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## TAGUNGSBERICHTE

### Perspectives on Technology, Society and Innovation

Report on the 4S/EASST Joint Conference “Design and Displacement”

Copenhagen, Denmark, October 17–20, 2012

by Nuno Boavida, Torsten Fleischer, Sophie Kuppler, Andreas Lösch, António B. Moniz, Jens Schippl, and Judith Simon, ITAS

To focus on processes of scientific and technological design and on how newly designed objects are used in different ways than initially intended (“displaced”), the organizers (the Society for Social Studies on Science-4S and the European Association of Studies on Science and Technology-EASST) chose the conference theme “Design and Displacement”. The concept of design here referred to innovative processes in forming new ideas and material objects. This general idea was reflected in a multitude of sub-topics. Approximately 1.650 participants met in Copenhagen to discuss 1.352 papers in 320 sessions. Just reporting on all of those we attended would give a tedious read. Instead, the spotlight will be turned on a few sessions, which we found particularly interesting or challenging with a view on technology assessment research.

#### 1 Public Engagement with Science

A panel discussion on the topic “Back to the future: why should we promote public engagement with science?” took place to revisit a debate that was institutionalised with the publication of the journal *Public Understanding of Science* about twenty years ago. Alan Irwin (Copenhagen Business School), talked about the ambiguity of the term “engagement” and mentioned the resilient approaches to this issue from practices of technology assessment that demonstrated to have tensions with political governance structures. He gave the example of the recent governmental position on the role of the Danish Board of Technology (DBT) in Denmark. Maja Horst (Copenhagen

University and EASST Council) also referred to that example. From her point of view the decision to close down DBT was not a surprise. In spite of the fact that they had been struggling for resources for about ten years, they became more famous internationally than in Denmark. According to her, the DBT was a “victim of its own success” while the Danish public is still not engaged with science. The difficulty remains on how to evaluate the consensus culture, while there are signs of “manipulation of public feelings”. David Guston (Arizona State University) also mentioned another case: the closure of the Office of Technology Assessment (OTA) in the United States was a problem and a challenge. For him “technology researchers can go very far in terms of development. Social scientists are not allowed to go so far...”. This has strong implications on public engagement policy. He suggested also the publication of fictional scenarios as a mean to public understanding of science. Bryan Wynne (University of Lancaster) presented on engagement with science, while science is assuming public authority. For this well-known expert, “there are practices being glorified. The question is why? And what are the purposes?” Finally, Sheila Jasanoff (Harvard University) talked about science as becoming an ideology and the necessity to develop some sort of “post-illumination” that could de-throw the superstition. Public understanding of science deals with perceptions. Thus, further studies should analyse the “public representations of science” and not only the “understanding of science”.

#### 2 Engaging with Socio-technical Systems

“Displacing the laboratory and STS with it: new modes of engagement” was the motto of a double session on Saturday morning. The talks were dealing with various approaches to lab studies in STS. While, in general, the composition of the panels entailed a rather diverse picture, a number of presentations focused on two specific aspects: the establishment and practices of boundary organizations dealing with anticipatory governance and/or assessment of new technologies and experiences with new forms of engagement, known as mid-stream modulation, or socio-technical integration research. Sharon Ku (USCB Santa Barbara and

Arizona State University) explored the politics of interdisciplinarity by examining how interdisciplinary collaboration was framed and practiced in two National-Science-Foundation-funded Centers for Nanotechnology in Society in the US. Torsten Fleischer (ITAS) discussed the role of TA institutions as “laboratories”, taking a closer look at the practice of research and science-policy interaction in the case of technology assessment of emerging technologies in a German TA institute. Ana Viseu (York University) and Paulo de Freitas Castro Fonseca (University of Coimbra) provided some insights into their experiences as “embedded humanists” in nanoscience/nanotechnology labs in the U.S. and Brazil, respectively. While Ana appeared to be deeply disappointed about the process and the outcomes of her interaction with bench scientists in her case, Paulo was cautiously optimistic about the impact of his project.

Empirical research on socio-technical arrangements and public participation were in the centre of the debate in the session “From here to eternity – socio-technical challenges to managing radioactive waste for the long term”, which mainly focussed on governance issues in radioactive waste management. Topics discussed by the speakers included the importance of framing the nuclear waste problem as a socio-technical issue instead of handling the technical and the social separately (Catharina Landström, University of East Anglia), the effects of deliberation on the public debate on nuclear waste (Sophie Kuppler, ITAS), the question how the social enters into the technical safety case for a repository (Bettina Brohmann, Öko-Institut) and how the RISCUM Model for Transparency with safe spaces for discussion separate from implementation and without any aim to reach consensus proved successful in the Swedish case (Linda Soneryd, Score).

The session gave an insight into the state of discussion on some central topics within the debate on nuclear waste governance: How can the public be involved? To what extent and in what should it be involved? Does it change the nature of the conflict if it is involved? In the discussion, the importance of national context in analysing nuclear waste politics and approaches to conflict resolution became once again evident.

### 3 Governance of Socio-technical Systems

In the panel “The governance of innovation and socio-technical systems: design and displacements - I” changing mechanisms in governance of innovation and socio-technical systems were discussed. Susana Borrás (Copenhagen Business School) and Jakob Edler (University of Manchester) proposed four theoretical blocks for change in governance systems, namely the opportunity structures and capable agents in a system, the instruments and governance mechanisms, the legitimacy and acceptance of change and its governance, and the learning and reflexivity process within the system. Jeremy Rayner (University of Saskatchewan) studied policy governance of innovation and innovation in governance using the example of biofuels. He concluded that innovation poses a distinctive challenge to governance because of the increasingly ambivalent character of public responses to new technologies, but at the same time suggested that ambivalence is a key driver of both the governance of innovation and innovation in governance. Stefan Kuhlmann, Peter Stegmaier and Vincent Visser (University of Twente) talked about the governance of the abandonment of socio-technical systems. They conceptualised the idea of “**discontinuation governance**”, analysed explorative cases, and suggested that policy should take up “**discontinuation governance**” as a strategic challenge. Nuno Boavida (ITAS) studied the extent to which indicators are used in governance, among three knowledge-intensive innovation communities. He found that researchers showed elements of reflexive judgment, considering indicators more important in decision-making than people, meaning that their decisions were less bounded by social interactions, more autonomous and with ample relations to scientific knowledge. Business R&D ipersonnel as well as policy maker communities emphasized more the role of social interactions in decision-making.

### 4 Technology and Values

ITAS co-organized a panel on “Feminist Theory, Values & ICT Design”. The panel focused on the question how feminist theory can be constructively used for ICT-design and the role of values in the process. The first session focused more on

theoretical-conceptual work on the relationship of ICT-design and development and feminist theory, while the second panel complemented with more empirical research.

Two speakers discussed Lucy Suchman's and Karen Barad's positions and their contribution to a feminist-critical view on ICT design and development. While Waltraud Ernst (Johannes-Kepler-University Linz) focused on the constitution of non-binary forms of gender in technological processes, Judith Simon (ITAS) tackled the question of how responsibility in socio-technical systems can be understood and enabled. In two further talks the conceptual link between feminist theory and participatory design was highlighted. Anna Cron Fors (Umeå University) discussed the commonalities between those two traditions of thought and called for a stronger linking between the two. Jackie Klaura (University Vienna) focused on concepts such as participation and interdisciplinarity and the role they play in understanding processes of co-production of technology and the public.

In the second session, Göde Both (Paderborn University) discussed questions of distributed agency in driverless or semi-autonomous vehicles from a feminist perspective. Alison Marlin (University of Melbourne) analyzed how intimacy within families is built up, extended and limited and what role ICT plays in those processes. Two further talks focused on the situation of women in informatics. Anna Vitores (Lancaster University) critically discussed the "leaky-pipeline metaphor" and the thesis that there are too few women in informatics, while Roli Varma (University of New Mexico) presented empirical studies on the particular situation of Indian women in informatics and related disciplines.

## 5 Technology and Work

In the session "Design challenges of working and organizing in technologically dense environments" Sylvain Parasie (University Paris-Est) discussed the creation of a new specific occupational group (the programmer-journalists) that has challenged the established ways of articulating work and technological practices in news organizations. Ravi Dar (University Uppsala) found that an enacted shift in the conception of

Business Intelligence in large Swedish corporations took place from a decision support tool that generates "intelligence" to the realization of the demands, requirements, and possibilities of intelligent organizational processes.

Lone Stub Petersen (Aalborg University) argued that the role of ICT-supporters is becoming central in the continued design and redesign of both information systems and organizational practices in hospitals. The role and engagement of conflict mediators – including ICT supporters in tackling the conflicts and challenges arising in the relations between technologies and different professional groups has been often neglected despite their influence on the rearrangement of technology dense environments.

António Brandão Moniz (University Nova de Lisboa and ITAS) referred to the technologically dense environments as settings in which human actors/robot operators and technological artifacts (robots) work "together" and where working and organizing are inextricably linked with the use of these technologies. Organizational models that are able to achieve flexibility under complex frameworks are those that include advanced automated systems with well-designed work places, meaning that elements of a human-machine interaction framework need to be included.

## 6 Concepts of Innovation

The concepts "responsible innovation" (RI) and "sustainable innovation" (SI) have made an impressive career in the EC's research policy and in the STS- and TA-communities. Both concepts allow for a plurality of interpretations. The panel "Responsible and Sustainable Innovation: differences, similarities and relevance for STS" set out to identify meanings and effects of RI and SI. The first half of the panel was seeking conditions and manifestations of responsibility and sustainability in emerging fields of science, technology and innovation. Do we see articulations of an institutionalization of responsibility or sustainability in the science system (Bos et al., Utrecht University)? Can we identify entry points for normative orientations in the different evolutionary stages of technological fields (Lösch/Büscher, ITAS)? Isn't there a fundamental lack of social innovation, which should constitute responsible and sustain-

able innovations (Quist, TU Delft)? Are we confronted with separate spheres: the problem driven sphere of sustainable innovation and the managerial effort to address responsibilities in innovation processes (Cuppen et al., TU Delft)? The second half identified specific responsibilities or sustainability issues in different cases – e.g., smart grids for a sustainable energy transition (Jorgenson/Jensen, Aalborg University), new co-responsibilities in ICTs (Kanelopoulou, Oxford), the designing of sustainability (Murray, Edinburgh University) or limits for responsible behavior in the health care system (Fletcher, Edinburgh University). In contrast to the general questions of the first half, a plurality of answers were given. Despite the variety of questions and answers one challenge remained clear: Reflexive research on the social conditions and (side)effects of RI and SI has to be done.

## 7 Transition of Energy Systems

Applying an STS perspective to the ongoing transition of energy systems in many countries was a key issue in several sessions. Amongst others, energy issues were addressed in a session called “Future energy infrastructures: aspects of design and resilience”. Another session which was split into four parts and lasted over a whole day was called “design and displacement in energy transitions: pasts, futures and presents”. The session addressed a broad range of topics, such as the public and/or consumers’ attitudes on the redesign of electric grids, the role of visions in public debate or the usage of scenarios for getting a better understanding of citizens’ perspectives. Case studies came from a broad range of different European countries and included cross-country comparisons. The German “Energiewende” was addressed in several presentations. In his presentation on design and displacement in Germany’s envisioned energy transition Daniel Barben (RWTH Aachen) emphasized the strong role of the state and the power of publicly funded science in the German energy transition. In another presentation, Jens Schippl (ITAS) explicitly connected the conference theme to the German “Energiewende” by highlighting that the redesign of the energy system is accompanied by its re-conceptualisation as a sort of socio-technical system replacing the “old” technocratic view on the governance of energy is-

sues. It can be concluded that the whole field of energy-related STS-Studies is still expanding; it will surely face increasing relevance and interest, given that the expected technical changes in the energy system are moving forward quickly.

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## Tagungsberichte zur NTA5

**Bern, Schweiz, 30. Oktober – 1. November 2012**

Zum fünften Mal traf sich die deutschsprachige TA-Community, um auf einer gemeinsamen wissenschaftlichen Tagung aktuelle Forschungsergebnisse zu diskutieren. Urte Brand liefert einen ausführlichen Überblick. Bei dieser Tagung, die heuer in Bern stattfand, feierte die TA-SWISS ihr 20-jähriges Bestehen. Dies nimmt Stefan Böschen zum Anlass, den Blick zurück nach vorn zu wenden.

### Was denkt sich die TA? Bericht von der fünften Tagung des Netzwerks TA

**von Urte Brand, Universität Bremen<sup>1</sup>**

„Vordenken – mitdenken – nachdenken“ – unter diesem Motto stand die fünfte Konferenz des Netzwerks Technikfolgenabschätzung, die im Anschluss an die Jubiläumsfeier „20 Jahre TA-SWISS“ in Bern stattfand. In der Eröffnungsrede von Michael Decker wurden diese drei Funktionen der TA thematisiert: Vordenken als Entwicklung von Zukünften und Optionen, um exploratives Orientierungswissen und Zielvorstellungen zu generieren. Mitdenken als Monitoring und Sensibilisierung für aktuelle (gesellschaftliche) Themen und Kontroversen und schließlich Nachdenken als reflexive Analyse von Problemen und Konfliktsituationen, möglicherweise auch das Neu-Aufrollen und die Neuorganisation von Diskursen.

### 1 Podiumsdiskussion: Nachfrageorientierte Sichtweise der TA

Auf dem Podium diskutierten Ulla Burchardt (Vorsitzende des Deutschen Bundestagsausschusses für Bildung, Forschung und Technik-