

2nd Nordic STS Conference

conference program

27th to 29th of May 2015




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Venue:
Aalborg University Copenhagen
A. C. Meyers vænge 15
2450 København SV
Denmark

We have been looking forward to welcome you - our Nordic friends and colleagues in STS - to this conference at Aalborg University Copenhagen. It is a pleasure to be able to continue the fine initiative that was taken with the first Nordic conference in Trondheim in 2013. It is also a pleasure to invite you to the location of a newcomer to landscape STS research: the Techno-Anthropology Research Group.

The overall purpose of this conference is to provide a regional forum that stimulates scientific exchanges and informal networking between STS scholars in the Nordic countries. In line with this purpose the conference theme is an open one.

The conference programme is of course a practical guide. But its user-generated content is also an indication of the liveliness of Nordic STS. As you glance through the pages, you will find topics that are novel to STS as well as new

Sincerely,

Torben Elgaard Jensen
Chair of the conference organizing committee

work on classic topics. You will find a significant amount of theoretical and methodological experimentation. And you will find an influx of new scholars as well as colleagues who have contributed to the field for decades. The conference is Nordic, but Nordic STS was always in close contact with the rest of the world. We are therefore also very happy to welcome friends of Nordic STS from abroad, including our keynote speakers. We hope that you will all have a stimulating and productive time together.

A final feature of the conference that deserves mentioning is the group of Techno-Anthropology students, who are working as our conference assistants. They know the building well and will help you with any question that you might have. STS is an important part of their curriculum, so we have also allowed the students to sit in on the workshops.



Day 1: Wednesday 27th of May

10.00 - 12.00	Registration and sandwich lunch
12.00 - 13.00	Welcome to conference <ul style="list-style-type: none">° Introduction to conference by Torben Elgaard Jensen° A reflection on 'the Nordic moment in STS' by Steve Woolgar° Practical information
13.00 - 14.30	Session A
14.30 - 15.30	Coffee break
15.30 - 17.00	Session B
17.00 - 18.00	Reception

Day 2: Thursday 28th of May

09.00 - 10.30	Keynotes <ul style="list-style-type: none">° Estrid Sørensen: Computer Game Stories° Fabian Muniesa: You Must Capitalize!
10.30 - 11.00	Coffee break
11.00 - 13.00	Session C
13.00 - 14.00	Lunch
14.00 - 16.00	Session D
16.00 - 17.00	Tour around the university
17.00 - 18.00	Harbour trip
18.30 - 21.30	Conference dinner

Day 3: Friday 29th of May

09.00 - 10.30	Session E
10.30 - 11.00	Coffee break
11.00 - 12.30	Session F
12.30 - 13.00	Lunch

13.00 - 14.30

A1 Science and its publics: STS studies in science communication
(first session of two)

Chair: Sarah R. Davies		Room: ACM 15 2.1.042
	Britt Wray	Make room for emergence when speaking of synthetic biology
	Maja Horst	Science communication as organizational communication
Maria Loroño Leturiondo & Sarah R. Davies		Scientists, climate, communication: Basque researchers' views on public communication

A2 Calculating, computing and documenting technologies
(first session of two)

Chair: Ger Wackers		Room: ACM 15 4.058
	Henrik Karlstrøm	Calculating power: the regulatory regime behind Norway's electricity grid costs
	Emil Urhammer	On the trail of the Calculator Boys
Anne Kathrine Pihl Vadgaard		Counting and cutting - exploring bureaucratic counting practices at a Danish election

A3 Valuographies - toward a constructivist approach to values in STS?

Chair: Francis Lee & Claes-Fredrik Helgesson		Room: ACM 15 2.1.043
	Francis Lee & Claes-Fredrik Helgesson	Proposing valuography to the study of the enactment of values
Lotta Björklund Larsen & Francis Lee		Calculating the risky citizen: Algorithms as valuation devices in the welfare state
Claes-Fredrik Helgesson		Assessing adaptive design drug trials
Heta Tarkkala		High quality is not an intrinsic property of the sample itself - The question of sample quality in biobanking

A4 Educational practices
(first session of two)

Chair: Morten Misfeldt		Room: ACM 15 2.3.124
	Sofie Stenbøg	Digital Student Expertise in the Making
Sara Heidenreich & Robert Næss		The digitalization of the school and its environmental challenges: Engaging adolescents to reflect on and change their use of ICTs considering climate change mitigation
Helene Ratner		Governing Danish schools through algorithms
Emilie Moberg		Foregrounding the technologies of preschool policy – tracing the concept of ‘training’

15.30 - 17.00

B1 Science and its publics: STS studies in science communication (last session of two)

Chair: Sarah R. Davies		Room: ACM 15 2.1.042	
Mikko Dufva, Toni Ahlqvist, Kaisa Oksanen & Arho Suominen		Lifting the veils - Structuring the societal discussion on synthetic biology	
Anja Johansen		Imagining the brain by engaging the body - Artistic strategies and affective encounters in contemporary science exhibitions	
Emma Petterson		Tactile strategies in the museum	

B2 How can researchers intervene through STS studies?

Chair: Maj-Britt Quitzau		Room: ACM 15 2.3.124	
Peter Munthe-Kaas		Innovation, translation and intervention - Using Actor-Network Theory to analyze public sector innovation	
Maj-Britt Quitzau		Imparting situational empathy in strategic spatial planning through an ANT research intervention	
Tina Talleraas		Unlocking the Black Box of Nuclear Disarmament: The Humanitarian Initiative to Re-Frame the Bomb	

B3 Educational practices (last session of two)

Chair: Helene Ratner		Room: ACM 15 4.058	
Maria Larsen Ryberg		Making flexibility durable: Interdisciplinarity and Bloom's taxonomy of cognition	
Rachel Douglas-Jones & Christopher Gad		Promises and perils of computational thinking: A discussion piece	
Morten Misfeldt, Marie F. Slot, Thomas I. Hansen, Andreas L. Tamborg & Jeppe Bundsgaard		Empowering teachers and students through situated goal formulation and assessment?	

B4 Engaging with digital methods (first session of three)

Chair: Kristian Hvidtfelt Nielsen		Room: ACM 15 2.1.043	
Peter Danholt		Modernist tools for a-modern ontologies - another example of cutting-edge equivocation?	
Marisa Cohn & Brit Ross Winthereik		Why a feminist cartography of controversies? Speculative figuration as a way forward in controversy mapping	
Torben Elgaard Jensen		ANTA-ology of Science? Exploring the possible co-existence between field study methods and digital methods	

11.00 - 13.00

C1 Engaging with digital methods (second session of three)

Chair: Brit Ross Winthereik		Room: ACM 15 2.3.124	
Anders Kristian Munk		Towards a pragmatics of digital mapmaking	
Tobias Bornakke, Andreas Birkbak & Morten Krogh Petersen		Prototyping controversies	
Irina Papazu		”Let’s Go Global!” – Circulating Samsø globally?	

C2 STS in the field (first session of two)

Chair: Morten Krogh Petersen		Room: ACM 15 2.1.042	
Morten Krogh Petersen	Who cares? How design thinking might help STS become more interesting		
Natalie Forssman	Embodied movement in the field: Playing with devices and disciplines		
Laila Zwisler	Can STS theory help recent academic heritage as sources for history of science and technology?		
Sonja Jerak-Zuiderent & Teun Zuiderent-Jerak	Matters of ... Noise? - Atonal Critique in Cacophonic STS		
Andreas Birkbak	The politics of comparison in mediated publics		
Laura Watts	Pixels and Pencils: Improvising Methods for Writing Futures		

C3 Valuating life (first session of two)

Chair: Mette Nordahl Svendsen		Room: ACM 15 2.1.043
Tone Druglitrø	Exploring the law as a moral technology and site for modifying the biopolitical collective	
Anja Marie Bornø Jensen	Mirror of the Soul, Therapeutic Tissue and Hospital Waste – (De)valuations of the Eye in Danish Cornea Donation	
Robert G. W. Kirk	Subjugated Love: Valuing life and Labour in the Laboratory Animal Sciences, c.1945-	
Carrie Frieze	The Role of Animal Husbandry in Translation Medicine	

C4 Calculating, computing and documenting technologies (last session of two)

Chair: Emil Urhammer		Room: ACM 15 2.1.009
Ger Wackers & Rolf Andreas Markussen	Document Agency	
Timo Leimbach	Govern uncertainty - Big data, algorithms and the question of reasarching the intangible	

14.00 - 16.00

D1 Engaging with digital methods (last session of three)

Chair: Marisa Cohn Room: ACM 15 2.3.124

Anders Koed Madsen & Anders Kristian Munk	Experiments with a data public
Kristian Hvidtfelt Nielsen	Mapping controversies from labs to public spaces: Critical engagement with controversy and digital methods in science communication studies
Benjamin Brink Allsopp	Engaging ArcForm in Science and Technology Studies

D2 STS in the field (last session of two)

Chair: Morten Krogh Petersenn Room: ACM 15 2.1.042

Rahel Leupin	Intercontinental Theater Exchange in the making
Stefanie Reinert Jenssen	Enough of Ethnography? Or: What I learned from being an ad-hoc lab rat in an Internet of Things
Steve Woolgar	Jimmy Savile and the dynamics of revalation

D3 Valuating life (last session of two)

Chair: Tone Druglitrø Room: ACM 15 2.1.043

Lene Koch	Eugenics as Modernism
Lotta Hautamäki	What Is of Value in Psychiatric Diagnosis?
Mette N. Svendsen, Iben M. Gjødsbøl, Laura E. Navne & Mie S. Dam	Life with a View - Enacting Futures across Species and Spaces

D4 Technoscience and the social - knowing in natureculture worlds

Chair: Ruth Müller Room: ACM 15 2.1.009

Kerstin Sandell	Is depression as biology shifting the nature/culture divide?
Jutta Haider	The materiality of digital technologies and the environmentally friendly self
Ruth Müller	Exploring the Epigenetic Self
Elaine Gan	Freezing Life for Doomsday

9.00 - 10.30

E1 Organizing environments

Chair: James Maguire Room: ACM 15 2.1.042

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|-----------------|---|
| Maria Eidenskog | Choreographing care for corporate sustainability |
| James Maguire | Shaky Matters: Making Earthquakes and Reconfiguring Politics - Managing the Environment in the Anthropocene |

E2 Governance and bio-technology

Chair: Aaro Tupasala Room: ACM 15 2.3.124

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|----------------------------------|--|
| Aaro Tupasala | Problems and practices of genetic sovereignty in international biobanking |
| Karoliina Snell & Jose A. Cañada | A broadened typology for biobank engagement - Strategies, practices and new stakeholders |
| Sebastian Mohr | Controlling masturbation |

E3 New Big Science - challenges for science, policy and practice (first session of two)

Chair: Kerstin Sandell Room: ACM 15 2.1.009

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| Mats Bennner | Big Science as Policy Mess: Governing the Ungovernable. |
| Torbjörn Friberg | The socio-political functions of contradictory phenomenon of Triple Helix |
| Jutta Haider and Sara Kjellberg | Data in the Making |

E4 Exploring empowerment (first session of two)

Chair: Henriette Langstrup Room: ACM 15 2.1.043

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| Lars Bo Andersen, Peter Danholt & Peter Lauritsen | Chasing empowering agencies in Teledialogue |
| Finn Olesen | To be liberated, or to be institutionalized - Reflections on Paulo Freire and Sociotechnical Selfcare. |
| Helle Sofie Wentzer | Political voices in empowerment |

11.00 - 12.30

F1 New Big Science-challenges for science, policy and practice (last session of two)

Chair: Mats Benner		Room: ACM 15 2.1.009
Ulf Maunsbach & Ulrika Wennersten	DATA and the law	
Josephine Rekers	Managing expectations in New Big Science	
Kerstin Sandell	New Big Science: Challenges for science, policy and practice	

F2 Exploring empowerment (last session of two)

Chair: Lars Bo Andersen		Room: ACM 15 2.1.043
Dorthe Brogård Kristensen & Matthias Bode	The optimizing self and the digital double	
Henriette Langstrup, Karen D. Nielsen & Anja E.Rahbek	Empowered by participation? The politics of invited and uninvited ehealth use.	
Malene Bødker	The role of enabling infrastructures in empowering older people	

F3 Innovation

Chair: Sampsa Hyysalo		Room: ACM 15 2.1.042
Janne M. Kohonen	Bringing order to chaos: Using multiple theories to explain technological change	
Mats Fridlund	Imagineered Communities - Technonationalism in Swedish Electric Power	
Sampsa Hyysalo & Svetlana Usenyuk	The user dominated technology era: Dynamics of dispersed peer-innovation	

F4 Medical practice and standards

Chair: Anne Heriksen Rogne		Room: ACM 15 4.058
Angelos Balatsas & Lekkas	Methodological challenges in studying interdisciplinary collaboration through patient safety	
Anne Hatting	Title: TBA	
Anne Heriksen Rogne & Heidi Gabriel Hansen	Control of antibiotic resistance - forms of knowledge, standards and technologies in general practice	

F5 Eating

Chair: Terje Finstad		Room: ACM 15 2.3.124
Janne Huovila & Sampsa Saikkonen	Establishing credibility, constructing understanding: The epistemic struggle over healthy eating in the Finnish nutrition blogosphere	
Terje Finstad	You are what who you eat: Negotiating animal feed and the relational meal	

Computer Game Stories: Thinking Society Through Media-Technology

Estrid Sørensen

The classic STS title of Bijker and Law's book on "Shaping Technology, Building Society" reminds us that in its founding years, STS was centrally concerned about how society was shaped through technology. It combined sociology and history to account for the socio-technical construction of society. As ethnography took hold of STS many researchers showed how micro-analyses of the continued everyday accomplishment of technoscientific practices have a lot to add to the accounts of large technological system. Emphasising the locally situated character of the object of study, its particular circulating mode, its decentred character or the multiplicity of the technoscientific practices of inquiry such studies are generally less concerned with society at large. For good reasons the existence of such an entity is even questioned.

Yet, 'society' has not disappeared out of STS. Latour's 'modes of existence' and the current trend to 'map controversies' are attempts to combine multiple micro-studies of technoscientific practices into accounts of larger assemblages one might also recognize as 'societies'. This talk joins these ambitions and seeks to describe societies through a media-technology: computer games.

Being a popular media computer games are encountered in societies' most central institutions: Ministry Departments engage with computer games by defining legal and political

regulations that limit their circulation among young people, while game publishers mobilize ways for games to proliferate widely through trade infrastructures. Science and health providers inquire how computer games may harm minors and how to protect minors from such harm, while game developers are occupied with creating games that allow players to engage realistically with worldly phenomena. Educational institutions use games to raise learners' competencies, while young people play games to have fun and relax from the stress and pressure of life in educational institutions. Parents, NGOs and journalists debate, reflect and are concerned about how to relate to this media-technology, and they experiment with how to intervene without interfering with children's computer game play.

The talk tells computer game stories from these various areas in Germany and Denmark that discuss how these media-technology evoke concerns in diverse, yet interconnected ways, how such concerns circulate and transform and are stabilized. Comparison across national borders and across institutional areas proves an apt method for thinking societies through computer games.

You Must Capitalize!

Fabian Muniesa

Capitalization, capitalization, capitalization: this is the buzzword, shibboleth, cosmology or engine that seems to be driving (at least to quite an extent) the rules according to which things are valued (as assets) and realities produced (hence also as assets) in many quarters

of our contemporary world -- from the business models of technological innovation to the managerial policies of scientific publication, from the economic tools of environmental mitigation to the organizational habits of knowledge management. From a purely existential angle, the motto "You must capitalize!" seems to duplicate quite well the rhetoric gymnastics that Peter Sloterdijk captures with the slogan "You must change your life!". How can this cultural syndrome be studied and assessed? What could or should an STS approach make of it?

Making room for emergence when speaking of synthetic biology

Britt Wray

This paper is concerned with the use and influence of imagination in ‘performative sentences’ about synthetic biology, and how the role of the science communicator might be revitalized to nuance such imaginaries. The paper begins with an analysis of depictions of synthetic biology as a revolutionary field that allows scientists to “not only alter nature but guide human evolution as well,” where life becomes more than “as it could be,” transforming into “life as we could make it be” (Pauwels, 2013). Synthetic biology’s ‘economic calculus’ that connects ‘engineering practice to a plurality of life forms’ has created the condition upon which it appears unprecedented (Mackenzie, 2013). I will demonstrate how this seeming lack of precedents ties it into discourses of ‘bio-objectification’ and what bio-artist Oron Catts calls “Neolife.” But is this lack of precedents real, or imaginary? According to Bernadette Besnaud Vincent, statements describing the technoutopian future of synthetic biology can be seen as ‘performative sentences,’ “sentences which do something in the world rather than (just) describing something about it.” Following Vincent Besnaud, I will argue that there is a cultural amnesia at play in synthetic biology, which gets produced through its imaginaries that overlook the histories of technoscience. The second part of the paper explores how masked histories of technoscience, ‘neolife’ and bio-objects might be brought into a productive entanglement with contempo-

rary synthetic biology discourse. I will present my initial findings from the interactive science engagement project that comprises my PhD, which catalyzes experimental discussions and audio recordings between scientists, philosophers, anthropologists, bioartists, bioethicists and entrepreneurs about the imaginaries that construct their understandings of synthetic biology. This is done in an attempt to generate experiments in knowledge production between scientists, social researchers and their publics that are “pluralist, reflexive, and promote mutual learning” (Rabinow & Bennet 2012, Fitzgerald 2014, Pauwels 2013, 225).

Science communication as organizational communication

Maja Horst

This paper focuses on the relationship between organizational communication and science communication, and particularly the way in which organizational and individual identity is performed and enacted in science communication. The professionalization of science communication has led to a large increase in communication professionals at universities and other research organizations. Science communication is therefore rarely simply a matter of an individual (scientist or journalist) simplifying difficult knowledge so that it becomes accessible to non-scientists. Rather, science communication is often linked to organizational branding and/or the ability to DO science by generating resources such as funding and legitimacy. Taking inspiration from the field of organizational science communication, the paper looks at the

close links between external and internal communication within a university as well as the importance of these links for identity constructions within universities and other research organizations. The empirical material for the discussion is taken from the University of Copenhagen exhibition at the EuroScience Open Forum (ESOF) conference in Copenhagen in June 2014.

Scientists, climate, communication: Basque researchers’ views on public communication

Maria Loroño Leturiondo & Sarah R.

It is now almost 25 years since Lévy-Leblond, in an early issue of the journal *Public Understanding of Science*, called for “studies and activities on the understanding of the public by scientists” (1992, 20). His point was that, after research comprehensively rebutting the so-called ‘deficit model’ of the public, STS was in danger of itself constructing a deficit model of a homogeneous, sociologically naïve population of scientists. There was, and continues to be, a need for research that seeks to understand the diversities and complexities of the ways in which natural science researchers imagine and perform science communication and the publics implicated in it.

A small corpus of literature addressing this issue has emerged in the years since Lévy-Leblond’s call. This paper briefly reviews this work to argue that, though it has started to explicate the ways in which scientists think

about public communication, it has almost exclusively focused on English language contexts and has, in addition, paid too little attention to disciplinary differences. We therefore discuss early findings from a study carried out in a Basque research centre, which aims to examine scientists’ perceptions of public communication regarding climate change.

Scientists interviewed in recent studies have begun to describe public communication as context dependent and started to identify some elements that ought to be considered in order to communicate well (for example Davies 2008). Our study will analyse scientists’ talks from focus groups in order to identify which elements they consider to be important when engaging face-to-face with the public, and also what other more general ideas about public communication they have.

Calculating power: the regulatory regime behind Norway's electricity grid costs

Henrik Karlstrøm

What is the role of economic calculative techniques in the regulation of important societal functions in a modern market-based political economy, and by which mechanisms do these techniques come to be? This paper seeks to discuss this topic by examining the case of the regulatory regime for the income of electricity grid companies in Norway, which are subject to a complex and contentious set of rules and calculations that determine their income in a given year.

The calculations that form the basis for the income roof of electricity grid companies are detailed in opaquely worded directives that seldom fall under public scrutiny yet have strong bearings on the electricity bill of all citizens. These documents also feature in yearly legal disputes between grid companies and regulators over their correct interpretation. The talk traces the origin of the different parts of these calculations in regulatory documents that originate in different departments and directorates, and discusses possible consequences for democratic transparency and participatory processes.

These questions are not just of academic interest, but form part of the discussion about how to govern an increasingly complex society in an acceptably democratic way.

On the trail of the Calculator Boys

Emil Urhammer

This article investigates multiple enactments of the Economy as an object that demands and determines parliamentary decisions. The entrance to the investigation is the Calculator Boys, an almost mythological breed of economists in the Danish Treasury, who run macroeconomic models and make economic calculations. In this regard, these economists are closely connected to the parliamentary process of economic policy-making.

The article's preliminary research question sounds: how can macroeconomic modeling, as an element in parliamentary politics, be studied through a specific attention to the so called Calculator Boys?

To answer this question, I follow the activities of the calculator boys and their macroeconomic models through interviews, news media and field observations. Even though the term the Calculator Boys (Regnedrengene) originates from Denmark, the study has a broader scope and tries to follow the activities of professionals, classifiable as Calculator Boys, in Denmark, Great Brittan and Mexico.

The primary theoretical inspiration of the study is Latour's distinction between matters of fact and matters of concern. Following Latour's appeal to pay attention to matters of concern, I try to conceptualise Treasuries as backstages of the parliamentary theatre, where important props for the performances on the main stages are produced.

A preliminary finding of the study is that the Treasuries' macroeconomic models are not epistemic devices that represent an objective Economy out there (to use Latour's expression), rather they should be understood as interlocutors that keep track of basic national accounting identities, but other than that can be adjusted to say what turns out to be suitable in a given political setting.

Counting and cutting – exploring bureaucratic counting practices at a Danish election

Anne Kathrine Pihl Vadgaard

When elections run smoothly, regulations and practices that ensure a secret vote and fair counting are mostly hidden in the machinery of elections. These are seen as a backslash to the political deliberation on Election Day and as practicalities and technicalities that provide the political spectacle with a transparent and neutral framing. This paper, however, focuses on the often hidden electoral apparatus and draws on science and technology studies to establish sensitivities towards a 'democracy in action'.

Based on 9 months of ethnographic fieldwork in a Danish municipal election office, I explore the machinery of elections in general and the counting practices at the recount the day after Election Day in particular. I argue that the recount is simultaneously a well-oiled bureaucratic machinery and a chaotic mix of discretions and bending, twisting, and tinkering of counting practices in order to produce an uncontested election result.

Through ethnographic stories of counting practices, I highlight the ambiguities, errors, and quick decisions that are often hidden behind the myth of democracy as solely relying on rational and transparent procedures (Coles 2007). These stories will, thus, not only shed light on the different technicalities of bureaucracy including sorting the ballots and the use of multiple spreadsheets to create an election result. They will also show how bureaucratic management of disruptive counting practices is characterised by enthusiasm, attentiveness, and changing incentives.

Proposing valuography to the study of the enactment of values

Francis Lee & Claes-Fredrik Helgesson

How can we take an interest into the enactment, ordering, and displacement of a broad range of values techno-scientific practices? The volume Value Practices in the Life Sciences & Medicine articulates a pragmatist stance for the study of the making of values in society, exploring various sites within life sciences and medicine, and asks how values are at play. This approach means taking seriously the work scientists, regulators, analysts, professionals, and publics regularly do, in order to define what counts as proper conduct in science and health care, what is economically valuable, and what is known and worth knowing. The notion of valuography is suggested to identify an empirically oriented research program into the enacting, ordering, and displacing of values. The editors (Dussauge, Helgesson, Lee) argue that a research programme of this kind, makes it possible to move orthogonally to the question of what values are. This move rectifies some central problems that arise with approaches that depend on stabilized understandings of value.

Calculating the risky citizen: Algorithms as valuation devices in the welfare state

Lotta Björklund Larsen & Francis Lee

Today, the social interest in algorithms is nascent and growing. Algorithms are increasing-

ly used to automate every facet of society; cars, vaccination programs, tax audits, surveillance etc. Although algorithms are value-laden, such quantitative technologies have often, in practice, been linked to an image of objectivity and rationality. In such cases, algorithms are seen as arbiters of a mechanical and value-free objectivity. A valuographic approach to algorithms sees them as valuation devices that make what matters: what/who becomes valuable/worthless, normal/deviant, and visible/invisible. This presentation explores how to do a valuography on algorithms for calculating the “risky citizen” in the Swedish welfare state. How do we investigate the enactment of values in relation to algorithmic issues such as: Who is selected for tax audit? Who is constructed as a disease vector? Who is at risk for sick leave? Increasingly, such questions in the welfare state are answered using computer algorithms. Can an algorithm then be made as racist? Sexist? Ageist? Is the question ‘Who is risky?’ then reframed as a question of computation rather than values.

Assessing adaptive design drug trials

Claes-Fredrik Helgesson

The valuation, through devices, of so called “adaptive design” trials is at the centre of interest in this valuography. This study takes an interest in how researchers, companies, and regulators work with how a drug trial can be assessed prior to it being conducted? Specifically, this study focus on the assessment of adaptive design clinical trials, which is a new breed of trial design that includes a planned

opportunity for altering one or several aspects of the study based on analysis of interim data from the study. The possibility of mid-study alterations of design features sets such trials apart from conventional randomised controlled trials (RCTs). The question of what is a good trial design is always topical in drug research. Yet, the valuations involved in establishing this becomes more convoluted when the design itself includes a number of possible paths that the actual trial can take depending on rule-based decisions guided by analysis of interim data.

“High quality is not an intrinsic property of the sample itself” – The question of sample quality in biobanking

Heta Tarkkala

The question of “high-quality sample” is crucial in the field of today’s biomedicine. This can be seen in the way the notion is used by clinicians, scientists and biobank stakeholders to describe the samples collected in biobanks, their sampling process and storage. Through the rise of biospecimen research and growing understanding of the complexity of biology the documented, defined and recorded quality of each sample has turned into a focal point of biobank activities trying to secure and build an infrastructure of biological materials for research use. However practices, standards and SOP’s are built based on today’s knowledge so a certain level of uncertainty is inevitable. Also the possibilities bound to these samples are, for now, mainly prospective.

Based on mainly interview (n=40) data I argue that a high-quality sample is something that is there to be used, but its use-value is bound to the circulation, documentation, standardization and protocols it has attended previously. Finally it has to have use-value for researchers in order for the expectations on biobanking to come true. And again the user must know what is appropriate use of these samples and for what kind of analyses do they qualify.

In the statements of my informants the efforts to give an identity of quality for something rather ambiguous can be seen. High quality of a sample and its meaning for research is often valued through the juxtaposition to the old way of doing research in the academy.

In the question of high quality sample and in the quest for achieving consistent sample quality in biobanking several dimensions inherent in building biomedical knowledge are drawn together. This high-quality sample of a biobank connects to expectations of biomedical progress and helps us to understand biobanks as part of the biomedical platform contributing to this progress.

Digital Student Expertise in the Making

Sofie Stenbøg

Digital Natives, iGens' or New Millennium Learners (Prensky 2001, Raphelson 2014, OECD 2008). There are many labels for the generation of young (western) citizens who have grown up with digital, web based technologies as a crucial part of their everyday life. This generation now inhabits schools all around the world and their entry has not escaped the attention from teachers, school managers and policy makers.

A current trend within education management, in Denmark as well as internationally, is to incorporate the students' digital skills or 'expertise' as a resource in teaching, e.g. through digital student production (Sørensen 2010). This trend is based on the widespread idea that students of the digital generation by default are competent and creative users of technology in virtue of their early interaction with technology, and thus the digital expertise resides within the individual student (e.g. Bennett et. al. 2008, Helsper & Eynon 2009).

This paper goes beyond the idea of digital expertise as something intrinsic. Building on STS's central notion of performativity (e.g. Law & Singleton 2000) the paper argues that digital expertise must instead be studied as a temporary achievement of negotiations and coordination between heterogeneous actors involved in the broad situation of teaching (Clarke 2005). Through the paper this analytical argument is elaborated in close dialogue with empirical findings from an on-going field study at a school in a Danish Municipality, whose strategic am-

bition is to involve and utilize students' digital competencies as much as possible in teaching.

The paper concludes that understanding digital student expertise as a performative and collective effort, rather than something given will have implications on digital school management.

The digitalization of the school and its environmental challenges: Engaging adolescents to reflect on and change their use of ICTs considering climate change mitigation

Sara Heidenreich & Robert Næss

Technology is becoming increasingly important in the lives of adolescents. They are heavy users of ICT both for communication, entertainment and information. They are also spending much money and time on ICT equipment. Recently, also schools (and hence another big part of adolescents' daily lives) are becoming digitalized and ICT is increasingly used for educational purposes. However, the use ICT has environmental and climate impacts, which often are not thought about. What happens when adolescents are confronted with such issues? STS has been concerned with public engagement regarding science and technology. How may we manage the issue of disengagement?

In this paper, we analyse 10 focus group interviews and four workshops organised to elicit responses from adolescents regarding potentially important behavioural changes such as energy efficient ICT use, transformed ICT use,

the effects of information campaigns and demands made in relation to new energy technologies. What are the main concerns of the youth with respect to reduce their ICT-related energy use in order to contribute to climate mitigation? Is it at all possible to consider disengagement with some forms of ICT? The paper focuses particularly on adolescents' use of ICT in school settings and thus provides new perspectives on the digitalization of the school.

Governing Danish schools through algorithms

Helene Ratner

'Governing at a distance' is a major concern for the Danish Ministry of Education. While the Danish Ministry of Education via legislation provides the overall goals and instructions for the content of teaching, local governments and individual schools shape these goals further through different forms of self-governance. Governing at a distance thus entails a delicate balance between facilitating individual schools' and municipalities' self-governance while holding these institutions accountable to national goals. With a growing political attention to international rankings and comparisons such as PISA, there is much political pressure on the ministry to intervene with schools deemed to be 'at risk'. While governance has long depended on a statistical apparatus rendering the population visible and comparable, the ministry currently experiments with new methods for data analysis. Big data analysis, it is claimed, can predict pupils' performance in PISA tests. This paper engages with these new methods,

with a particular attention to how algorithms help bureaucrats screen, sort and value institutions.

Foregrounding the technologies of preschool policy – tracing the concept of 'training'

Emilie Moberg

This paper will explore the materialities and technologies of preschool policy enactment, decentering the human (teacher) actors often posited as key actors in policy implementation research. Following Bruno Latour (1999), insisting on a relational materialist notion of agency and power, technology is what holds society together, making it durable. In the paper preschool policy is posited as collectively generated through networks of ideas, materialities and humans. Working from a praxiographic methodological stance (Mol, 2002), ethnographically foregrounding the way objects relate in a preschool practice, I wish to trace a concept that appears to mobilise response, affect and even counter-networks in the preschool practice. The tracing of this concept - the concept of 'training' (children)- involves following the way it moves from one place to another, associates/disassociates to other actors, becomes materialized and (de) stabilized (Latour, 1986).

Lifting the veils: structuring the societal discussion on synthetic biology

Mikko Dufva, Toni Ahlqvist, Kaisa Oksanen & Arho Suominen

Societal discussion around emerging technologies, such as synthetic biology, encompasses various and often conflicting viewpoints. This diversity is somewhat typical in the case of technological expectations, laden with uncertainties and uncharted prospects. However, this mode of “explorative expectation” easily leads to biased perceptions that focus only on selected aspects. This might fragment the societal discussion and hinder the sharing of the intentions and aims of varied actors. In this paper we structure the societal discussion around synthetic biology by analysing variegated metaphors collected from the expert and public literature. Based on the results we highlight the tensions between the societal viewpoints and expectations. We position these tensions to a heuristic continuum constructed of two societal “veils”: the one end of the continuum is called “veil of expertise” and the other “veil of ignorance”. By “veil of expertise” we refer to a theoretical situation where only expert knowledge is perceived as meaningful considering the technological expectations. This expert-orientation is often emphasised in societal planning practice, such as technology foresight. At the other end of the continuum is the “veil of ignorance”, which refers to a theoretical situation in which the human tendency to overemphasize the prospects of risk and insecurity leads to doomsday portrayals and worst case sce-

narios. This emphasis could sometimes unfurl rapidly in media. Obviously, the two ends of the spectrum are rarely found in pure form. However, the continuum is useful for emphasising the different aspects of “societal cloaking” that could be effective in the discussion on emerging technologies. The analysis of metaphors helps to understand the variety of societal perspectives that could be taken on such controversial emerging fields as synthetic biology. Furthermore, applying the continuum of societal veiling helps to balance the discussion and foster an inclusive and emancipatory societal dialogue regarding the future expectations around emerging technology.

Keywords: Synthetic biology; metaphors; foresight; veil of ignorance; veil of expertise

Imagining the brain by engaging the body - Artistic strategies and affective encounters in contemporary science exhibitions

Anja Johansen

Museums of science, technology and medicine are currently involved in collaborations with artists in re-thinking the exhibition as a format for public engagement. My aim in this paper is to contribute to discussions on the potential advantages and challenges of such experiments, by considering two recent exhibitions about the brain and neuroscience that aimed to bring art and science together in the museum – but in rather different ways. Brain: The Inside Story, at the American Museum of Science and Tech-

nology was a highly multimodal and interactive science exhibition, that integrated art installations by artist Daniel Canogar and Devorah Sperber as imaginative ways of engaging with the basic of neuroscience. In the exhibition Mind Gap at The Norwegian Museum of Science, Technology and Medicine, on the other hand, artist and playwright Robert Wilson was invited to shape the overall concept and scenography of an exhibition on the culture and practice of neuroscience. Leaning on theorisation on affect and discussions on the transformative potential of affective encounters, I present a short historical review of the role of aesthetics and the sensing, bodily subject in exhibition strategies across art and science. While both my contemporary cases can be said to aim at evoking affective engagement and aesthetic curiosity, the epistemological approach of the curators and their discursive framing (or lack thereof) deeply impacted on what role the art and artist was given, and on what was communicated about the brain and neuroscience. In turn, this also points to diverging ideas about what a science exhibition should be and do, and its potential and shortcomings as a format for public engagement.

Tactile Strategies in the Museum

Emma Petterson

This paper reflects on two topics of relevance to STS, the communication of scientific and medical knowledge to public audiences, and the material turn in social theory. It focuses on the sense of touch in museum contexts. This occupies something of a problematic position: there

is a tension between two of the central roles of the contemporary museum – the audience- and the preservation-oriented roles. On one hand museums are concerned with the preservation of the artefacts for the future, and on the other hand, they are attempting to satisfy visitors’ needs for handling museum objects with regards to e.g. learning and aesthetics.

There are several examples of strategies that museums use when trying to “solve the problem of touch” in museum contexts. I discuss implications linked to replicas, handling collections and different kinds of digital technology – all of which have limitations and cannot on their own fully meet the audiences’ ‘touch-needs’ – and reflect on the role of tactile and material encounters with authentic museum objects in science communication. Replicas raise questions concerning the significances of the original, 2-D vs. 3-D copies and the duplicate. When is the use of replicas in museums ok? Where are the material limitations of a handling collection (due to e.g. fragile objects)? How are the principals of selection for such collections with regard to materiality and tactility decided? Digital technology such as e.g. haptic interfaces, online catalogues, virtual exhibitions, touch-screens and iPad-apps seem to “privilege visual experience at the expense of the multisensory”.¹ Ironically, as museums offer such solutions with the purpose of enhancing the audiences’ tactile and material experiences, the sensual encounters with objects seems to be in danger.

In concluding, I reflect on what material studies of science, technology and medicine may have to offer the communication of science to public audiences, and suggest that such com-



munication needs to be understood as just as materially embodied as the practice of science itself.

¹ Chatterjee, H.J. (2008). *Touch in Museums: Policy and practice in object handling*. Oxford: Berg. p. 121. See for instance: "Please touch the exhibit," an Ipad application offered by Melbourne Museum. <http://museumvictoria.com.au/melbournemuseum/discoverycentre/please-touch-the-exhibit/>.

Innovation, translation and intervention Using Actor-Network Theory to analyze public sector innovation

Peter Munthe-Kaas

In this article I use Actor-Network Theory (ANT) to analyse the emergence of new planning practices in the public sector. I want to show how ANT inspired studies can help to uncover how planning practices develop at a micro scale in the public sector through the alignments and interventions of actors, particularly how research interventions can play an important part in the development of new practices.

I have narrowed the scope of this article to deal with the field of public sector innovation. The empirical basis of the analysis is the introduction and development of an innovation agenda in Copenhagen's Technical and Environmental Administration (TEA). I was involved in the development of this agenda from 2011-2014 through my PhD work, doing ethnographic studies and intervening actively in the organization.

By applying the framework of translation, concerning the problematization, interessement, enrolment and mobilization of actors, the article describes how actors in the administration became involved in, challenged and were integrated in the innovation agenda.

The article concludes that an ANT approach to the analysis of developments in the public sector gives a detailed view of how practices are challenged and changed through spe-

cific events and often deliberate attempts to change organizations by realigning actors.

Imparting situational empathy in strategic spatial planning through an ANT research intervention

Maj-Britt Quitzau

Cities are becoming more and more strategic players in sustainable development, especially in the Nordic countries. As a result, urban planners increasingly engage in challenging attempts to force and convince urban stakeholders to shift their practices towards more sustainable development. This represents a challenging endeavour, because path dependent dynamics of development often prevail, while the urban planners have few effective planning instruments to apply.

The sociology of translation from Actor-Network Theory seems to provide an interesting theoretical framework to support the attempt of the urban planners to force and convince other stakeholders to shift their positions. This is because this theoretical framework engages specifically with such strategic attempts to engage with resistance in processes of development. The aim of this paper is to explore how research interventions based on the sociology of translation may support and strengthen this form of strategic work in cities.

This is explored by unfolding a study carried out in the Interreg project called 'Urban Transition', where a researcher intervened in a urban development process in the city of

Malmö (Sweden) by applying elements from the sociology of translation as a means to challenge the strategic work of the urban planners. The researcher both took actively part in the process of transformation and in the research process by gathering data in a systematic way. The knowledge of the researcher is fed more directly into the planning process. The paper provides a narrative about how the researcher is able to function as a mediator of the translation process – helping urban planners to figure out how they can enable movement towards more sustainable positions by applying the sociology of translation in the transformation process. The paper illustrates that there is a great potential of research that intervene more directly on strategic work in urban planning, but there are also important challenges.

Unlocking the Black Box of Nuclear Disarmament: The Humanitarian Initiative to Re-Frame the Bomb

Tina Talleraas

In recent years, what has become known as the “humanitarian initiative” has been making its way up on the international nuclear disarmament agenda. Ever since the 2010 Final Document of the Non-Proliferation Treaty (NPT) Review Conference gave mention to the “catastrophic humanitarian consequences that would result from the use of nuclear weapons”, a group of interested states and civil society have been working to expand on this issue in hopes of shifting the political discourse from concepts

of national security to the comprehensive threat that these weapons pose to humanity and the environment. As such, the humanitarian initiative challenges ingrained assumptions about nuclear deterrence and represents a first attempt at moving beyond the traditional “black-boxed” interpretations of nuclear weapons as political tools for non-use.

This article will argue that the time is ripe for such a task. In order for nuclear states to embrace nuclear disarmament as a pressing goal and not a far-distant vision to be disregarded in policy-making, the nuclear black-box needs to be opened and explored.

Thus, the article sets out to critically confront the technological determinism that seems to reside both within existing academic literature as well as current policy decisions.

Specifically, the article will use the discussions surrounding the humanitarian initiative as a starting point to explore the key role of expert involvement in reframing politically controversial issues. Although nuclear disarmament is typically studied within the domain of political science, this article argues that theoretical resources from STS can be helpful in deconstructing the debate, perhaps even contributing with new perspectives on how the current standstill in nuclear disarmament can be moved forward.

Making flexibility durable: Interdisciplinarity and Bloom's taxonomy of cognition

Marie Larsen Ryberg

Within the last 15 years, interdisciplinarity has (re-)emerged as a promising way of organising knowledge and education in what is often described as a still more complex world. A key assumption is that disciplines in themselves are not enough to create new knowledge or prepare young people for the future. Instead, interdisciplinarity is highlighted for its capacities to create new forms of knowledge, for its potentials for innovation, and for offering a flexible way of organising knowledge that can account for what we often describe as an increasingly complex world. In Denmark, the current interdisciplinary engagement has not been restricted to research policies and higher education, but has been taken up in the Danish grammar school as a central organising principle in an extensive and contested reform in 2005. Interestingly, the preoccupation with interdisciplinarity in a Danish context has been accompanied by an increased deployment of taxonomies of learning as a way of managing and assessing interdisciplinary education.

This paper is concerned with the translations of Bloom's taxonomy of cognition into a key device in managing interdisciplinarity in Danish education. As such, the paper turns from a concern with how 'technology makes society durable' (Latour 1991), to asking instead how flexibility is made durable through

specific devices. The paper examines the translations of Bloom's taxonomy of cognition from its appearance in a 1956 publication in 'Taxonomy of Educational Objectives' to contemporary interdisciplinary education in the Danish grammar school. It asks what kind of work has been done to the taxonomy and what work it does for interdisciplinary education. And it concludes that Bloom's taxonomy is a device that is concerned with making the implicit explicit, yet in doing so, it enacts a particular aesthetics of knowledge that obscures others.

Promises and perils of computational thinking: a discussion piece

Rachel Douglas-Jones & Christopher Gad

Proponents of computational thinking use the concept to account for what they perceive as important generalizable aspects of human thought (Wing 2011, National Research Council USA 2010, 2011). Simultaneously, the concept is employed to designate an ambitious pedagogical programme, in which computational thinking can be taught as a skill for the digitally literate 21st century (ibid.). As such, CT is seen both as an innate human capacity and a programme for developing future oriented skills - both for individuals and for populations at large.

This paper explores what we perceive as conceptual slippage within the computational thinking concept, as it moves between the descriptive and promotional modes de-

scribed above. We consider the implications of this slippage through various conceptual apparatuses available within STS - since these approaches are already critical of distinctions between the innate vs the learned, the normative and the descriptive. This exercise sets out the ground for considering CT - its promises and perils - as a growing arena for research in which the analytic techniques of STS are both needed and challenged.

Empowering teachers and students through situated goal formulation and assessment?

Morten Misfeldt, Marie Falkesgaard Slot, Thomas Illum Hansen, Andreas Lindenskov Tamborg & Jeppe Bundsgaard

A recent curricular revision in Denmark has focused on formulating learning goals for the pupils. Furthermore a new legislation suggests goal directed teaching as a consistent approach to teaching in Danish primary and lower secondary school. These governmental initiatives has been point of departure for a design based research project that simultaneously promotes goal-oriented teaching, and generate knowledge about use patterns and perceived value and obstacles to goal directed teaching. With reference to international research we have designed interventions with intentions of:

- improving the linkage of curriculum, objectives, learning materials and resources
- representing, translating and transforming curriculum objectives in order to design goal targeted learning

- supporting continuous follow-up.

The technological dimension of the intervention is the Goal Arrow (maalpil.dk), a digital tool that supports goal-orientation in education, by allowing teachers to describe lesson plans and expressing associated situated learning goals related to the national curriculum.

Data for each student is collected over a period of time and in relation to several goal arrows, making it possible to sketch out a student achievement profile, a class profile, and a profile of the curriculum areas covered in the period.

Prior to our intervention we have investigated how teachers perceive goal oriented teaching and we found that some teachers sees goal oriented teaching partly as a threat to their autonomy since it could limit their opportunities to pursue spontaneous and unplanned input from pupils in their teaching. We will present a case where a teacher use of the Goal Arrow and perceives the need to change and re-plan the teaching in order to follow up on new opportunities for learning. The case includes the teachers initial concerns, needed re-planning, reflection and reimplementation of the educational design in a colleague's classroom.

Modernist tools for a-modern ontologies – another example of cutting-edge equivocation?

Peter Danholt

When reading the various accounts concerning the use and the potentials of digital methods, one often encounters an optimistic discourse on the promise of these methods and technologies. These tools are presented as crucial for the evolution of social science and research (Venturini & Latour 2010) and necessary for the development of democracy in a time and culture where relativist critique is no longer reserved for STS scholars, but has become a strategy mastered by everyone and utilized as in order to relativize and thus de-stabilizing other's claims and positions (Latour 2004). When phrased modestly digital tools are articulated as interventions in controversies and in less modest accounts they are presented as capable of deciding who is the least partisan in a specific debate.

Interestingly enough, being considered as ANT turned into practical tools for practice, one recovers a discourse that in various ways and in order to increase, it seems, the potential of these tools, mobilizes modernist ontological assumptions about e.g. micro-macro, qualitative-quantitative or the relations between laymen and scientific expertise. Drawing on Barbara Herrnstein Smith's analysis of Haraways arguments regarding situated knowledge as being what Smith calls an example of 'cutting edge equivocation' (Smith 2006), I will argue that much of the discourse in relation to digital tools and prominently articulated by Latour himself, seems to do exactly the same, namely

to mobilize those very modernist assumptions that amodernist ANT has challenged and refused strenuously over the years. Ironic? Inconsistent? Strategic doublestandards? Maybe just Latourian!

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Why a feminist cartography of controversies? Speculative figuration as a way forward in controversy mapping

Marisa Cohn & Brit Ross

This paper compares and discusses modes of controversy cartography we have encountered in our teaching of the graduate course: Navigating Complexity: Mapping, Visualization and Decision-making. In the course we have used a set of open source tools developed by the Paris school of controversy mapping. These tools have been effective for teaching students how to recognise technoscientific controversy and get analytical handles on concepts such as inscription, black boxes,

and translation. However, in our paper we show how certain values such as transience and embodiment/mediated vision are difficult to keep in the analysis when using the digital tools available. Using examples from class, we show how we have used insights from feminist STS to remedy what we saw missing in the students' projects. Interestingly, and perhaps not surprisingly, adding in these insights created troubles. We show how these troubles have nevertheless been effective pedagogically in not only helping us create space for transience and embodiment but also for equipping students to work through the mutually constitutive relationship between the digital tools and their adjacent theories, and better account for the complexity of this relationship. In our own research we find our experiences with teaching valuable for further experimentation with the relations between data and knowledge infrastructures and public communication.

ANTA-ology of Science? Exploring the possible co-existence between field study methods and digital methods.

Torben Elgaard Jensen

The recent surge of interest in digital methods in STS has spurred a great interest in technical and methodological experimentation, in new modes of teaching, and the possibilities of reinvigorating the field in various ways. Amidst all this innovation, a somewhat more prosaic but nevertheless important question is how digital methods might co-exist in the STS knowledge

ecology with older and far more well-established methodological creatures such as the anthropological field study? The aim of the paper is to explore this question of 'co-existence' by staging an encounter between the newest and the oldest methods of STS.

In the first part, the field study method is on the stage alone. I will present the conclusion of a field study that I conducted of a group of so-called cultural-historical psychologists at the University of Copenhagen in 2013. I will argue that the psychologists' peculiar mode of knowledge production can be described as 'a gradual renewal of conceptual repertoire'. This part is intended to be 'classic science studies'.

In the second part, the field study methods will share the scene with a young contender: the digital methods in STS. I will deploy digital methods to test and elaborate the image of the psychologists, which was generated from the field study. In particular, I will use the ANTA and Gephi software tools to attempts to investigate the nature and extent of the 'gradual renewal of the conceptual repertoire'.

Finally, I will reflect on the possibility and desirability of peaceful co-existence.

Towards a pragmatics of digital mapmaking

Anders Kristian Munk

Concepts like controversy mapping and issue mapping have in recent years become almost eponymous with what it means to be doing digital methods in STS. If you are curating online empirical material, you are ‘charting digital traces’, if you are visualising its relationships you are ‘spatialising’ it, and if you are making the results available for further scrutiny you are building ‘maps’ and ‘atlases’ for ‘exploration’ and ‘navigation’. These cartographic tropes are arguably both well within the comfort zone of the insistently descriptive, radically empiricist and predominantly actor-network theoretical strands of STS from which issue and controversy mapping originally emerged, but also potentially at odds with the a-modern ontology that has always defined these very same strands of STS. So why do we even bother with mapping? Why not just speak of digital methods and data visualisation? I propose that we device a pragmatic test to answer this question instead of seeking intrinsic definitions: If it acts like a map, then we should call it a map; if it has cartographic effects, then it is rightly a form of cartography. This requires us to define what it might mean to ‘act like a map’ or to have ‘cartographic effects’.

Prototyping controversies

Tobias Bornakke, Andreas Birkbak & Morten Krogh Petersen

Despite the democratic ambitions underlying the practice of controversy mapping, external actors seldomly seem to take an interest in controversy maps, even though the maps are normally made publicly available on the web. Instead practitioners tend to move on to other things as soon as the results are out, which leaves it to the public to stumble upon the webpages and explore the results. This unspecified public, however, often seems to have more similarities to a void of non-engagement than a receptive social room.

In this paper we take two related steps to counter the lack of public engagement with controversy maps. First, we try to distribute the production of issues and maps beyond the academy. Drawing on design thinking (e.g. Brown 2009 and Björgvissón, Ehn & Hillgren 2012), we ask what it might mean to co-produce data visualizations together with visitors of the website. Second, we abandon the claim that we have produced a map of the controversy. Rather we attempt to make available a potentially controversial data set, followed by an invitation for actors to raise new issues with it. In sum, we try to move from mapping controversies to prototyping controversies.

In order to do so, we build a website that makes available a large relational data set on the Danish power elite (Ellersgaard et al. 2015) through an interactive data navigation tool. The tool allows visitors to explore a data set that is potentially controversial but difficult to nav-

igate. Further, Google Analytics and a simple survey allows us to examine how visitors to the website were led to the site in the first place, how they made use of the data navigation tool and how customized maps from the webpage travelled into new and unpredictable arenas. The experiment thus explores the tension between publishing and making things public by generating clues about what it might take for controversy maps to travel beyond the classroom.

”Let’s Go Global!” – Circulating Samsø globally?

Irina Papazu

Since Samsø – a Danish tourism and farming island – was appointed Denmark’s Renewable Energy Island and embarked on a ten-year experiment to become energy self-sufficient through the development of windmills and district heating plants, it has had global ambitions; it has wanted to make its exertions count.

In this article I ask why the production of an exemplar fit for circulating internationally has been such a priority for the project developers on the island, and whether and how this circulation has been achieved.

The analysis employs what Venturini and Latour (2010) have called a ‘quali-quantitative’ approach, combining fieldwork episodes with digital mapping of the Internet focused around the concept of the issue network, in order to grasp the online and offline circulations which underlie Samsø’s widespread success.

The argument put forward is that the

project developers have managed to keep the model or idea of ‘Samsø’ flexible and thus fit for circulating in many different zones or networks all over the world. From the regional European project network, to the heavily politicized American network and the Danish business-as-usual network Samsø manages to show through its example that a greener world is within reach.

Keywords: climate change, renewable energy, public demonstrations, issue networks, digital methods, ethnography

Who cares? How design thinking might help STS become more interesting

Morten Krogh Petersen

The phenomenon of design thinking has gained widespread attention over the past decade. Somehow, design thinkers have succeeded in persuading businesses, the public sector and research institutions alike that they all can find value in the specific way that professional design thinkers attack and solve problems. Design thinking tends to be depicted as a wonder cure resulting in not only commercial success, but also democratic inclusion and, possibly, environmentally sustainable solutions. While the many promises are certainly problematic (e.g. Kimbell 2011; 2012), this paper suggests that STS might still learn from design thinking.

While design thinking enjoys its place in the spotlight, social science research struggles to argue for its own relevance. In recent years, hopes of coming to matter (cf. Law 2004) have become more and more firmly attached to the idea of research as a collaborative endeavour. Drawing on the ontological relationalism of Donna J. Haraway and Bruno Latour, Casper Bruun Jensen and Peter Lauritsen symptomatically suggest that social science research is “about exploring common futures with practices” (Jensen & Lauritsen 2005: 73), rather than representing practices. If that is the case, the great challenge is to “come up with ingenious solutions to the problem of how to become interesting enough for practices to care about” (ibid: 72).

Through ethnographic fieldwork encoun-

ters with Radicand Design Collaboratory, a collaborative product development consultancy located in Silicon Valley’s Redwood City, the paper suggests that design thinking as it unfolds at Radicand has a lot to offer STS in overcoming this challenge. Notably, through an absolute and irrefutable commitment to rapid prototyping, Radicand cultivates an attitude towards the configuration of present and future practices – their own as well as others’ – where there is always more to learn, always more collaborative and hands-on ways of modestly exploring the present and possible future configurations of practices.

Embodied movement in the field: Playing with devices and disciplines

Natalie Forssman

STS in the field has long developed techniques to trace and unpack the nexus of bodies, objects, techniques, technologies, and spatialities within and around which scientific research is situated. This work has produced nuanced styles of attending to processes and practices of interaction and engagement in lived and built environments.

This STS study takes researchers who themselves investigate a nexus of bodies, technologies, and spatialities as its subjects, asking what resonances and discords are produced in a loopy and recursive zone of resonant yet discordant research objects, methods, and techniques. The informants are field biologists who attach tracking devices to marine mammals, in order

to learn about their underwater movements, activities, and worlds. The ethnographer is a practitioner of STS in the field, and she asks about the embodied coordinations between humans, animals, technologies, and landscapes that allow this knowledge of faraway nonhuman doings.

How might the informants be made interested in the interactive ecologies upon which their knowledge production is prefaced? While they focus their research attention on minute movements of faraway bodies, their own bodies negotiate complex ecologies—material and technological—in order to make that research possible. By recording their practices with a small camera, and analyzing those activities in a playful space between ecological and STS vocabularies and methods, this paper asks what STS in the field makes possible at the interface between social scientific and natural scientific techniques and technologies.

Can STS theory help recent academic heritage as sources for history of science and technology?

Laila Zwisler

The History of Technology Division at the Technical University of Denmark collects recent academic heritage from this university. This is a wonderful opportunity to learn about the processes of science and technology, as well as university history. The people, who have been associated with the artefacts, may well be available for interviews, and provide further

collecting opportunities. A very full and specific understanding of historical artefacts and the dynamics, they have been part of, may be within reach.

But how do we find the topics and questions we should raise in interviews? Often we have found that we must look beyond traditional museum practices and into the toolbox of STS as well as general history. Especially theories relating to things are used as inspiration. In this paper I will show how we have approached this in practice and relate our experiences from this work, with a focus on an on-going research and interpretive project about the chemical platform technology Flow Injection Analysis.

Based on the STS approach we ask about people, economics, networks and other non-technical matters. Our informants, on the other hand, have their own sensibilities regarding history, science and technology. Our questions may seem strange. Hence we have developed a strategy for keeping the conversation open and flowing. In this work our first objective has become to secure the local and specific micro stories relating to the historical material, and the informants with firsthand experience of the artefacts are essential to unearthing these. Using historical material as boundary objects we have found surprising stories, intertwined and far reaching networks. New lines of investigation open up.

However, we also find that the road from microhistory to an understanding of overarching themes and macro structures is long. Are we missing out on larger dynamics due to our theoretical standing?

Biography:

Laila Zwisler is the head of the History of Technology Division at the Technical University of Denmark (DTU). Her main research interests are university history with main focus on DTU, history of technology, communities of practice, recent academic heritage and oral history, and microhistory.

Matters of... Noise?! Atonal Critique in Cacophonous STS

Sonja Jerak-Zuiderent &
Teun Zuiderent-Jerak

Imagine you are sitting in a small office of the Ministerio de Salud de la Nación in downtown Buenos Aires, and in that office nine people have gathered. Seven of them are involved in the development of a health guide for trans* people. This guide is needed because of a radical law getting passed by the Argentinian parliament that makes gender a matter of personal choice, without administrative or medical gatekeeping. The meeting has disintegrated into three separate conversations going on at the same time – two of them at full volume and one in a more hush-hush tone of voice. The air-conditioning seems to be competing with a departing helicopter for a noise award. From the Avenida de Mayo, named after the 1810 Argentinian independence revolution, sounds enter of exploding fireworks and the chanting of slogans in a protest against liberalizing the labor market, organized by one of the unions. The remaining two people in the room are STS researchers who have come here to study the development of the trans* health guide. One of them is deeply involved in one of

the three conversations. The other is trying to listen in on the hush-hush conversation across the table and is somewhat anxiously looking at the recording device, wondering if anything at all will be understandable when they listen back to their precious material...

This paper explores the possibilities of critique that takes noise serious by neither striving for melodious harmony nor for mere discords. It sounds out the possibility of ‘atonal critique’ that resists turning the cacophony of technowledge into social voices. Care then may not be about a particular ‘matter’ or ‘issue’, but rather about attending to the noise that a multitude of issues produces.

The politics of comparison in mediated publics

Andreas Birkbak

News media and social media are often compared in a way that focuses on their contrasts, e.g. as between objective news and passionate opinions – or between a clear-cut public and multiple issue-oriented quasi-publics. If we do not assume such divisions to be pre-given, it becomes possible to study how the contrast is enacted through the media’s own comparative practices that produce navigable pluralities of ‘news’ or ‘opinions’. Paying attention to media as comparative devices thus turns comparative media studies into a comparison of comparisons. Here is a choice: Do we focus on how these comparative practices are different, or do we focus on how they interlink? I argue that if we want to learn from the comparative work being done with media, the politics of

linkages is more interesting. In the paper, I try to demonstrate empirically what is at stake in these politics of comparisons through two case studies. For instance, it becomes possible to not just describe how news media and social media handle issues through setting up socio-technical ‘comparators’ (Deville et al. 2013), but also attend to how actors draw creatively on a range of interlinked comparators in their navigation of mediated publics. Here, the researcher can begin to think with and not just about contemporary media practices when trying to rethink comparison and its politics.

Pixels and Pencils: Improvising Methods for Writing Futures

Laura Watts

Academic arguments are stories with a particular literary form: this has been well-argued in Science Studies since the Reflexive Turn in the 1980s. Argument-stories have a form that derives from the enlightenment production of objective knowledge—they are methods for modest witnessing. The method requires a literary toolkit, including the objective narrator authorial point of view, the voice I am speaking in now. But, sitting in my ethnographic ‘room with a view’, looking out at an industrial harbour, with hulking grey, floating cranes ready to haul several tonnes of marine energy machine in and out of the water, now, my voice is situated. And if I tell you that these wave energy machines, a future electricity industry, hang from their cranes by a thread, perhaps you imagine a plot: will they fall? As E.M. Forster famously noted: The King died, and then the Queen died’

is a story, but ‘The king died and then the queen died’ is a plot, one that moves and convinces a reader. ‘Plot’ is another literary tool; so is digital video, so are images, so is poetry. The apparatus we use to make our arguments is often a mixture, both digital and handwritten.

But Karen Barad and others have emphasised how world-making is done through apparatus: change the apparatus and you change the world. So, how do different writing apparatus, from pixels to pencils, change, not just our academic arguments, but also the worlds that we write into being through our words? This paper is a story, it may include a poem, it may have a plot, but it will explore how worlds are made through mixed writing methods.

Exploring the law as a moral technology and site for modifying the biopolitical collective

Tone Druglitrø

Michel Foucault's lectures on biopolitics and governmentality has been regarded as rich resources in humanities and social science, including STS, because of their focus on technologies of government that work upon individual bodies and the population by other and more indirect tactics and means than law. Inspired by Foucault's way of working, we suggest in this paper that when approached as a technology, the law in fact presents itself as a particularly interesting site to study how life is being inserted into history and to investigate how life is valued at different times and in different constellations. Law, we propose, does valuation work in that it works as a moral technology – a valuation technology so to speak – that takes part in producing objects at which it is targeted and the relationship between them. As such it takes part in “modifying” the collective of humans and non-humans and the very composition of society.

Animals for instance have by law gone from figuring as “creatures” and human property to be recognized as beings with the abilities to feel pain and to be valued and respected in their own right, beyond their use-relations to humans. We propose that the government of animals is and has not only worked to realize animals are sentient creatures, but it has also taken part in realizing distinct versions of humans and humanness. Reengaging with Foucault from the perspective of STS thus provides

a potential for a thorough empirical, differentiating, and historicizing approach to how life and ways of living has been modified by law.

Mirror of the Soul, Therapeutic Tissue and Hospital Waste – (De)valuations of the Eye in Danish Cornea Donation

Anja Marie Bornø Jensen

The eyes are by far the bodily tissue that fewest Danes agree to donate in the Danish donor registry and hospital staffs are often reluctant to ask families for corneas fearing that this will create resistance towards the idea of organ donation in general. Cornea donation is considered controversial and disturbing by many donor families and in the public due to the symbolic significance of the eye often characterized as “the mirror of the soul”, and due to ideas about how the eye is removed from the dead; a practice that is embedded in public secrecy and also dreaded by the people performing it. Also politically, the donation of eyes are under prioritized and intentionally left out of alliances and organizations dealing with solid organ transplantation. However, the eyes seem to transform significantly in the cornea lab, creating professional excitement when they are handled, stored and prepared to be exchangeable corneas potentially improving the sight of patients. In addition, cornea recipients seem almost unaware or indifferent towards the origins of their new cornea. Based on anthropological fieldwork in the Danish cornea bank and among Danish donor families, cornea recipients and health

professionals, this paper aim to discuss these apparently context dependent meanings and valuations characterizing the human eye on its journey to become an exchangeable cornea and thereby provide insights in the social implications of bodily transformations and exchanges within transplant technology.

Subjugated Love: Valuing life and Labour in the Laboratory Animal Sciences, c.1945-

Robert G. W. Kirk

This paper takes up the theme of ‘valuation’ to examine the forms of knowledge and practice that have sustained the use of nonhuman animals within the biomedical sciences from the mid to late twentieth century. The provision of healthy animals for experimental research required the adaptation and deployment of existing knowledge of animal health and wellbeing, drawn from diverse sites (e.g. the zoo), as well as innovation where knowledge of the needs of a particular species was lacking. Such work also required the construction and formalization of new sites through processes that enrolled existing expertise (e.g. veterinary knowledge) for new purposes, creating new forms of expertise (e.g. the animal technician) and new spaces of work (e.g. the animal house). At the heart of these developments was the goal of establishing acceptable standards of laboratory animal care, an aim which required the productive management of multiple, often conflicting values. This agenda gave rise to an expert discourse grounded in a new interdisciplinary field of ‘laboratory animal science and medicine’, which

transcended the situated needs of a specific experimental programmes by promoting generic values grounded in animal health and welfare of importance to all experimental uses of animals. Wholly instrumental, these processes are shown to have contributed to the transformation of animal wellbeing from a moral value grounded in political language to a scientific value embedded in the material cultures of science – a transformation that might can be understood as the materialization of animal care and welfare.

The Role of Animal Husbandry in Translation Medicine

Carrie Frieze

It is becoming increasingly common to hear life scientists say that quality scientific findings rely upon quality animal care (Davies Forthcoming, 2010; Frieze 2013, Online Ahead of Print; Poole 1997; Hurst and West 2010). The introduction of the ARRIVE guidelines (Kilkenny et al. 2010), requiring reports of husbandry practices in journal articles, attests to this institutionally. This paper asks how and why animal care is being made an explicit part of scientific knowledge production today, in the context of translational medicine. It is based on preliminary analysis of a survey conducted with British scientists. This survey explores which scientists prioritize animal care, and the factors that enable this. It also begins to map in vivo science in the UK as a field.

Document Agency

Ger Wackers & Rolf Andreas Markussen

STS-inspired anthropologists and ethnographers have turned their research interest towards the practices of bureaucracy and governance. These efforts bring documents into focus, from the wealth of policy documents and governmental guidelines to more mundane forms of documents like standardized forms with blank spaces to be filled out that constitute the material infrastructure of everyday governance. But how should we study documents? What do they do?

In this paper we present a brief review of anthropological-ethnographic STS or STS-inspired work on documents, but also discuss an agenda for further research. In doing so we will take a performative turn and ask what documents do? We will be not so much interested in the intentions of the document's authors or designers, but rather in what effects various document forms have, in their agency, that is, in document agency: what hierarchy of competence and/or what geography of responsibility they produce; what spaces of representation they produce to present the problem and solution at hand. Furthermore, we will go beyond the analyses of the linguistic or textual content of documents and focus on the performative effects or agency of non-textual elements in document: logos, signatures, tables and figures, fonts and so forth.

When documents constitute the material infrastructure of governance, an infrastructure that has melted into the wall paper of everyday practice, in this paper we will try to sketch a

program for, to use Geoff Bowker's term, the cultural inversion of (documental) infrastructure.

Govern uncertainty – Big data, algorithms and the question of researching the intangible

Timo Leimbach

During the last years big data gained a lot of attention in scientific and public debates, mostly shaped by strong ambiguities and uncertainties. One point is the confusion about the question what big data actually is and how it works. Another one is its potential, for better or worse, and its limitations. Above that, there are many open questions about the extent of its actual use and the ways it works. Finally, there is the question if and how the shift from causality to probabilities and in particular the uncertainties that goes along with it will affect business, science, everyday life or economy and society as a whole.

Based on the results of a study that used literature reviews, interviews and scenario techniques undertaken in Germany, the presentation seeks to address two points. The first point is to provide an overview on the main impacts discussed. This includes questions like the autonomy of consumer or citizens as well as the question how probabilities can impact decision-making of policy-makers, administrations, businesses or scientist will be affected by the inherent risk of failures.

In a second step the presentation will be aimed at researching the technical foundations

and how underlying principles of methods and algorithms influence the value of such analyses.

This includes the question of neutrality and fairness as well as the question on what does it mean that software is accountable for decisions, for example in combination of big data, complex event processing and high frequency trading? Especially the question of "software as an institution" or "regulation by code" and the underlying assumptions and implications will be discussed.

Finally, the presentation wishes to relate both aspects in order to determine impacts of this development and show emerging needs for more socio-cultural research that go beyond technical or juristical implications of it, because often it is used as a cipher for the fears and concerns or, in opposite, the promises and hopes of the digitalization as a whole

Experiments with a data-public

Anders Koed Madsen &
Anders Kristian Munk

Democracy, it is said, is in a state of crisis. What exactly defines the crisis depends greatly on who, when and where you ask the question, of course, but the credo is frequently heard. Denmark is no exception and the recent reform of the Danish school system, traditionally a highly praised token of participatory democracy, has been a case in point. So what happens when elected politicians recognize that they can no longer act as trusted representatives and decide that a radically new dialogue with the public is called for? And what happens when they decide that this dialogue must be constituted where the public is already venting its frustrations, i.e. on social media? In this paper we consider our recent experience of being enrolled as data-experts in a participatory democratic experiment that attempted to use Facebook to collectively envision the school of the future in the municipality of Aalborg.

Mapping controversies from labs to public spaces: Critical engagement with controversy and digital methods in science communication studies

Kristian Hvidtfelt Nielsen

Mapping controversies is the exploration of society in the making by means of qualitative and quantitative methods. The term was first

suggested in relation to scientific and technological controversies, but later gained wider relevance going beyond the boundaries of science and technology studies. Mapping controversies, however, still for the most part involves exploring public debates in which scientific and technical expertise is at stake. Boundaries between science/engineering and the rest of society often becomes blurred in public controversies, which is one of reasons why mapping controversies can be said to explore the assembling of collective life.

The field of science communication studies also emphasizes the blurring of boundaries between scientific communication among peers and the public sphere. Rather than accepting a sharp division between “real” and “popular” science, researchers studying science communication emphasis have noted that scientists use both scientific and public discourse to build legitimacy and credibility for their knowledge claims and disciplines. Communicating science draws on a number of different rhetorical and discursive resources.

When applying digital methods such as bibliometrics and other digital tools to mapping controversies, it is important not to implicitly adopt the boundaries between scientific and public discourse inherent in such methods. Visualizations using data from Scopus, for example, only capture scientific publications, while data from the internet often is understood as measuring aspects of public life. The first kind of data may readily be interpreted as capturing the scientific aspects of the controversy and the other as representing the debate in one of the public spheres, thus reaffirming the very

boundaries that mapping controversies studies try to question.

This paper will review existing mapping controversy studies from the vantage point of science communication studies to show how ideas from the latter field may prove fruitful for the former.

Engaging ArcForm in Science and Technology Studies

Benjamin Brink Allsopp

ArcForm is a non-linear form of general-purpose human language. It is designed as an alternative to paragraphs of text for intellectual collaboration (Allsopp 2013). It combines three areas of notational value: 1) It is similar to natural language (NL): both in its expressiveness and in the way meanings are expressed. It also supports ways of being more precise than in normal prose text, but its foundation on NL suggests that it is a form of NL on par with spoken and written form rather than a simple notation or an entirely new language. 2) It presents separate meanings/thoughts as separate though connected things/tokens (unitokenality), which, like geographical maps, both exploits our finely tuned visuospatial intuitions and allows the massive integration of content into a single representational artifact: a “Google Earth” of non geographical information. 3) It is based on a highly predictable syntax that allows meaning to be stored as structured data supporting structured querying/filtering and the dynamic (and interactive) generation of perspectives on content. It also allows individual meanings to be the objects of digital management and on-

line social curation. - This article explores two ways in which ArcForm may support STS research: Firstly, it suggests that through its human friendliness, ArcForm can support the further adoption of structured data as the object of STS research. Secondly and more importantly, it argues that with ArcForm’s expressiveness it will be able to map not only the relations between the objects of various sciences and technologies, but simultaneously map the interrelations of these relations with social, political, and cultural objects. Furthermore in relation to the second way, the article describes how shared ArcForm maps may support dispersed STS researchers in their negotiation of meaning.

Intercontinental theater exchange in the making

Rahel Leupin, PhD fellow

This presentation focuses on the aesthetics and politics of contemporary intercontinental theater exchange. I focus my research on the development of what I call “intercontinental theater plays”. These plays are not text-based rather they are co-created in collaboration between artists from the so-called Global North and Global South. I enter my empirical data production by observing the rehearsal process of a German-Ivorian theater group called Gintersdorfer/Klassen. In doing so I aim to shed light on the trajectories of otherness and cultural difference and the “new” aesthetics that emerge from this dynamic process of “cultural interweaving” (Fischer-Lichte 2014).

There has been a strong focus on the analysis of the aesthetic experience per se in Performance Studies. I call it the sovereignty of the representation. Only recently have scholarly voices emerged focusing on the rehearsal process of a performance (Harvie and Lavender 2010). Approaching intercontinental theater “in the making” (Latour 1987) as opposed to “ready made” theater this presentation sets out to analyze the rehearsal ‘space’ of an intercontinental theater production.

In postdramatic theater space refers to the status of the in-between of an interaction, the “neither here nor there (...) betwixt and between (...)” (Turner 1969: 95) In this “liminal space” (Fischer-Lichte 2004) or “heterotopic space” (Foucault 1997) difference does not manifest itself through either or (either ‘self’ or ‘other’)

but it signifies the construction of a “third space” (Bhabha 1994). Leaning on ideas of Actor-Network Theory and inspired by concepts of the so-called new Sociology of the Arts (de la Fuente 2007, Eyerman and Ring 1998, Eyerman and McCormick 2006) I follow the actors while they collectively ‘co-produce’ (Hennion 2001) a play in this “third space”. Highlighting so-called moments of translation (Serres, Latour, Callon) this presentation sets out to shed light on those instants in the creative process where decisions are taken and thus aesthetic choices are made. Unfolding these transformative moments where the artifact is being formed and deformed the presentation aims to shed light on the aesthetics and their political dimensions brought forth “In the making” of contemporary intercontinental performances. In doing so it describes the intercontinental dialog as an aesthetic ‘Vorschein’ (Fischer-Lichte echoing Ernst Bloch 2014), the anticipation in and by the arts of something that will become social reality much later, if at all.

Enough of Ethnography? Or: What I learned from being an ad-hoc lab rat in an Internet of Things

Stefanie Reinert Jenssen

Anthropologist Tim Ingold (2014) declares that he has heard enough about ethnography and that the term has been misused for years by researchers who have no idea what they are talking about. He argues that the ethnographic is in the final writing process as a form of ‘judge-

ment’ passed upon those studied, retrospectively. Defining ethnography in this way however, reduces fieldwork and parallel or subsequent writing to some kind of reporting on what one has found ‘out there’.

I suggest that we rather follow Ingold’s colleague Marilyn Strathern (1999) who argues that the ethnographic (moment) is exactly the relation between immersing oneself in the field and re-creating the effects of certain practices in writing about them. I want to discuss this relation with an example from my fieldwork in the Norwegian clothing industry, where new technologies make it possible to count clothes for inventory with the help of wireless RFID (Radio-frequency identification). These technologies are part of an emerging web of relations, called an ‘Internet of Things’. In one circumstance I was unexpectedly asked to be a test-person (lab rat). I reflect upon whether this is a form of ethnographic co-production, what might be co-produced here, and what might be implications for evaluating ‘embodied practices’ in studying technoscience (Michael 2006: 43).

Ingold, T (2014) That’s enough about ethnography! *Hau: Journal of Ethnographic Theory* 4 (1): 383–395.

Michael, M (2006) *Technoscience and everyday life: The complex simplicities of the mundane*. Open University Press.

Strathern, M (1999) *Property, substance, and effect: anthropological essays on persons and things*. London: Athlone Press.

Jimmy Savile and the dynamics of revelation

Steve Woolgar

The contention that “it could be otherwise” is the kernel of STS provocation. This paper is part of a larger project which examines the dynamics and consequences of the operation of this slogan. STS uses this clause, in many different ways, to open up and/or problematise (scientific and technical) phenomena Yet we have a tendency then to recourse to familiar/traditional/safe explanatory formulae which effectively closes them down again. One upshot of restoring stability is the production of a form of news about science and technology, construed as phenomena held at arms length by the analyst’s gaze, rather than generating a more profound inquiry into the basis of knowing. The questions which arise are: is this kind of movement from openness to closure inevitable? Could we operate the “it could be otherwise” clause differently? Are there alternative possible outcomes of this mode of analysis? What social and organisational circumstances might keep otherwise alive? This paper addresses these questions by focusing on the dynamics of revelation, the point at which it becomes clear (and/or is claimed) that “it could be otherwise”. It draws on material from the case of Jimmy Savile, the TV personality and charity fund raiser, a revered (and beknighted) British “national treasure” who after his death was revealed to have been an extreme and persistent paedophile.

Eugenics as modernism

Lene Koch

Eugenic theory and practice may be seen as a future oriented, scientifically based response to the fragmentation of modern life, inaugurating a new social order in reproductive matters. It sees it self as modern as it 1) substitutes a religiously argued social order with a secularised approach to the government of reproduction; 2) substitutes irrational (eg expensive and in efficient) forms of regulation (marriage prohibition, internment) with more rational ones, and 3) is an instrument to counter the degeneration characteristic of modern society. Eugenics was seen as a method to cleanse society of harmful elements, which were seen as barriers to the establishment of the new order. Even in the Scandinavian countries the rhetoric of "cleansing" of the population was employed by leading politicians. What we today see as inconceivable and even anti-modern is the readiness to distinguish between worthy and unworthy (fit vs unfit) lives. But in the modernist eugenic logic of the time, cleansing is necessary for revitalisation. Using the writings of KK Steincke as its main empirical material the paper discusses valuation of human life as a core practice in Scandinavian eugenics and sees it as part of a larger normative pattern of a programmatic and social modernism battling the undesirable implications of modern society.

What Is of Value in Psychiatric Diagnosis?

Lotta Hautamäki

In the suggested presentation, I will use the empirical context provided by psychiatry, as a science and a clinical practice, to explore processes of valuating life.

I will use ethnographical material to view valuation processes within three different sites: 1) psychiatric science and the selection of research populations 2) clinical practice, where the patients are diagnosed and treated 3) and everyday practices of patients living with a psychiatric diagnosis.

A psychiatric diagnosis is ordering and measuring the thoughts, feelings and behaviour of a human being. A diagnosis is steered by various human and non-human actors, such as diagnostic tools, clinicians, nurses, manuals and clinical practice guidelines. The purpose of a psychiatric diagnosis is to differentiate normal from pathological, as well as ultimately value processes of life, both biological and social, in the human mind, brain and body.

In addition, a psychiatric diagnosis is used in diverse practices and for different purposes within the three sites I have been observing. In the practices within science, clinic and patients' lives, the value and the ontological status of a psychiatric diagnosis in and of itself is oftentimes questioned.

Thus, in a psychiatric diagnosis viewed in the three different sites, diverse values are enacted, or more like, put into effect. In the proposed presentation, I will introduce some of

these enactments by pondering the question: What actually is of value in a psychiatric diagnosis?

The presentation is based on my doctoral dissertation project, which is an ethnographical analysis of bipolar disorder enacted in psychiatry. The thesis is currently in the pre-examination process and will be published as a monograph in September 2015.

Life with a View - Enacting Futures across Species and Spaces

Mette N. Svendsen, Laura Emdal Navne, Iben Mundbjerg Gjødsbøl & Mie Seest Dam

What is a life worth caring for? This paper investigates practices in the field of neonatology where preterm infants are at the beginning of life and personhood and in the field of dementia care where Alzheimer patients are at the ending of life and losing the usual markers of personhood. The paper situates these humans in the context of the research on animals whose lives as models are materially implicated in creating a worthy life for humans. In bringing together the preterm infant, the Alzheimer patient and the research piglet, the paper explores the temporal imaginaries that are actualized in caring for life at the margins and the ways in which questions about resources in a welfare state context enter negotiations of life worthiness in these fields. It argues that clinicians and researchers caring for these individuals establish a temporal horizon, a view ("udsigt" in Danish), that enacts life as having utilitarian value and absolute value.

In exploring the relationships established between these values as well as the tension experienced between them, we argue that creating 'a life worth caring for' mobilizes particular understandings of individual and collectivity in past, present, and future.

Is depression as biology shifting the nature/culture divide?

Kerstin Sandell

In this paper I will engage in a dialogue with new materialism within feminist theory. I will do this though depression and the use of the type of antidepressants named SSRIs (selective serotonin reuptake inhibitors), often talked about under the commercial brand of Prozac, and through the work of Elizabeth Wilson. My focus is how biological understandings of depression have become more and more dominating and on how this shifts or refigure the dichotomy of nature/culture. I will engage mainly in narratives of people using antidepressants and in the new materialist understanding of depression and antidepressants that Wilson launches, but also touch upon biomedical understandings of depression.

The materiality of digital technologies and the environmentally friendly self

Jutta Haider

This paper explores how the materiality of social media - employed as technologies of surveillance and self-control - structures environmentally friendly living. The concept of affordances is drawn on and developed to fathom how seemingly mundane information on how to lead environmentally friendly lives is shaped by the possibilities and limitations of the tools used to produce it. The implications this has for

how the necessary shaping of bodies, houses, and families is imagined and for understandings of the environment and the human body's place in it are discussed. This helps also to understand the many ways in which information - as something that happens rather than something that is - is woven into the texture of the social. I draw on material from a net-ethnographic study of Swedish environment blogs and connected social media profiles from 2011-2013.

Exploring the Epigenetic Self

Ruth Müller

Epigenetics, an expanding field of molecular biology, proposes radically new ways of thinking about the human in the environment. Research shows that chemical modifications on the DNA - the 'epigenome' - control the expression of our genes. Remarkably, these modifications have been found to be highly responsive to the environments we inhabit throughout our lives, from the womb to the tomb. Diet, toxins, exercise habits, but also experiences of social adversity and trauma can shape the expression of our DNA and hence the living structures of our bodies and minds. While promising remarkable insights into the human as a biosocial being, this new paradigm poses significant epistemic challenges to biology as a discipline that is by and large founded on the assumption of a clear-cut nature/culture distinction. The paper explores such challenges through an analysis of seminal papers in environmental epigenetics. It proposes that while exploring the inherent entanglement of nature and culture, clear distinctions between nature and culture tend to resurface in

epigenetic writing. Implicitly, themes emerged such as the figure of a natural epigenetic self that precedes cultural formation, or in some cases even environmental determination. The paper proposes that these narrative binaries limit the richness of epigenetic research about the human self as knowledge claims become again framed within the nature/culture dichotomy.

Freezing Life for Doomsday

Elaine Gan

In 2006, construction of the Svalbard Global Seed vault began on Spitsbergen, an island in Norway, about 1300 kilometers from the North Pole. Located deep inside a sandstone mountain in a former coal mining facility, the vault opened in 2008, with a mandate to serve as a secure backup of much of the world's plant life. Temperature and heroism are key to its success. The vault is now home to 850,000 seed accessions from various agricultural research institutes (e.g., IRRI/Philippines, ICARDA/Syria, CIMMYT/Mexico, USDA/United States, etc.). Funded and managed by the Norwegian government, Global Crop Diversity Trust, and the Nordic Genetic Resource Center, the vault can conceivably hold up to 4 million seeds for most of the major food crops - frozen at a temperature of -18 degrees celsius for hundreds or perhaps thousands of years. The seeds are saved through the heroic efforts of humans - warriors and guardians of futures increasingly threatened by rising sea water, civil war, and extractive industry right outside its airlocked doors. This is the scene of my paper, which

explores the overlapping confluences of nature and culture - an imagined future of seed security and a historical materialism structured by permafrost and technological control. It asks: what human and nonhuman interactions come into being in this curious seedvault? What worlds are made and unmade when "we" try to freeze time? What is life, when seeds from dying worlds become stand-ins for global futures beyond Doomsday?

Choreographing care for corporate sustainability

Maria Eidenskog

Corporate sustainability is a subject which interests researchers from a range of disciplines and inspire many types of stories. I aim to tell a different story than the common view of the company as a profit-maximizing organization, and instead I utilize the concept of care as a way to bring attention to practice and affections. In this paper, inspired by Law and Lien (2012), I will discuss how care for sustainability is choreographed in a medium sized company in Sweden. Through observations, interviews, and text analysis I have studied the enactment of sustainability in a corporate setting. In relation to the ordering and distribution of care for sustainability, I follow practices as choreographies of care. Analyzing sustainability enactment with the concept of choreography is a way to foreground the ordering in time and space required to accomplish something that might appear simple on the outside, but which is never simple in practice. I will study how the employees enact realities where matters of care connected to sustainability sometimes can co-exist, while in other situations some matters of care are made absent. This is done by telling stories of the struggles of caring for sustainability. One example of this is shown when the studied company tries to lower the use of chemicals in their processes and the employees find that this quest might affect their sales numbers. Thus, the different matters of care, working with lowered emission while still caring for the survival of the company, is impossible to enact

at the same time. These struggles can be studied as choreographies of care, and this theoretical approach will inspire to new stories of doing corporate sustainability and contribute to deepening our understanding of care practices.

Shaky Matters: Making Earthquakes and Reconfiguring Politics - Managing the Environment in the Anthropocene

James Maquire

As the world attempts to move into a post carbon age, new forms of economics, politics and social relations are being imagined and configured. Energy production is at the heart of this new imaginary as green agendas and thinking abound. In Iceland, green geothermal energy is deeply embedded in the country's socio-political relations, and presently 86% of the country's primary energy matrix is classified as renewable. However, in the attempt to manage the tectonic environment in which geothermal energy is produced, other disturbances occur. As dictated by environmental impact assessments, geothermal fluids are reinjected back into the volcanic fractures from where they came, and in the process 'induced seismicity' is triggering earthquakes in a small town nearby the production plant.

As such these earthquakes emerge at the imbrication of natureculture forces, mixing environmental regulation, local fracture instabilities, green energy capital and uncertain geological knowledge production. As a 'shaky

matter' induced seismicity brings together a constellation of actors (the state, the local town, the power company, and the EPA) and relations (human-environmental, political, socio-economic) all of whom are attempting to 'stay with the trouble' as they work out political and environmental strategies for getting along in the anthropocene. This paper will focus on the work that it takes to 'make an earthquake' and will argue for a renewed sensitivity to both the varying problematics that occur in managing human-environment relations and to the remodulated politics that are a possible response to them. In doing so it will contribute to a re-configured understanding of the anthropocene, pushing the neologism not just beyond geological terrains, but through them, as it examines the ways in which the dystopic (earthquakes) and utopic (green imaginaries) work up and against one another.

Problems and practices of genetic sovereignty in international biobanking

Aaro Tupasela

Genetic sovereignty has become an important topic within the field of biomedical research in relation to the collection and use of material. Strongly associated with post-colonialist studies and practices related to bio-piracy the discussions surrounding genetic sovereignty have focused on the ways in which states ought to protect the rights and interests of marginalized or indigenous population rights. This paper presents some examples of the problems and issues related to genetic sovereignty as it applies to research in and between ‘developed’ and ‘developing’ countries. Drawing on examples taken from Finnish rare disease research, chromosomal translocation research in Pakistan, as well as a recent venture by the Beijing Genomics Institute in Denmark, I suggest that although the notion of genetic sovereignty might sound appealing current developments in global biobanking networks suggest that the concept may already be outdated and problematic

A broadened typology for biobank engagement – Strategies, practices and new stakeholders

Karoliina Snell & Jose A. Cañada

Research on biobank engagement has focused traditionally on the interaction biobanks have with donors, patients and the research sub-

jects, problematizing mainly informed consent processes and the management of hopes and expectations. Lately, the interaction with industry has been gaining terrain in STS research on biobanks. Interested by that background, we started to wonder about the role of a third actor, the state. In our research we therefore aimed at making sense of the relations in which biobanks engage with the triangle formed by patients, business and the state. In order to do this, we analyzed the biobank legal framework and carried out interviews with biobankers from Spain, UK, US, Canada, Finland and Iceland. We analyzed the data focusing on what engagement processes we could see in it. Our results can be summarized in two different points. First, we have developed a typology of public engagement that aims at illustrating the different sorts of engagement strategies that biobanks put in practice in order to recruit and retain participants. Secondly, we saw how the public has a much smaller role than that attributed by academia. While they remain an important stakeholder and patient’s association have sometimes a big role in the functioning of biobanks, we still find other stakeholders such as hospitals, clinicians, states, industry or charities, playing a very central role for biobanks’ day to day activities. This necessarily broadens the perspective to biobank engagement.

Controlling masturbation: Danish sperm donors, biomedicine, and affective masculinities

Sebastian Mohr, Assistant Professor

The public figure of the sperm donor is one of

masturbatory mystique: young virile men enjoy moments of sexual ecstasy and receive cash in return. However, nearly nothing is known about sperm donors’ experience of masturbation. Despite its central role in contemporary reproductive biomedicine, masturbation is not of importance for most researchers interested in biomedical regulation. Based on interviews with Danish sperm donors and ethnographic fieldwork at Danish sperm banks, I want to provide insights into what it means to produce semen samples as part of reproductive donation. Instead of making assumptions about how easy it is to donate semen, since it ‘only’ involves masturbation, and rather than dismissing masturbation as a central regulatory focus of contemporary reproductive biomedicine, I turn the analytical gaze towards Danish sperm donors’ masturbatory practices and experiences of masturbation. I argue that controlling male masturbation is a central mechanism of contemporary reproductive biomedicine, and that the governance of sperm donation happens by ways of regulating men’s gendered and sexuated self-conceptions. It is through a regulation of the affective spaces of male masturbation that contemporary reproductive biomedicine appropriates men and their bodies.

Keywords:

Denmark, sperm donation, masturbation, masculinity, biomedicine

Big Science as Policy Mess: Governing the Ungovernable

Mats Benner

The presentation deals with the politics of big science, in particular the multifaceted and complex process of resource mobilization at various levels, including national and international negotiations. Such mobilization normally precede the inception of Big Science facilities and often also follow them through completion (with resources mobilized for individual projects and experiments, specific instruments such as beam lines and spectrometers, etc.). It discusses some effects of this fuzzy process of raising resources on research practices, concluding that science in Big Science dominated fields is done in the 'shadow of horse trading'.

The socio-political functions of contradictory phenomenon of Triple Helix

Torbjörn Friberg

According to Henry Etzkowitz, the Triple Helix model assumes from an organizational idea that there ought to be collaboration between universities, state and business in order to improve the condition for innovation within knowledge based society. Triple Helix is presented as a new research policy model in contrast to: (1) The centralized model in which the state controls the academia and the industry; and (2) The Laissez faire model in which academia, state and industry, in a certain extent,

collaborate over explicitly boundaries. Instead of striving towards a centralized or boundary oriented model, the representatives of Triple Helix assume a kind of hybridization of the three domains. At the background of sociological and philosophical discussions – concerned with the role of the state, the relationship of private and public spheres, knowledge production, subjectivation processes and democracy – it is possible to argue that Triple Helix is a truly political project. Despite this general awareness of policy it seems that most cultural brokers of Big Science simply repudiate or are unwilling to treat Triple Helix as a policy. When I raise questions about policies and knowledge with the cultural brokers of innovation they most often become “troubled” in a sense that they move their bodies in different position, or take a defending position in further discussions. In this paper, I will take departure from this kind of bodily and verbal expressions as signs of contradiction. To observe contradictory statements and practices opens up for ethnographers’ to think about absurdity – as a ridiculous or widely unreasonably social phenomenon. However, on contrary of simply dismissing contradictions by ironic comments, or trying to make sense of it by the help of logical theoretical argument, that is, transforming it to a form of non-contradictory, I argue, ethnographers should take it seriously.

Data in the making

Jutta Haider & Sara Kjellberg

The presentation explores some of the challenges related to research data management in the

sciences, often associated with notions of big data. The presentation explores different imaginations of data as well as of its potential and roles in the research process in the setting up of 'big science' projects. It also tries to capture some of the ways in which disciplinary cultures are 'hardcoded' into data (and metadata) and asks what this might mean for interdisciplinarity and possibilities for so-called data-mining, long-term preservation and processes of knowledge production. It is based on document studies and interviews with staff at ESS and MAX IV.

Chasing empowering agencies in Teledialogue

Lars Bo Andersen, Peter Danholt & Peter Lauritsen

Teledialogue is a combined research and design project aimed at utilising IT to strengthen the dialogue between social workers and children placed in foster care or at institutions. The ambition is for children to attain greater influence on their current situation and general life conditions. This ambition is described both in- and outside Teledialogue as empowerment. Em-power-ment (verb in gerund) means literally the process through which someone, who are assumed to lack resources and/or positioned outside power and influence, are given resources or brought into power and influence. This conceptualisation of empowerment has been criticised for being conformity seeking, constituting a covert form of governmentality and based on the assumption that power and/or resources are tokens to possess. Empowerment nonetheless holds important performative qualities and is *raison d'être* for the Teledialogue project. Empowerment is the shared ambition for project participants, it helps define relations to political initiatives and, not the least, it normatively obliges participants to work for an improved situation for children. On the other hand, experiences from Teledialogue reveal that empowerment cannot simply rest on identifying someone as lacking resources or being outside influence and then intervening on their behalf. There is thus tension between empowerment as normative ambition and empowerment as analytical approach. Accordingly,

empowerment needs to be re-conceptualised. With an outset in ANT and related post-structuralist theories, this presentation consequently discuss empowerment along two dimensions: 1) Empowerment as an indispensable ambition in projects like Teledialogue, framing normative obligations and sustaining relations. 2) Empowerment as a displacement in a tangle of relations, as a movement from one form of participation to another, from one set of resources to another.

To be liberated, or to be institutionalized - Reflections on Paulo Freire and Sociotechnical Selfcare

Finn Olesen

Currently we see a significant shift in public health recommendations regarding the responsibility of the state to support patients with chronic health conditions, like diabetes, or chronic obstructive lung disease, copd. New strategies are being introduced to enable individual patients to engage in selfcare activities in accordance with personal values and desires. Also, new personalized healthcare technologies are developed and introduced in order to help empower these patients, often under headings such as 'telecare', telemedicine', or 'eHealth'.

New sociotechnical orders also bring new disorders. Hence, we need to develop concepts and methods to verbalize the altered states in healthcare practices to be able to understand both expected and unexpected transformations of relationships between patients' and health

professionals. In the presentation, I will discuss, firstly, the different ideals and meanings of 'empowerment' with an eye to Paulo Freire's original ideas about empowering people. Institutional selfcare and empowerment does not warrant a safe road to more liberated patients. Secondly, I will discuss shifting roles and agencies of patients with COPD, during a test of telemedical technology. I will argue that health care policies to empower patients through sociotechnical strategies will not just enhance, but also transform, intended agencies and powers of the individual patient in unforeseen ways.

Political voices in empowerment

Helle Sofie Wentzer

The paper presents different philosophical problems related to the convergence of technological development and patient empowerment in health care. On the basis of three empirical studies of digital mediated patient empowerment, and drawing on the writings of Isabel Stengers, Niklas Rose and Paulo Freire, the following questions will be elaborated: Who are the subjects to be empowered? What are sciences and researcher to learn from them? And, finally: what understandings of a 'we', and a 'common good' are to be found in the discourse and practices of patient empowerment?

DATA and the law

Ulf Maunsbach & Ulrika Wennersten

In a world of bits and pieces insurmountable amount of DATA are created instantly and perpetually, among other things in media, in other commercial and professional activities and in social networks. The Internet revolution and the development of the Information Society may be characterised in different ways, but a common denominator is, by necessity, an increasing amount of DATA. And DATA is not a sufficient expression where as the topical term would be Big DATA, as the better expression including an element of exponential growth. As the flood of data is gaining power one of the most pertinent issues in modern time is how to handle the increasing production of data. One, simple enough, solution would be to disregard the entire production as irrelevant, which is likely to be an appropriate reaction to an absolute majority of data, but it is similarly evident that data also may carry value; not only sentimental value but commercial value of increasing importance. One example would be the development of Big Science, creating even bigger amount of data. It is obvious that experiments that are being conducted in such facilities create data, as a matter of fact the creation of data is likely to be the main purpose of the experiment, and such data is of course valuable. Data, although with a potential of containing enormous value, is an illusory concept, immaterial, volatile, omnipresent and vague. However, irrespective of its value data, in its original form, can not be claimed by arguing legal rights (disregarding the possibility to handle data under specific agreements) and consequently data is, by nature free.

In all of this, traditional concepts seem to lack the capability of creating clarity. A number of different legal principles may be affected by the development, but few would be directly applicable to data as such. There is growing, and well argued, concerns that data should be openly available and this line of thinking is manifested, among other things, in the growing Open Source Movement. It is also manifested in a number of Open Access initiatives. One of the most influential is the Berlin Declaration; containing short statements that presents two general principles that applies in relation to open access¹. However, in the discourse of open access and open source little attention is placed on the categorisation issue, e.g. how we are to define data and, in particularly so, how different form of data (eg. raw data, metadata, source materials, digital representations of pictorial, graphical materials and scholarly multimedia material) is to be categorised from a legal point of view. Another relevant question is if there are property rights in data.

The purpose of this paper is to initiate such an investigation. We are well aware of the wide scope of the topic and it's multifaceted nature and we do not claim to present final solutions in this paper, but rather pinpointing more specified issues for further research. During the work we will use the "production" of DATA in Big Science facilities (like ESS and Max IV in Lund) as an example, but the conclusions that is derived is likely to be of more general relevance.

¹ Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities.

Managing expectations in New Big Science

Josephine Rekers

Today, big science facilities attract attention from a wide range of stakeholders. Scientific users and funding bodies still comprise the core audience, but politicians, industries, universities and the communities that host facilities are also looking at what big science means (and could mean) for them. Their voices, activities and stakes are increasingly important in shaping the environment in which big science facilities are launched and operated, and they thereby place additional expectations on facilities. From a geographic perspective, New Big Science involves new levels of cooperation between stakeholders at various scales: Facilities are often multi-nationally financed, serving increasingly global and multi-disciplinary user groups, but they are also localized in particular regional environments. Expectations are therefore likely to vary across space and across scales.

The focus of this paper is how these expectations are formed and managed. The first section aims to trace the processes of embedding facilities in regional, national and European networks; the second section zooms in on the regional scale and identifies the factors that shape university-facility interaction. Empirically, the focus is on MAX-IV, the ESS and universities in the Öresund region. While these universities are geographically proximate to the facilities, cognitive, social, organizational and institutional distances will need to be overcome.

New Big Science: challenges for science, policy and practice

Kerstin Sandell

"Perceptions of the political in the design process"

In STS studies the slogan "politics by other means" has been central in understanding scientific practice. In this the distinction between Politics, as played out in governing bodies and through designated political actors within the political system and politics as the inherent political dimension of almost everything humans do is central. In this paper I explore how the Political is articulated and understood in interviews by instrument scientists designing instruments for the European Spallation Source (ESS), a neutron scattering research facility being realized in Lund.

I want to capture how the delineation between politics and science is figuring and also how the technical comes into this. It was something that stayed with me after the first reading of the interviews, but that was not as easy to find when I started to do the coding as I had expected. What started me off was the ways in which politics was made into something that is not science, or maybe the other way around.

The optimizing self and the digital double

Dorthe Brogård Kristensen & Matthias Bode

Optimization was originally a concept used within computer science and public management, which denotes the maximization of the beneficial output of some process. Increasingly, in modern consumer culture the term has been popularized and has entered the microphysics of everyday life; it now also refers to a mode of living, as a strategy of “making the most” of life, on a physical, economic, social, mental and spiritual level. In this context, well-being and well-doing become a personal project, like a piece of clay that can be formed and molded (Christopher and Hickinbottom 2008). The goal is continuously to improve, enhance, empower, manage, develop and transform. Consequently current consumer culture sees a surge of new technologies designed to optimize mental and bodily well-being and capability for its own sake, such as medical enhancement, cosmetic surgery, meditation techniques, dietary fashions, as well as a variety of technological devices for tracking and monitoring the self (Askegaard 2002, Hogle 2005).

On this background the aim of this paper is to explore the concept of optimization and subsequently describe how the concept that originally emerged from a public and scientific domain increasingly characterizes strategies for making the most of life – in other words to be optimal in all aspects. To this end we explore the optimization of the self – an empirical setting, more specifically technology (Ruckenstein 2014; Lupton 2012, 2013). The overall

methodology of the empirical project involved ethnographic studies of experience and everyday practices from 2012-2015 among members of the Danish Quantified Self. The conceptual argument is that the process of self-tracking subjectivation can be described by the metaphor of the digital doppelgänger: a digital version of the self that is perceived as “more you than you are yourself”. We do not see the digital doppelgänger as a final result of the self-tracking activities, but as a relational actant in a performative process with elements of empowerment, creativity and restriction.

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Empowered by participation? The politics of invited and uninvited ehealth use

Henriette Langstrup, Karen Dam Nielsen & Anja Elkjær Rahbek

Patient-engaging e-health technologies have become highly praised tools for inviting citizens to participate in the provision of health-care by delegating care responsibilities to patients. The invitation rests on the promise of empowerment – being equipped with certain tools gives you the power previously reserved to health professionals of caring in a competent way for your body. However, quite similar tools to those provided by the established healthcare system are accessible to citizens as consumers, be they for self-monitoring, -caring, -tracking or -diagnosing. These technologies are often used without prior invitation from health professionals and health authorities, but may be promoted as likewise empowering and enabling participation by users, designers and commercial actors. But how can we understand and nuance empowerment and participation across these two seemingly different domains of invited and uninvited ehealth use? In this paper we first of all want to question the often implicit positive reciprocal relation between participation and empowerment found in the discourses surrounding patient-engaging ehealth. What we observe is that participation through the use of these technologies can be experienced as both empowering and disempowering whether invited or uninvited. Secondly, we wish to infuse these conceptual discussions with an attention to politics, a concern once native to

discussions of empowerment and participation, but now rarely articulated. We do so by illustrating how individual and collective projects often interweave when patients and citizens use ehealth and thereby enact participation beyond their own care and treatment, becoming political agents. What we ultimately arrive at is the claim that the engagement with the technologies in question is in any case a way of participating beyond personal consumption or private self-care – a claim that echoes the work of Marres on “material participation” (Marres 2011; 2012).

The role of enabling infrastructures in empowering older people

Malene Bødker

Since the start of the millennium, a large number of western countries have increasingly focused their homecare services on enabling care modes characterized by the promotion of the active participation of older citizens. In a Danish context, enabling care takes the form of 8-12 weeks' home-based programmes, during which the older citizen receives training and guidance in regaining the ability to carry out practical tasks and/or personal care. It is intended to reduce the need of eldercare services and thereby both lower eldercare costs and improve the physical and mental wellbeing of older citizens. Enabling care is promoted as “help to self-help” and in that sense has strong ties to ideas of empowerment.

I wish to use Star's notion of infrastructures to



investigate how the concept of empowerment unfolds in relation to enabling care. This term can help draw attention to the extensive network of actors that surround enabling care. These actors include different groups of health professionals, citizens and their relatives, that in different ways relate to enabling care via evaluations, negotiations, agreements and disagreements. Moreover, they include various non-human actors, e.g. certain policies, places, categorizations, assessment tools and methods used by health professionals. Together, these heterogeneous actors that are mobilised around enabling care form an infrastructure that may or may not serve to empower the individual. Thus, the success or failure to achieve empowerment cannot simply be ascribed to the individual health professional or citizen. Rather, I propose the term enabling infrastructures to highlight that enabling care must instead be seen as practice that it played out in the relations between people, places, materiality and language. In this perspective, enabling care cannot simply be considered an empowerment tool to be implemented in a fixed environment, but as a distributed practice.

Bringing order to chaos: using multiple theories to explain technological change

Janne M. Kohonen

How technological change occurs, and how should it be studied? Existing theoretical constructs of technological change and innovation are stylized models that typically focus on some specific aspects of technological change. When these models are used as theoretical frameworks in empirical studies, they inevitably leave gaps in explanations. So far, the preferred response to these gaps and insufficiencies has been the development of models so that they integrate more perspectives and elements deemed crucial by different researchers. In this paper, I argue that this approach tends to result to unwieldy and aesthetically unsatisfying theories. A better alternative is to use multiple theories in an “alternate templates” research strategy. In this approach, famous from decision studies, the researcher proposes several alternate interpretations for certain series events, based on different but internally consistent sets of theoretical premises. Then, these theoretical templates and their contribution to satisfactory explanation is assessed through theory-focused retellings of the same case study. Although this approach is not novel, it has been only rarely used in the study of technology, even though its features would seem to make it a good strategy for exploring rich empirical cases. I illustrate the use of this strategy with a rich historical case study of the development and adoption of a radical innovation in copper smelting industry in the period following the Second World War. This

case is examined through three theoretical templates, namely rational choice, social construction of technology, and cumulative innovation. Each of these templates is shown to be necessary for explaining the entirety of the case, but none are sufficient in their own.

Imagineered communities - Technonationalism in Swedish Electric Power

Mats Fridlund

This paper argues that nations and nationalisms are as much engineered as imagined communities, they are imagineered. It demonstrates his through a case study of the role of nationalism in the development of Swedish electric power and more specifically in the founding of the Swedish government electric power utility the Royal Board of Waterfalls and the building of its first electric power plants 1906-1916. This cannot be fully understood without taking into account the ideology of nationalism.

In the 1910s the Board of Waterfalls built several large "national power plants" that emblematically manifested a new Swedish engineering nationalism and that was not only to produce electric power to strengthen Swedish industry but also to produce cultural and political power to strengthen the nascent Swedish nation. Swedish national identity was central to the Swedish engineers working on those projects. In addition to technical construction work a crucial part of their engineering consisted in the imagineering of cultural or ideological construction work - to construct or 'engineer

the Swedish nation', in that they legitimized and charged their technological projects with larger nationalist ideal of national autonomy, unity and identity. Furthermore, the projects was seen as helping the establishment of Swedish national champions in the electrotechnical industry. These projects demonstrates the importance of ideological factors in engineering and are all examples of the reciprocity of techno-nationalism, in that electric power technology became a tool for nation-building by strengthening the political autonomy of the Swedish nation-state and aiding in constructing a new modern Swedish national identity, as well as Swedish nationalistic motives came in as support and rationale for developing certain hydro-power technologies.

The user dominated technology era: Dynamics of dispersed peer-innovation

Sampsa Hyysalo & Svetlana Usenyuk

Users invent new products and product categories, but the assumption has been that manufacturers will supplant users if their innovation is of value to many. The current paper examines Russian all terrain vehicles “karakats” to discuss a case of an era of extended user dominated technology and the related dynamics of dispersed peer-innovation. Karakat users have invented, modified, diversified and iterated this technology, as well as continued to self-build and self-maintain it. These vehicles are wide spread, have half a century of history and hundreds of design variants. Despite this, manufacturers have captured only a small subsection of

the karakat market, albeit they have established new markets based on karakat principles. We find that the combinatory effect of previously known dynamics in user innovation research and science and technology studies offers a plausible explanation for the user dominance and dispersed peer innovation pattern, and manufacturers' failure to conquer the market.

Methodological challenges in studying interdisciplinary collaboration through patient safety

Angelos Balatsas - Lekkas

This paper aims to offer insights for the empirical study of interdisciplinary work practices in healthcare. It employs patient safety for unraveling some methodological implications that interdisciplinary collaboration may present for the development of new competences and their translation across professional and institutional boundaries.

A patient's pathway (Zuiderent-Jerak et al. 2012) through a hospital relies on the multiple work among healthcare practitioners and others partaking in the delivery of safe care. For example, doctors' and nurses' collaborative efforts of reporting and managing the so called errors contribute to the safe delivery of care and they also offer valuable practice-led insights for designers, innovation consultants and others involved in the development of medical technologies. While the providing of safe care is mediated by multiple modes of ordering (Law 1993, 2008) of interdisciplinary practices, interdisciplinarity may often rest to well-delineated understandings of collaboration.

The paper approaches interdisciplinary collaboration by analyzing empirical material at 1) "Innovation Units" (IUs) which are currently situated within hospitals and at 2) mother-child treatment facilities that are spread across different departments of a university hospital. Common to both sites is a "user-driven"

approach for the development of medical technology (at IUs) and for the early-stage design of a new more centralized mother-child ward. Designers and healthcare practitioners consider patients as the primary users of new technologies and facilities but such approach to interdisciplinary collaboration becomes critical for performing safe care delivery. Envisioning of new technologies and facilities favors some interdisciplinary practices instead of others. With that in mind, how may emerging interdisciplinary practices that potentially contribute to the safe delivery care be supported?

The findings allow a discussion on the emergence of interdisciplinary patient safety practices under the notion of assemblages (Markus and Saka 2006). Assemblages may help for 1) conceptualizing the generation of heterogeneous relations between design work and healthcare practices 2) foregrounding the "invisible work" (Star 1999) that takes place within existing healthcare settings and currently contributes to the delivery of safe care.

Title: TBA

Anne Hatting

Standards and best practices have become a pervasive means of managing and controlling the processes of health care suppliers. However, there are also growing concerns about the utility and unexpected effects of such approaches. First: because the effects of standardized processes are often difficult to predict (Brunsson et al 2013). Second, because it remains open to debate whether uniformity across time and space is indeed desirable in practical contexts

that show widely varying demands (Thevenot 2009). Third, because the introduction of standards and accompanying control and accreditation programmes are not just resource intensive but also frequently invoke resistance and resentment amongst medical practitioners (Trinantafillou 2014).

Investigating the processes involved in the introduction of standards, this paper is drawing on a study of a standardization initiative in Danish hospitals. Three political ideals are identified: standardization, accountability and transparency. The passage of these ideals into the realm of hospital wards is documented. To understand how local relationships are altered, three processes, relating to ANT, are elaborated and exemplified: translation, transformation, and inclusion/exclusion.

The paper discusses possible ways of understanding and telling stories about producing arguments about the essence of good health care in hospitals. The research confirms the unpredictability of the effects of standardization initiatives and helps to understand how actors may 'benefit', or become disenfranchised by the changed circumstances.

Key words: standardization, accounting, agency, hospitals, accreditation, organizational ethnography.

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Control of antibiotic resistance - forms of knowledge, standards and technologies in general practice

Anne Rogne & Heidi Gabriel Hansen

As a part of the international science collaboration UC-Care our project is participating in a holistic and multidisciplinary approach to find solutions to the challenges that our current use of antibiotics has led to. Drawing at least partly on insights from the field of medical science and technology studies, the aim is to explore the governance of antibiotics in the complex situated practice of the clinical consultation in general medical practice. With a special interest in the different forms of knowledge circulating in the interaction between professionals and patients, the various standards, that might prevail and how these standards shape the implicated subjects and vice versa together with the technologies, which both govern and inform clinical practice, we will elaborate on the interface between governance, technology and affected bodies.

In association with The Danish College of General Practitioners (DSAM) a specific interest is to study how knowledge and standards implied in clinical protocols, aimed at infections, which potentially requires antibiotic

treatment, are translated from medical research to clinical practice. Adopting qualitative methods as developed in the fields of psychology and medical anthropology we are at present still in the phase of data collection, observing encounters between practitioners and patients followed by ethnographic interviews with practitioners deploying methods of stimulated recall. The empirical data will be used to discuss the implications of these translations for rational antibiotic use in the actual clinical encounter with the individual patient, his embodiment, self-understanding and everyday life.

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Establishing credibility, constructing understanding: The epistemic struggle over healthy eating in the Finnish nutrition blogosphere

Janne Huovila & Sampsa Saikkonen

What constitutes healthy eating is under ongoing public debate. This debate increasingly takes place in the internet and social media. By using rhetorical discourse analysis, we investigate in this paper how six highly popular Finnish nutrition counselling bloggers (PNC-bloggers) construct dietetic credibility and understanding. We also compare their argumentative approach to that of two academic experts contributing to the blog of National Institute for Health and Welfare (NIHW- bloggers) about healthy eating. Theoretically we draw on Michael Billig's notions on how thinking and understanding are pervasively argumentative and reflect wider socio-cultural contexts, and on the dilemmas of common sense. We demonstrate how the PNC-bloggers credibilise their claims and construct dietetic understanding through individualisation of healthy eating, and in a critical opposition to population-based dietary guidance and communication. This dietetic individualism was not just an instrumental rhetorical approach, but also an all-encompassing epistemic orientation. We argue that the PNC-bloggers epistemically reflexive and pluralist attitude, in which epistemic value is attributed to other forms of knowledge and understanding alongside science, contributes to their credibility and popularity in the public domain. Furthermore, we point out that their

credibility might also have much to do with their way of thinking and arguing, and how this relates to mundane thinking about healthy eating. Finally, as a more practical implication of our analysis, we make some suggestions concerning communication about healthy eating.

You are what who you eat: Negotiating animal feed and the relational meal

Terje Finstad

You are what you eat! If that is so, then modern farm animals are at least partly pharmaceutical beings. As animal husbandry was industrialized in the period after World War II, antibiotics became a much used tool given to animals suffering from bacterial infections, but also as a animal feed additive that would prevent intestinal infections and increase the growth of animals. Designed by various kinds of pharmaceutical, micro-biological etc. expertise, the animal diet became an important tool used for adapting animals to their new industrial environments, keeping them healthy and productive. However, the pharmaceutical animal diet also linked environmental concerns to questions of human and animal health as new microbiological theories saw the light of day in the late 1970s and the 1980s. The name of the game seemed to change from becoming what you eat to becoming what the one you eat eat.

This paper investigates negotiations of the pharmaceutical animal meal in post WW II Norway. More specifically, I will draw on

the archives of the so called Forvarerådet (The Animal Feed Council, AFC) that was staffed by leading veterinarians. The AFC was the official institution evaluating and approving all new animal feeds used in Norway. As such, the institution was an obligatory point of passage for all new animal feeds and the archive contain letters and reports from meetings between the various actors linked to the animal feed business. Thus it will be an excellent source to utilize for investigating how new ideas about the connections between the animal, human eaters and their environments came about through the negotiation of animal feed designs.

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Thanks

The conference organizers wish to thank the Department of Learning and Philosophy, Aalborg University Copenhagen, for its moral, administrative and financial support of the conference.

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