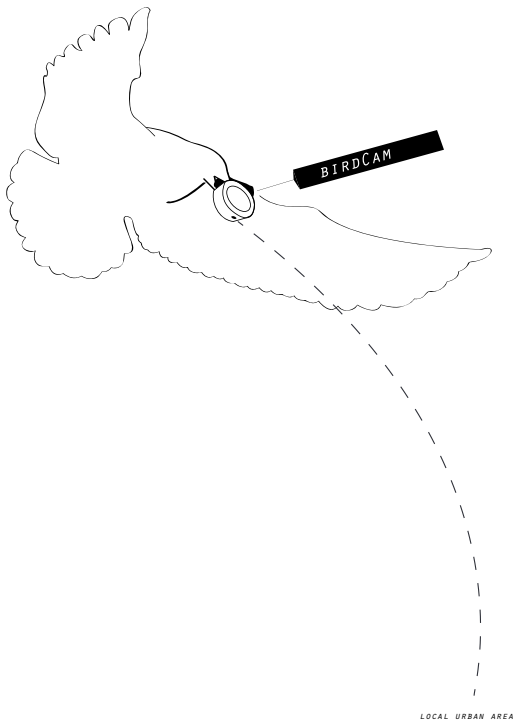
To frame the potentials for creating interspecies communication and exchanges I conducted several field visits to Gronnehaven and its surrounding neighbourhood. During the field visits I noted and looked for different already existing traces of exchanges between the not-quiet companion species and people. This was done through photographing the surrounding area and through informal interviews with the staff. The *not-quiet* was for example visible in how the pest control of rats was placed around the neighbourhood taking the shape of miniature houses that functioned like traps. Other, less risky materially visible human and bird-relationships were spotted in the surrounding gardens where people would feed smaller birds such as tits. Inside Gronnehaven there was also traces of relationships through for example how one of the wards had a small birdcage with living birds.

2.3.2 Speculative experiments

Through informal interviews with the staff I was told how the retirement home tried to in different ways engage the residents in spending time outdoors. I was shown a small herb garden that the residents and the staff cared for collectively. All in all, Gronnehaven and its staff had an interest in exploring how to appeal to different senses. Their official values (that can be accessed from http://tinyurl.com/q7wnw37) were among others to provide for

calmness, reflection, creativity, the opportunity to live out dreams, mysteriousness and curiosity, and to give surprises to life. Through those insights, as well as the different traces shown around the neighbourhood, the set of above mentioned enquiries became the scaffolding for how we materially could investigate how the new possible relations started to come into being.

1. The first enquiry, which explores the notion of *exchange* developed into the experiment *A Birds' View Perspective*. Here, 'the Birdcam' was developed and meant to allow the birds themselves to film and be in control of a video camera. The intention was to literally give a birds' view perspective of the local area. The BirdCam is made out of off-the-shelf components, including an inexpensive spy video camera that one can attach bird food to. The weight of the object means that not any animal can pick it up. Instead it is meant to be used by the strong large local black back gulls outside the retirement home. The BirdCams attempted to set up an exchange, where the gulls might potentially film the local milieu from their perspective, but only if the seniors set up the exchange (the Birdcams) with the food. Put simply, the Birdcam can only work its wonder if both actors put their effort in. Without attaching the food, it offers little in exchange for the gulls, and without the gulls the Birdcam is nothing more than a small and strange-looking device to the seniors. Its agency depends on the joint effort.

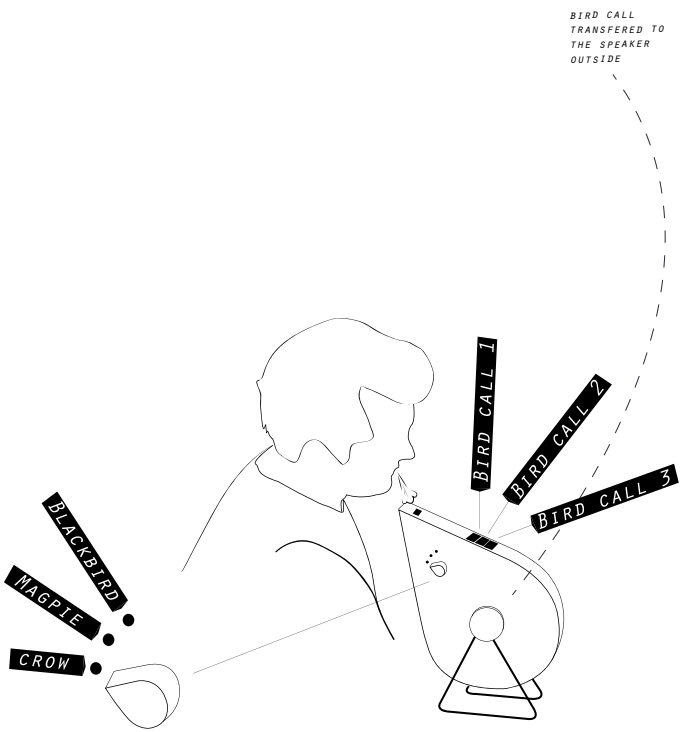


The BirdCam was made out of off-the-shelf components, including an inexpensive spy video camera contained in a small waterproof box. Attached to the box a rubber-band was added that would allow for bits of fish and other bird food to be attached. On the top of the box a small compartment was used to leave a message encouraging whoever would find the container to either hand in the BirdCam to Gronnehaven or to upload the film to a website. The weight of the object means that not any animal can pick it up. Instead it is meant to be used by the strong large local black back gulls outside Gronnehaven.

2. In the *Talk-in-to* experiment, the 'BirdFlute', a flute-like instrument deals with *communication as translations* between species. The BirdFlute uses similar technology as hunters do for calling in pray, with the major difference that a conventional duck call is used for the purpose of luring in the bird and killing it. And the BirdFlute is used as a communication device. When blowing into the flute-like instrument the outgoing sound mimics a sound from another species, like a crow. And by switching a knob on the instrument one can change the sound-scape from crow to magpie or to blackbird. The sound created by the flute is then transmitted via a digital network to a small speaker placed outside the retirement home Gronnehaven. By pressing one of the three different keys down causes a change of animal call allowing the seniors to enact and intervene in unexplored spaces of interspecies communication.

We know that (some) animals can understand us, and follow our demands. In the bird-human history this is typically recognizable through the parrot that learns to mimic human speech. Parrots are social creatures, so it may seem advantageous from a survival standpoint to learn the language of their new flock – the humans

in their home. However, it might be more rare that we can orally communicate with other species, rather than straining demand upon them. In the Talk-in-to experiment, instead of letting the parrot mimic us, the sound conducted by humans becomes translated into a nonhuman message through the 'BirdFlute'. That way, the relationship between bird-human was figured not by moving nonhumans into our habitats, but through attempting to make humans become more bird-like by reaching out in the habitat and communication of birds. The sounds are a selection of different birdcalls that have been recorded and interpreted into different functional signals on a shared Internet community used by ornithologists. Since no 'bird call-experts' have been involved in the experiment, the translated digital sounds are far from stabile translations. Instead we have to rely on Gronnehaven's residents to consent to explore other ways of communicating, and perhaps to make beginner 'zoo-grammar' mistakes.



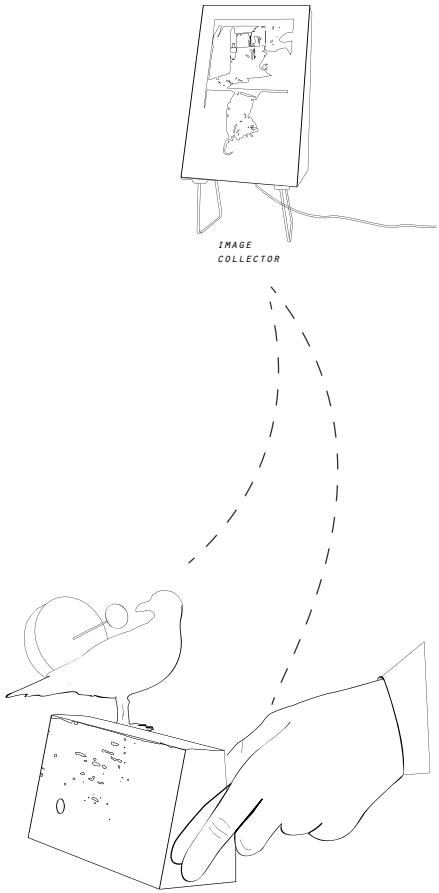
But, "how do you make an instrument and not a tool?" came to guide the making process. Kalle, who was the 'main maker' of the BirdFlute developed a variety of shapes in the local wood workshop that we then tried out and played around with. Having

the different shapes in hand we worked out different more suitable and possible features. Starting from a cylindrical form, we wanted the instrument to become a merger between a piece of furniture and a musical instrument. Problematically a cylindrical form gives no hints of where or how to exhale into it, so by adding an extension for exhaling, the BirdFlute ended up with its flutelike shape. To be able to let anyone who would not necessarily be able to hold the instrument in his or her hands, small legs were added. There was no intention to make the BirdFlute have animalistic features, but in the end it somewhat came to look a bit like a cross between a rodent and a musical instrument. Furthermore, just as with Watt-Lite, we looked at the surroundings and the existing furniture at Gronnehaven to allow it to blend into to the environment. We did not want the instrument to be too alien, but rather to have more warm and round welcoming features.

3. The final experiment *InterFed* explores *power relationships* through the instrument 'PhotoTwin'. The experiment consists of two digital camera devices, one being located outdoors and one inside the retirement home. The outdoor camera device is triggered when birds are pecking on the replaceable shutter release made out of bird-food. Simultaneously, two different photos are taken, one photo of the birds' outdoor practices and one of the seniors' indoor practices. The two photos are then displayed side by side on a portable screen in the retirement home.

The PhotoTwin helped the speculation on how to establish more equal interspecies relationships. The closest resemblance might be that of a camera trap, often used to scout for game or for capturing wild animals on film when researchers are not present. Instead of being disguised and camouflaged to capture an animal in the midst

of the forest, the PhotoTwin traps both animal and human everyday practices via photographs on attempted equal grounds. The fact that it is the action of the bird - as true nature photographers - that triggers the shutter release was a way to intentionally give active agency that allows the birds to intervene and affect the 'great' indoors.



The PhotoTwin was developed in a fairly similar fashion as the BirdFlute. The difference between the two was that the PhotoTwin's main interaction point was with birds. The two photo-devices and the screen were to be easily moved about and were both designed to be able to stand firmly on any flat surface, and they each got a large grab-able handle. The outdoor instrument that was placed in the garden got the cylindrical form so that the birds could potentially roll it about. It could also be pushed into the ground becoming more similar to a traditional bird feeding table (that we had seen in the gardens surrounding Gronnehaven). Both humans and birds could then use the stick that penetrates the wooden body in numerous ways.

2.3.3 Inviting Others

UA & Us started as an invitation from the Helsingor volunteer centre with the aim to work with some of the networks in Helsingor. In a similar fashion to Invite! the project was delivered as an open invitation to the residents and employees of Gronnehaven. The invitation was to participate in the experiments and collaboratively unfold and make sense out of the speculative prototypes and the potential new interspecies relations. An important actor for initiating the project at Gronnehaven was the newly appointed Head of Section Leader Carsten who with enthusiasm welcomed the project. While developing the different materialised enquiries he would comment and give us feedback on how he could see it fit to meet the retirement home and its values. Carsten was the one who guided us into the retirement home and introduced us to different activities, politics, and wards. He put us in contact with Gronnehaven's Activity Centre where the Birds View Perspective was hosted as well as the B1 and B2 wards where BirdFlute and PhotoTwin were hosted.
As mentioned, UA & Us was also concerned with practicing and pushing the boundaries of collaboration and inclusion. This was obviously much in extension to my local milieu at the Co-Design cluster. Here discussions on how to rehearse the future through design would focus on collaboration between people like future users. This is of course a fair way to work with inclusion from a democratic perspective. However, to explore and reach out for a slightly extended democratic perspective, or cosmopolitics, Tau and I ventured further into the experiments with seniors, things, and non-human others. Cosmopolitics aims to articulate categories such as value, agency, subjectivity, and experience, such that those categories apply no longer exclusively to humans but in various capacities to all beings. That is what Isabelle Stengers, Bruno Latour, and others discuss in

Image: (top and middle) InterFed's two photo caturing devices. (bottom) The image collector

order to overcome the bifurcation of the world into two halves, that is one side populated by humans, values, meaning, and subjectivity, and the other side populated by nature, facts, matter, and objectivity. And the further we ventured the clearer it seemed that there was an interesting and slightly un-explored role within design that did not put the human and more discursive values in the centre. This was to a certain extent already formulated in the micro-program, but grew stronger and more vivid for both Tau and me while indulged in UA & Us. And, the notion of a non-anthropocentric design has since become an important part that has been fed into the continual investigation of an event framing in design, something we will come back to in chapter 5.

Sum Up

Above I have shown you the iterative journey of how the exchanges between the program and experiment take place and are influenced by a diverse set of things. Clearly, one cannot stand without the other, but they inform each other, allowing for explorations to take form in dialectics with each other. A

chapter 3

From Static Objects to Events

As we, in the previous chapter, have come to know the objects of design in this PhD, this chapter is where those objects meet STS scholars' suggestions to move from objects to *things*. To do this, I will give a substantial account of Actor Network Theory (ANT) since it throughout doing my PhD has played a significant role in the practical work as well as discussions I have been involved in. Through the rest of this document we will continue to travel with ANT, and its peers (like SPIDERS) and design. At times this journey will be smooth and easy; at other times I will also put pressure on parts I find more troublesome from the perspective of being a hybrid 'ANT/design/researcher' practitioner. I will in concurrence, bring the question of presently unrealized potentialities into question for design and ANT. Such difficulties, I argue, are among others related to ANT's

program grows out of diverse concerns and influences such as from other designers, local discussions, as well as theoretical influences. And this is actually what I mean by a position from within, because it cannot be understood seen through the 'great' lenses of some 'big' theory. Rather, what comes into being, how we compose the world is always from an inside position, in the local entanglements, among the hybrid encounters. However, and importantly, as I got acquainted with more and more theoretical perspectives during my doctoral education many of these also became active actors and part of the iterations. This can for example clearly be traced in the different kind of engagements in Watt-lite and UA & Us. The program for Watt-lite was for example almost a conclusion for the design project where the theoretical perspective became a support to better understand the doings of Watt-lite. In that way, the theoretical perspectives were to an extent imported after the design proposal had been done. In relation, before UA & Us came into being, the rough outlines of the micro-program had a strong theoretical account. Hence, the program and experiments in UA & Us had a more symbiotic relationship between the theoretical and practical inputs. That is, the making processes were influenced by the theoretical perspective and the vice versa, without one coming before the other. They cannot be pulled apart, but are fully entangled in each

heavy emphasis on the actual, already present in the world. Taking the risk of clashing with Latour's more actualistic accounts I will through Science and Technology Studies (STS) scholars such as Karen Barad, Jane Bennett, and Mariam Fraser try to get closer to introduce a more performative enchanted proposal. I articulate why this move towards the end of the chapter and propose the notion of event as a framing for such a move.

3.1 Science in the Making

Derived from STS, the presentness and transformation of the world is argued to always be in the making; it is always open to being otherwise.

other. And so far, UA & Us is perhaps the best pointer and proposal in my work for avoiding the problem of designers treating social science as a resource for design. Nonetheless, the theoretical framework, and how we understand the 'social' in social science is something we will explore next.

There is no manifesto of what the world is, because it is always in a state of becoming; it is emergent. We are not in this world, or on the earth, but rather it is argued that we are of this world (Barad 2007, p. 185). We compose it! (Latour, 2010). This means that we can compose differently, allowing a set of different opportunities to constantly emerge. It is a shift that moves us from a single world to the idea that the world is multiply produced in diverse and contested social and material relations.

Within STS, positions have focused only upon how social relations, concerns, and influences of technology (such as the social construction of technology, SCOT) have been critiqued. This is due to the fact that the influence technology has upon social relations has been underplayed (Fallan, 2010). In correspondence, more recent STS thinking such as Actor Network Theory (ANT) has tried to overcome this divide. In the need for a new social theory adjusted to such dichotomies, Bruno Latour, the French sociologist and anthropologist, along with Michel Callon and John Law started to use ANT in the latter half of the 1980s to describe their particular approach to scientific and technological innovation. ANT distinguishes itself from other sociotechnical approaches by considering both human and nonhuman elements equally as actors within a network.

John Law

Law and Callon say 1988, "We are not primarily concerned with mapping interactions between individuals…we are concerned to map the way in which they [actors] define and distribute roles, and mobilize or invent others to play these roles" (p.285). So, when going about doing your business, like me writing this document, there are a lot of things that influence how I do it. I use several word-processors that all influence the process of writing by regulating the layout. This is of course a great support in many ways, but I am also made to write in a linear manner, and I am disciplined to revise the words that are not standard as they flag up as red. I am also influenced by lots of other functionalities as well as my previous experiences using the computer and the program. All of these are factors that influence how I act and how this specific text came into being. This is a move ANT makes us aware of, that all of these factors have to be considered together. There is not a blank vacuum, but both human and non-human actors have to be understood within a network. Everything from people, technologies, nature, politics, and organizations are the result, or effect, of heterogeneous networks.

Methodologically, ANT approaches 'science and technology in the making' as opposed to 'readymade science and technology' (Latour 1987). This entails studying the places where science and technology come into being like labs, institutes, government departments, funding agencies, and engineering studios. By employing the same analytical and descriptive framework when faced with either a human, text, or a machine, ANT attempts to open the 'black-box' of science and technology by tracing the complex relationships that exist among all from technologies, money, and bacteria to people. But Latour's

approach to scientific facts ties into a larger aim, which has to do with the idea that the world should be divided between two distinct elements; *nature* and *culture* (Blok & Elgaard, 2011). Drawing from Whitehead, Latour proposes that dynamic relations between culture and nature, humans and non-humans, society and science are obstructed by a purifying practice that defines modernity. This can for example be seen in Whitehead's critique of what John Locke refers to as 'Bifurcation of Nature' that ultimately divides nature up into primary and secondary qualities. For Locke, an apple is proposed to consist of primary and objective qualities, such as shape, size, and weight, and secondly of qualities that are observer dependent like colour, flavour, and smell. Whitehead is very critical of this position, and proposes instead that everything available to the senses is equally part of nature. In an interview with Blok and Jensen, Latour says that ecology is not about nature, "but (…) about the way we live - what (Peter) Sloterdijk would call breathable, liveable atmospheres" (2011, p. 154), which, in another interview Latour directly relates as a challenge for design: "I think that is a very big change for designers—in the large sense of the word—because now you have to create the conditions of cohabitation, of building a completely new space where you have to breathe" (Latour, 2008c, p. 125). Considering all the intimidating complexity, ANT has spread across a number of different disciplines, from its beginnings in the sociology of science and technology, to later becoming part of philosophy and sociology, anthropology, geography, organization studies, economics, as well as design research.

Bruno Latour

So what makes an ANT perspective interesting for design? First of all, it is a domain that recognizes the impossibility to understand how

society works without including nonhumans. That means to recognize how design conditions and makes possible everyday sociality (Yaneva, 2009). Albena Yaneva, who has a firm interest in crossing borders between ANT and design describes this entanglement through how a staircase "holds a vision of the world". Inscribed in the construction of the stairs the specific *scripts* such as width, inclination, as well as *affordances* such as the smooth wooden surface of the handrail affords particular actions.

> *Its wide and inviting surface makes me lean upon it in conversation with colleagues during an on-stair encounter. The narrow stairs make it impossible to ignore others whom I might meet occasionally. The stairs' design triggers spontaneous face-to-face conversations, making us extend the auditorium discussions in other university spaces (…) Meeting and chatting on the staircases, I find myself involved in relationships mediated by the particular design of the building (…)* (Yaneva, 2009, p. 274).

Human and *nonhuman*, one is less or more than the other, but is constantly in the *making*, *entangled* in each other. And this is another important implication, that it is not only nonhumans. This is important because it means that "we cannot figure design as a separate cold domain of material relations" (Yaneva, 2009, p. 280). And finally, to understand 'in the making' from an ANT perspective, cannot be done by providing stand-in explanations of design through social, psychological, historical or other approaches. Instead, an 'ANT-ish' design means "tracing networks with wood, steel, polished surfaces

and blinking signals, beeping doors and blinking elevator buttons" to find out how "design connects us differently, linking disparate heterogeneous elements and effects, thus entering a game of producing, adjusting, and enacting the social" (Yaneva, 2009, p. 282). Accordingly, one of the big advantages with ANT in correspondence with design is that it potentially helps us escape the modernist divide of nature/culture or object /subject. Traditionally the object had to be divided, either as a purely material thing or as a highly symbolic and aesthetic thing. The promise of 'ANT-design' lies in the fact that materiality, morality, ethics, and politics can coalesce in design.

3.1.1 Capturing an Object in Flight

Latour argues for objects, or to be more specific, for *thing*s. With reference to Heidegger, Latour is using the word *thing* in its double meaning: a meeting and matter. The English word 'thing' has Germanic roots, and this connection is the word 'ting', which in Scandinavian languages still can mean an assembly (as in Swedish Allting). Thing or Ding, is an archaic assembly where people would gather around diverse matters of concern to "... come to some sort of provisional makeshift (dis)agreement" (Latour, 2005, p. 23). Such assemblies do not have the character of 'matters of fact', but of 'matters of concern'. They connect people not because they are factually true, but because they embody a common involvement that includes all of the diversity of viewpoints related to a matter. The politics of *thing*s is wherever something is at issue. In relation to design, and in Latour's words:

> *Design is ideally placed to deal with object-oriented politics (…) if you look at what people actually feel about politics, it is always about things; it is about what I call "matters of concern." It is always about subways, houses, landscapes, pollution, industries. Politics is always connected to spatial issues, and political theory is always about humans representing these issues, but the issue itself is difficult to represent.* (Latour, 2008, p. 125)

Through this conception of politics of *thing*s, the objects are not apart from our political passions, and politics are no longer just questions for people, but also for *things. Things* could nowadays be translated to 'issues' (Latour, 2008). Applying Latour's suggestion, by shifting attention from *objects* to *things* is to highlight controversial assemblages of entangled issues. For design, it means to go beyond encountering the single object - to view them as sociomaterial assemblies of humans and nonhumans. Politics is about configurations of humans and nonhumans, all of which must be adequately represented. He is asking for a more symmetrical politics, which takes both human and nonhuman matters seriously, not just a representation of the people, but also a representation of the matters that are at issue. Those matters can vary from a hole in the ozone layer, to electricity, and piles of garbage.

When considering matters that are of issue, as explained by Latour and Yaneva, *things* are unfairly accused of being static and stable. In 'Give Me A Gun And I Will Make All Buildings Move: An Ant's View Of Architecture' (2009), they further entangle the problem by explaining

that buildings are in need of the reverse of Etienne Jules Marey's 1882 intervention, the 'photographic gun'. This intervention allowed Marey to capture the flight of a gull - to see continuous flow of flight in a fixed format of successive stop-motion frames through photographs. Before the photographic gun, a gull could only be studied when dead, not moving at all. The problem with buildings, he and Yaneva argue, is that we have no equivalent of Marey's photographic gun. Everybody might know that a building is a moving project that constantly changes due to weather conditions, to different planning permissions, transformed by its users, re-purposed etc. But when we picture a building it is still as a fixed solid structure portrayed often through full colour photographs in glossy magazines. It seems almost impossible to grasp them "as movement, as flight, as a series of transformations" (2009, p. 80).

Image: Marey & his photographic gun.

To view *things* passively like art work born from the Greek tradition seems to be something that design has embedded in its notion of form. In a somewhat similar manner to that of Latour, Johan Redström (2013) suggests in 'Form-Acts: A critique of conceptual cores' that the image, such as the photograph rather than the experienced object, is perhaps still the most important way in which this visual notion of form is continuously reinforced, the images come to *define* what a given design is. In essence, if the dominant mode of experiencing and understanding *things* is through the image, the glossy magazines, and not through the actual building, we will constantly be reinforced to grasp *things* as static and un-evolving.

Redström traces the notion of 'form' that we typically still find in contemporary design back to the beginnings of industrial design and early Modernism. Through this historical context, it inherited features from artistic practice, at that time and in general, and from certain perspectives of the fine arts in particular. He further argues that to be able to address sustainable development, which in essence means changes over time, the notion of the traditional visual and spatial notion of form does not support such a shift.

Similarly, Latour finds it paradoxical to say that a building is always a thing, a contested gathering of many conflicting demands and yet, at the same time, we are completely unable to draw up the issues they are conflicted about. He further accuses the 'powerful attraction of perspective drawing' (Latour & Yaneva, 2009, p. 81) as invented in the Renaissance for being responsible for this strange idea that a building is a static structure. The Euclidian space is a rather subjective, human-centered or at least a knowledge-centered way of grasping entities, which does no justice to the ways humans and things get by in the world'. Additionally, if we manage to move away from this perspective, one of the advantages would be that we avoid the divide between the old subjective and objective dimension of how we perceive the world. And the reason we need to give up this divide is simply because it does not justify how the likes of garbage piles, or ozone holes participate in the politics of *things*.

Through matters of concern, we are connected to each other by our worries and the issues we care for, more than by any other set of values, and opinions (Latour, 2005). In other words, we gather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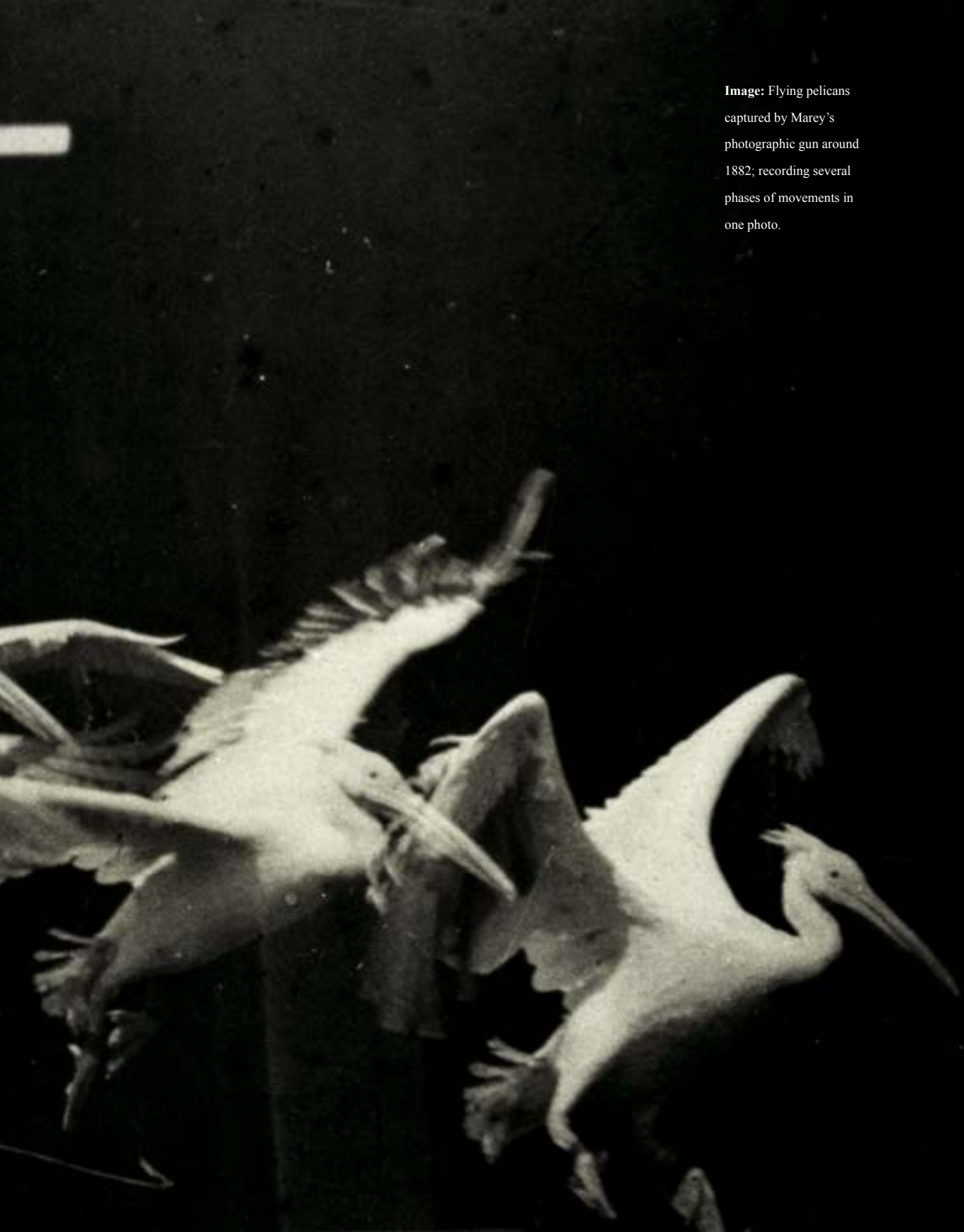

Image: Flying pelicans captured by Marey's photographic gun around 1882; recording several phases of movements in one photo.

around issues (or *things*) that we in some way or another attach to. Gatherings is the translation that Heidegger used to talk about those sites that allow for assemblies of mortals and gods, humans and nonhumans. Already in 'Politics of Nature' (2004) Latour offers conceptualizations of a politics of *things*, in the form of what he calls 'the collective', a way of "collecting associations of humans and nonhumans". The collective is defined as a political body that organizes relations among the humans and nonhumans that constitute it. Along with Latour, Stengers rejects the idea of a common world already in existence. Instead they propose that the question we must address is one of composition; what world do we want to compose, and with what entities? The world "is something we will have to build, tooth and nail together" (Latour, 2004b, p. 455). What Latour first christens as 'Parliament of Things' and later the 'collective', and Stengers as 'cosmopolitical parliament' (2005), emphasize the political creation of contemporary cosmos, the shared worlds of human and nonhumans and the environments we inhabit. Recalling cosmos, Latour and Stengers expand politics to include entities other than only humans, such as natural entities, scientific artefacts, and technical apparatus.

3.2 The Social Glue

The cosmopolitics of a Parliament of Things requires taking into account the practices that go into producing and maintaining environments and to include human and nonhumans. However, addressing such questions obviously also relates to questions of *how to* nail them together and compose them. In Latour's guide book to

ANT, 'Re-Assembling the Social' (2010), he presents his systematic version of how to compose by reassembling. He calls for a new approach to sociology - one that traces associations and relations between controversies in order to describe how society is assembled by various actors. Rather than using 'the social' to explain the state of affairs and to solve current controversies, he proposes to redefine the adjective social not as the 'science of the social', but as tracing of associations (2010, p. 5). This shift from what Latour calls "sociology of the social" to "sociology of associations" is a method of study that embraces uncertainties about the nature of the universe and relies on the actors' own theories, contexts, metaphysics, and ontologies to assemble the social. 'The social', according to Latour is not what the social scientist proposes as a stabilized affair. Quite the opposite, it is the type of connection between things that are not social in themselves. Instead it is what is glued together by many connectors. To redefine the notion of social we need to trace those connections by developing what he calls 'practical metaphysics'. For Latour, to talk about metaphysics, or ontology, means paying close empirical attention to the various, contradictory institutions and ideas that bring people together and inspire them to act. He describes metaphysics:

> *If we call metaphysics the discipline . . . that purports to define the basic structure of the world, then empirical metaphysics is what the controversies over agencies lead to since they ceaselessly populate the world with new drives and, as ceaselessly, contest the existence of others. The question then becomes how to explore the actors' own metaphysics.* (Latour, 2010, p. 30)

Latour advocates for a return to empiricism, in which scholars' main task is to "deploy actors as networks of mediations," and to describe how these multiple, complex associations of actors create a collective. The duties of ANT are to no longer limit actors to the role of informers, but to grant them back the ability to make their own theories of what the social is made up of. He argues that researchers must give up the hope of fitting their actors into a structure or framework and instead follow the actors' own way by tracing the controversies left behind in their activity. Comparably, while the science of the social theorists would argue "Surely we need to start somewhere. So let's start by defining society as being made up with X", a social theorist of associations would argue "Let the actors do the job for us. Do not define for them what makes the social up" (Latour, 2010, p. 36). Reopening the questions that sociology of the social have foreclosed, Latour suggests for us to build upon and examine five uncertainties. Using a cartographic explanation, we are warned that traveling with ANT is explained as being rather slow where the journey that will re-define the social will be interrupted, interfered with, and dislocated by those uncertainties.

3.2.1 The uncertainties

I should mention that I have taken the freedom to re-arrange the order of the five different uncertainties as presented in Re-Assembling the Social. This is done in an attempt to make them as applicable to design as possible. So let us start with the uncertainty that perhaps makes the most sense to design.

Objects Too Have Agency

Through this uncertainty, Latour proposes, in contrast with what sociologists of the social have presented, that society does not function independent of objects. Comparing objects to how sex in the Victorian era was rendered invisible, so are objects in sociological terms nowhere to be seen, doing most of the work, but never represented as such. Rather, objects as well as social relations, are intertwined. Removing objects means that we would have to believe that the social holds itself together only through social forces. As pointed out by Latour, the problem with such an understanding is that this renders action as something foreign, alien, and magic. To bring objects back and to generate less alien accounts for action, ANT proposes that "any-thing that does modify a state of affairs by making a difference is an actor" (p. 71). Latour gives us a range of examples of verbs and objects that designate action, to mention just a few; kettles 'boil' water, soap 'takes' the dirt away, rails 'keep' kids from falling. To further define and find actors, he proposes that we use the question: *Does it make a difference in the course of some other agent's action or not?* (Latour, 2010, p. 71). And, as in most cases the answer is yes, we have an actor. Actants denote human and nonhuman actors that in a network take their specific shape by virtue of their relation with one and another in the network. Actants are more precisely participants in the course of action, and because an action collects different forces, they are collective. But even if this is the case, Latour explains that there is a major drawback with objects - they are so silent compared to humans. In accordance, they are much more difficult to account for than human actors, and hence

they quickly shift from being fluid and open mediators to becoming blackboxed, static objects. To make them talk, one of Latour suggested solutions is to invent descriptions of what they do (such an example of description is 'scripts'), or to study them in situations and contexts where the objects tend to be more fluid and visible, such as:
1) In innovation processes like artisans or engineers design studios. Here the object tends to be more mixed together with more traditional social agencies.
2) At a distance such as in archaeology (time distance) or ethnography (space distance).
3) In breakdowns/accidents and strikes. Here silent and forgotten intermediaries become vivid mediators.
4) By bringing them visible through historic accounts like archives, documents, and museum collections.
5) And finally, make experiments to turn the solid objects back into mediators. Latour encourages us to learn from artists or resources to fiction, and use counter historic facts!

Objects have been excluded not because of lack of data, but rather of will. For Latour it does not make sense that the courses of action entangled by millions of participants would only enter social ties through the Marxian types of 'material infrastructure' that regulate social relations, or as a 'mirror' or 'reflections' of social distinctions as critical sociologist Pierre Bourdieu claims, or as a backdrop for the stage on which human social actors play the main roles as Erving Goffman's interactionist accounts describe. None of these accounts is enough to describe the many entanglements that make up the human and nonhuman collective. According to Latour, the remaining

problems are matters of empirical research. For designers, objects are of course not necessarily 'studied' at such, but are visible as well as more fluid in the sense of working with them at hand in the studio and workshops. In the wood workshop, objects and materials are always mediators. However, as Latour says, once built and assembled they rarely utter a word. And herein lies the challenge, not only for sociologists, but also for design, to experiment with ways to overcome the static object that has left the fluid state of the studio.

No Group, Only Group Formations

As explained by Latour, many sociological enquiries start by defining what group and level of analysis to focus on. Sociologists settle on privileged groups even if it is clear that there are lots of contradictory group formations. Instead of imposing some order beforehand, the first uncertainty suggests that there is no starting point, no relevant group that can be said to make up the social. Taking an example from a newspaper, Latour shows us that with every second line, a group is being made and un-made (2010, p. 37), from anthropologists declaring that there is no 'ethnic' difference between Rwanda's *Hutus* and *Tutsis* - to how a CEO airs his worry of how the big company merger still has not managed to integrate the different departments of the two companies proper.

The point is, whether one group or another, an on-going process made up of uncertain, fragile, and ever-shifting ties can be traced through those newspaper articles. For the sociology of associations there exists no society to begin with, and no pots of glue that holds

them together, because groups are constantly made and re-made. Developing the approach to work in practice, Latour encourages us to follow the traces left behind the actors, to follow and map the controversies around the different group formations. That way, we lose the fixed and predefined list of groups that supposedly make up the social, and we regain groupings where the social ties constantly need to be refreshed to not vanish. We need to do this, because we cannot claim to know things in advance. We cannot know if mussels will attach themselves to a fishermen's net, or whether the new cycle route through the city centre will be cycled upon. Related to design, one of the first challenges that comes to mind is definitions of 'users'. If groups are not predefined, fixed and clear groups, but constantly made and re-made, how do we then find and define the user? Who are the users in the LevVel project that we ought to design health technologies for if there is no predefined group (of seniors)?

To further attribute the differences between the two schools, he introduces us to two different means to produce the social as taken as *intermediaries* or as *mediators*. Intermediaries might be technically complex but in many ways count as one (Latour gives us the computer as a typical intermediary that is technically complex, but black-boxed). Intermediaries are what transport meaning or force without transformation. Mediators, on the other hand, can never count as one and might be as banal as a conversation. Compared to a computer, a conversation might have a complex chain of events that branches out in opinions, passion, and different attitudes. Mediators transform, distort, and translate and modify meanings attributed to its role. Its input can never be calculated in its output. Hence,

a computer can transform into a mediator if it breaks down, since this might distort and modify its attributed role and turn into a very complex chain of events. Sociologists of the social believe in one type of social aggregate, many intermediaries, but few mediators. The sociologists of association believe that there is no preferable type of social aggregate and a set of endless mediators that rarely transform to intermediaries. There exists constant uncertainty over whether entities as intermediaries or mediators are the source of all uncertainties. To understand this as a good ANT account, the concept of actors are allowed to be stronger than that of the analyst. For design, we might consider this as a challenge of a practice in the making, where the account and experiment is to allow actants to be stronger than the designer.

Action Is Overtaken

This uncertainty describes action as a uncertainty because "action is not done under the full control of consciousness; action should rather be felt as a node, a knot, and a conglomerate of many surprising sets of agencies that have to be slowly disentangled" (Latour, 2010, p. 54). Courses of action are always something you carry out with others and include a vast set of surprising agencies. In any course of action, a great variety of agents enter. An actor is made to act by many others, similar to how an actor on stage is never alone acting but exists with lighting, props, and stage crew. Latour gives us an example of how puppeteers say that they are never fully in control of the puppets they are making act through strings; the puppets "do things they will have never thought possible by themselves" (2010, p. 60). When

something is manipulating something else it can be an occasion for other things to start acting. To shift from a certainty about action to an uncertainty about action we should not ask who is asking but rather ask "what is acting and how" (2010, p. 60).

From an ANT perspective, puppets, fungi to humans all have agency beyond the human intention. The environmental agencies, for example, fungi include among many others, wind flows, humidity, tree bark, and decaying wood, all of which are mediators for the behaviour of the mushrooms. Although we might not always be sure what is making us act, agencies always account for a doing by making a difference and transforming. Revisiting the notion of intermediaries, nothing will be present in the effect that has not been in the cause. But in an ANT account, action cannot be predicted in such a scientific way. As mediators, a lot of new and unpredictable situations will happen. "Action should remain a surprise, a mediation, an event" (2010, p. 45). Because the social is not yet made, it cannot be predefined and explained by some alien social forces, but has to be manifested in the traces, the "hesitations actors themselves feel about the 'drives' that make them act" (2010, p. 47). In other words, an ANT approach makes it clear that designed products have agency beyond the intention of the designer, and its use (behaviour) will be affected and transformed by all kinds of different human and nonhuman agencies.

Matters of Fact vs. Matters of Concern

Latour describes how he and his ANT colleagues began to use the expression 'construction of facts'. The word construction was to them

a vivid and exciting word referring to how artistic practices such as making film, art work, cooking, architectural items and engineered items, connect humans and nonhumans. "(T)o say that science, too, was constructed gave the same thrill as with all the other 'makings of': we went back stage; we learned about the skills of practitioners; we saw innovations come into being; we felt how risky it was; and we witnessed the puzzling merger of human activities and non-human entities" (2010, p. 90). Awkwardly he says, the same word construction is used very differently among his colleagues. To them, construction seems to mean that something is not true. "They seemed to operate with the strange idea that you had to submit to this rather unlikely choice: either something was real and not constructed, or it was constructed and artificial, contrived and invented, made up and false" (2010, p. 90). Simply, facts are fact, because they are fabricated and artificial. Latour continues by saying "We were prepared to answer the more interesting question: Is a given fact of science well or badly constructed? But certainly not to sway under this most absurd alternative: 'Choose! Either a fact is real or it's fabricated!'" (2010, p. 91) The choice given is, either something is real and not constructed, or it is constructed and artificial, contrived and invented, made up and false.

To make up with such truths that have occupied western thought Latour suggests, as mentioned, not matters of fact - but matters of concern. We are reminded that "fishermen, oceanographers, satellites, and scallop might have some relations with one another, relations of such a sort that they make others do unexpected things" (2010, p. 107) and there is nothing in this description that can be

explained as *social* or as *non-social.* We might not yet know how these different actors are connected but the "(s)ocial is *nowhere* in particular as a thing among other things but may circulate everywhere as a movement connecting non-social things" (2010, p. 107). The actors are, or might be, associated in such a way that they make others do things. Without the nets, the scallops would not attach themselves to it and the fishermen would not go to collect them and oceanographers would not study them. This is what Latour refers to as the 'translations' that explain the transformation manifested by unexpected events where mediators come to follow each other. Translation in ANT, does not mean a relation that transports causality, but rather brings two mediators into coexistence, a transformation, a movement, a displacement happens. It is the connection that both transports and transforms (or translates!), which takes us back to the oldest etymology of the word *socious* meaning 'someone following someone else', a 'follower' or an 'associate' (2010, p. 108). In relation, we are asked to be open and not claim one matter of fact as an elementary building block of the world, as singular. But instead take part in the world as constantly moving, made up of controversial transformations of matters of concern. So how can we consider these 'new' matters that are uncertain, constantly in the making and entangled in each other? To deploy them we are encouraged to follow a list of how to feed off the uncertainties by 1) following the fabrication of facts in laboratories and research institutes, 2) following these fabrications out of labs into other settings 3), paying attention to experiments and the controversies they generate (such as e.g. stem cells or wind-farms), and 4) paying attention to public controversies over 'natural things' (such as e.g. global warming).

While those scientific facts used to be made in the laboratories, it has now extended itself so much that it includes daily life and ordinary concerns, which in extension then means to concern matters of design.

Writing Down Risky Accounts

The final source of uncertainty describes how to write an account that could live up to the prospects of the sociology of associations. Keeping in mind that there are so many questions, like, whom to follow and choose, as well as for how long. Writing up an ANT account by considering all uncertainties is a slow process. So what does Latour mean by accounts?

Accounts, in relations to social science, are typically made up of text. For a social scientist such accounts are equal to the laboratory in natural science. Hence, like a good experiment in the lab, a good sociological account needs to be well written and done. One must put forth the following question: "Can the materiality of a report on paper (…) extend the exploration of the social connections a little bit further? Because, "(i)f the social is a trace, then it can be retraced; if it's an assembly then it can be reassembled" (2010, p. 124).
Hence, a good ANT account treats each participant traced in a network as a full blown actor that does something. Furthermore, one of the difficulties we will encounter is that people easily appear as matter of fact and have to be treated with much more care because many of their objectives are hard to register. This is the main reason why writing up good accounts is of much more importance for the

social than for the natural scientist. In a bad ANT account only a few actors will be registered as the causes of all others. It equals transporting an already composed social force without re-opening and describing what it is actually made out of. Instead the proportion of mediators to intermediaries has increased through the text. This is what Latour refers to as a risky account, because such texts can easily fail, just as an experiment in the lab will. That way questions are raised not only by scholars, but also those whom they study. No one knows the answer, "it means that a new negotiation begins to decide what the ingredients of one common world might be made—or not" (2010, p. 135). It is not easy being a sociologist of associations. It is, in fact more like being an actual ant, hardworking, slow, detailed, and above all, it is uncertain! A risky account is the possibility of helping assemble part of the collective, to give it a space and representation through text. I will come back to what this implies within creative practices such as architecture and design through Yaneva's examples, but before that let us stay with Latour's suggestions for a tiny bit longer.

3.2.2 Flattening the Social

We now start to see that while a sociology of the social roughly would claim to know what the social world is made of, a sociologist of associations position should always begin by *not* knowing what it's made of. And there is nothing more difficult to grasp than social ties, simply because they are traceable only when they are being modified. Following Latour, sociology should be able to 1) deploy the full range of controversies and trace the associations, 2) be able to show

through which means those controversies are settled and how such settlements are kept up, and 3) define the right procedures for the composition of the collective by rendering itself interesting to those who have been the object of study. We need to move away from always researching context and structure and instead concentrate on the local, or to what Latour refers as the 'flattening' of the social. In order to do this, it's first necessary to remove any connotations of the global because the 'global' implies a hierarchy embedded in other ism's like e.g. capitalism. When looking at, for example, objects, sociologists of the social have often traced the local, then situated the local in a broader context. Alternatively they have attempted to trace the broader context (structuralist) and found instances of the local to reify the structure. Latour's solution to this problem is to flatten the social, to render it without depth. In removing the global, the analyst is able to simply trace the connections instead of jumping from local instances to larger global contexts. Those connectors will move us beyond context; this flattens the landscape. If we begin to trace the connections from one site, such as the Wall Street Trading Room instead of capitalism, we get a landscape of where things really happen. This local view, (what Latour calls oligopticon), means that we get away from the global views (what Latour calls panorama). All of the connectors, all of the mediators, all of the non-social things (law, politics, religion, economics, and art) play a role in the composition of the actor-network.

To briefly sum up, the alternative Latour proposes, is that the social comes into being when the ties in which one is entangled begin to unravel, as well as through movement of associations

between actors. Those associations should never be pre-assumed. By eschewing social determinism and technological determinism Latour opens a space for a renewed engagement with material objects as actants within our social networks. What is no longer the case is the impossibility to connect an actant to what made it act without 'dominating', 'limiting', or 'enslaving' it. Because the more attachments it has, the more it exists. And the more mediators there are, the better. An actor-network is what is made to act by a large star-shaped web of mediators flowing in and out of it. It is made to exist by its many ties: attachments are first, actants are second. By tracing human and nonhuman actants, this tracking may end up in a shared definition of a common world of what Latour refers to as a collective, rather than society, "Sociology is best defined as the discipline where participants explicitly engage in the reassembling of the collective" (p. 217). After this flattening of the landscape, the outside itself should change a lot, with the implication that there is no longer a great divide of society and nature. Those uncertainties are building blocks that make up a sociology of associations.

Through ANT we start to see how the social holds itself together through objects as well as social relations; they are intertwined and collectives come together through controversial transformations of matters of concern. Accordingly, to describe the social can be done through following the manifested traces and describing them through 'risky textual accounts' that similar to a science experiment always can fail. It fails, if it does not assemble and represent a collective. This way, the ingredients and building blocks of our world can start to be allowed to be negotiated. This provides a platform for understanding

our world, and how it is assembled through constant movements and transformations. To continue, and to better make sense of ANT and design, I will give you an example of a risky account through using Yaneva's case study that depicts how architects involve themselves in a kind of dialogue with materials and shapes. This case is obviously chosen because of the architect's close resemblance to design practice.

3.2.3 Being an ANT Among Buildings

Yaneva travels well with ANT. She makes architects' building models 'talk' by giving them descriptions of their actions. She studies them in an innovation studio. She helps turn them into mediators. She does all this in a case study around the 'Whitney Project' in Rem Koolhaus' architecture office in 'Scaling Up and Down: Extraction Trials in Architectural Design' (Yaneva, 2005). The description shows the everyday practices of how designers and architects construct in the studio - as well as how their practices are constructed in and through their studios. Rather than following how facts are made, Yaneva shows us how constructions are made by following the fabrication of constructing a building in the studio. Through detailed descriptions she shows us how actors are associated in such ways that they make others do things. On her ANT- journey, in the written account, the models shift from intermediaries to become mediators by rendering them visible through describing their agency of scaling up and down. Yaneva studies the architectural studio in the same way that STS-scholars have approached the laboratory. She exposes the materialization and developing appearance of the actual building by

asking, "How do architects imagine, see and define a distant object that is meant to become a building? How does it become knowable, real?"

To attempt to answer these questions she follows architects' discussions and material operations as they work on the construction of the building. As architects fabricate and transit between small- and large-scale models, the building emerges and becomes visible, material and real, what Yaneva describe as 'scalings'. Hence, the paper does not imagine what the architectural practice is, and what their studio is made of; instead it depicts the concrete manipulations of materials along with discussions and actions of the architects. Negotiating the possibilities of the building starts off with a set of (negative) constraints and moves on to a listing of what the building needs to accommodate. In Koolhaus' architectural studio, two different models are used - one larger and more detailed and precise, the second smaller and more fuzzy and abstract. By gathering around the huge scale model, architects discuss and repeatedly rearrange the interiors making the two different models become an object of collective experience. By adding and repeatedly changing it with the help of scissors, paper, foam, and other instruments, the models transform into more defined compositions involving a wide selection of different actants at the same time. Through the material rearrangements in the models, an architect can share and make his view visible for others. The task of building the space, of the positioning of for example the escalator is communicated through a visual language, rather than a verbal one. By jumping between the two scale models, the architects scale up and down - where every

Image: Scale models of the extension of the Whitney Museum of American Art in the studio of Rem Koolhaas. *Courtesy of Albena Yaneva*

scale shift reduces uncertainty about the future building. In this circuit, the two settings are crystalized in a 'less-known' and 'well-known', 'abstract' and 'concrete' with no clear distinctions between the real and virtual. This scaling continues until the building has reached a certain level and the building is stabilized. But at different times certain models start to work on their own. Thus, even if the scaling process ends in stabilization, it does not do so through jumping from different scales to one great detailed, finished, and realistic model. Instead, the Whitney Building is rather a diverse concentration of models with intensities of detail of variations that are stabilized in the office through time. The myriad of presentational states generated, each new model, form a network that is presenting different vantage points on the same building. She says; "*This* is the Whitney Building: the building is ubiquitous in the scaling operations, and is not specifically located in any of them" (2005, p. 35). Hence, Yaneva shows us that the final product of architectural design is neither the building nor the model in scale, but in the scaling trials that bring the building to existence. One never sees a building as a whole.

Yaneva's case is interesting in terms of helping us to understand and study the shift towards the 'doing' of design, rather than the more discursive question of what some-*thing* means, which in extension is a clear pointer to one of the overarching ANT research agendas:

instead of investigating the influence of external factors (whether economic, cultural, political) of design, the idea is to describe the (design) process itself. It exemplifies ways of representing that accounts for how new artefacts (buildings in Yaneva's case) are weaving together networks of activity involving both humans and nonhumans. Architecture and design is through her account understood as a distributed process of drawing together and stabilising otherwise fluid objects, systems, and interactions among many different actors. Furthermore it also points to a curious concern from the architect's perspective to experiment with ways of how to keep the object (the building) as a mediator - rather than a blackbox. The building is never represented as one, never exhibited as a whole, but rather presented through different vantage points that makes it exist in the movement and rhythms of scaling between the many models on the table.

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But there is something we need to unfold a bit more. Yaneva proposes that the models "serve as 'social glue' among architects, experts, clients and publics, and organizes the design process in the office and in networks of outside consultants and experts" (2005, p.872). In her account, it is very clear that they do this between the architects, but a bit unclear how exactly they do this in relation to gathering experts, clients, and publics. Hence, our next move is to dive further into questions of how models and different materials take the role of performing as social glue, and more precisely as *things*.

3.2.4 Difference Between Object and Things (in design)

When Latour encourages us to think of *things* rather than design artefacts, Telier (et al. 2011) proposes to us a specific way of doing this in the book Design Things. Drawing on Latour and Heidegger, they also point to the problem of how objects often seem to be reducing entities to a predefined scope. However, they are not entirely happy with this understanding. Instead they suggest *things*, from an architectural perspective, are firstly something we encounter in the design process, in the making of a villa. Secondly, *things* are the outcome of the design process where it becomes a public *thing*. Taking the example of the design of a villa, they point out how different constituents, such as small 3D models, colours, and drawings form part of designing the object (the villa). This seems rather similar to Yaneva's notion of scalings and the function of social glue in the different architectural models. However, the difference can be found in how constituents are not only focused on how architects stabilize and construct future buildings among themselves, but how constituents connect beyond the studio, and include 'outsiders' like clients. Constituents are the material parts of the design project that allow people to interact and discuss the object to come as well as its features. The constituents, they argue, are the primary source of knowledge about how and why the building took its form. They contribute to social interactions, and are both made up along the way by, for example, making fast sketches when discussing the floor plan with the customers as well as by importing samples from the outside.

Each one of them offers a partial view of the object together with a set of possibilities for action. In extension, their valuable point is that the object is not the outcome of design, because the object does not need to exist; the villa can exist among the diverse constituents. In other words, there are objects (like the villa) that exists before it has been erected and embodied. However, there is also a transformation that takes place when the architects hand over and are detached from their experience with the villa. For the architects, *things*, are the experience of what they are immersed in through the design process, when they deal with that which does not yet exist. However, when the customers receive their finished villa they also receive a *thing*, but as their own and different experience of the object. Hence, *things* are, according to Telier et al., connected to the social interactions and not different types of materials. And the question for them is to consider how to gather around design *things* - where *things* are matters of concern insofar as they are able to offer people new possibilities and experiences.

3.3 Risky Accounts, Design and Beyond

Following Yaneva, an ANT approach to design consists of investigating the culture and the practices of designers rather than the theories and their ideologies, i.e. following what designers and users do in their daily and routine actions. But there are also some limits to ANT when it comes to thinking about creative practices like design, art, and architecture. As constructive design researchers, our roles

are dual. On one side, ANT gives us the challenge to "capture the movements of artefacts and designers" (Yaneva, 2009) in a textual account, but at the same time what we 'capture' and describe is often our own constructive design research practice. In principle, as Law (2009) pointed out, ANT tells stories about how relations assemble or don't. In a way, it can be understood as a toolkit for telling interesting stories about relations. Even if ANT recognizes agency to also belong to non-humans (as well, shown for example, in Callon's classic discussion of scallop fishing or through Yaneva's example of the architecture studio), it has also been critiqued because many analyses tend to downplay any agency that nonhumans might contribute with in the network (Miettinen 1998), because, as Latour also has warned us, one major drawback with objects is their silence compared to humans. Humans appear to have richer repertoires of strategies and interests than nonhumans, and so tend to make more fruitful subjects of study. More significant differences, however, seem to go back to the imaginary nature of design. Designers are expected to imagine new things, not to study what exists today, because, unlike the social sciences, the project of design is not just doing serial re-description, but actively making and constituting new realities. Winograd and Flores (1986) use Heidegger to describe designing as ontological: design as proposing new ways of being in the world as a way to think beyond both the omnipotent designer and the obsession with products and objects. So what happens, when we stand with the messy materials and constituents at hand - when the outcome of an ANT approach is not 'only' made of a textual risky account?

3.3.1 The Challenge of Collective Agency

To move on to less descriptive accounts, and instead to practice and the 'doings' of design, Pelle Ehn reflects on the concept of *things* and the idea of *design things* in relation to PD practices. He likens *design things* to a town hall meeting (Koskinen et al. 2011, p.125), where people gather around to decide collectively and debate futures for communities. Instead of using sophisticated systematic methods, Ehn suggests that designers get better results by using rough materials like cardboard, foam, and clay, since this brings people to the same table and creates a language everyone can share. In participatory design activities such as workshops, rough materials are used such as a 'Ticket-to-Talk' (Sokoler, 2007) for opening up conversations with strangers or acquaintances. This is further described in relation to the PD project 'Senior:Interaction' (Malmborg et al. 2010), in which the aim of the project is to design new service concepts to strengthen social interaction among seniors. To encourage all stakeholders and senior citizens to gather and discuss what those future services might be as well as to share experiences, they are asked to create and record a 'doll-scenario'. Provided to the workshop to enact the future scenarios are a "number of dolls, and materials for customizing these, a stage consisting of three sets, some pictures to glue to the three sets, and a video camera for each group" (2010, p. 3). Through the scenarios, different 'design' materials are used to facilitate and encourage dialogues that move towards

Image: A drawing depicting some seniors making a doll-scenario.

creating concepts for what social interaction technologies may facilitate. This can further be exemplified through a range of co-design methods by using and developing tools such as *probes* (Mattelmäki, 2006) or *design games* (Brandt, 2006) to include the participants to experiment and explore a new range of possibilities by creating common tangible outputs.

Participatory design has a strong political agenda with a foundation in workplace democracy. The reason for engaging potential users within participatory design is not only to make better products and systems, but also to take ethical and social implications of a new design into consideration. Often dialogue is valued as one of the most important tools for engaging (or to intervene cautiously) in that which is to come. The doll-scenarios and design games, can serve as an excellent example of *design things* as town hall meetings. But I would also like to further relate it to how Callon (2004) in his discussion around PD suggests that in constructing new types of collective life and in conceiving new technologies, we must avoid constantly disentangling humans and nonhumans. When Callon prompts us not to reduce the collective to human individuals, it is because participatory processes spontaneously consider only the participation of human actors and the information available to them, but to him, the challenge is now how to position the hybrid collective in the centre. This might at first seem to be the opposite of such participatory processes, since the dogma of PD is, as described by Brandt (2006), to involve people. But when Callon suggests for us to place the hybrid collective at the centre it is because technologies and artefacts cannot be considered as servants "as pure associations of human beings who communicate

one to each other" (2004, p. 9). Instead he argues that we should consider them as partners and revise our conception of human beings themselves.

Through an array of examples, Callon describes that action is collective. He gives us examples from how an innovation project about electric vehicles allows a collective to come into being from a set of different stakeholders and antagonistic groups - to describing how SMS text messages contribute to the emergence of new identities and social groups – to show how ploughshares distribute an invisible co-presence by binding together the ploughman with all those who designed, distributed, and maintained it. Ploughing a field he says, is not a private action, but accomplished by thousands of human and nonhuman entities. Each entity is a source of action in its own right. In other words, Callon describes how human agency is shaped by the socio-technical arrangement around him/her. And by changing this arrangement or collective, you also change agency. Hence, artefacts and information technologies give rise to new and diversified human agencies. Accordingly, Callon hopes for a future of innovation in which information technologies and artefacts aim to diversify human agencies (2004, p. 8). To do this, he encourages the participatory design community to explore collective agency by 1) not assuming that modes of action are peculiar to human beings, 2) and to not only respond to demands or to satisfy human needs, and 3) not to treat artefacts sonly as servants. Hence, to conceive new technologies, new goods, and new services, is not just a question of satisfying needs or demands expressed by well-identified human beings. It is also about shaping new forms of human agencies and

consequently constructing new types of collective life. It is about finding ways of engaging and enacting worlds, of making room for the re-enchantment of reality (Bennett, 2001). Easy to say, of course, but so much harder to do, to enact, and to make real.

3.3.2 Material Matters

In relation to considering how to approach diversified agency, Karen Barad questions how language has come to be more trustworthy than matter to shape our understanding of the world in the paper 'Posthumanist Performativity: Toward an Understanding of How Matter Comes to Matter' (Barad, 2003).

> *Language has been granted too much power. The linguistic turn, the semiotic turn, the interpretative turn, the cultural turn: it seems that at every turn lately every "thing"—even materiality—is turned into a matter of language.* (2003, p. 801)

She continues to ask why language is granted its own "agency and historicity while matter is figured as passive and immutable, or at best inherits a potential for change derivatively from language (…)?" (2003, p. 801) and reminds us how Nietzsche already during the nineteenth century warned against allowing linguistic structure to determine our understanding of the world. For Barad, material conditions matter not because they support language, but rather through playing an actual part in the formation of the world in its becoming. Barad argues that to think of discourse as "mere spoken or written words forming

descriptive statements is to enact the mistake of representationalist thinking" (2003, p. 146). Discourse, she argues, is not what *is* said but what enables or constrains what *can be* said. Her proposal to challenge this belief in the power of words is to take a performative understanding. "Performativity, properly construed, is not an invitation to turn everything (including material bodies) into words; on the contrary, performativity is precisely a contestation of the excessive power granted to language to determine what is real" (2003, p. 802). Her version of performativity has more to do with 'agency' as departed from the linguistic as speech acts – in the general sense as doing something. Barad's work has much in common with the insights of figures familiar to scholars such as Bruno Latour, Donna Haraway, and Jane Bennett. Like them, Barad is interested in understanding the complex interrelation between humans and nonhumans, all of whom she believes have agency. Rather than to speak of interaction, that denotes in-between, she suggests that we consider intra-actions in recognition of understanding the complex interrelation between humans and nonhumans. In her performative account, agency is "a matter of intra-acting; it is an enactment, not something that someone or some thing has" (2012, p. 77). Entities become linked through intra-actions, a term she uses to indicate the mutual constitution that occurs simultaneously with their joint activity.

3.3.3 Making and Enacting Worlds

In John Law and John Urry's 'Enacting the Social' (2004) they ask us what the power of social science and its methods are. Their argument is that social inquiry and its methods are not means of uncovering,

but of enacting - because they in fact make social realities and the social worlds. They enact through describing the world, and through the description - they participate in, reflect upon, and enact the social. In sum, social enquires are argued to be performative because they make differences and have effects. Their rather important hypothesis is that if social investigation makes worlds, "then it can, in some measure, think about the worlds it wants to help to make (…). The issue is not simply how what is out there can be uncovered and brought to light, though this remains an important issue. It is also about what might be made in the relations of investigation, what might be brought into being. And indeed, it is about what should be brought into being" (2004, p. 5).

The implication to think of sociology as an enactment, that methods get involved in world making, is in other words the act of engaging in ontological politics. This claim has certain interesting consequences: If methods help to make the realities they describe, there are no longer different perspectives on a single reality, but instead the enactment of different *realities* - a shift that moves us from a single world to the idea that the world is multiply produced in diverse and contested social and material relations. Following Law and Urry, the social science is both real and it is produced. Rather than a 'universe', social science helps to produce a 'pluriverse' where the world is produced in diverse and contested social and material relations. This ultimately leads them to ask the questions: "Which realities? Which do we want to help to make more real, and which less real? How do we want to interfere (because interfere we will, one way or another)?"(2004, p.11)

> *There is nowhere to hide beyond the performativity of the webs. But since our own stories weave further webs, it is never the case that they simply describe. They too enact realities and versions of the better and the worse, the right and the wrong, the appealing and the unappealing. There is no innocence. The good is being done as well as the epistemological and the ontological.* (Law, 2011, p. 154)

In this view, where epistemology collapses into ontology, the social sciences are rather practical and performative activities that make worlds by interfering and adding new elements with new capabilities and new relationships. Knowing (and thinking about knowing) are turned into particular styles and methods for connecting and cooperating with specific actors (human and otherwise) - thus shaping reality. In a world where everything is performative, there is no political neutral position that is merely descriptive, with the consequence that distinctions between description and concrete intervention are blurred, since one cannot but intervene. And as argued by Danholt (2005), "When not subscribing to a sharp distinction between description and intervention, the repertoire of what constitutes intervention and thus potential contributions is considerably broadened (2005, p. 73). Following Law and Urry, there is still work to be done on how to engage ontological politics, or how, by what methods, we ethically enact the world. They end by calling out, *give us examples of how to help shape new realities*, to provide tools for understanding and practicing the complex and the elusive.

3.3.4 The Complex and Elusive; Speculation & Enchantment

One way to think through the complex and elusive could be through speculation. However, to use speculation and to talk about enchantment in relation to ANT is risky business - there are probably few things farther from, and perhaps even contrary to, the actualistic empiricist spirit of ANT, because ANT is based on a conception of the world and the real that only recognizes the existence of concrete entities, and actual actors; and there is no room for potentialities.

Ignacio Farıas (2014) argues that ANT battles a slightly asymmetric understanding of the social, since it in fact denies the virtual. Unlike the possible, which is static and already constituted, the virtual is the cluster of tendencies or forces that accompanies a situation, event, object, or entity, and invokes a process of resolution: actualization (Lévy, 1998, p. 24). This is key in the discussion of potentiality as taken up by Deleuze - the virtual is the presently unrealized potentialities. The virtual offers a 'beyond' actual state of affairs from that which is *not given* and that which *might have been given,* towards that which is *not already known* or even *imagined* (through Whitehead as explained in Fraser, 2010). Given the strong effort to develop a sociology that takes objects into account, Farıas admits that it is perhaps understandable that any reference to the virtual or to forces, processes, and potentialities that are at first sight intangible, or immaterial, only provokes scepticism and bewilderment among scholars of ANT. Indeed, understood as concrete and irreducible individuals, actants cannot be explained by reference to external

powerful actors, or virtual forces, but only through the networks that make them what they are. In a similar matter, Fraser tells us "Latours examples point to a curious emphasis on what is already present in the world, on what can be known, and what can be found, and on what is already able to be imagined" (2010, p. 71).

In a somewhat similar manner, Jane Bennett, whose philosophical project attempts "to think slowly about an idea that runs fast through a modern head, the idea of matter as passive stuff" (2010, p. xii) and theorizes a vital materiality of enchantment. This is a theory designed to open democracy to the voices of excluded humans, or more attentive encounters between 'people-materialities' and 'thing-materialities'. According to Bennett, this might spur the cultivation of more responsible, ecologically sound politics. Through Latour, she explains the agential powers of objects by referring to how many hoarders repeatedly say *the things took over*. From a psychotherapeutical perspective those people are described as ill. To Bennett, those are people who might have a certain (better?) susceptibility to the enchantment of *things*. The hoarders, with all their stuff, show that humans are *not* the mastery of agency. When *things* take over, nonhumans slip through and show us power to startle and provoke a gestalt shift in perception (2011, 27 December). She argues that perception is bias to instrumentally rather than vibrancy. Such instrumentally is to Bennett an example of a narrative of disenchantment. Her idea is that the characterization of the world as disenchanted may "discourage affective attachment to the world" (2001, p. 3). Hence, her counter-story is to call attention to the way the world is, or can be experienced as enchanted, and suggests that

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experiencing such 'enchantment' might make one more open to the appreciation and concern for others (including nonhuman others). Enchantment is a sense of openness towards the unusual, the captivating, and sometimes also disturbing part of life. She is trying to show how it is still possible to experience a sense of wonder. The mood she is calling enchantment involves: "a meeting with something that you did not expect and are not fully prepared to engage; a feeling of being charmed by the novel and as yet unprocessed encounter and a more unheimlich (uncanny) feeling of being disrupted or torn out of one's default sensory-psychic-intellectual disposition". Bennett consciously seeks to extend the realm of agency and to challenge the anthropocentric position that regards the human being as the central fact of the universe. This may sound overly idealistic and romantic, but is how Latour discusses how to become affected, where the body is an interface theorized as "leav[ing] a dynamic trajectory by which we learn to register and become sensitive to what the world is made of" (2004, p. 206).

So, while ANT might help us to give richer stories of risky accounts, it also seems to fall a bit short of understanding design as a way to open up unforeseen possibilities and potentialities. Potentiality, as Latour himself agrees on, is one of ANT's neglects (See discussion between Harman and Latour in Prince and the Wolf: Latour and Harman at the LSE, 2011).

3.3.5 When an ANT Meets a SPIDER; Improvisations

In a highly entertaining text, Tim Ingold allows an ANT and a SPIDER to meet deep in the woods (Ingold, 2008) In the struggleful discussion between the two, the spider insists that there is a major difference between the ANT's networky social colony where each 'act-ANT' appears as a particular node and his own web. The spider says that the lines she has laid down as a web are the lines along which she lives and conducts her perception and actions in the world. The lines of the spider's web do not connect points or join *things* up, rather they are extensions of the spider's very being as it trails into the environment. This web also makes her know when a fly has landed in the web because of the vibrations. "But the lines of my web do not connect me to the fly. Rather, they are already threaded before the fly arrives and set up through their material presence the conditions of entrapment under which such a connection can potentially be established". Thus, as argued by Ingold, the lines of the web "lay down the conditions of possibility for the spider to interact with the fly. But they are not themselves lines of interaction. If these lines are relations, then they are relations not between but along" (2008, p. 211). The spider's web is here rather figured as lines that condition possibilities, laying out grounds for potential interactions for the spider and the fly. Referring to Deleuze and Guattari, lines can accordingly be constituted not only by tracing connections within the network, but as what they sometimes call 'lines of becoming' (2008, p. 10), where practices unfold lines along which things continually come into being.

So what is Ingold actually arguing for? Well, he is concerned with

a tendency in the literature on art and material culture that read creativity 'backwards', starting from an outcome in the form of a novel object and tracing it back to the idea of an agent's idea (like an artist or designer). This Aristotelian idea has rendered form to be seen as imposed by an agent with a goal in mind, while matter has been rendered passive and inert. His aim is thereby to propose an ontology that assigns primacy to processes of *formation* away from final products locked into their final forms. Clearly, also for Ingold, there lies a major difference between form and *things*, and he insists that we *inhabit* the world compromised not by objects, but by *things*. The thing is a place where several goings on become entwined. Owing his argument to Deleuze and Guattari, their 'lines of becoming' do not necessary connect, but pass between points, and come up through the middle. This middle, what Deleuze and Guattari attribute as relations between material and forces are in Ingold's argument where a variable of properties is enlivened by the forces of Cosmos. It is where material of all sorts mix and meld with each other. In extension, Ingold argues that these relations of forces are missed in the notion of agency as seen from the ANT's perspective; it attributes vitality to objects that are already made, but misses that which is in the making, or what is becoming.

For Ingold, practitioners such as the cook and the painter (or for that sake, designer) are not necessarily in business to impose form on matter. Instead they are suggested as bringing together "diverse materials and combining or redirecting their flow in the anticipation of what might emerge" (2010, p. 94). Such formative processes are according to Ingold, 'improvisatory' and 'forwards', - they are lines

along which *things* continually come into being, as a 'going on', or where several goings on become entwined. This 'going on', is another way of saying 'gathering', or that the *things* are not objects, but formations. Thus, when he speaks of the entanglement of *things* he literally and precisely means, "not a network of connections but a meshwork of interwoven lines of growth and movement" (2010, p. 4). So rather than to *trace* he suggests that we understand making practices, or material experiments, such as cooking and painting to be understood as *improvisations*: "To improvise is to follow the ways of the world, as they unfold, rather than to connect up, in reverse, a series of points already traversed".

As we return to the conversation between the ANT and the SPIDER the web is not a dancing partner equal to the spider, but conditions for the spider's agency, upon where she can explore its properties of stickiness and stretch to act out, or interact with the world. Similarly, the potter and the clay are not equal partners. The clay is to the potter as air is to the butterfly, water to the fish, and the web to the spider. As such, it constitutes the ground for interaction, but is not an interactant. We will come back to Ingold and further define how lines of becoming connect to making, but before we do that I would like to continue by unfolding the event description.

3.4 Towards the Event

Let's keep the notion on improvisations with us, because this is where we can start to move towards the event. Already in the

70s, Berard Tschumi suggested strategies as a kind of 'event architecture' where he insisted that there is no architecture without events, without actions, or activity (1983). The purpose was to transcribe things normally removed from conventional architectural representation, such as complex relationships between spaces and their use. More recently, Brandt and Agger suggested 'co-design events' as a way to involve stakeholders to explore present practices and sketch new possible futures (Halse et al., 2010). As explained to us, the co-design events are in an innovation process that ties a whole process together. They are defined by the times stakeholders meet face to face and are aimed as a way to get beyond boundaries, to work *with* the clients and *not for* them. In each event important issues are raised between designers and different stakeholders, which then become the starting point for the preparation of the next event. Different formats of explorations, like field visits and workshops, and suitable materials assist the participants to create a shared language through the help of the physical materials.

From a less practice-based perspective, sociologist Mariam Fraser (2006) is looking at the event in the hands of Guattari, Stengers, and Deleuze. Fraser describes the event not just as something that happens but rather as a concept that "exits in relation to a specific set of problems, including the problem of how to conceive of modes of individuation that pertain not to being, or to the essences and representation, but to *becoming* and *effectivity"* (Fraser, 2010, p. 57). As the event is not only a *coming together*, but constituted by a *becoming together* - Fraser argues that questions related to representation are through an eventualisation replaced by questions

as to what scientific artefacts or works of art can do. That is "less by the types of solutions that are being proposed for the problems than by the way in which the positioning of the problem and the solutions proposed situate and involve those whom they address" (Stengers & Ralet 1997, cited in Fraser 2006). In other words, the event can be likened to Ingold's formations, where several goings on become entwined. However, they also suggest a difference, which through their entwindness become something else - they are transformed in the process of interaction. Fraser describes how this transformation for Stengers is a major aspect of the event since it constitutes the ability to invent new practices, and ways of encountering a problem.

The event, as a philosophical concept, is then used to a specific set of problems in relation to understanding processes of becoming. For Haraway, such processes are informed in an understanding of concepts of mutual articulation, what she calls "dance of encounters" (2007, p. 3). In her posthuman accounts she stresses the importance of getting beyond the human exceptionalism, to recognise that collectives consist of, what she has theorised and calls, companion species. Defined less as a "category than a pointer to an ongoing 'becoming with' (…)". For her, species is about the dance linking kin and kind - learning to be worldly by "grappling with, rather than generalising from, the ordinary" (2008, p. 3). Following Haraway, such attachments and engagements in the world are how cosmopolitical questions arise, when we *stay with trouble and avoid solution*, "when people respond to seriously different, felt, and known, finite thoughts and most cohabit well without a final peace". She continues to say, "If one knows that hunting is theologically right or wrong, or that

animals' rights positions are correct or incorrect, then there is no cosmopolitical engagement" (2008, p. 229). As mentioned, Stengers has designated Latour's Parliament of Things as cosmopolitics, where our concern is shifted from a concern with accurate representations of singular subjects and objects, to how to engage in affective relations that enable becoming and transformation to occur. For Stengers, the practical challenges in enlarging politics, "not only to things but maybe also to what would artfully enable us to gather around things (2005, p. 996), to perhaps 'artefactualize' issues as a way to enable us to think and to feel differently in the presence of the world. From Stenger's cosmopolitical perspective active participation has nothing to do with decisions that "put everyone into agreement" but rather designing a scene "of artfully taking a part in the staging of the issue" (2005, p. 966).

Elisabeth Stenger

3.4.1 Dissecting the Event Description

To draw up some important features of understanding the event:
1) At its most minimal, an event, (for Stenger), is the creator of a difference between before and an after; 2) It is not the event itself that is the bearer of signification. Instead, all those who are touched by an event define and are defined by it, whether they align with or oppose it; 3) The scope of the event is part of its effect, of the problem posed in the future it creates. It measures the object of multiple interpretations, but it can also be measured by the multiplicity of these interpretations: all those who, in one way or another, refer to it or invent a way of using it to construct their own position (Stenger 2000, as cited in Fraser, 2006, pp. 67-68). It signals that something

matters – that something has produced a variation or made a difference – without specifying what that something is or to whom or to what it will matter. The value of such a conception of the event derives from its capacity to generate the new. Simply put, entities come together, and in the coming together they become different, they become something else.

Listening to the above scholars, the identity of the event, in short, is defined not by any one of its (individual) components (such as the designers-users-artefacts), or even by the sum of its components (all of what the design process involves). It lies, rather, in the singular becoming-together of, a sort of co-production among properties intrinsic to the material and circumstances in use. Stressing this co-production or intertwinement of human and nonhuman actors is argued to challenge traditional epistemology (Jensen, 2010) because activities such as observing or representing are not seen as distinct from intervening or constructing; rather, they are viewed as specific ways of intervening and constructing. So when Latour says designers should not construct, but add - it is in relation to a broader debate around how disciplines can only add to the world and almost never subtract from it. "There is no primary quality; no scientist can be reductionist; disciplines can only add to the world and almost never subtract from it" (Latour, 2004, p. 226). In this way of thinking about what makes up the world (ontology) and how we can know it (epistemology), we are always, already, enmeshed in the world and will only be able to understand it from a situated and particular place where the question is *how* to add, or *how* to artfully participate in the staging of issues. Fraser phrases this in relation to how the event

"does not involve inventive problem-solving. It involves inventive problem-making" (2006, p. 132).

In concurrence, let's continue by doing a bit of dissection of the event description by dividing the key terminologies, *problem*, *inventiveness,* and *making* that makes up the event.

3.4.2 Problems & Issues

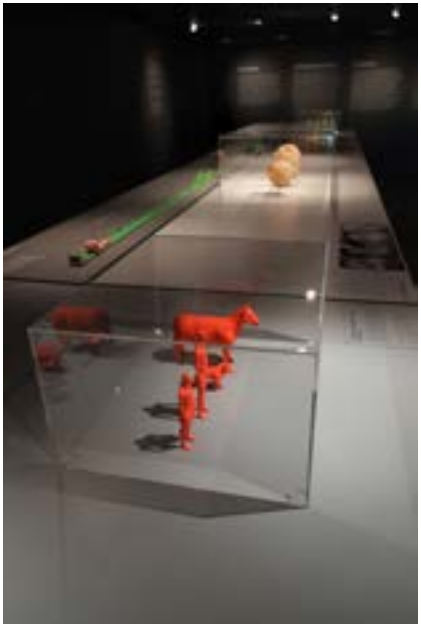
To assemble and to gather might be constituted through a place, a meeting, a council (Latour, 2005). But a concern, or an issue also constitutes it. In an American pragmatist tradition in 'The Public and Its Problems' (1927), John Dewey presents a public of bodies coalescing around a problem. Importantly, those bodies come together through the shared experience of issues. He makes it clear that a public does not pre-exist its particular problem but emerges in response to it. The public, a confederation of bodies, are temporary formations that constantly crystallize and dissolve around a problem. While Dewey actively used the term 'issue', it was interchangeable with the term 'problem', Noortje Marres suggest that we consider a more STS-driven appropriation of the terms. She suggests that the term issue is a better way to understand the problematic entanglements. While a problem is solvable, issues define a problematic entanglement without, or before, the problems have been actively articulated (2007, p. 767). Her main point is that there is a key, but often forgotten point, which is that issues spark publics into being. Not only is a public or group not pre-existing, it is emerging, it is multiple, and is organized around a particular issue. But the public

might also, as Jane Bennett suggest, neither be "the individual human nor an exclusively human collective but the (ontologically heterogeneous) 'public' coalescing around a problem" (2010, p. 108).

To enable a co-emergence of how to gather around matters of concern could be argued to be further articulated in Marres' notion of the 'issuefied' objects (2012). Marres argues that the issuefication of objects is where the capacity of the object is not so much to project a definite role onto human actors, but become charged or loaded with issues. Through an augmented teapot that provides information about environmental data associated through a real-time feed, she describes how objects (teapot) come to accommodate wider issues (such as climate change) and align with moral and political purposes. Importantly, she points to the notable differences between 'issuefication' and Akrich 'scripting', where the latter object projects a particular role scripted onto subjects. Scripted objects are political because they address the subject to act in specific ways where the determinate effects can be traced back to them, residing "in the 'blueprints for action' that are inscribed in objects and projected or forced onto subjects". In the case with issuefied objects, Marres argued that they are more open-ended, where "the capacity of the object to resonates with a spectrum of issues: climate change, smart grid, peak oil, innovation, the carbon economy, and so on" (2012, p. 7). It is the variability of forms, or of modes of action where the object may accommodate issues.

Issues in Design

As above descriptions arrive from a sociological perspective, let us move over to how issues have been dealt with in design. I have already given you accounts of how issues have partly been dealt with in participatory design processes. Less centered around the human, a more material or object oriented notion of how to deal with entangled issues can be found in speculative design. Typically, speculative design is concerned less with human participation and more with operationalizing speculative prototypes to explore complexities (Michael, 2012). This strong interest in prototypes and artefacts can be found in the older tradition of what Dunne and Raby refer to as critical design. Here artefacts and scenarios are created, but not as responses to direct and practical needs but applied to stage debates on pressing issues by "…design that asks carefully crafted questions that make us think" (2001). More recently, Dunne and Raby have articulated their practice as design fictions, characterized by exploring different approaches to making things by probing the material conclusions of people's imagination by telling stories. In their recent exhibition, which I attended during spring 2013 at the London's Design Museum, they created an exhibition based on future scenarios for a fictional UK (or United micro Kingdom) (Dunne & Raby, 2013. *UMK*. Retrieved 10/11 2014 from http://www.unitedmicrokingdoms.org/). The fictive story features citizens who live in 'super-shires' that are made up of different tribes that are all prescribed to rather extreme futures. The tribes have developed from extremes depending on digital technology, bio-technology to others that have chosen to abandon most technology (the futuristic tribes go under the name digitatrians,



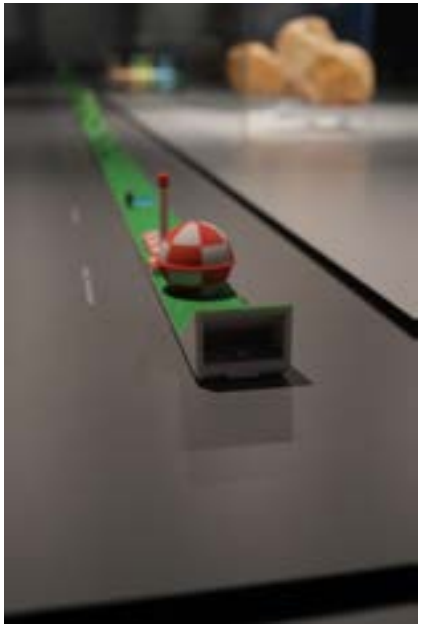


Image: Photographs from Dunne & Raby's UMK exhibition at Design Museum London 2013.

bioliberals, anarcho-evolutionists and commune-nuclearists). The show features small models and manipulated photos that represent the fictional story.

When we are presented with Dunne and Raby's design fictions, we are rarely presented with the possibility to experience the work design itself; instead we are used to seeing them as photographs or in exhibitions like props that help focus, imagine and speculate about possible near future worlds. Furthermore, they are, as pointed out by Michael (2012) often grounded in a particular critique of the present. Their proposals enact a world that poses itself as a contrast, another possibility, or an escape in an exhibition far apart from the one in which we actually live. In extension, their proposal seems to handle a 'becoming with' rather poorly, since they rather articulate a position that stands on the outside. Hence, following Michael, they are hard to figure as contributing to an inventive problem making because the 'problem' is so clearly staked out. Another important difference is that they are also, still, tied up to ways of making discourse, speech acts - to allow for debate. So let us return to speculative design, which seems to have more of an interest in not only how to represent, but also how to gather around issues.

By borrowing the 'strange' character of the idiot from Stengers 'Cosmopolitical Proposal' (2005), Michael argues that speculative design is characterized by a 'proactive idiocy'. This idiocracy is partly operationalised through designed artefacts in what he calls 'engagement events' (2012b). Importantly, parameters of the 'issues' are in Michael's speculative design cases not focused on specific

issues, but oriented toward the exploration of complexity and entanglements. Through cases such as 'Biojewellery project' (by Tobie Kerridge), that uses bone cells taken from the jaw that were donated by couples undergoing the removal of their wisdom teeth, it is argued that speculative design prototypes bring together 'alien relations'. They do so by challenging their audiences not to engage in solution seeking but rather to enact a peculiar and designerly idiocy, as inventive problem-making.The idiotic prototypes that are deployed in domestic settings are inventing problems through participants' responses and can thereby be framed not as satisfying human needs, but are rather, a designerly way to frame public engagements in contrast to the social scientific perspectives. He argues that artefacts and prototypes allow both their users and designers to open up what is at stake, which in extension open up for the conceptual and practical doings of social science as a 'idiotic methodology'. But, as others have pointed out (Lindström & Stahl, 2013) it is also a bit difficult to actually understand how these speculative design cases managed to accomplish inventive problem making. Instead the speculative design prototypes might be more characterized by their 'idiocracy' of dealing with the complex and elusive, rather than the process of 'becoming with' and 'inventing problems'.

3.4.3 Inventive - the Expansion of Present

To stay with the call for *enacting the complex and elusive* and an *inventive problem-making*, I would like us to linger upon how Nina Wakeford and Celia Lury recently have contributed to the repertoire

of ‘materially innovative methods’ (Law, 2004) in the foreword to the book ‘Inventive methods’ (2012). Here they propose an inventory of methods when conducting research that tends towards an investigation, or rather engagement, of the open-endedness of the social world. The methods are meant to enable the happening of the social rather than being merely descriptive. In their introduction, they broaden the definition of method, much in answer to Law and Urry’s call and what we normally might assume a method or knowledge practice appear as. Inventive research methods come closer to being devices or instruments, from tape recorders or a hand-crafted design probes to anecdotes and patterns. In their excellent discussion of ways to understand the inventive, which at first tend towards the ability to think of the ‘new’, Wakeford and Lury really push for an understanding of how inventive (methods) do *not* equate to the new, but rather expand the present, as an ‘an ongoing maximization of the agencies involved in social life’. Hence, the inventiveness of a method can never be known in advance of a specific use but are things that emerge in relation to the purposes to which they are put. And in extension, to consider a method’s capacity to be inventive we cannot presume by which senses the social world is known, or by which medium research data should be collected, argumented, and communicated through. Instead, such capacities have to be enhanced ”by the use of the material-semiotic properties of materials and media to expand relations between the sensible and the knowable” (2012, p. 21). Hence, similar to how Callon argues not to treat artefacts as servants, it is not only about the capacities, but how those capacities have to be recognized through the properties of the medium, or ‘the logic of materials’ - might it be a tape recorder, a print, a list,

Nina Wakeford

or a speculative artefact. Because, they all have different material-semiotic consequence and capacities to answer to the problems they engage in. Their proposal, to enable the happening of the social from a socio-material perspective is to me to acknowledge the complex combinations of human and non-human agencies by (also) paying detailed attention to the properties of the medium. Another way of saying this is that it makes a huge difference to bring a book, a PowerPoint presentation, a Post-it note, or a speculative design object into situations of addressing an issue, because what is performed is a matter of collaboration in the situation of all those entities that enter into this situation. To come back to Fraser, events as inventive problem makers, Wakeford and Lury ask not only what an inventive problem making might be, but also "how to 'lure' materials into posing their own problems" (2012, p. 21).

3.4.5 Making

In a seminar entitled 'Thinking through Making' (Ingold, October, 2013), Ingold presented an alternative account of making. Traditionally he says an artefact is seen as a materialisation of thought in western thinking. That means, in order to make something, you have to think it first, and continually keep that thought as a statue in your mind when working with materials. When the material has taken the form of the statue, the intended shape, one says it is finished. After that, whatever happens, the artefact is subjected to the phase of use. This is what in philosophy is referred to as hylomorphism. Against this hylomorphic model of creation - where one maker (designer/artist/carpenter) projects the form on matter, where theory leads

Tim Ingold

and practice follows, Ingold argues that it misses out on the flow of transformation of materials, as well as in the movement of the imagination of the sensory awareness. He is pointing out that making is not so much about imposing form upon matter, but rather to see it as a process of growth. Instead, as mentioned before, he suggests that we read making and creativity in the movement forwards, which means 'joining with', as improvisations. Hence, he points out that there is a rather big difference between *thinking through making* and *making through thinking*. Using willow weaving as an example (2013, p. 23) he describes how the relation between the weaver and the willow are bodily, material, and the final form of the basket is far from a defined form. Rather it is a construction among the capabilities of bodies, wind, as well as the dynamic properties of materials that come to be the basket. In concurrence, he says, "every artefact is a way-station, on its way to something else", meaning that we can no longer regard making or artefacts as "a projection of a ready-made thought or concept onto raw materials, or a projection of a form on matter" (Ingold, October, 2013). He suggest that we think of artefacts as knots, temporarily bound together of many entities. To think of artefacts as knots has consequences of how we think of surfaces. Because rather to think of a mug or a basket, as something that is bound within itself, he calls upon us to try to expand this view to instead see it as a meeting among many different surfaces, to consider making as a place where there is a lot of continual interchange between materials and the environment, where the making of the mug should be thought and practiced from the point where the different materials intermingle, where porcelain meets the coffee as well as the air.

As mentioned, he suggests making practices to be understood as improvisation (meshworks), rather than tracings (networks). Ingold and Latour might have their slight oppositions; however, they do meet fairly well in the middle when talking about knowledge. Similarly to Latour, Ingold finds it problematic that 'the science' (he himself laughs at the broad definition) tends to explain the world through ideas, through a hypothesis generated on the basis on theory and facts. "We come up with ideas, we come up with hypothesis, we test them against fact, revise the ideas to accord better with our experimental findings" (Ingold, October, 2013). Like Latour, Ingold points to how this way of making science places the knower outside of the world the researcher investigates. Similarly, this is what *making through thinking* does, also in the name of a scientific experiment. On the other side, *thinking through making*, he argues, puts this in reverse; it is instead a way of knowing from the inside. The difference is that the minds are not filled with pre-established concepts, and the world is not filled with already existing objects. Instead this knowledge grows from our own practical engagements, "with the materials, being and things all around us"

chapter 4

Framing Events in Practice

Below I will more closely describe what was sparked into being through the material interventions of Watt-lite, Invite! and Urban Animals & Us. In other words, this is where we will encounter the objects, artefacts, and things as events. The event framing provides a way to encounter how these material interventions participate and bring about new orientations to the issues each case coalesces around. Thus, a defining characteristic of the event is to say that it brings the relation between the actual and the virtual to the fore (Wilkie, 2013).

(Ingold, October, 2013). And to follow this path of improvisations as a practitioner means to couple substantial flows and sensory awareness in the world of materials. With that, he seeks to overthrow the hylomorphic model, to restore to life an ontology that assigns primacy to the processes of formation.

3.4.6 Finding the Event in a Nest of Webs

As the ANT and the SPIDER have now become our companion species on this journey, we might need to turn to question what different matters they are tinkering with. As the ANT slowly builds his networky nest, constructed through needles he has found on the floor, the spider connects his web in-between things, making connections that were not there before. While the ANT traces the pheromone trails created by other ants, the spider awaits the potential of something to happen by her web of arrangement. To stay with those metaphors, I have through Ingold pointed to how becoming assigns primacy to improvisations, where gatherings in making practices constitute a going on, a messiness that unfolds rather than connects. Somewhere, with all the respect to the ANT, because its hard work is well needed, it seems that the small almost transparent weavings of the spider are more where we will find an openness to "the captivating and sometimes also disturbing part of life" (Bennett,

To get to better grip on this, firstly we will encounter Watt-lite, where the artefact functions as a way to materially re-imagine electricity as a non-human actant participating in the everyday workplace. I will describe how Watt-lite provides a specific way of making electricity become identifiable leading to different and new ways to relate to electricity. I will focus narrowly on a particular incident in which Watt-lite sparked a controversy into being. Through an event framing this provides us with ways to consider what an inventive 'problem making' rather than 'problem-

2001, p. 216). That allows for "a meeting with something that you did not expect and with which you are not fully prepared to engage" (p. 5), or in other words, the enchanted!

On a more general notion, to encounter design things as events, I have followed Fraser in her excellent discussion of the event. I have also dissected the description into parts of *problem*, *inventiveness,* and *making,* to later stitch them back together. I have through Marres further articulated how 'problem' and 'issues' are tied up, but are not the same. Issues are rather problematic entanglements that do not have a clear solution, but are importantly characterized by the gathering that spark (publics) heterogeneous collectives into being. I have unfolded how an 'inventive' might be understood by using Wakeford and Lurry's description - not as something new, but as a maximization of agencies and expansion of the present, which in many ways mirror well how Ingold solving' might be. Secondly, through Invite! I point to deploying the concept of event not only as an analytical framing, but also as a way to consider how to apply it as a material intervention. This merge is further practiced in UA & Us where we will encounter the misbehaving nonhumans as they become part of making an event. Finally, we will come back and make a reverse journey, not only from things and events, but also to constituents.

4.1 Sparking Issues into Being: Energy as an Actant *Watt-lite*

As a programmatic enquiry, the event framing has developed along the way of this thesis, hence the framing is partly made up of retrospective snapshots. Furthermore, each project have been executed in different milieus, concerning different issues. During this journey my engagement as a

suggests that we understand formative processes of making as improvisatory, entwining that should join with processes of imagination and sensory awareness, that is less like traces, and more like improvisations. This is a pointer to understanding how the event firstly ties up with the understanding coming together as *becoming* different. I have also through posthuman scholars like Haraway, Stengers, and Bennett pointed to how processes of becoming are strongly connected to ways of sensitizing, of becoming worldly, by linking and being attentive to 'others' (nonhuman, other species, other types of agencies).

designer and researcher has also evolved. Starting off with Watt-lite, my engagement was very focused on making the invisible (electricity) more tangible. The notion of tangibility has continued to form an important part in my design research. However, Watt-lite nurtured a new interest, which concerned notions of issues, and in extension with *things*. This interest moved me away from focusing on the object of design, to what more seems to be collections of diverse materials, and controversies. If anything, I would like to consider these material interventions as constituents (Telier, et al. 2011). And following Fraser, what is distinctive in the event is the moment where these constitutive entities rather than simply being together, become together. That is, they are transformed in the process of that interaction.

Through Latour and others we have been given the suggestion to move from objects, to

Pulled back together these concepts form the theoretical backdrop to understanding the event. Then, to encounter design things as events is to sketch out a more applied version of the event to make it applicable to design research, with the aim to get closer to better describing what is sparked into being. That is not only through language, but pays special attention to including a material dimension - as a way to stay with trouble, to linger, or as Latour expresses it, to kayak with it.

Which, to some degree, attests to what the role of design can be in "making things public", as not making known, but as way of exploring conditions for inventing ways of entering into relationships with nonhumans. And to get a better picture of this, I suggest that we in the next chapter move back into practicing being an ANT by paying close attention to the empirical and its sometimes rather contradictory and messy paths.

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think of design things as controversial assemblages of entangled issues. Hence, we cannot encounter Watt-lite as a thing on its own - we have to remove ourselves from considering it as a self-enclosed entity, as a designed product aimed to show electricity usage. Instead, the aim is to view it as a sociomaterial assembly of humans and artefacts, institutions, materials, and other entities, that is *away* from representation, and *towards* eventualisation and questions of what things do. This means to consider electricity use not as a matter of fact, that it has to be reduced, but as a matter that can allow for a diversity of viewpoints, which means to consider gatherings of electricity usage not only through the representation of people, nor only through electricity as a resource, commodity, or instrumentality - but also and more radically as an actant. Importantly, to figure e.g. electricity as an actant already points to how things cannot be disassociated from what happens, the doing of things. When Watt-lite moved from being a safe object in our studio, to 'a thing out there', situated at the

concrete work places, plugged into the electricity system, it opened a space for possible interactions among the energy system, people at work, and the devices in the everyday work life. But how do we not fall back on function and use? And how do we shed light on things as events?

Before we attend to the doings of things, let us briefly re-cap the background, aims, and motivations for Watt-lite. As you might remember, Watt-lite takes the form of three over-sized torches meant to engage employees in electricity usage in their workplace. The light beams projected from the computational device render the otherwise rather hidden electricity visible in the shared workplaces. To explore ways of engaging with electricity, we as designers, set up a provisional program of enquires – *Making energy statistics more tangible, Transferring connotations of use,* and *Encouraging an exploratory, open-ended, and social type of interaction.* The enquires where developed in relation to the discussions from the workshops as well as from insights across social science research and environmental policy as well as previous experiences at Interactive Institute. We organized a set of three workshops held along with some of the participating employees. At the workshops we discussed challenges and daily encounters with energy consumption at their workplace. Insights from the social science research were related to how a greater awareness and possible reduction of energy consumption may be achieved by making energy more present as a material resource through visible displays like smart meters, energy monitors, and other home appliances (Darby, 2006 & 2010) (DiSalvo et al. 2010). However, as pointed out through the program of enquiry, our

focus was not to script the computational artefact of Watt-lite to solve the problem of energy monitoring or to perform energy reduction. Instead the consideration was rather to explore ways *not* to script Watt-lite as an energy reduction device. Electricity, we thought, was not to be like a quiz-show question where the correct answer would be to reduce electricity, but rather, how Claire Colebrook positions the 'problem of light'. Colebrook writes "when plants grow and evolve they do so by way of problems, developing features to avoid predators, to maximize light or to retain moisture. And the problem of 'light' is posed, creatively, by different forms of life in different ways: photosynthesis for the plants; the eye for animal organisms; and color for the artist" (2013, p. 21). To her, the problem is rather a response that develops in multiple ways in specific contexts. Similarly, Watt-lite's light projections were an attempt to pose the problem of energy differently, which could allow it to evolve in different ways in relation to the context. Our attempt to do so was by trying to make the Watt-lite an extension of the energy grid leaking out and spilling onto the floor through its projections without morally positioning the meaning of electricity.

To further stretch and articulate Watt-lite through an event framing, let us continue by paying attention to what was sparked into being through the intervention. Towards the end of the month when Watt-lite had been deployed, I visited the different workplaces. Here I conducted semi-structured interviews with one of the employees from six out of the nine companies. The semi-structured interviews lasted around half an hour. Below I will account for parts of these interviews that specifically highlight some rather specific ways of how electricity through Watt-lite performed differently in the companies.

I will also focus on one occasion of an 'overspilling' (Michael, 2012c), defined broadly as that which in one way or another typically is left out of an empirical account because the activity did not necessarily make sense within the social scientific framing. This overspilling took the form of a surprising email, and thereby took place beyond the semi-structured interviews and could in many ways be seen as a failure - since it resulted in the Watt-lite having to be removed from the particular workplace. But before we go there, let us first attend to some of the particular insights.

4.1.1 The Object of Multiple Interpretations

To start, let's make one perhaps unsurprising thing clear: in the factories where Watt-lite wasn't positioned in a central and communal location, there were fewer interactions. This was clearly articulated by one of the employees during the interview. "They are placed in the entrance mainly used by office workers. The rest of us go straight to the changing rooms before entering the workshop. You only walk past them if you are going to talk with someone at the office". In relation, the rest of the analysis is centered around instances where the Watt-lite was positioned in a central place in the work places.

We had, in the process of designing Watt-lite, decided to avoid having any reference to more rational ways of measuring electricity through numbers, like for example 10 Kwh. But to be able to appreciate the amount we decided to create the orange and blue torches as a way of referencing the amount of energy flow, rather than the more rational statistical numbers. However, our intention of trying to avoid Watt-lite

to be charged with the meaning of electricity use was enacted very differently in practice. This was shown in an interesting comment in regards to creating a less scripted, and more open-ended exploration of energy. It was articulated by one of the managers during the interview when he described how Watt-lite was not only used for interpreting electricity consumption, but also as a measurement of production in the factory. He told me: "We want the orange one to be as big as possible (…). We want a lot of production. Everyone is happy when the orange is large". The orange projection, as you might remember depicts the highest amount of energy used during the day. However, quickly after finishing this sentence he continued somehow a bit embarrassed to explain that he assumed that Watt-lite was not intended to be a tool for understanding how much capital they generate, but in his words: "as a way to save the planet". (Another participant also touched upon this dilemma).

Even if we as researchers at no point have articulated this as an aim it might come as no surprise that electricity was performed as an environmental dilemma bound up with a logic leading to clear energy reductions. As a manager, the projection was made to make sense for his particular responsibility at work - to keep a high production going. The projection came to act as a way to understand the company's production through high energy use. This means that the open-ended figuration of aiming to avoid the explicit 'right' or 'wrong' in terms of portraying the flow of energy through Watt-lite became a way to locally measure capital among the managerial staff. How to deal with the dilemma of production and energy conservation was an important issue made explicit by the interview. And the blue and orange

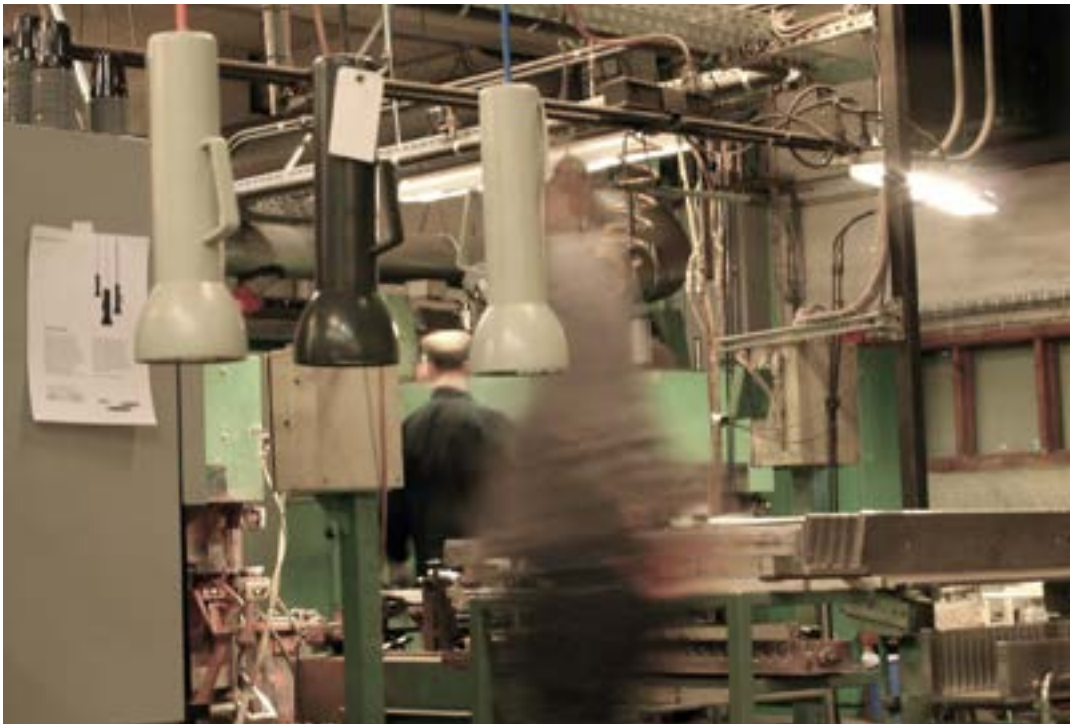

Image: (top) Watt-Lite in one of the factories next to the coffee machine. (below) One of the factories used the floor as a collaborative drawing board for marking and keeping track of energy use.

projections came to trigger differentiation between "good" and "bad" energy consumption, where "good" denoted production and "bad" consumption was linked to leakage in for example air-pumps or when machines were running during breaks and weekends without actually producing.

However, the white light projection also came to matter. During an interview with one of the smaller companies, I was told how it had been used on one occasion to identify energy use: "Last Friday Neil actually went back into the workshop after seeing that something was out of balance. He saw it on the light circle. …It took him half an hour to find out what was left switched on before he could go home". His comment suggests that energy became easier to relate to since it was materialized; this meant that Neil could actually act upon the wasted electricity being consumed after production hours. However, on a more general level both those examples suggest that the 'the logic of materials' (Wakeford & Lurry, 2012) to some extent supported such enactments by dividing up energy not only as a flow (white projection), but by freezing the flow into high (orange projection) and low (blue projection) in time, and was perhaps less ambiguous than we had intended it to be. Searching for a cosmopolitical perspective, Watt-lite came to enact some of the already identified goals of what can be considered theologically right or wrong (Haraway, 2003) in relation to energy - that reduction of energy use saves the planet. In other words, it seemed to do little to participate in a more cosmopolitical arrangement.

4.1.2 A Minor Enchantment?

To make sense, compare, and engage with the slightly ambiguous light energy projection's different methods of monitoring the collective consumption were used within the local area of the workplace. In three of the industries were Watt-lite was positioned in a central location, to compare and track the constant flow of energy in the workplaces, the employees scribbled on the floor, made use of paper notes, or placed a whole whiteboard underneath the light projections.

There were also less materially obvious ways of engagements, where electricity started to embed other objects and practices in the everyday work situation. In the workplace where they used a white-board to mark the energy flow, the Watt-lite was situated in the middle of the production floor next to the coffee machine. During the interview, I was told: "I like that they are by the coffee machine… then everybody can see how much we are consuming at the moment". (…)"We talk about the different sizes of the projection". Ake continues: "Of course you use energy when you push the button for coffee - but the white halo amuses me because it moves when I push the coffee-making button. Is that electricity used for the coffee machine? Just for a wee bit of coffee? Can the torch react that quickly?" His comment shows how electricity and everyday local practices, such as making coffee, are bound up together, but still hard to relate to. Even if we know that we use energy through our everyday activities, it becomes easier to grasp when it is visible and relates to the direct actions carried out. Furthermore, Ake's comment might well be a glimpse, an instance of what Bennett refers to as

enchantment, a feeling of being charmed by the novel, an unexpected encounter. In this case, an encounter with the invisible, but (mostly) ever-present force of electricity that is embedded in the background of e.g. the coffee machine. Instead of invisibly supporting a task, the common uses and accesses of the infrastructure in terms of electricity became a forefront activity, staging encounters not only between people and objects, but also among coffee machines, Watt-lite, and electricity. By re-materializing the flow of electricity through Watt-lite it started to emerge as something that partly composes the environment we inhabit. However, if we are to stay with Bennett's definition of enchantment, it might of course be harder to argue that it for sure creates a shift of perception that opens up for concern for others. But when the coffee machine is put into motion by other entities (more specifically Watt-lite and in extension electricity) it might be closer to how Latour asked us to allow bodies to become interfaces that "learn to be affected, meaning 'effectuated', moved, put into motion by other entities, humans or nonhumans" (2004, p. 206). Watt-lite started to provide a way to collect associations not only between humans and nonhumans but also to an extent between the ecology of things on the production floor. However, there was also an occasion that came to play an important role of better understanding the Watt-lite as a more cosmopolitical engagement – where energy was mobilized beyond devices and generated another way of environmental and political participation in energy issues.

4.1.3 The Overspill

One day upon arriving a bit late to work on a gloomy winter day there was a thriving discussion among some of my colleagues at Interactive

Institute who were all involved with the Watt-lite in some way or another. It turns out that we had just received an email from the participating community education college, saying:

> *We follow the different charts and graphs, but it is difficult to understand what is measured since they seem to show different values. As an example, when no one has been in the building during this Saturday night a very heap usage was discovered (…) For the first time we almost had zero consumption this weekend. It makes you wonder: Has the XXXXX (owner of the building, author's comment) changed their routines? Was the fans switched off? Was there something else wrong?*
> *(E-mail sent 20/10-2010 in Swedish, translated by author)*

From previous experiences within the building and customizing computational artefacts at Interactive Institute it was highly possible that the Watt-lite malfunctioned. Perhaps it was just a loose cable we thought at first. Consequently, Jonas (the electro-engineer) quickly went over to the nearby college where he through a close inspection concluded that there seemed to be no faulty technical glitches. Subsequently, since the Watt-lite light projections did not seem to cohere to the opening hours of the school the next thing was to compare whether the electricity information was miscalculated through Watt-lite. Still, after comparing the electricity readings directly from the electricity provider and the college it turns out this all seemed to agree. Everything seemed to be as it should. In a short period of time, an assembly of emails, phone calls, and meetings created an overlapping and somewhat unintentional exchange among

the local energy provider, the college, and us (the project team) from Interactive Institute, which furthered the college's worries. They started to question how, as well as what part of the building the Watt-lite pulled the energy information from. One clear dilemma was articulated from the college side: Was it possible that they were paying for electricity that the other companies were using in the shared building? They started to suspect that the energy company's electricity readings were incorrect. As the energy company was approached with this question there was a small hint, or mention, that electrical wiring in old buildings are not always as straight forward to do electrical readings from. The old industrial building the college shares in the city of Eskilstuna was once upon a time built for the mechanical industry. Over time, the building has been re-purposed in multiple ways to fit new activities. Through this re-purposing - where walls are constructed, doors are extracted, windows are added - the electric wiring is in correspondence added and changed to fit the new physical structures. But a wiring that was once built for one building might not necessarily be as easily re-purposed as a wall. Hidden away in walls, neither we from Interactive Institute, nor the concerned energy provider could directly answer how the electricity was structured in the building. The assumed to be 'technical experts', 'expertise consultants', and 'users' together opened up gaps and controversies in the system that we tried to resolve, but Watt-lite was in the end removed - due to the fact that no one could assure us that it was showing the correct information.

4.1.4 A Cosmopolitical Gathering

Watt-lite was removed, and vanished from the workplace. So was this a total failure? I suppose that if we are to encounter design as an object that provides answers and clear solutions to problems, it is. However, if we are to reconsider how nonhumans also compose the word into being, not as servants, but as partners that contribute, and participate in making up the thing, then Watt-lite helped un-blackbox the otherwise complex and technocentric energy grid to become a mediator. For the college, Watt-lite provided a way to explore electricity much beyond electricity reduction; it became a condition for the college to get involved and position themselves in the energy infrastructure. In this particular case, the energy grid did not have to break down through a power cut to become a mediator. But in relation, we could also ask if we just came to impose a form on the matter of electricity, still with a specific moral scripting in terms of what 'good' and 'bad' energy would be. To some extent, perhaps it is impossible to think beyond electricity use as having to be reduced. I mean, the fact that the orange and blue projections actually showed highest and lowest amounts of energy flow during the day could perhaps suggest that we intuitively followed the logic to materialize energy from the perspective of reductions. However, we did not start with a defined idea, or form for how to make electricity tangible. The form was gradually build up in relation to its surroundings, through discussions at the Interactive Institute as well as in the workshops with the employees. But it was also built up in relation to the structure of the buildings, and in the possible ways of accessing energy information. For example, the idea to show electricity as a pulsating

heart of the company was a huge challenge. The only way to measure the electricity momentarily was by building a small parasitical reader that attached to the participant's electricity readers. And as the torches are updated by the readings from the parasitical reader, a small motor attached to a camera aperture, changes the size of the light projections. Thus, the reference projection came into being in relation to the more discursive discussions as well as technological and material possibilities.

Hence, if we then think of electricity as a kind of material, similar to the potter's clay, or Ingold's' example of willow, the form is not just something to be pinned down, or projected as a final form, but is rather a bringing together, to correspond with the materials in a formative process. While this might not give a clear answer to whether the Watt-lite was unintentionally scripted, it highlights an important part of how the energy flow and Watt-lite came to get the specific form. For the college, Watt-lite became a way to condition connections to the energy grid that allowed the physical infrastructures of cables, walls, buildings as well as the people (from the electricity company) 'inside' the invisible system to be actualized and sparked into being. It made them, as energy users, able to interfere back into the system of energy as a site of material-political struggle. It opened up questions that none of the involved partners could answer.

As the electricity flowing in the workplaces was artefactulized, Watt-lite was both a design thing made public, and became a constituent that allowed energy users to construct their own position in regards

to energy use. In other words, we could also say that the *thing* was the political actor of energy, what Latour calls matters of concern, defined as 'that about what people might have issues'. Or rather, the focus on electricity should not be explained through 'was', because rather it 'became' a thing about what people had issues. Electricity was posed differently, and Watt-lite partly participated in conditioning this, which consequently means that Watt-lite was never a thing, but rather a constituent in the sociomaterial assemblies of humans and nonhumans. Where in the Parliaments of Things, energy was made to speak, where Watt-lite figured as a voice of energy. Obviously, this does not offer a final solutions to our collective energy crises, rather it suggests capabilities for developing speculative inquiries into politics of energy directed toward making new energy engagements and collectives possible, in which cosmopolitics of energy refers to ways in opening up engagement with distinct matters of concern. These powerful engagements that emerged served as the opposite of the image as a static or thoroughly instrumentalised matter. This also served as an implement to be continued and further explored in Invite!

4.2 Inventive expansions; Invite!

In search of a description and a framing for the coming design experiments the best fitting description grew into being referred to as 'design events' in what became Invite! When we invited the different stakeholders to participate in Invite! we referred to design events, clearly because there was no particular manifested designerly 'object'

to refer to (as compared to Watt-lite). Invite! was developed in the midst of the social innovation project, Lev Vel. The overarching project was meant to develop meeting places for seniors by developing better user knowledge in relation to technology and aging as well as to develop prototypes corresponding to this knowledge. Invite! was a hybrid of these aims. It was hybrid in the sense that it did not quite fit the expectations of an ethnographic account of studying the users, but neither did it fit the description of development work as technological prototypes. As mentioned, through the design proposals we wanted to allow for a set of different ways for seniors to participate and emerge within the early stages of the Lev Vel project, ways of being that would add to the current descriptions of the Lev Vel discussions and documents shared among us. Hence, our attempts to pluralize the existing universe of the Lev Vel senior descriptions was by adding a more material dimension through the design events.

The events in Invite! took form as an intervention in relation to the joint discussion by gathering the collective terminology into a list of keywords that was repeatedly mentioned (by us and others) during one of our stakeholder workshops. Following Law and Urry, those documents and discussions are already enacting seniors by description. As you might remember, this leads them to ask researchers not only to believe that we can catch the world through those descriptions, but that we also need to ask and consider questions of what kind of realities we want to help to make more real (and which *less* real). If we imagine that we ask the Lev Vel project collectively of which realties we want to make possible, I believe our mutual reply would be that we want to make the reality

Image: (top) The Agressive Kitchen in action. (bottom) Porcelain has become jewellery

of being lonely 'less', rather than more. But if the issue is not simply to uncover the 'lonely senior', but it is actually to consider how to make other ways for the senior possible through our documents, technologies, and discussions, how can we go about doing this? In Invite! this was done through inviting both the seniors and the stakeholders to participate in guerrilla gardening (Paint the City Yellow, Blue, and Red), to smash fine porcelain and turn the pieces into bits of precious jewellery (Aggressive Kitchen), to exchange skills by letting the already existing skills and knowledge within the senior communities travel and be shared by a younger generation (SkillShare*)* as well as to participate in the new potential for city bird spotting (*Urban Bird Spotting*). By that, we avoided trying to create a clear solution, one in which we attempted to solve the issue of being for example 'a lonely senior'. Rather, we tried to attend to how Wakeford and Lurry ask us to open up for questions and possibilities that expand this present definition in the making. Our attempts in Invite! were in other words to artefactualize descriptions by using material-semiotic properties of materials and media to expand and stretch our shared terminology through the events.

4.2.1 Invitations Were Taken Over

As the name of the project describes, there was a focus on invitation. Digital leaflets that roughly explained the ideas, questions, and materials that we wanted to use were sent to all the Lev Vel stakeholders. This was an invitation to host the design events with us. The email invitations were simple in their layout, composed by a static image showing a bricolage of different materials that Andrea and I

imagined would be used in the design events. Those with interest and capabilities replied and became hosts and collaborators for each event with Andrea and me (the fourth one, Skill-share did not get accepted by anyone). Through further emails, meetings, and phone calls we collaboratively organized the practical details. When all of this was in place, the partners then invited seniors in their network to participate by distributing emails and putting up leaflets in the location where each event would take place. Hence, as soon as we handed over the invitation to the stakeholders, each design event started to get its own life beyond our intentions and control. Already, Invite! seemed to become what Latour describes as the relation between the puppets that do things the puppeteers are never fully in control of (2005). This seemed to be a continual characteristic of the unfolding of the design events. Let me give you two examples.

SNAP SHOTS: The Aggressive Kitchen

The day Andrea, Café Kram and I were to host the design event Aggressive Kitchen we had no idea if anyone, or who would show up. The invite that Café Kram had made, calling out for participation, was just a small paper note stuck to their entrance. To me and Andrea, who did not know any of their customers it seemed very uncertain that many people would even have noticed the invite. However, as we started to set up in the garden, more and more people started to show up. Around 1 pm o'clock we were a total of 11 women. We started by introducing ourselves to each other, then Andrea and I told them about the Lev Vel projects, the Aggressive Kitchen as well as how we planned to smash crockery and make use of the porcelain

pieces. Shortly after, the first woman, dressed up with protective gear threw a plate with small flower decorations into the wall and smashed it into pieces. She rushed forward and selected some of the best bits of china, which in effect were the pieces that still has the flower decoration intact. And the rest followed in what seemed to be a thrilling excitement of being allowed to participate in the somewhat destructive act of smashing crockery. However, there are also considerations of the act of destroying the plates, as one of the women expressed a bit jokingly right before throwing it, " Oh, it almost hurts me, I am an old war child". The act of destroying the fully usable plate she had in her hand was slightly provocative after having lived through times less wasteful. However, the next second she made her mind up and threw the plate against the wall.

Somewhere in all the excitement in the sunny garden in Frederiksberg, Andrea and I quickly lost control over the arrangement. Shouts such as "Damn, I did not think it would break that much!" filled the soundscape along with the crashing noises of china and filing (to get rid of the sharp edges). Bits of sharp porcelain started to fly all over the place, and the protective gear we brought along was quickly left behind on one of the benches. At this point Andrea and I were getting seriously worried about the safety of the activity both in terms of sharp bits of porcelain that would fly all over the place, and in terms of the physical force that had to be used in the smashing process. Bodies that we did not inhabit and seemed so fragile to us were showing vitality and strength much beyond what we anticipated. Being engrossed in this situation, among the flying bits of porcelain, the women's active bodies, the enthusiastic conversation, the filing

of sharp bits of material, both Andrea and I realized that our guidance was hardly needed. What became clear to us, was that if anyone was challenged, it was in fact the two of us. In media res, it turns out that we had assumed the same as the descriptions and terms we were trying to challenge and what was emerging in front of us took us by surprise. The women had no concern with our worries of safety, and the control of the situation disappeared in front of us. In other words, as Latour would say, action was overtaken. The women who had joined took control over the event and the making of their own eccentric jewellery and they found new positions and ways of smashing the porcelain. And in that, the group formation changed from 'us' and 'them', when we all ended up sitting next to each other by the table filing and sanding the sharp bits of edges together.

Urban Bird Spotting

After Andrea and I had brought in all the materials in Urban Bird Spotting, the DIY-bird trees and the different props were left to be cared for by Café Kram and its customers. On occasion we would go to visit Café Kram during the next coming two weeks. However, pretty soon we could see that the bird-observations board and the notebook had been little used. After a couple of days, we were told that few birds had come to visit the DIY-bird trees outside their windows. In total, about five bird registrations on the board and eight notes in the book were made after two weeks (including a funny poem about a pigeon). Possibly, their non-activity might be due to badly constructed DIY-bird trees, in respect to the fact that neither Andrea nor I were especially knowledgeable of what would form a good meeting place

for birds. It might also be, as one of the visitors at the café pointed out, because it takes a while for birds to find new habits for food as well as places that are safe enough to be around. Nonetheless, the staff and some of the customers tried in different ways to attract the birds by making sure there was plenty of food. Together we moved one of the trees a bit farther away from the windows in case this might be one of reasons for so little bird activity.

In concurrence, the birds' minor activities and interest might also be the reason why it seemed like we all got to participate in something

Image: (left) The DIY-bird trees outside the window. (right) Some of the birds spotted in the garden.

quiet special on one of the days something actually did happen. That day, Andrea and I had just arrived to the café when the movements of a massive gull and two pigeons caught our eye and that of the three visiting guests. Looking out the window we saw that three birds had discovered the potential for a food treat. They were now right outside the window struggling to reach the fat-ball in the small DIY-bird trees. At first no one of us who at the time was inside the café, moved; it was like we were mesmerized by the birds' activity, and we felt

as if we would break the spectacle by moving only the slightest bit. The gull that was jumping around right outside the window seemed massive and somehow out of place in the small garden outside. After a while, when we realised that the birds did not really seem to sense or care about our close presence, we all started to relax and share the rather surprising experience among us. Action was overtaken, the DIY-bird trees were taken over, not only by the café and some of the guests, but also by the urban birds. But instead of our imagined small bird gently picking away on a fat-ball, the food disappeared into the stomachs of the gull and pigeons in a few minutes right in front of our eyes.

While this spectacle might have been enchanting, there was also a slight disappointment that there had been so little animal activity outside the window. In light of this Café Kram took the opportunity and decided to invite an ornithologist to have a seminar as well as to offer potential better bird-spotting outside the city in the form of a small excursion to the woods.

4.2.2 From 'What' to the 'How'

Just as Wakeford and Lurry (2012) point out, adding different materializations and media have consequences of how practices unfold in relation to the properties of the medium. The tactile and situated, they argue, are to experience and hold the possible closer in our hands. They emphasise that within social inquiry, there is also a sensory richness that has to be recognized, acknowledged, and expanded. Importantly, their emphasis on inventiveness and its

relation to ways of expanding the present are not to focus on what is already present, but on the experience of the happening – what is in the making, and unfolding. In other words, we could say that the inventive can be characterized by attaching the virtual to the actual through tactile experience, and through exploring different material-semiotic relations in the happening of the social.

If we are to relate this to Invite!, we could have invited some of the elderly to a workshop or meeting and asked questions conversationally: *What is health-technologies?* or *Who are the lonely seniors?* We could have used our language, or speech acts to ask if the action of smashing crockery in some way could be a way to engage differently in opening up questions related to both loneliness and health. But by putting pressure on the more material capacities in relation to the shared terminology, the replies to the 'problems' are performed differently. Materials and artefacts seem much more open-ended, messy, and less descriptive than words. This is what Jungnickel (Jungnickel & Hjorth, 2014) referring to Law, refer to as a 'mess' in relation to qualitative research. This argument obviously ties into a larger discussion, that among others connect to Law, Wakeford and Lurry's arguments. As Law puts it, textures, ideas, objects, artefacts, places, and people are difficult to deal with in social science. The complex and the messy worldliness cannot fit into a neat and clear argument. This mess encompasses the matters that designers are constantly tinkering with. As authors such as Latour, Bennett, Law, Disalvo, Wakeford, Lurry and Jungnickel help us point out, the materialities and media play an important role in public life, and we might need to get better at articulating what is more particulate about

Image: (top & bottom) Fragile porcelain being smashed for the Aggressive Kitchen.

these materialities. More specifically to design practice, this entails a move from a 'what' to a 'how'. Applying that move to Invite! entails a push away from chasing what meaning and the intentions are, to instead focus on how materials and media participate, or contribute, in their own right. While the design event in Invite! might be made with a specific intention, and through the hand of a designer, the different materialities come to matter not only as intentions, but as unfolded improvisations. This does not mean that what emerges out of it is not necessarily generalizable, but rather "that the generalization made possible takes place through the mediation of the matter of design" (Boehner et al., 2012).

In a somewhat similar manner to Wakeford and Lurry's definition of the inventive, Andrew Barry proposes it as "an index of the degree to which an object or practice is associated with opening up questions and possibilities" (as cited in Suchman, 2011, p. 211). The inventive is not the novelty of the singular things, but the transformative possibilities afforded by the context in which they are located. Again, our aim in Invite! was not to create an answer to how to make the elderly less lonely. Neither did we try to invent the new 'senior', or to invent an answer to the articulated problems. Instead we tried to open up for possibilities, to allow for other competencies and agencies to come into being through adding the specific materials. Hence, by adding materially, I mean literally adding materials such as for example two DIY-bird trees, bird-food, binoculars, seed-sticks, postcards, china, and all the rest. And subsequently through the properties of these mediums, barge in, intervene, and possibly expand the current definitions. Accordingly, to consider the expansion of the present in

Invite!, is where the material-semiotic unfolds and develops its own logic through the event. If we return to Latour, he asks us to shift from a certainty about action to an uncertainty about action. To do this, he tells us not to ask who is acting but rather ask what is acting and how. In Invite!, it was not necessarily the discussions we had with the women in the garden that came to make a difference and transform the stereotype of the senior for us.

It was the unpredictable in the situations that happened, where the action was overtaken in relation to Invite!'s intentions. Clearly, in the Aggressive Kitchen the women where acting, but it was also the porcelain; they are both agents in the event (along with many other entities). And in reply to the question of how they act, they do it in a very specific way, the obvious one being that they act through bodies. But the porcelain also acted through its properties of being able to be smashed. In fact, in the Aggressive Kitchen, the only thing that comes across as being fragile, was in fact the porcelain. By that, we do not believe that all seniors should engage in smashing china. We have not solved the problem of being a lonely senior, but the events have expanded capabilities and possibilities, performed through, among others, the specific material properties. What is being pointed at here is that the materials also are agents, and that the nature of actions is as Latour says, "a great variety of agents (that) seem to barge in and displace the original goals" (2005, intro). Clearly, to attend to the doings of design, is a much more performative position - paying attention to how objects and materials participate in specific ways to unfold and participate in issues.

4.2.3 Feeding Back

As we wanted to explore assumptions of 'appropriate activities' for seniors and the difficulties of understanding what it is like to be aging, we as researchers stood back as 'the problem'. We were also the ones who, as Haraway would say, had generalized from the ordinary, the ones challenged, and definitely not the elderlies participating in the Aggressive Kitchen. Just as the seniors to some extent seemed enchanted by the activity of smashing the crockery, so were we enchanted by their action. However, we were faced with a problem of how to bring back some of these, both good and sometimes disappointing, experiences to share in the Lev Vel project. As we were also the ones transformed in the interaction, how would we not just do the same as those descriptions we had reacted towards?

The way we first attempted to bring back the design events was by presenting snippets of film, anecdotes, and photographs in a presentation for the rest of the members of the Lev Vel. This was done through a presentation on one of our joint stakeholder sessions. That day there was a busy schedule with lots of presentations and activities. But at the end of my presentation it seemed like the events I had presented faded away with my voice. As the next speaker got ready to present there were no questions or replies to that which had been shown. To follow Latour in the uncertainty of the 'object to have agency', as the design events became built and assembled into my PowerPoint, the presentation seemed to act as if it were black-boxing the actions taking place. Rather than being mediators, the different experiences articulated and explored through the events were black-

boxed into the PowerPoint presentation. They were presented, but transformed little in the Lev Vel constellation. It seemed the fluidity of what Latour defines as mediators, ranging from the conversations to the smashed crockery, had become silent and static. The presentation itself had become an intermediary.

As Michael (2011) points out, as elements that enter into the event mutually change so does the event, and what emerges can be addressed in two different ways. Firstly, it can become a problem in need of a solution. When formulated as a problem he tells us they are often accounted for in the genre of self-criticism. In correspondence, the solution is to better one's 'skill-set', to seek out more training or to pick a less difficult sample or case study. However, in all this, he points out that the problem is presupposed and that good data were not collected, and then good analysis failed to happen. Michael lists a number of ways in which research participants 'misbehave' by refusing to engage in the topic presented to them, or by wilfully moving the conversation to discuss another topic. To speak of these actions as 'misbehaviours' is to set up the social scientific event as a problem in need of a solution. However, when such 'deviations' from the research event take place, they are often simply ignored. And yet, as he points out, they have affect.
On the other hand, he also suggests through Fraser, that the 'issue' can prompt a re-visioning of the event and the invention of a more important question. This is where the event opens out to different possibilities, where there is a shift in trying to find a solution and instead treating the event as an occasion of inventive problem-

making. In Invite! we could render this through the design events when we presented them for the Lev Vel members through showing photographs and videos. Something seemed to be amiss; there was no clear research like data or clear results to bring back to Lev Vel members, but just a selection of what perhaps seemed like whimsical events. We could say that the Lev Vel members, those listening to us, misbehaved when they remained silent during and after the presentation of Invite! However, this would be beside the point, since they were not the 'object of study' and as much part of the project as any other members. We can of course fall back into the position articulated by Michael (ibid.) as the genre of self-critic, where Andrea and I were bad design researchers that at this particular meeting with all Lev Vel members gathered only succeeded in delivering a whimsical presentation of four ambiguous design events. But perhaps, the more interesting problem was how Invite! in itself misbehaved or overspilled as a research participant, as data, in the Lev Vel project, how it in some way deviated and failed to participate appropriately. In some way, Invite! seems to me to account for a similar 'failure', in the way that it to some extent was ignored in the constellation of Lev Vel. Nevertheless, as Invite! was meant to add to Lev Vel and the ongoing discussions within the project, it seemed the question still remained of how we could gather and share the particular happenings in the events.

4.2.4 The Book - the Untameable Anecdotalizations

Latour encourages us to make experiments to turn solid objects back into mediators (2010, return to Chapter 3 for a full account in

the ‘the uncertainties - objects too have agency’). Among other things, he suggests inventing descriptions and bringing them back through making them visible through historic accounts like archives, museums, and documents. In Invite! we did not necessary deal with a historic account. Nonetheless, our way to experiment to turn the intermediary PowerPoint back into something that could modify and be branched out into Lev Vel, was by turning what seemed to be

Image: (left & right) The Invite! book and its paper that folds flat and unfolds.

untameable non-data of the four different events into the book Invite!. And by that, I am not only pointing to the above described scenario of the presentation, but also to how some of the events, like the guerrilla gardening in Paint the City Yellow, Blue, and Red, gave us little data from a more sociological perspective. There were e.g. no interviews, no fieldwork done, and no clear descriptions. The only information we had was from the meeting with the seniors in different sports, gym, and library facilities and the postcards that responded to where and why they had chosen to plant the seeds in specific parts of the city (which often was in response to traffic). Hence, the book became a way of gathering, to ‘anecdotalize’ (Michael, 2012c) the stories of how the materials,

seniors, and we met. As Michael explains, anecdotes are narratives that become anecdotes "by virtue of their telling, because they are deliberately sent out into the world" (Michael, 2012c, p. 25) and are deliberately put into circulation. As it seemed like the events were too whimsical and ambiguous to relate to, the Invite! book was our way of artefactualizing the events as anecdotes by also telling how Andrea and I changes through the interactions, and by verbalising the different actions of the actors, both human and nonhumans.

As mentioned, the book was designed to have a gift like character that had to be unwrapped by unfolding the cover. The content and text inside consisted of an image showing the different terminologies gathered from the workshop. Then each event was presented through photographed Post-it notes with the written questions related to each term explored through the event. For example, in Urban Bird Spotting the first page opened up with the question: *Can bird spotting make you healthy?* Followed by: *What are health technologies? -Do they really have to be the only things that convey health? Can we create an inexpensive meeting place by focusing on the small joys of life by using what is already available right outside the window? Can it be something we take care of together to help uncover a collective concern?* The selection of photographs shows both the making process and the staging of these. For example, when flipping through the pages of Urban Bird Spotting we encounter a photo of a pigeon in the DIY-bird tree, someone photographing the birds outside, two of the different guests gazing out at a gull, notes of what different birds have been spotted, and a leaflet for a bird spotting trip. Each event was further described through small anecdotes from each event along with a timeline highlighting what

unfolded through the coming together of the event through among other things, different comments from the participants. In other words, the intermediate terminologies were increased in proportion as mediators via anecdotes and by sketching timelines, and tracing participants in the event.

We can of course also compare this to another of Latour's uncertainties, that of 'risky accounts', because we did come to treat the materiality of a report on paper as a way to extend the exploration further. We did this by increasing the proportion of mediators through text. But the materiality of paper was also handled not only as a way to be filled with written text to write up an account. It was approached through considering how the qualities of the material, wrap up, stays flat, travels, and unfolds. That is, wrap up as a gift like the cover; stays flat, allowing the anecdotes and images to be held and told concentrating on local stories (both in English and in Danish); travels, as an Ikea flat pack; unfolds, in relation to the graphical timelines describing the actions in each event. In that way, the challenge to turn the black-boxing PowerPoint, from an intermediary to a mediator, was made in the experiment of the Invite! book. The experiment, in other words was a hybrid between bringing visible firstly through a written account and at the same time as its material condition was made to matter by playing an actual part in the formation of the book. Hence, the Invite! book was at the same time, more similar to issuefied objects (Marres, 2012), rather open-ended in how it resonated with issues in the Lev Vel project. Its mode of action to accommodate issues was rendered through the anecdotes that travelled and unfolded via the book. This became our way of making Invite! 1) public

to the Lev Vel stakeholders 2) allowing it to travel, as a mediator that would allow and connect to new individualized events, making do, rather than causing or dominating (Latour, 2005), and 3) transcribing things normally removed from objects, to allow actions or activity to be part of the representation of our design work, to keep the interventions as events. But as events is not only constituted by neither 'being', nor 'a coming together' but by a becoming together, we will now move on and put pressure on how we through an event framing can get better at understanding processes of becoming, as becoming 'with' and 'worldy'.

4.3 Infolding Others: Urban Animals & Us

A massive lawn in the more central areas of Helsingor surrounds the senior retirement home Gronnehaven. These urban habitats might be far away from the wildlife we seek to encounter in forests, but are still chosen by the animals to inhabit. Since the three different experiments all bridge the concern of co-habitation, Gronnehaven's surroundings seemed a good place to start. Since unlike an urban zoo, this is an area where animals remain by choice. In UA & Us the relations explored can be understood as a kind of architecture of reciprocity where any action is set up as possible exchange. In other words, to create an exchange and to facilitate a relation to come into being, all partners have to give something back, to provide a reaction. The program of enquires explored was through the notion of exchanges in *BirdsView Perspective,* communication as translations in *Talk-in-to* and power relationships in *Interfed*.

To explore and gather around those different relationships, the

Image: (top) Gronnehaven-made bird-food. (bottom) The Bird-flute at Gronnehaven.

BirdsView perspective took the form of a workshop hosted with Gronnehaven's activity center. Together with some of the residents we assembled the BirdCam that consisted of a small spy video camera, a plastic container with a small note that encouraged the finder of the camera to deliver the content back to Gronnehaven, and a rubber band with food. The BirdCams were meant to set up an exchange, where the gulls would film the local milieu of Helsingor from their perspective. The Talk-in-to experiment took the, among other, material form of the instrument 'BirdFlute'. The instrument mimics the sound of crows, magpies, and blackbirds and transmits the sound to a small speaker placed outside. Together with the B1 and B2 ward the new possible relations were explored over the span of five weeks. The final experiment *InterFed*, which unfortunately kept breaking down, was hosted by the B1 ward for about three weeks. It consisted of two digital camera devices (one outdoors and one indoors) and a portable screen that displayed the photos taken. Together with the birds and the B1 ward, the PhotoTwin explored how to establish more equal interspecies relationships.

Over the time UA & Us took place, Tau and I came to know some of the staff and residents at the B1 ward well. There was an open atmosphere and we were always treated with coffee, cake, and a chat. This meant that we soon would find out about issues in the politics of senior nursing homes (on a national level), such as how the staff found they had too little time to socialize with the residents. During such informal chats we also got to know that UA & Us was appreciated because it was a break away from the daily tasks for the staff, and gave both seniors and staff something to gather around. It

also seemed that the 'strangeness' of UA & Us also put the staff, the seniors, and us on equal levels, since we were all as new to explore these interspecies relations as anyone else. But to get to the point of having informal and open chats in the canteen took a long time.

To set up the constellation of UA & Us all three experiments were approached through an open event format (Halse et al. 2010; Mazé & Redström 2008), by involving many participants, covering many different tasks, such as presentations, collaborative writing, material experimentation, and analysis in an open-ended format. As argued, this collaborative format "creates room for increasingly developing a shared language, and continually creates room for issues and proposals to mature underway" (Halse et al. 2010 p. 72). Another important issue is that an event stretches over time. More specific to UA & Us, this can be seen in the joint writings of our blog, www.urbananimalsand.us, the tinkering with Arduino boards and Raspberry computers, field visits with hunters and ornithologists, as well as the many hours spent in the local woodwork shop. Nonetheless, the design concepts were initially developed by the design researches (Tau and me) as 'evocative sketches'. Such sketches are characterized by an incomplete, rough, and sketchy style and are used within co-design events as suggestions that may be part of further sketching and stories among stakeholders (Halse et al. 2010 p. 48). Later, these evocative sketches were shared among the stakeholders and collaborators and later evolved into the initial concepts and experiments that would then be formed into three more specific experiments. This setup entails, as further described in a section below, an open invitation to the residents and

employees of Gronnehaven to participate in the experiments where we collaboratively unfold and make sense out of the speculative prototypes and the potential new interspecies relations. As design researchers, we set up a loose structure for the gatherings but left the program open to evolve along the way.

In many ways UA & Us can be seen as a kind of collapse of the previous Watt-lite and Invite! Comparably, UA & Us had a very speculative agenda to explore a somewhat virtual space of presently unrealized relations. This can be likened to how Watt-lite afforded new engagements with electricity. At the same time, lessons from Invite! of how to intervene came to play an important part. Below I will try to describe how we went about doing this.

SNAP SHOTS: A Birds View Perspective

We are in total 12 people who have gathered around the table, eight residents, and two employees from Gronnehaven, Tau and me and one participant from the local volunteer centre. The participants have been invited to a workshop for making bird food for the vaguely described 'bird-cams'. During the three hour workshop we made a selection of bird food with included ingredients such as raw fish, seeds, and food-waste from the retirement home. While kneading together materials like fish, flour, coconut oil, and bacon to tempt the carnivores and scavenging birds, there were no direct questions of why we wanted to make bird food for the less favoured birds. However, the animals were discussed as "rather opportunistic" and

ever present. One of the residents shared her memories. " I never forget the summer when we were grilling, and a huge gull landed right on the grill, and stole a beefsteak."

One of the staff raises her issues. " I cannot believe I am here making bird

Image: (left) Kneading bird-food. (right) Some of the senior residents and staff looking out at the 'realise of the BirdCam.

food. I cannot stand birds!" She continued and explained how she barely dares to venture outside the retirement home when there are too many birds gathered on the lawn. Still, some of the participants are keener on birds. "I live on the ground floor, and I feed the birds every day," to which someone quickly aired worries of other scavenging animals. "How about rats then?"

It is hardly a symbiotic relationship towards the species for which we are now trying to create a food feast. During the session the slightly troublesome relationship with the birds seemed to be overshadowed by the making of the bird food. Getting our hands greasy together and making the bird food took up most of the rest of the conversation. We had covered the tables in plastic; however the coconut-fat used to stiffen the different bird food materials seemed to get everywhere.

Everyone seemed to be enjoying the messiness of trying to shape the materials into form, giving each other compliments for the most successful food-balls. It was towards the end of the day, when five bird-cams were released into the urban surroundings that we ended up getting closer to our, not-quite companion species. Due to the stormy weather, the senior participants watched the spectacle of releasing the cameras from the safe indoors. There was a nervous anticipation in the room since we could not rely on the birds to show up, or even less that they would actually pick them up.

The BirdCams were placed on the lawn outside the common area at Gronnehaven, where lots of terns were circling around. Since the BirdCams are too heavy for them, we were all instead awaiting the larger black backed gull that can carry the weight of them. After about 20 minutes the lawn had gathered as large selection of birds. During the wait, some of the participants of the event were spending their time guessing what birds had arrived. "- What is the black one? It is not a seagull. Maybe it is a blackbird." "Yes, or maybe it is a crow, I see them here. Or a magpie?"

Among around fifteen terns, and two of the anticipated black backed gulls finally show up. "Look, look! Now they are here. Yes, it is one of the big sea gulls". After a short while one of the members of staff shouted out enthusiastically, "It has picked up one of the BirdCams!" leading to spontaneous applauses in the room. "Oh no, it dropped it. It lifted it over the pathway. Did you see that? - Oh, it is there again. It got it. Yeah!". When the whole event ended, two out of the five bird-cams had been taken

on a small flight. Outside, light had become dark, and we gathered our things and finished the workshop with the advice from some of the participants to make the BirdCams a little bit lighter in terms of weight for our next session. In some senses the experiment (A Bird's View Perspective) failed with regards to the intention of getting a bird to fly off with the camera and film the local area. The film made by the birds contained seconds depicting a blurry film of snow, lots of bird sounds like calls and flapping wings. There was also a closeup of a gull that was pinching the food from the BirdCam and feasting in front of the screen. Seconds later it flew away and a dog appeared in the film.

Talk-In-To

In the Talk-in-to experiments, Tau and I were invited by a specific ward that had responded to the invite to explore and host the experiments. That day we were handing over the BirdFlute to everyone at the B1 ward with an interest in the experiment and we were all to meet up in the canteen. As we sat in their canteen and assembled the BirdFlute, which needs a bit of tweaking and testing before it is fully operational, Tau and I explained the aims of UA & Us, as well as the basic functions. We were in total about 10 people in the room, and the atmosphere and discussions were open and relaxed. When the BirdFlute was assembled, the staff and residents collectively decided to position the instrument by the comfortable sofa and the outdoor speaker on their shared balcony. After having set it all up and making sure that the sound conducted by the BirdFlute was properly transmitted to the outside speaker we all took a short break.

Image: The Bird-Flute and the B1 pigeon on the balcony.

During this break something surprising happened - a dove lands on the balcony. This generated excitement in the room. Someone grabbed hold of the BirdFlute and blew into the instrument. Random birdcalls were generated: a crow was calling out a warning signal; a magpie was calling for food; a blackbird was singing. We were all trying to make sense of the BirdFlute in situ when we saw that the dove on the balcony was moving nervously. It seemed to us as if it was trying to define where the sound was coming from and whether it should take it seriously. The pigeon walked forward on the balustrade, stopped and leaned its head in a new position. Inside, everyone who had gathered was slowly starting to realise that the BirdFlute did not attract any possible dove calls but just crows, magpies and blackbirds call. After a short while the dove decided to fly away and one of the residents reflected: "Perhaps the dove is not either so good at listening and understanding the sounds of other species". Tau and I left Gronnehaven for the day. But it turns out that the seniors' and staff's relations with the dove continued over the following weeks.

When arriving for our next visit, we noticed a small plate with water and some crumbs left on the balcony. We were told that the BirdFlute had not generated quite as easy communication as the staff and residents imagined. Charlotte, one of the staff told us how they had grabbed hold of the BirdFlute when they saw birds flying past outside the balcony, but none of these birds actually came closer. The birds would not be lured to their balcony event if they had become better at recognizing the different calls from the BirdFlute. Karina used her own body to mimic the dove's behaviour when she told us how the pigeon

Image: A selection of analog photographs taken by the staff and residents at Gronnehaven's B1 ward.

had reacted by puffing itself up when they had made the crow call. Instead the focus has turned to the same dove we encountered the first day.

Some of the residents have added new material possibilities for creating and extending interspecies relations (bread and water on the balcony). When Tau and I enquired into this, one of the residents told us that they are not allowed to keep pets, and now they refer to the pigeon as their pet substitute. Charlotte continued and told us how

some of the seniors kept asking if they could feed the pigeon with the bread provided for their lunches. In the end, the dove became so at ease with some of the residents that it actually started to come inside and walk around in the living room. This happened on one of the days Tau and I were visiting the B1 ward. It was a peculiar sight; both the dove and Ove seemed rather relaxed about it, while the staff as soon as they noticed started to shove the pigeon back out onto the balcony. Tau was standing with a camera in his hand; I stood next to Ove slightly unsure of what to do in the situation. Ove who has had regular encounters with the dove said, "There is nothing to worry about, it will soon leave again". The last story we were told by one of the staff when enquiring about the friendly dove was that it had to be removed, in her words, "back into the wild". Whether this was a friendly way of telling us that this resembled the death of the pigeon is still slightly unclear to Tau, the senior residents and me.

InterFed

In the final experiment InterFed, the screen in the living room that gathered the photographs triggered by the foraging birds, had a drawing effect on some of the seniors in the ward. One man in particular became momentarily captivated by the changing sequence of images during the period that the experiment was running. Ove was at the time of the trial one of the most observant and interested seniors when the experiment was set up. On more than one occasion, our deliberations about the project made him reminisce about his life, e.g. encounters with a school of gulls in the middle of the Atlantic, when he was sailing as a young man. And if we turned

Images: Selection of photographs taken through InterFed triggered by the birds. (left) from inside the ward (right) from outside Gronnehaven.

to the selection of image-pairs generated by the InterFed prototype, it was evident that Ove is one of the seniors who often appears in the frame. But more importantly, his appearance - and life inside the ward is general – juxtaposed with the birds' outside generated fragmented still-life portrayals. Problematically the technical parts of the experiment kept breaking down; nonetheless during the time it did work it generated over 100 photographs, images that are hybrid encounters of snapshots of birds and seniors every day. Comparably, photographs have long been understood as a way of looking by offering the photographers specific framing (Bogost, 2012, p. 52.) But this specific framing seemed to have disappeared in the image-pairs generated by the InterFed.

From outside Gronnehaven the photograph only caught the tip of a bird's wing, or a gull in flight, or was sometimes out of focus. At other times there was a frustrated face instead of a bird. These are photographs of us, the researcher, where InterFed had broken down and we had come to restore it. Other photos displayed snapshots from when we were setting it up and taking it down. In many ways, there is no objective representation in the photographs; they are showing failures and the behind the scenes events. Birds, grass, design researchers, human and nonhuman food were all photographed from the framing of the sensor reading movements. From inside the wards, the mundane and ordinary rhythms, details and practices of the everyday routines were made visible; sometimes the photographs were upside-down or facing the wall, or a corner of a clock radio, or a portrait of a woman wearing a red blouse, or someone eating lunch alone. What was being captured was literally a gull in flight, someone eating lunch, and a researcher trying to

do her work. The images took the shape they did through stop motion frames of the ongoing movements and actions in and around Gronnehaven.

4.3.1 …& the Rest

The Birdcam, Birdflute, and Interfed were not the only material additions brought into Gronnehaven. While the different experiments were spread over time, and each investigated a specific notion of reciprocity, to keep connected over the distance of both time and space (Helsingor/Copenhagen) the B1 ward had a small digital screen that we updated with images from the project. The changing images would show a selection of the evocative sketches, photographs of Sebastian tinkering with Arduino boards, Kalle and me filing and

Image: (left) The poster from the three different experiments hanging in Gronnehaven's entrance. (right) The small digital screen that was regularly updated with photographs from the making process.

sawing in the wood-workshop, photographs from excursions to a pet shop with a sensor, and from a field-visit when we participated in animal hunting. There were also messages (like a Christmas greeting or updates in regards to dates) mixed with photographs from the

ward and its residents. This was one of our attempts to mediate what was in the making, to keep the blackbox open to the processes in the design workshop and studio. At the same time, Gronnehaven

Image: (left & right) Some of the assembling being done at Gronnehaven.

was also given a small camera by us, which would allow them to photograph their different explorations and entanglements they were making with the nonhuman others in Helsingor.

Another attempt to avoid the blackboxing was done through making sure that the different material parts would be assembled at Gronnehaven. Hence, the shared canteen would to an extent temporarily function as a maker's workshop. Through mixing visits, words, images, and 3D materials we kept on trying to extend ways of how to expose intentions and seek responses. Our repertoire of intervening was by visually experimenting with a glossary of how to keep the objects, as what Latour refers to, fluid and visible. This way of working came from trying to employ an event approach in practice, to allow entities to come together to become different, in practice. Similar to how Yaneva points out that the final product of architectural

design is not in the building but in the movements between scaling, neither are BirdCam, BirdFlute, and InterFed the outcome and final product of UA & Us. They were never the objects of UA & Us, but constituents along with the digital screen, a poster explaining the basic concept, and the camera. However, these where not there to support interactions of a future service, product or villa, but adjusted to allow us to inhabit an evolving issue of co-habitation by evoking a sense of entanglements with these other-than-human citizens that share our planet.

To round UA & Us off towards the end of the three months, Gronnehaven's activity centre, the B1 and B2 ward, all got together to hang a selection of photographs from the experiments. Three large prints with a selection of photographs were agreed to be hung in the shared entrance to Gronnehaven. The prints showed photographs taken by me, by the staff, by the birds, and by Tau. All of us had participated in exploring the potential of creating new interspecies relations. Those photographs were in themselves a kind of sample of a visual anecdotalization, an assemblage of misbehaving participants, depicting the messiness that unfolded during the experiments. As a material account, the photographs were not our researchers' version, but a visual assembly of a hybrid account including the works of many diverse actants. However, as a form of anecdotalisation, they might not travel the world, but are rather very tied to the local context at Gronnehaven.

4.3.2 Misbehaving Nonhumans

Let's return to how Michael points out that the 'issue' can through the event open out to different possibilities, and can be treated as a form of inventive problem making. You might have already figured that the meeting with the gulls and pigeons outside Café Kram was something that was carried further in the experiments in UA & Us and can actually continually be likened to the notion of anecdotes. As an example of an anecdote, Michael describes an incident from his early career that took the form of a disastrous interview of misbehaving research participants going off topic and refusing to engage in his interview questions. In relation, he also describes how there was no data collected due to, among other things, a cat that came to disturb the interview. By playing with the tape recorder the cat started removing it further and further away from the interviewee. He tells us that this professional 'disaster' has followed him through his career. But what he has come to realise through scholars in ANT and STS-studies, is how the disastrous interview reveals how "social data is made possible by virtue of the disciplining (or silencing) of nonhuman others" (2012b), such as the cat. We can liken this to how Haraway (2008) discusses how ways of becoming worldly are linked with entering into relations such as 'touch' that make us responsible in unpredictable ways.

In UA & Us, there have been many incidents of misbehaving nonhuman others, but the design experiments are not focused on touch, but (as explained above) through a set of different exchanges of relations. Importantly, those exchanges are not driven to design *for* animals, but neither are they designed *for* the seniors. Instead,

it is weaving things and practices around us together, to allow for a slippage in perspectives from a designing *for* to designing as a means to becoming *with* that is the central aim. If it is 'about' anything it is about finding ways of engaging and enacting worlds, of making room for the *re-enchantment of reality* (Bennett 2001). Bennett who seeks to extend awareness of our inter-involvements and interdependencies between humans and nonhumans says, "The political goal of a vital materialism is not the perfect equality of actants, but a polity with more channels of communication between members. (…) There are many practical and conceptual obstacles here: How can communication proceed when many members are none-linguistic? Can we theorize more closely the various forms of such communicative energies? How can humans learn to hear or enhance our receptivity for 'propositions' not expressed in words? How to translate between them?" (2001, p. 104). The prospect of *speaking as* a bird differs significantly from *speaking with,* as in conversations. Or, the more political *speaking for,* as a spokesperson. All three seem to suggest an imaginative leap. But, *speaking as* seems to suggest a way to inhabit 'otherness' as actually is enacted through the BirdFlute. It is an expansion into the vitality of new relations. It is not about the otherness of the birds, but a oneness with, or a breaking down of an insider/outsider dichotomy

Through UA & Us we attempted to explore non-linguistic propositions through questions such as, how do we take a not-quite companion species' perspective into account? And, in the forming of new interspecies behaviours, how do we foster relationships that enable communication among species in worlds that lie beyond our direct access? In relation, one answer to Bennett's question can be found

in Haraway's discussion of how touching (her dog) and becoming worldly is linked. She says: "Accountability, caring for, being affected, and entering into responsibility are not ethical abstractions; these mundane, prosaic things are the result of having struck with each other. Touch does not make one small; it peppers its partners with attachment sites for world making". When species meet, Haraway continues, "Touch, regard, looking back, becoming with - all these make us responsible in unpredictable ways for which worlds take shape. (2008, p. 36). She refer to this as infoldings: "I like the word infolding better than interface to suggest the dance of world-making encounters. What happens in the folds is what is important since: "Infoldings of the flesh are worldly embodiments" (2008, p. 249), that is, infolding others to one another in an ongoing and situated formation. Similar to how Haraway refers to dogs, UA & Us also has its focus set on animals – more specifically birds with which we share the urban context. However, as Haraway's notion of touch is driven by her specific interest in dogs as a companion species, the more carnivores and scavenging urban birds, do not quite fit the interspecies dependencies we can attribute to significant others. Hence, in UA & Us we expanded the concurrent notion of companion species by proposing a category of familiar animals in an urban context, as *not-quite companion species*. By proposing the prefix not-quite to companion species it is merely to emphasize a category of animals with more opportunistic, weak and - perhaps most importantly - precarious interspecies relations with humans. They are all animals that most of us find difficult to categorize as companions, even though we co-inhabit within the same (urban) space.

4.3.3 Unfolding Infoldings

What unfolds, or rather infolds, in a BirdsView perspective is that the opportunistic birds are not perceived as quite the same animals as before the experiment. Instead of being creatures viewed from the window, we are during the workshop having to rely on them turning up, as we have to rely on the cheap cameras to work, and to the seniors to engage in making the bird food. And under these conditions, we all take risks. What comes into being is neither a gull's perspective, nor our human perspective – it is another, new relation. It might be fragile, and definitely uncertain, but in the traces left behind the actors we can see the group-formations that also include the birds, even if members are non-linguistic. However, it might not be as straightforward and easily appropriated, as one would like it to be. This can further be seen in how the Talk-in-to experiment very specifically intended to explore communications as translations between species (through BirdFlute). However, rather than a straightforward communication, a set of different power relationships unfolded, where both the residents and the bird developed a relationship that could not be hosted by the B1 ward, for the perhaps obvious reasons of hygiene.

This first calls into question the network of relations among seniors, birds, institutional regulations (e.g. according to time, consumption, hygiene etc.) But secondly, and more interestingly, it also points to the "hybrid community" between the dove and a number of the seniors, partly, enacted through the design prototype/event. And in Interfed, the ontological leap to take up an animal's point of view, there is room for debate to whether the experiments enabled greater hybridity

amongst humans and nonhumans or not. No doubt, examples of 'more' and 'fewer' instances can be found. But it is not impossible to say that compared e.g. to hunting technologies the animals are voluntary. In that way, the technologies, humans and animals are in a way co-working, where the form of unexpected experience gives way to enchantment with the overall effect of what Bennett describes as a liveliness, and at least for Ove at times "a fleeting return to childlike excitement about life" (Bennett, 2001, p. 5), which recuperates the value and attentiveness to engage with other forms of life.

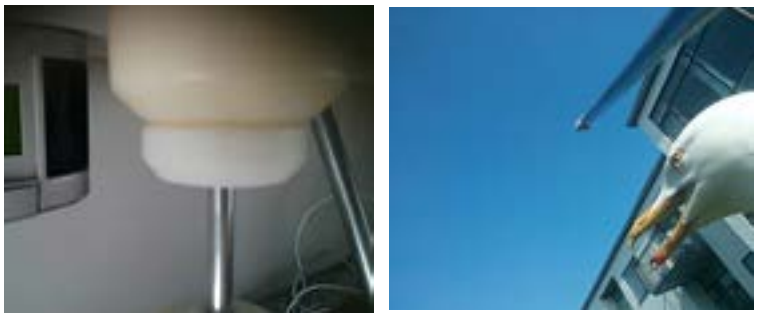

Image: Example of photograph from InterFed where the indoor device clearly has been turned towards the wall.

These characteristics were the outcome of interactions with the prototype that we subsequently would inquire into upon our next visit to the ward. From the staff we learned that someone among the staff (no names where disclosed), would repeatedly turn the camera towards the wall; s/he felt uncomfortable with the prospect of having her picture taken. Somewhere in the process the box with the camera was left upside down, as the objects on the chest beneath the screen were rearranged, perhaps during the mundane act of tidying up.

Unlike the other UA & Us experiments, the interrelation was not one in which 'we' intervened in the birds' world, but instead the relations of intervening were turned around, where 'we' were touched by 'the others'. The birds intervened in our everyday practices; they are becoming actants that actually started to modify and make a difference in the course of actions at Gronnehaven. Or as Latour jokingly puts it, in relation to someone making a spelling mistake, "action is other-taken" (Latour, 2005, p. 45), rather than overtaken.

4.4 The Reversed Journey; Back to Constituents and ~~Design~~ Things

Telier et al., (2011) forwards the question of how we can gather around design things. The design thing, is in their description divided between two different experiences, partly the design process (of making the villa), and partly when the villa is made a public thing, when the customer experiences living and breathing in the house. The constituents are that which is brought into the design project to discuss the coming features through colour samples to 3D-drawings. However, not mentioned by Telier et al., constituents are also highly imaginative, and there are seas of alternatives about what could be (2005b); they could be argued to sensitize us for the possible. In Telier et al.'s case that might figure in how the client and the architects together imagine the coming villa through colour samples, to 3-D models. But as mentioned before, the constituents I am exemplifying are slightly different from how they define the role of constituents. Because they could just as well be figured as a sensitizing of potential interspecies relations.

Allow me to take us a step back from Telier to Latour, to erase the *design* in ~~*design*~~ *things* to get a slightly different question. The question can then be configured, how do we gather and offer new experience and possibilities around matters of concern - that which we might have concern for? (Latour, ibid.) And how do we do this through design? By removing design, in relation to things, I attempt to move the attention away from how design in this constellation has less to do with thinking that we collaborate around the final object (like the villa). Instead, I want to turn the focus back to understanding the social as a collective, where constituents participate as 'one of the part that forms something' (constituents, 2014. In *Merriam-Webster.com*) that contributes to expanding the present.

It is one thing to say that everything is made up of events, or an occurrence of happenings; it is another thing to say that the event is a specific way of intervening as an expansion of the present, characterized by a bringing together. However, as I have removed the design in things, and spoken warmly of inventive methods, this obviously has rather significant consequences for how we position 'the doings of design'. Because if we consider the events to be better defined as expanding the present, as taken from inventive methods, we might better need to define events in relation to design and inventive sociological methods. So where and how do we position and define constituents in relation to design?

Image: Interfed is being overlooked and installed at Grønnehaven.


godt!
siddestillingen i dag?
Onsdag den 22. juni
Onsdag den 1. november

Prototypes, Enactments, and Scenarios

Traditionally prototypes have been applied to clarify requirements, or to evaluate a proposed solution and thereby construct the future. In the late 1970s, prototyping emerged in Scandinavian PD as a reaction to more rational and traditional models. Prototyping in participatory design has been developed as a means to facilitate participation and design, rather than to communicate design (Andersen, 2012). In critical design projects, communicating the idea through a prototype, rather than prototyping seems to have been the focus. But understanding worlds as assembled through distributed agency makes it hard to see how one can design questions through artefacts (as in, for example, critical design), since our imaginaries in a socio-material world are not determined through meaning making at one point, but are constantly being remade through its intertwinedness. As pointed out by DiSalvo (2010), critical design's focus is to articulate a specific meaning and intention by tending to emphasize the conceptual aspects of the objects - emphasising that the idea is more important than the artefact. In other words, little focus is put upon how the materialities involved actually do this. This might also explain why we often encounter critical design objects as photographs or in galleries, focusing on what the meaning is, on a discursive and representational understanding - rather than how these nonhumans, as specific materialities act and participate in particular ways. Furthermore, as pointed out by others (Lindström & Stahl, 2014; Koskinen et al., 2011) such critical objects often tend to stay in galleries, where they are likened more to highly priced art pieces than explorative devices. Even if it might have an object oriented

focus, the specific materiality is actually less important. Within most critical design, the idea and concept 'overtakes' the focus since the representation of the issue, through an object, becomes more important than the 'doings of the object'.

Recently, prototyping has been argued to be "a sociomaterial technique for performing the (possible) future in the present" (Wilkie, 2010b), and even as a way to 'prototyping a collective' (Andersen, 2012, p.109) by ethnographically researching and participatory designing that which design researchers want to create. In relation, when Law and Urry talk about 'enacting the social', the co-design community has spoken of 'enacting scenarios' as a method used by interacting with props and prototypes. The strategy of 'rehearsing the future', suggests a performative way of intervening, in which multiple actors enact possible futures (Halse et al., 2010). As argued by Brandt (et al. 2013), enacting scenarios is very powerful for imagining and exploring new possible futures.

Enactments can be staged in various manners like for example in the previously mentioned 'doll scenarios'. Another, scaled up example of this can be found in Buchenau and Fulton's 'Experience Prototyping' (2000) in which design experiments are carried out as enacted improvisations in real-use contexts. For example, in an investigation into passenger needs for a new rail service they explore experiences in situ of the train using different props and materials. These props can be instructions such as "Buy a return ticket for yourself and a child" (ibid, p. 4). The term 'Experience Prototyping' is described as methods that allow designers and stakeholders to

Image: (top) Bread and pieces of wood is tied together to explore how much weight the local gulls agree to carry.

(left) An excursion to a local pet-shop in Copenhagen to test wheather heat sensitive sensors can 'read' movements from small animals such as rabbits & birds (for UA&Us).
(right) Making in the local wood workshop.

experience the problems and opportunities themselves - rather than watching or reading about someone else's experience as a passive audience. Thus, both bodily and tacit knowledge is set in motion to generate and evoke new knowledge for possible futures. As argued, 'Experience Prototyping' allows designers to think beyond "one or more specific artefacts", as well as allows client, design colleague, or a user to understand a design idea by directly experiencing it. These experiences are based on a scenario, which in extension is meant to allow us to engage with new better ways to materially answer problems, to that which does not exist yet. This might in many ways be figured as rather close to how I have described the event framing. But there are differences, firstly in the fact that the events are not a scenario. It is not a representation of something else, like a potential better/other future. It is rather the unfolding of the potential in the present, maximizing agencies by changing the arrangement of the collective through inviting and binding together. Secondly, the events characterization of a bringing together of humans and nonhumans beyond artefacts is not to respond to human needs or to identify issues as design opportunities (as in Experience Prototyping or

Prototyping a Collective). It is not prototyping; it is *making* because it moves us away from the proto, as in the first or original.

A Messy Sociological Method

When Bennett asks what method could possibly be appropriate for the task of speaking a word for vibrant matter she argues that there also needs to be a certain openness to appear naive or foolish, "to affirm what Adorno called his clownish traits" (preface), close to Stengers ' the idiot', and Michael's suggestion for an 'idiotic methodology'. To operate and articulate the event from a designerly position, to consider the "impossible or barely possible, unthinkable or almost unthinkable versions of reality" (Law 2004, p. 6 as cited in Jungnickel, 2014b) means also to deal with mess. Jungnickel encourages exploring and embracing the messy aspects of life and things difficult to deal with, like textures, ideas, objects, and places in sociological accounts. Through her 'inventive messy methods', she describes how riding a bicycle, compared to mobile practices of motorized transport, opens up for new ways of apprehending the city in new ways. By making sense and experiencing (through the cycling) it recasts mass motorized infrastructures in a new light, which in extension makes it is easier "to question why they are there, whom they are built for, who I enabled and who is less enabled by their presence" (2014b, p. 5). In the eventualisation of bicycling, by becoming together with bike, roads, bumps - the city infrastructure is becoming different. It is to experience the matter of mobility differently, it invents new ways of constructing a position. It does not solidify an answer, but pluralizes perspectives.

Again, this is very close to what I have proposed. However, in the cases I have described the existing mess is not only embraced, but to an extent it also invents a mess. It does so through what at times seemed to be slightly idiotic invitations of exploring new relations between wild urban animals and seniors through the material additions. Hence the aim of the event framing is not to question who is enabled or less enabled as proposed by Jungnickel, but rather to enable presence, and to do so by inventing opportunities to experience new relations, such as between birds and humans, to open up to that which is not already known (as the likes of cycling). This in many ways is tied up to what Stengers (2005b) argues to be related to a "culture of the imagination" that can create new modes of relating to each other. It is sensitivity for the possible, plunging that which is presented as "fact" in a sea of alternatives about what it could be that nourishes aesthetic appreciation, appetite, and interest for reality in the making. As Stengers quietly but forcefully explained, the new vocabulary of politics – or rather cosmopolitics – will come precisely from a new attention to other species and other types of agencies.

4.4.1 Stitching the Event Back Together

Taken together, this actually makes us move closer to understanding design events closer to Ingold's spider web. When the spider lays down the web it starts to connect to already established and existing things in its near surrounding, such as leaves, a stick, or a blade of grass. Through making the web, it literally starts to connect elements, to expand the present through connecting a diversity of entities

that were next to each other before, that now connect together. For the spider, these entities support its web, the web that conditions improvisations to happen, and the potential of the fly to get stuck in the sticky substance. Hence, it is not the novelty of for example the BirdFlute or the bike in itself, but if we are to follow Ingold, as an intervention where several 'goings on' become intertwined that allow for improvisations to happen. While it draws together those different entities it makes other events spur and new encounters to potentially take place. They open out onto a 'virtuality'. To expand the present, means to interlink to lay down conditions of possibilities, combining or redirecting to allow us to cautiously sketch out, sense and experience, different modes of being in a shared world. By that, I hope that I have shown ways to explore collective agency by exploring how modes of action are not particularly only to humans (made perhaps most obvious through UA & Us), as well as ways of working as a designer that

chapter 5

Remaking Collective Life

In this final chapter, I will start by following Latour and his proposal for how to enable progress through cautiously adding. Through him I will further discuss how we can re-consider matters in design. Towards the end of the chapter, I will position the design event through a non-anthropocentric approach. Finally, this chapter ends with a sum up.

5.1 Stealing Fire Cautiously

In 'A Cautious Prometheus? A Few Steps Toward a Philosophy of Design (with Special Attention to Peter Sloterdijk)' (Latour, 2008b), Latour uses design in the traditional meaning as having superficial features: "look not only at the function, but also design" (2008, p. 1). Design in this traditional sense means to give a new and better "look" or shape to things like lamps, chairs, and interiors. He argues that because

do not respond to satisfying human needs, or directly attempting to answer a well-defined problem.

This more or less is an important part in all of the cases. I have placed the hybrid collective at the centre' by avoiding framing artefacts as servants, but as participants that form part of something, through the notion of design constituents**.** Thinking and making through the event support such a framing. As I previously separated the event (end of Chapter 3) into *problem*, *inventive,* and *making,* I have now attempted to stitch them back together. Because one of the most important features of an event is that it can never stand on its own, and neither can these terms. An event is always a process, made up of different parts that come together, impossible to define by one entity. It can never exist only as an invitation, an object, one person, or a conversation. Because as we start to divide it up, as soon as we start to describe the BirdCam, Watt-lite, or the seed sticks in Invite! as an

of its historical roots there is nothing foundational about design, instead it *adds* to something else. This might at first seem like a rather modest way to characterize the practice, which, perhaps he would get few design researchers to agree upon. Nonetheless, Latour's point is that the more matters of facts are turned into matters of concern, or objects into things, we can slowly dissolve the typical modernist account that divides materiality (as function) and design (as form) into opposites. By introducing the titan Prometheus, who defaced the gods and gave fire to humanity as a symbol of modernism, Latour is calling for the opposite heroic gestures. If the Greek character enabled progress by radically breaking with the past and avoiding the consequences, the opposite, to take the qualities of design, of adding to something in a modest way, is to revolutionize progress. Design could be thought of as the anti-hero, or as a post-Prometheus. In

object we lose their coming together, which in extension also means that we can never utter a word of how something becomes different, or enchanted. The strength of the event description is right here, because it means that we cannot encounter objects or subjects by themselves, but always in processes of formation that are hybrid and mix and meld a human/non-human mingling. This is a form of making, less defined by making form of materials, but allows us to practice formations of hybrid collectives. In other words, to encounter design things as events, is to follow Callon and Ingold, by attempting to construct new types of collective life by entangling humans and nonhumans, both through theory and practice. Leaving us with an event framing that does not divide the experience up, it collapses them in the anticipated flow of what might emerge.

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concurrence he suggests a non/post-Promethean theory of action.

The post-Promethean theory of action for design arises in an extended sense "when every single thing, every detail of our daily existence, from the way we produce food, to the way we travel, build cars or houses, clone cows, etc. is to be, well, redesigned. It is just at the moment when the dimensions of the tasks at hand have been fantastically amplified by the various ecological crises, that a non- or a post- Promethean's sense of what it means to act is taking over public consciousness" (2008, p. 3). By claiming that we *design,* we escape the modernist dream of *constructing* and *building* from point zero. Instead, design is modest. His point is that it never starts from design, because to design he says is always

to redesign, to respond to something, an issue, or a problem. Instead of thinking of creation as a blank page that is to be filled with great ideas, design is the "antidote to founding, colonizing, establishing, or breaking with the past" (2008, p. 5). Design is the task that follows depending on the various constraints within the project.

Another important implication of design, which moves us away from the heroic modernist hubris dream of Prometheus, is attentiveness. The more modest way of adding to something is within design characterized by Latour to be skilfulness, attentiveness, and craftsmanship. This slowness and attention to detail are what he counts as a reactionary revolution to the modernizing and more brutal urges of progress as radical departures in the early past. In concurrence with these implications, he asks us to think of artefacts as infiltrated with more and more daily surroundings in both symbolic and commercial settings. When design artefacts become *things*, as complex assemblies of contradictory issues, matter is absorbed into meaning through new complex designs. That is not through chair and lamps - but through for example biotechnologies, where those who copyright DNA certainly also consider themselves as designers. Such contested practices are an example of how matters of fact are weakened and instead appear as 'issues' or 'matters of concern'. Hence, design is closely related to translations (as transformation, movement, and displacements). The final advantage of design is that materiality and morality coalesce through design. This ethical dimension is brought in through the question if something is well or poorly designed. According to Latour, goodness and badness were qualities that matters of fact could not possibly possess. Instead,

things as matters of concern "offer a good handle from which to extend the question of design to politics" (2008, p. 6). Finally Latour points out that the definition politics of matters of concern is simply the activity of collaboratively designing "since all designs are "collaborative designs", if things are gatherings as Heidegger defined them.

The 'new revolution' of remaking our collective life has to be carried out in the opposite of modernizing attributes. It is replaced by a set of cautious and modest attitudes such as skills, craft, meaning, and attention to detail. The role of constructing collective life is not as the *hubris Prometheus,* but instead replaced by the *cautious Prometheus*. It is through design that we can ask, *how do we steal the fire in a cautious way?* In relation, a modernist takes this for granted, "There will always be air, space, water, heat" (2008, p. 9). Referring to Sloterdijk, Latour reminds us that we cannot take the Umwelt that makes it possible to breathe for granted, simply because to be in the world requires life support. Taking ecological crises as an example, we are never 'outside', but we are always entangled and surrounded by elements necessary to support life. And by making such elements explicit, or by treating human life support as a matter of concern, we can *rematerialize* without seeing materials as only social or symbolic. "The idiom of matters of concern reclaims matter, matters, and materiality and renders them into something that can and must be carefully redesigned" (2008, p. 11). And to carefully design, as the cautious Prometheus, is according to Latour to 'draw together matters of concern'. This 'drawing' should according to Latour offer an overview, or view, of political disputes that entangle us when we

need to modify our material existence. Every controversy that comes into being, from changing our incandescent light bulbs to low energy ones, to developing corn based fuel, is a matter of concern because the matter/s are constantly disputed. Matter, as in matter of concern, modifies the whole notion of materiality as dead and not animated; it frees it from the modernist restriction. To re-consider matter in design, as concerns, takes us way beyond the traditional design studio or workshop. It means that we need to reconsider what matter we are tinkering with; the material that used to make the wooden stool, has now radically shifted to partly be made up of controversies of matters of concern.

5.2 Roles of Design as Non-anthropocentric

The role of design shifts when we need to reconsider what matter we are tinkering with. But on one side, design needs to move away from being approached as cold material practices (Yaneva, 2009; Latour, 2008) with little interest in engagement with social issues and concerns. On the other side, design needs to move away from only focusing on users (Redström, 2006). Such oppositions are, as we know now, exactly what Latour tries to help us move away from – the divide between human and nonhuman, between culture and nature – by proposing symmetry around the human/nonhuman divide. So how do we design in a space adjusted to matters of concern? How do we address a new agenda, a return to design *things* from a less static criteria without falling back on practicing cold materiality or re-designing users?

When I recently attended a seminar with Bruno Latour (February 2014) he received a question about creative composition. He replied by saying that art is one of the most brilliant ways of sensitizing us to what the world is made of. I do not necessarily think that it needs to be framed as art; I think he could also have said re-design in relation to sensitizing. Haraway actually proposes her concept of infoldings, the 'dance of world-making encounters', of the 'flesh as worldly embodiment' as translatable to *things*. That is, "the infolding of others to one another is what makes up the knots we call beings, or perhaps better, following Bruno Latour, things" (2008, p. 249). A bit more explicit than Haraway, Pickering uses the idea of 'the dance of human and nonhuman agency' as a way to focus on an undoing of the 'linguistic turn' in sociology. Similar to Barad (2007), he understands the performative focus of STS as leading away from humanistic concerns with meaning or semiotics. Pickering is concerned with political formations that emerge when moving away from a purely humanistic focus to alternative ways for organizing the world away from the subject-object distinction of modernist epistemologies (as cited in Hicks & Beaudry, 2010). More closely related to design, Callon suggests, "To understand the functioning of the hybrid communities involved both in designing goods and in defining the needs to be satisfied, we need to give up the traditional opposition between (wo) men and machines, between ends and means, or in other words between human beings and nonhuman beings" (2004, p. 4).

One suggestion for how to address and move towards more astute recognition of nonhumans and the interplay between humans and

nonhumans in design can be considered by shifting from a *human-centered* to a *non-anthropocentric* or an anthro-de-centrifying (Lenskjold & Jonsson, 2014) approach. This might sound rather Promethean at first, but as explained by DiSalvo and Lukens: "Nonanthropocentric approaches to design do not negate the human. Rather, they attempt to better account for nonhumans in design in order to better understand, describe, critique, or intervene in a given scenario. That is, the human in a nonanthropocentric approach does not disappear; it becomes one entity among many entities, all of which are granted legitimacy in a kind of radical pluralism among objects and things, human and otherwise" (2011, p. 421).

Entering In, Out & Changing

So taking a non-anthropocentric approach does not mean to eradicate human perspectives, but we could actually understand it to be about practicing ways of placing the hybrid collective in the centre. We can further relate this to how Marres proposes to understand material forms of engagement as modes of participation. Through the conception of 'constitutive' materiality, she makes a distinction between the *constitutive* and *constituted* participation. She explains how social studies of participatory devices have focused on how materiality and devices enter into the enactment of public participation through the likes of opinion poll, focus groups, and research on demonstrations such as the anti-road protest. In doing so, they have focused on the constitutive participation and have accordingly been able to document that the participation itself took a discursive form of 'public debate'. But the role of material objects remained under-

articulated: "The materiality of public participation is here limited to its constituent components: to objects, technologies, and settings that enter into the performance of participation, but the contribution of which is not accounted for in the staging of publicity" (2012b, p. 65). By contrast, Marres proposes to consider public participation by not focusing on how material devices *enter into* such performances but how the devices actively facilitate and enable a distinctively material form of participation. Referring back to the augmented and issuefied teapot, the device is argued to configure public participation as a form of material action on the environment. It does this through resonating with a spectrum of issues, and thereby allows for different modes of action, and is argued to be a highly artefactual undertaking.

This is why the framing of the event in relation to constituents is important. Clearly, the design event is also an artefactual undertaking, but not as a radical break of intervening, but as a constituted material mode of adding and modestly changing. But constituents do not only enter the event, they also actively accomplish change through the event. Again, let us return to Fraser's discussion of the event to better understand this. She writes, "The singularity of an event is based not simply on the coming together of prehensions, but on their becoming together in a particular way" (2010, p. 64). Prehensions are explained to be a form of apprehension by the senses, in which each 'perceiver' or element in an event is in a relation. If we are looking at a fireplace, the eye is a prehension of the light, and seeing the red colour is an achievement conditioned by the event. Through Deleuze, Fraser continues and explains that the event framing is not a question of the possible to the real, but a question of virtual to the actual. "The world

is actual - virtual, and as such maintains the power of virtuality; the capacity of a thing to become different. (…). The concept of the event, informed by the concept of the virtual, not only contributes to an explanation of the relations between things, but also accounts for the inexhaustible reserve or excess that produces novelty" (2010, p. 78). That means, to think and make through an event does not only mean being an attentive 'tracer', because to condition something to become different, as Marres points out, is not only a matter to attend to the constituents that enter into the performance of participation. It is also, as Fraser points out, to attend to the becoming together in a particular way, to account for the virtual, for things to become different. To attend to the *becoming together* in a *particular way* somehow seems to echo well with the more modest way of adding with attentive skill that Latour cautiously calls for.

How Do You Add Cautiously?

In Watt-lite, Invite! and UA & Us this was something that developed (better) over time. With Watt-lite I don't think we were necessarily particularly good at adding. We did not carefully consider the entering of the different elements as a 'coming together'. We might have intuitively considered some issues of how to intervene but we never practiced how to articulate this. This is probably also the reason why few electricity engagements happened in some of the workplaces. To some extent we fell into the pit-group of adding a bit too radically.

In Invite!, the adding was done by trying to expand the words, and the terms, with more material elements. However, this could of

course be done in multiple ways; we could have clearly positioned ourselves critically to the definition of health technologies. But, if we are to take Latour's words seriously, this would make us fall back into being Promethean. Adding was instead through Invite! attentiveness to not react towards the terminologies, but to modestly add to them materially. In Invite! we became better at practicing 'the coming together', which was done through invitations shared among the stakeholders and seniors. This worked well for those accepting the invitation, from stakeholders, café guests, to birds. However, we also forgot how to add this to the larger LevVel project, and this is why the Invite! book became very important as an anecdotalization to circulate within Lev Vel.

In many ways it was actually first in UA & Us we managed to add, cautiously well. At the same time, this was the most clownish and unthinkable design proposal of them all. But importantly we really carefully *made* the coming together by considering involvement by inviting through the 'evocative sketches', and by having the opportunity to spend time in and around Gronnehaven. As a 'coming together' we made a kind of rough mapping of the existing heterogeneous relations at Gronnehaven. The map consisted of the different meetings with both residents and staff. It also consisted of different documents that articulated their visions for the senior home, a lot of photographs from inside and outside the home, tracings of birds, weather and the behaviours. This very rough mapping functioned as a way to get to know the different actants, routines, and visions for both inside and outside Gronnehaven. We found out that the birds turned out to have certain routines where they would roughly show up at certain times of

the day, but this was also dependent upon weather. Some days they would come in hordes, other days only a few would show. Through the mapping, the considering of the coming together, the intentions of UA & Us developed through a slow process of attentiveness to the very local, where we as researchers were very much included in the process. And by the time of bringing in the material constituents it seemed like the clownish traits had disappeared. To add to 'something', it seems you need to know what you are adding to, at least if you want to add well.

Constituents & Political Roles

Importantly, we did not only consider how to add cautiously in a discursive manner, but also through an attentiveness to the materials that made up the different constituents like BirdFlute, BirdCam, and InterFed. This also influenced us to move away from the idiotic and clownish. The instruments were far from some whimsical suggestions, but they in themselves were earnest waypoints for exploring and opening up new kinds of relations. In other words, following Despret we engaged in a political question of how to expand the collective. In her contribution, 'Sheep do have Opinions' in Latour and Weibel's 'In Making Things Public, Atmospheres of Democracy', (2006) we get to know the primatologist Thelma Rowell and her slightly unconventional ethology studies, which includes a flock of 22 sheep and 23 bowls of food. To fully understand the radicalness of Rowell's studies, Despret reverts back to explain how in classical ethology, a typical research question would be figured: "Are ewes capable of maintaining bonds with their daughters?"

In this case, the questions seek the conditions that cause certain events *not* to happen and are in extension often included as part of the result. Instead, Despret attempts to change the question into: "What are the conditions that sheep require to expand their repertoire of behaviors?" (2006, p. 364). We then get a new question and challenge. Because how do we actually go about this? How can we afford these 'nonhuman others' the opportunity to give us the chance to talk differently about them?

The answer we get through Rowell and Despret is; through an extra bowl! Through Thelma Rowell's observations and routines, we find out that the extra bowl is that which should *give sheep the chance and opportunity to be more interesting*. Despret argues that compared to how most other ethology research descriptions tend to focus on hierarchies, this approach allows for a whole new way of understanding 'sheepish behaviour'. And it becomes political "in the sense of posing the problem of the collective that we form: do we prefer living with predictable sheep or with sheep that surprise us and that add other definitions to what "being social" means?" (2006, p. 363). Hence, the extra twenty-third bowl becomes an example of how to make possible, in certain circumstances, or to condition that which would otherwise not be possible and cause unexpected effects. It is a means to ensure that it is not only possible to give response to constraint, but rather to choices, which in Rowell's case pluralizes possible ways for sheep to behave and respond, and in extension how we get to know them. Concluding, Despret argues that 'making things public' is "not only making them known; it is also exploring conditions for new ways of organizing ourselves" (2006,

Image: Birds in the cage at Grønnehaven.

p. 368). And the role of the twenty-third bowl is "responsible for inventing, with the generosity of intelligence, polite ways of entering into relationships with nonhumans" (2006, p. 361). This attests to a position she calls 'the virtue of politeness' that as far as possible should avoid "constructing knowledge behind the backs of those I am studying" (2006, p. 361).

In relation, the added 23rd bowl is much similar to the constituents I discuss. Despret's virtue of politeness also suggests cautiousness, but it is a cautiousness that seems to do more justice to adding more 'materially radical' than Latour's suggestion. Comparably, Invite!, might be an example that would fit Latour's description.

Here the different events added to the 'problem of the lonely senior' as well as Lev Vel's descriptions of the 'progressive senior active gym members'. The material additions responded to some of the problems "depending on the various constraints to which the project has to answer" (Latour, 2008b, p. 5). Fine, we seemed to tick the box of being post-Promethean. However, if we take UA & Us as an example we could also argue that we added. Because the residents and the birds were all there before, they where in a very broad definition already together, as in the local area in and around Gronnehaven. But clearly we did not 're-design' in the same way of responding to a constraint within a project. We actually added with the intention to allow for something 'new', ex nihilo, to become different. Those material additions conditioned that in a particular way, they enabled something that was not there before. The particular, the eventualisation of things becoming different, was that they (or some) were becoming in relation to each other. However, what became different was not the intention of the designer; it was the coalescing of those who entered the event. And the added constituents enabled an expansion of the present by enabling new prehensions. Rather to inform a space of possible solutions within the constraints of the project, UA & Us was populating a space of choices by actualising new capacities and competencies. And it seems to be that if we are to keep world(s) enchanted and the doors open for potentialities, we cannot only trace. And as we get closer to understanding this through the event-framing, it helps to point to things becoming different. In that way, tracing runs counter to the event, to processes of becoming (Wilkie, 2013).

The implication here is that *without* the event framing, we could focus on how different kinds of materials and objects come together. But *through* an event framing, we have to pay particular attention to how objects and materials become constituents because of their intrinsic properties. They have powers of their own far beyond the intention of the designer. That means first of all that we have to attend to questions of what those new relations are *doing* and secondly that we *cannot divide* human and nonhuman, because what they are doing is in circumstances to each other. Another way of saying this is that the hybrid collective actually potentially is sparked into being through the process of the design event. That in extension, means that we cannot design the 'cosmopolitical' or 'controversies', because this is what might, or might not come into being in the event; this is the scope of the event, and the productive entanglements of the problem posed in the future it creates.

How Does an Event Framing Propose Symmetry around the Human/non-human Divide?

We can define the event as a nonanthropocentric approach, because it is not designing *for* birds, or electricity for that matter. It is neither *for* clients; it is designing through *interlinking*, *infolding,* and *weaving* together. This framing shifts us away from centering human activities and desires at the top, as a way to consider new forms of engagement as distributed and collaborative-not-only-with-humans, to allow the social to be a space of complex exchanges among all actants in design.

Furthermore, discussing hybrid collectives also ties into new ways of considering ecologies and sustainability by reducing the ontological distance between the human and the nonhuman. Not surprisingly, nonhumans figure prominently in many ecological discourses. In the description of posthuman environmental ethics, Alaimo (2010) says that sensibilities of environmental responsibility can only come from hospitable ethics, an "ethic that is not circumscribed by the human but is instead accountable to a material world that is never merely an external place but always the very substances of our selves and others" (ibid, p. 158) This inclusive landscape has much in common with Bennett's enchanted proposal for a political ecology of things. Importantly, they point to understanding sustainability, garbage piles, ozone holes away from 'making aware', and 'raising awareness', to instead deal with receptiveness to the complicated webs of ecologies that we are part of. Bennett actually rehabilitates anthropomorphism as a strategy aimed at reducing the (linguistic, perceptive, and ethical) distance between the human and the nonhuman. Anthropomorphism is not instrumental to a human-centered vision; instead she says that it works against anthropocentrism. Rather than stressing categorical differences, it can show similarities and symmetries between the human and the nonhuman: "We need to cultivate a bit of anthropomorphism - the idea that human agency has some echoes in nonhuman nature-to counter the narcissism of humans in charge of the world" (Bennett, 2011, p. xvi). (…) "A touch of anthropomorphism, then, can catalyze a sensibility that finds a world filled not with ontologically distinct categories of beings (subjects and objects) but with variously composed materialities that form confederations" (Bennett, 2011, p. 99).

To relate this back to design and how to move us beyond the question of making aware and representation, we might approach such issues from practicing how to inhabit awareness. To me, this also relates to the realm of imagination, to at least momentarily be outside of our patterns, to imagine worlds anew, or as Bennett would say, to startle a gestalt shift in perception. This means to carefully contribute to a narrative of enchantment to cautiously try to inhabit the Umwelt differently. By inhabiting, I mean to be more like Ingold's SPIDER that lives and conducts her conception of the world(s) from her web. The web is not a proposal or a rehearsal, but lines that are *made* and allow for *improvisations* to take place. Which, as Ingold points out, allow for more continual interchanges of intermingling. In that sense, to practice how to be radically cautious we could playfully think of the hybrid design event, as a practice of a hybrid of an ant and a spider. We might have created a monster, a spider with six legs, or an ant with eight legs. Through this monster it seems that we sometimes have to be slow travellers, to follow the pre-trodden paths to better learn how to *make* something well, to cautiously lay another stick on top of the rest, while at other times to connect the already existing things around us differently, to join and make the web materially, and to inhabit it to allow for new formations and spontaneous encounters to take place.

5.3 A Sum Up

I have taken you on a journey of reconsidering what matters we are tinkering with in design. We have travelled slowly as an ANT – by attentively trying to attend to the different actants, especially those that in the design process otherwise are considered as static objects. Through this journey the *event framing* has come into being as characterized by the movements of the ant that traces the paths of each other, but also as a practice of improvisation.

Following discussions of socio-material gatherings of matters of concern, to encounter *design things* through the framings of event I suggest does not only attribute vitality to already made objects but to things in the making. To encourage affective attachments to the world, to keep the door open for potentialities, to practice and become sensitive to what the world is made of, I have approached design as a virtual practice that deals with the complex and elusive, that which is not already known. I have suggested that to intervene in issues by adding materially is a way to expand the present by operating in a mess. To do this, we have to use speculation by questioning what kind of ontologies we want to design for, or what ways of being we want to make possible. When we move from artefacts to *things*, or from the studio - to participate in moving, entangled and public projects, the event framing from a designerly perspective first of all pushes us to think of ways of coming together. In relation, when Telier defines *things* (2011), he also refers to a diversity of entities that come together, what they refer to as constituents. However, while their mission is to better understand how to gather around *design things*, my mission is to better understand how constituents participate in *things* and resonate with a spectrum of issues. Hence, the version of

event that I account for does not only focus on how humans come together, (like e.g. in the Scandinavian Allting), but also on how other entities, as design constituents come together in this gatherings, as a way to explore collective agency, as a drawing, pulling, coming together of a plurality of entities. Or as Ingold pronounces "The constituents of this world are not already thrown or cast before they can act or be acted upon. They are in the throwing, in the casting (2009, p. 93)".

In concurrence, this also shows a potential to realign perspectives in design research and the recent 'object-turn' in STS. As Barad points out, if 'every-thing', lately has been turned into a matter of language, this turn is made to develop and recognize material agency. To rehabilitate such a perspective in design I define the hybrid event as a non-anthropocentric approach. The material proposals become constituents and contribute with their intrinsic properties. In relation, while Sanders (2002) emphasizes participation in design through the idiom of *allowing all people 'to have a stake'*, which could be argued to become subjective and inextricably related to language, through the event framing, the stake is closer related to the Old English 'staca', describing a piece of wood or other material that supports something, e.g. a pole. Bearing in mind the etymology of staca, the material support does not retreat to language, but rather performs an intricate dance with 'people-materialities' and 'thing-materialities' (Bennett, 2010) that stakes out an improvisatory and co-produced path, rather than voicing a claim. Hence, *speculation* along with adapted *methods from co-design* have become the experimental modus operandi of the design event. In the introduction, I refer to this as 'STS-design'. However, we could perhaps also call it a speculative co-design, or an attempt at collaborative speculation.

I have shown this collaborative speculative practice through my practical and design driven engagements with Watt-lite, Invite! and Urban Animal and Us. The material intervention of Watt-lite turned electricity into a matter of concern and sparked a controversy into being for the community college. It also sparked other actants into being from walls, coffee machines, and energy-providers. It sparked a collective into being. However, through Watt-lite we also learned lessons to become better at considering how to infold cautiously. Lessons learned were further attributed in Invite! As the name itself suggests we got better a practicing the coming together of making a hybrid event. In Urban Animals & Us, the infolding and weaving were brought together to explore new relations between the wild urban birds and senior residents. A non-anthropocentric approach was from that perspective a move towards opening up abilities to understand and participate, to understand the environment and practice hybrid relationships in new ways.

In relation to considering how entities, objects, nonhumans, and humans come together through a design event, adding with modesty, and learning how, has been an over-all theme. Because how they come together *well*, also affects how they become together *well* differently. It enables what a design proposal can do. Importantly, this should not be understood as a universal answer of how to understand and know messy entanglements. Rather, it is an attempt, a start at better placing the collective in the center. It is about inhabiting issues to allow matters of fact to weaken and appear as 'matters of concern'. It is collaborative since it does not *only* focus on human matter.

So what is the conception of the designer in all this? How does Latour's definition play in with how I in my early education was taught not only to make and do things, but to engage in the world? Because we have not quite followed the task of, 1) designing in relation to the various constraints within the project, and 2) to give an overview of things as political disputes (Latour, 2008). Instead of an overview, which would be a representation, the hybrid events showed that we actually entangled more. And it was in these entanglements, made up of diverse heterogeneous matters of concern that allowed us to keep the door open for potentialities, for things to become different. Because, in Latour's own words, "If action should remain a surprise, a mediation, an event" (2006, p. 45) our practices cannot be made only of traces, simply because this would mean that we would have to keep materials in design practices as static. Instead, the event has in my account of design become the practice of adding the 23rd or extra bowl through the metaphor of becoming a SPIDER-ANT. And this is what my program has come to be: the design event as a means to invent polite ways of entering into new relationships with nonhuman others, from electricity to gulls. It is a material addition that makes possible, that gives chance to expanding the repertoire of possible choices, and to explore how design can intervene and allow for different hybrid formations to emerge by moving away from a purely humanistic focus. It is an attempt to stake out paths for a more intricate and vital collective dance that moves us closer to the idiom 'to pull up stakes', in order to move away from a fixed position firmly grounded in language and discourse.

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