Conference Abstracts

10th Annual IAS-STS Conference "Critical Issues in Science and Technology Studies"
2rd – 3th May 2011, Graz, Austria

Sessions:

Plenary Presentations

Transdisciplinarity in sustainability studies: Theoretical debates – methodological challenges and empirically gained experiences

Irmgard Schultz, Institute for Social-Ecological Research (ISOE), Frankfurt/Main, Germany

The contribution will start with a short description of the history and field of transdisciplinary research in sustainability studies. Where do we stay? What are the key characteristics? Against this background a conceptual understanding will be submitted which will be explained on behalf of a general model of transdsiciplinary research. The model explains the transdisciplinary research process, its overall aims, characteristic challenges and methodological steps which we can use to elaborate analytical insights and to generate new knowledge.

In a second part this model will be used to explain the research process – step by step - of the transdisciplinary project 'Sustainable behaviour at work and in private life|. [1]Within this, a focus will be set on methods to integrate the different scientific disciplines and actors and knowledge elements. These methods concern social and communicative integration of the participating scientists and stakeholders of the project as well as different forms of cognitive integration (integration of terms, conceptual integration, integration of results etc.).

In a third part, the so-called 'knowledge transfer' in transdisciplinary sustainability studies will be reflected, first on behalf of the example of the 'Sustainable Behaviour'-project and then in general terms: How is the knowledge exchange between scientists and stakeholders organized in this type of knowledge production? How and why does the different knowledge context matter: of scientific experts, of the companies' managers and the companies' employees? And - question to all - what understanding of everyday life actors and | intervention into everyday life problems is assumed?

Socio-technical transitions towards sustainable energy systems – some conceptual remarks

Harald Rohracher, Inter-University Research Centre for Technology, Work and Culture (IFZ), Graz, Austria

Innovation and technology policies are increasingly focusing on so-called 'grand challenges' such as climate change mitigation or energy security. Analysing such challenges from a science and technology studies point of view draws our attention to a dilemma: On the one hand, concepts and empirical analyses of socio-technical change teach us how messy such processes are, how they depend on various contingencies and distributed action which in practice is hardly coordinated. On the other hand, we will have to deal with those transformation processes in one way or another and try to collectively shape socio-technical change. In my presentation I will look at some concepts of transformational change in science and technology studies (such as transition management) and sketch out how they are used in analysing the challenge of transforming energy systems towards greater sustainability. I will particularly focus on a number of conceptual questions which have not yet been resolved, but which are at the same time essential to get a more differentiated understanding of the potentials and pitfalls of our ambition to shape the transition towards sustainable energy systems.

Web 2.0 & Diversity: Gender and Technology in Action

Heike Wiesner, Berlin School of Economics and Law, Germany

The talk "Web 2.0 & Diversity: Gender and Technology in Action" provides an overview of the actual Web 2.0 debate and the gender concept. Using the example of Web 2.0 technology, it demonstrates how criteria for success of innovation and equality in the relevant educational contexts can be materialized.

New media have increasingly been adopted in education, which is evident from the sharp increase of scientific attention given to this area. It is also established that interactive and playful components foster the learning process. The professional deployment of innovative, technology-supported learning scenarios lags behind this development. The research projects fe|male and divtec is devoted to this theme: Both projects places Web2.0 technologies in education in the centre of the research focus. These technologies will be analyzed under the aspect of gender and also in relationship to their didactical deployment within the framework of a gender-sensitive academic education. Popular internet activities such as the social interaction though the networks MySpace, Twitter, Wikis or Flickr, but also the production of content within a community serve as potential starting points for the development of future technology-supported learning scenarios in schools and workplaces. The new impulses originating from Web 2.0 entail in this context socio-technical room for innovation in education. They also contain the potential, frequently male dominated organizational structures to be "gendered". This represents a notable democratization in the area of equal opportunities by way of the backdoor – both an innovative and economically promising development.

Information and Communication Technologies

Informatized Work and its socio-cultural implications

Caroline Roth-Ebner, Department of Media and Communication Studies, Alpen-Adria Universität Klagenfurt, Austria

In the past decades informatization has become a phenomenon of our everyday lives. The ubiquitous use of ICT is influencing our way of life, our social interactions and communications. In my paper, I focus on working contexts. What I am particularly curious about is the work of 'digicom-workers'. These are people who deal with and communicate intensively with digital media in their work environment, e.g. software designers, communication consultants, entrepreneurs or even scientists. The smartphone, iPad and notebook are their virtual offices and their attendants throughout the day. Without digital media their work would often be bereft of purpose.

In my paper I will first give an overview of the actual situation at work referring to concepts of virtual and informatized work. Then the term 'digicom-workers' will be explained, also by introducing some examples from my study. The main part deals with the socio-cultural implications of informatized work. For example, digital media enables workers to act in greater independence of time and space. On the other hand digital media seems to contribute to a process of acceleration. Permanent ubiquity and multitasking can lead to stress.

My paper is based on the preliminary results of my current empirical study titled 'Work in the dynamics of media, time and space'. The methodological source of my investigation lies in 20 qualitative interviews with digicom-workers in different working contexts as well as visualizations, carried out and then verbally commented by the workers after each interview.

Technological visions and Open Government Data

Axel Kittenberger, University of Vienna, Austria

Open Government Data is a movement that strives to have governments regularly publish all non-personal data free of charge. I am studying the Austrian perspective in which promises of the possibilities of current and future internet technologies like Linked Open Data, the Semantic Web or Meshups are used to shape a new social practice of data and government. In Austria this interweaving of internet technology and a vision of different ways to govern is reflected by the personnel overlap of the Semantic Web and Open Government Data communities. Notions of preventing further "lateness in the international race" are frequently uttered, especially in comparison to the UK and USA. The agency of the internet in the Austrian discourse of Open Government Data can be highlighted in comparison to these references where various Freedom of Information Acts have a history much less associated with said technologies. At the current stage I'm planning an interview series with the Open Government Data Austria activists with a focus to develop insights of the agency expectations of future internet possibilities can have on governmental policies.

Open source software development: "GNU communities" and the social face of ICT

Rositsa Dikova, IAS-STS, Institute for Advanced Studies on Science, Technology and Society, Graz, Austria

The paper focuses on open source software development projects with focus on specifics of the communities behind them. Major query shall be the architecture of F/LOSS (Open/Libre Open Source Software) projects and the specifics of the communities behind one such

project: Drupal. Drupal is an open source content management system (CMS) that has steadily grown to be one of the leading frameworks, but is also often recognized from within the community as a social platform in itself. Part and parcel of the portrait of a F/LOSS project aimed in the paper shall be:

- means of information flow,

- modular software development,

- social and technical capacity ranking,

- free-riding and individuals' contributions,

- the politics of the GNU license and the rise of "open source" governmental portals

The presentation shall engage with two local communities (the Bulgarian and Austrian Drupal communities). Such a comparison will result in a range of specific social implications: community building, personal and collective identity issues, usability and accessibility, and gender issues, all of which form parts of the contemporary approach to ICT from an STS perspective. I shall further analyze F/LOSS projects development with specific interest paid to the so called "architecture of participation" and the modularity of open source software. Conclusions from the analyses of the CMS and the community behind it shall cover several social, economical and political aspects of F/LOSS projects development.

Trusting Diversity: Exploring Diversity-Based Recommendations in Research

Judith Simon, Institut Jean Nicod - Ecole Normale Supérieure, Paris, France

In Republic.com, Sunstein warned us that the 'Daily-Me' of filtering information according to our political preferences may be harmful for democracy (Sunstein 2002). Instead of only searching for information that confirms our views, a democratically sound way of informing oneself should ideally balance contradicting information, should assess the pros and cons of different viewpoints. In a similar vein, there have recently been attempts to develop recommender systems, which are not only or primarily based on similarity, but on diversity of information (e.g. Agraval 2009, Hadjieleftheriou 2009, Minack 2009). In my talk I want to explore the relevance, the pros and cons or employing diversity as opposed to similarity for the generation of recommendations in research literature. Even if we generously assumed that the tendency to suppress or ignore contradicting information is less severe in research, the problem of sticking to similar content or views is quite prevalent in many disciplines. This problem seems to be caused by implicit trust and reputation relations within scientific communities: researchers know only a very specific group of people, attend only very specific events and ignore content, people and events that may be interesting, but are associated with or rooted in different communities. Yet, as Page (2007) has shown, diversity trumps ability, even if people have a bias to trust those who are similar more. In my talk I want to use the example of recommender systems to explore the relationship between trust, similarity and diversity in more detail from a critical perspective.

Agrawal, R., Gollapudi, S., Halverson, A., and Leong, S., 2009: "Diversifying search results". *Proceedings of the Second ACM international Conference on Web Search and Data Mining*, R. Baeza-Yates, P. Boldi, B. Ribeiro-Neto, and B. B. Cambazoglu, , pp. 5-14.

Hadjieleftheriou, M. and Tsotras, V. J., 2009: "Special Issue on Result Diversity". *Bulletin of the Technical Committee on Data Engineering.*, 32, 4.

Minack, E., Demartini, G., Nejdl, W., 2009: "Current Approaches to Search Result Diversification". *Proc. of 1st Intl. Workshop on Living Web*.

Page, S. E., 2007,: *The Difference: How the Power of Diversity Creates Better Groups, Firms, Schools, and Societies*. Princeton: Princeton University Press.

Sunstein, C.R., 2002: *Republic.com.* Princeton: Princeton University Press

An STS approach to the design of Online Reputation: The Assemblage Theory compared with current state-of-the-art

Stefano De Paoli, AHREF Foundation, Trento, Italy

This paper is part of a larger project for the development of a participative and bottom-up journalistic social web platform (the *AHREF Platform*), whose aim will be to harness the power of peer-production and crowd-sourcing in the production of a citizen-driven journalism (Gillmor, 2004). Early in the project emerged that assessing the *Reputation* of participants within the Platform is a critical feature for supporting the collaboration and fostering the creation of Quality Information.

This paper is a literature review on *Reputation in Social Media and Web2.0*. The goal of this review is to prepare the ground for a new Science and Technology Studies (STS) approach for the design of Online Reputation for the AHREF Platform. Clearly designing Online Reputation is a socio-technical research effort which involves both understanding Online Reputation social dynamics and technologies. Current mainstream theories for developing Online Reputation are either based on Game Theory (Dellarocas, 2005) or Cognitive approaches (Castelfranchi and Falcone, 1998). In both theories social actors are conceptualized using individualistic and often rationalistic lenses. The STS theory that guides our design approach is the Assemblage Theory, recently developed by DeLanda (2006). In relation with Reputation DeLanda argued that socio-technical assemblages can act as devices for the storage of personal reputations and as enforcement mechanisms for rules violations. This new STS Online Reputation design approach will, in our view, better support participation and quality than current mainstream approaches, because it will harness the reputational dynamics of socio-technical collectives (Latour, 1999) rather than those of individual actors. In conclusion the paper will:

> • illustrate main aspects of current Online Reputation design theories and approaches and compare them with the Assemblage Theory.

> • Compare between different definitions of Reputation and the Assemblage Theory definition.

> • Provide a list of noteworthy features of current Reputation Systems (from literature) that can be useful for the design of the AHERF Platform (e.g. Quality of Information) and discuss them in relation to the Assemblage Theory.

> • Prepare the ground for an STS approach to the design of Online Reputation.

Castelfranchi, C., & Falcone, R. (1998). "Principles of trust for MAS: Cognitive anatomy, social importance, and

quantification," in 3rd Int. Conference on Multi-Agent Systems. Paris: IEEE Computer Society.

Delanda, M. (2006). *A New Philosophy of Society: Assemblage Theory And Social Complexity*. NY: Continuum.

Dellarocas, C. (2005). "Reputation Mechanisms," in Handbook on Economics and Information Systems (T.

Hendershott, ed.), Elsevier Publishing.

Gillmor, D. (2004) *We the Media*. Sebastopol, CA: O'Reilly Media

Latour B. (1999). *Pandora's Hope. Essays On the Reality of Science Studies.* Harvard University Press.

Digital Civic Engagement among Anarchist Activists in Poland

Lisiunia A. Romanienko, Institute of Sociology, Wroclaw University, Poland

The effective mobilization of many disaffected blocs of young people has been facilitated through the strategic development of a digitized global saboteur network involving anarchists and other activists who take possession of a space online. By offering alternatives to knowledge and consumption dependency patterns, by deconstructing failure camouflage in 'primitive' societal settings, and by providing opportunities to obtain alternative intrinsic and extrinsic rewards through collective action; digitized activists are in the process of acculturating subversive dissenters into nonoccupational mechanisms of achievement through the reorientation away from private goods toward collective labor. The analysis will demonstrate that anarchist online discourse highlighting the uneven distribution of extrinsic and intrinsic occupational rewards provides audiences with valuable insight into the possibility of minimizing power distances, reversing democratic failures, and creating a more hospitable socioeconomic and political environment to foster harmonious cooperative exchanges within a politically-mobilized climate.

Through technical path and pattern recognition systems of filtration, ICT is now capable of bringing users the information they demand based on immediate analysis of similar user needs. This technological breakthrough has brought users relevant online information with unprecedented precision regardless of subject content. In this way, fragmented activist communities living in geographically distinct regions gain rapid access to content deemed popular with users reflecting similar needs. The precision path and pattern recognition available through ICT platforms sensitizes users to specificities of alterglobalization through content that brings about a level of awareness that has not merely resulted in protests or other participatory democratic attacks on hegemonic agents of dependency stratification on and offline, but has directed content that has actually increased cultural capital among resistors as they exchange aesthetic, social, cultural, political and other informative resources throughout their consensually oppositional digitized network. This has led to a powerful form of insurgency and related community building within the constraints and limitations of different formations of struggle.

By examining the case of all anarchist networks active online in Poland, the paper offers a content analysis examining network connectivity, ideological orientation, transaction exchange types, and motivating rewards. The analysis will demonstrate that the more embedded a regional anarchist network is, the more salient their adherence to multiple anti-hegemonic ideologies, the more cooperative their exchanges, the more successful they are in offering participants opportunities for achieving intrinsic rewards and other lively resistance activities being sought among those immersed in cultures of contestation and emerging forms of digital civic engagement.

Workshop

The Concept of 'Heteronormativity' and its Methodological Implications

Birgit Hofstätter, Inter-University Research Centre for Technology, Work and Culture (IFZ), Austria

Torsten Wöllmann, TU Dortmund, Germany

The concept of heteronormativity originates from queer theory as a critique of feminisms and feminist research reproducing gender as a heterosexual binary. It thus refers to the interdependence of gender and sexuality (Ingraham 1996; Wagenknecht 2007). However, the concept does not only describe sexual norms but also shows how they structure social units and institutions such as marriage and family relations as well as relations of friends, people at work, etc. Heteronormativity has also an impact on the way the world is interpreted, the way research is conducted. In this workshop we want to raise the question how heteronormativity affects us as researchers and how we can deal with it in order not to reproduce it. On basis of an article by Stevi Jackson (2006) explaining the concept and its limits, we will discuss this issue and collect ideas of how to improve the quality of our research by avoiding heteronormatively biased interpretations of data and conclusions.

Ingraham, Chrys (1996), 'The Heterosexual Imaginary: Feminist Sociology and Theories of Gender', in Seidman, Steven (Ed.), Queer Theory/Sociology, Cambridge, Mass: Blackwell, 168-193.

Jackson, Stevie (2006), 'Interchanges: Gender, sexuality and heterosexuality: The comlesity (and limits) of heteronormativity', in Feminist Theory, 7 (1), 105-121.

Wagenknecht, Peter (2007), 'Was ist Heteronormativität? Zur Geschichte und Gehalt des Begriffs', in Hartmann, Jutta; Fritzsche, Bettina; Hackmann, Kristina; Klesse, Christian & Wagenknecht, Peter (Eds.), Heteronormativität. Empirische Studien zu Geschlecht, Sexualität und Macht, Wiesbaden: VS Verlag für Sozialwissenschaften / GWV Fachverlage GmbH Wiesbaden, 17-34.

Trans-disciplinarity in sustainability studies

The Problem Multiple Constructing 'the Research Problem' in TD Project Contexts

Ulrike Felt, Judith Igelsböck, Andrea Schikowitz & Thomas Völker, Department of Social Studies of Science, University of Vienna, Austria

Over recent years, transdisciplinarity has become a research paradigm in numerous national and international research programs, among them Austria's program on sustainability research. Researchers are expected to integrate societal actors into the knowledge production process itself and thus to enrich perspectives and experiences. This collaboration of scientific and non‐scientific actors should allow for both, the collective identification of societally relevant problems and the development of adequate solutions.

This paper will focus on one facet of transdisciplinary research, on the heterogeneous practices of developing, framing and negotiating of what is called "the common research problem". This means looking in some detail at issues of participation, translation, timing, epistemic framing and many more when it comes to define the problem at stake. Employing a practice-based perspective allows us to draw a differentiated picture of how diverse kinds of knowledge and experiences are involved in this kind of knowledge production. In doing so, we understand ways of knowing and ways of living in a society as deeply entangled and will thus also address the role of specific contexts, be they institutional, local or cultural. Focusing on the construction of a research problem will furthermore allow us a broader reflection on how the boundaries and the mutual relations between science and society are negotiated and re‐defined in the course of such projects.

The presentation will be based on interviews conducted with researchers and nonscientists participating in transdisciplinary projects as well as observations produced in a larger project studying the culture and practice of transdisciplinarity in sustainability research in the Austrian context.

Participatory modelling and sustainability research: concepts, means and aims of knowledge integration

Barbara Smetschka & Veronika Gaube, Institute of Social Ecology Vienna (SEC), Alpen-Adria Universität, Klagenfurt, Austria

Sustainability research needs knowledge integration between various actors in order to enhance the probability of implementing innovative and sustainable solutions. Additionally, integration of various levels of knowledge in order to make the commonly created knowledge effective is essential. This requires a common effort of stakeholders, experts and scientists from various disciplines. Scientists can support this process by providing 1) data on different scales and issues, 2) knowledge on ecological, economic and social contexts and 3) skills in transdisciplinary process-oriented methods. We would like to show our experience with a method of participatory modelling that approaches all three challenges.

Transdisciplinary research aims to address the complexity of real-world phenomena while focussing on problems relevant to stakeholders. Working with models as a strictly formalized method requires the reduction of complexity. Many examples of modelling sustainable development without stakeholder involvement exist. Integration of stakeholder perspectives in models means to involve them throughout the whole research and modelling process: defining relevant questions, integrating their knowledge as experts and finally finding more sustainable development paths.

This paper presents an agent-based model of an Austrian region with single farm households as agents. The model assesses effects on patterns of land use as well as socio-economic

conditions induced by changes in the farms' environment, such as subsidies and changes in market prices of agricultural products. The decision-making process of each agent is simulated within a "sustainability triangle" representing each farm with its ecological, economic and social dimensions. The presentation will focus on the process of participatory modelling, where farmers were involved in designing the agent-based model and creating scenarios. The model was handed over to the stakeholders and can be used for discussion and education processes to find sustainable paths in agricultural development.

Responsivity as a transdisciplinary research principle

Ulli Vilsmaier, University of Salzburg

The newly emerging culture of TDR searches to overcome established separations between disciplines, societal domains and accordingly different types of knowledge and epistemologies. It further aims at embedding knowledge production to heterogeneous horizons of interests, objectives, concepts of values and norms.

Besides furthering methods for problem framing, knowledge integration, knowledge assessment and mediation methods, there is a prior need (i) to explore possibilities for establishing a common rationality which allows for creating space for integration at all levels of the research process and (ii) to develop research frames which enable a formalization (framing) of highly unpredictable and uncertain research tasks to provide re-constructivity at the level of the process design. The contribution will focus on (i) and will give a short outline on research requirements related to (ii).

The contribution aims at discussing the need for establishing a common rationality for transdisciplinary research. It will be argued that TDR needs to be based on a *responsive rationality* that allows for acknowledging the complementary character of different epistemologies, types of knowledge, interests, objectives, values and norms. Responsivity will be introduced as a key principle for creating space for integration, mutual learning and the production of knowledge at the interface of disciplines, societal domains and individuals. Bridging these established boundaries calls for reflecting on identities, including the understanding of one's own self and the correlative dimensions of identity (professional, disciplinary, cultural). It will be argued that any form of identity only exists through differences and that any type of knowledge production, any discipline as well as any professional or cultural identity only exists against an all-embracing background. A responsive rationality allows for an understanding of the self (and dimensions of identity) which is characterised by an oscillation between self-reference and self-detractedness and is therefore an open concept. This openness will be discussed as an essential foundation for TDR.

Bergmann, M., T. Jahn, T. Knobloch, W. Kroh, Ch. Pohl, E. Schramm, 2010: Methoden transdisziplinärer Forschung. Ein Überblick mit Anwendungsbeispielen. –Frankfurt, New York.

Breda, van, J., 2008: Overcoming the Disciplinary Divide: Towards the Possibility of a Transdisciplinary Hermeneutics. –In: Burns, M. and A. Weaver (Eds.): Exploring Sustainability Science. –Stellenbosch.

Hamberger, E., 2004: Transdisciplinarity: A Scientific Essential. –In: Annals New York Academy of Science 1028. p. 487-492. –New York.

Hirsch Hadorn, G., H. Hoffmann-Riem, S. Biber-Klemm, W. Grossenbacher-Mansuy, D. Joye, Ch. Pohl, U. Wiesmann, E. Zemp, 2008: Handbook of Transdisciplinary Research. –Berlin.

Max-Neef, M. A., 2005: Foundations of transdisciplinarity. -In: Ecological Economics 53/1. 5-16.

Vilsmaier, U., 2009: ÜberRäumlichkeit. Ein Beitrag zur anthropologischen Konstitution von Raum. (=Dissertation an der Naturwissenschaftlichen Fakultät der Universität Salzburg) –Salzburg.

Waldenfels, B., 1997: Topographie des Fremden. Studien zur Phänomenologie des Fremden 1. –Frankfurt a. M.

Waldenfels, B., 2002: Bruchlinien der Erfahrung. Phänomenologie, Psychoanalyse, Phänomenotechnik. –Frankfurt a. M.

Waldenfels, B., 2010: Ortsverschiebungen, Zeitverschiebungen. Modi leibhafter Erfahrung. –Frankfurt a. M.

Integrating research and teaching by inter- and transdisciplinary case-studies: The case-study on mobility management along corridors

Alfred Posch, Ralf Aschemann, Karin Dullnig & Karl Reiter, ISIS - Institute of Systems Sciences, Innovation and Sustainability Research, Graz, Austria

Ulrike Seebacher, Inter-University Research Center on Technology, Work and Culture, Graz (IFZ), Austria

In this contribution we argue that traditional single disciplinary approaches are not sufficient to cope with ill-defined, highly complex real-world-problems. Instead, it is argued that research and teaching on innovation for sustainable development need to be both inter- and transdisciplinary. Case studies have the potential to be appropriate means for the integration of researchers, students, and practitioners by leading to interaction and thus to mutual learning between the case study actors. The main objective of this contribution is to illustrate these thoughts with an inter- and transdisciplinary case study on mobility management along corridors, an integrative teaching project conducted at the University of Graz.

The leading question of this interdisciplinary case study was how to influence the private and job related mobility behavior along the corridor of the suburban rapid-transit railway S3 in the sense of a more sustainable mobility. Here, two main groups of actors, their room for manoeuvre, and their perceptions and preferences analyzed. Firstly, it was the company Knapp AG, a large enterprise along the corridor and its employees conducting commuter travel. Secondly, it was the municipality Hart by Graz and its residents primarily conducting private travel. Based on empirical research, an intervention concerning the travel mode choice was planned and conducted. As result, potential strategies and measures for supporting of an economic, ecological and social sustainable mobility were developed for both, commuter travel of employees and private travel of neighboring residents.

Integrating research and stakeholder's perspective in research on alternative agro-food networks: experiences of 'co-operative research'

Sandra Karner, Inter-University Research Center on Technology, Work and Culture, Graz (IFZ), Austria

Nicoleta Chioncel, University of Oradea, Romania

The presentation will be based on experiences in transdisciplinary research gained through the project 'FAAN – Facilitating Alternative Agro-Food Networks: a Stakeholders' Perspective on Research Needs'[2], which involved five academic institutions and five civil society

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[2] Coordinator of the FAAN project (http://www.faanweb.eu): *Inter-University Research Centre for Technology, Work and Culture*, Austria. Partners: *Via Campesina* Austria, *Open University Milton Keynes* - Faculty of Technology, United Kingdom; *GeneWatch*, United Kingdom; *Szent István University* - Institute of Environmental and Landscape Management, Hungary; *Vedegylet - Protect the Future*, Hungary; *Institut Superieur des Sciences Agronomiques, Agroalimentaires, Horticoles et du Paysage*, France; *Fédération Régionale de Bretagne des Centres d'Initiatives pour Valoriser*

organizations in 'co-operative research'. An important aspect of 'co-operative research' refers to the issue of the production of new knowledge. Questions are raised about the way in which different forms of knowledge - represented by the different actors participating in a co-operative research activity - are both being treated and integrated. The suggested contribution will discuss the concept and practice of knowledge integration in a co-operative research process by reflecting on the experiences gained within FAAN.

Taking into account that the knowledge production process is relational and action-oriented – being formed and enacted in the interaction among different actors, we will argue that it makes sense to recognize that the framing of the research process may be closely related to the framing of the knowledge production and the associated process. Our contribution will discuss the impact of the research design on the co-production of knowledge, and how knowledge integration can take place within a co-operative research activity. We will illustrate how this could be taken into account in the research process design - in particular focusing on communicative action in the context of information exchange, negotiations and decision making processes. We found that in practice three key aspects influence the integration: 1) making differences explicit, 2) generation of a common ground, and 3) shared frame of reference.

Concerning the structure of the general process, we focus on the role of differentiation and reflection as a basis for integration.

The paper offers an interpretative analysis of diverse material collected in situ over the course of reflexive project steering, combined with retrospective in-depth extended interviews with FAAN-team members.

Trans-disciplinary Methods for Researching and Supporting Ecological Entrepreneurship: Researcher-Merchant Partnerships in Cambodia

Hart Nadav Feuer, Department of Ecology and Natural Resource Management, Center for Development Studies, University of Bonn, Germany

Researcher-merchant partnerships allow local entrepreneurs and development researchers to collaborate in a mutually beneficial manner that serves to create data for the researcher while supporting the advancement of an ecological enterprise. Small-scale enterprises in developing countries—particularly socially or ecologically sustainable initiatives—often lack two important resources that researchers can potentially provide: market analysis and credit. Researchers, in turn, typically lack two resources that entrepreneurs can provide: market data and access to entrepreneurial activities. In many cases, small-scale enterprises promoting sustainable production and consumption are simultaneously worthy of studying and worthy of financial support. For enterprises of sufficiently small scale, individual researchers can serve as investors and partners in exchange for privileged research access and control over the data collection activities of the enterprise. The entrepreneur benefits by receiving a line of credit (often with favorable conditions), an unpaid associate, and the results of the researcher's data analysis. In this article, I detail two trans-disciplinary fieldwork experiences involving small-scale enterprises for organic rice and traditional medicine in Cambodia. In both cases, the researcher's financial stake in the enterprise was the precondition for a research partnership, while the data collected from the process is the primary reward. More generally, I introduce the methodological basis, project scoping techniques, and practical structuring of researcher-merchant partnerships, paying close attention to issues that arise in the areas of ethics, researcher bias, reflexivity, and financial risk. Also explored are the advantages, disadvantages, and limitations of this kind of research as well as comparisons with other trans-disciplinary partnership models.

How do you manage? Unravelling the situated practice of environmental management

Dimensions of Limits to Environmental Management: STS Reflections

Ingmar Lippert, Augsburg University, Germany

This paper explores recent studies on ecological modernisation practices in their relation to organisational and societal fields. A set of such practices are often signified as environmental management. We will develop a comparative perspective on such practices and their limits.

Often, environmental management is construed as apt to solve local as well as global environmental problems. Examples are geo-engineering, the Clean Development Mechanism, Corporate Environmental Management Systems or Natural Resource Management. However, also practices which are commonly not classified as "environmental management" in itself, such as recycling done by individuals or travelling to academic conferences, may be orientated towards reconciling the conflicts between capitalist dynamics and environmental protection. All such practices are socially, politically, economically, but also materially and naturally, limited. We will revisit studies on a variety of limits to generate a multidimensional approach for their analysis. For that the paper utilises the sensibilities of recent STS discussions on the performativity of economies and natures.

Making room for water. Managed-retreat as local practice.

Silvia Bruzzone, Faculté de Droit et Science Politique, Curapp/CNRS, France

Though climate change appears rather a new public issue, it does not happen on a tabula rasa; it affects "traditional" policy sectors. If it is so, the question is how this "new issue" interacts and takes shape in already established organizational processes? How climate change is "operationalised" in local practices?

In the face of major events linked – to a certain extent - to climate change such as desertification, climatic migrations, inundations, landslides, one can make the assumption that one of the main implications of climate change is a major change in land use or at least a transformation in land organization and management. The study explores the process of implementation of a "flood controlled area" as adaptation practice to climate change. What kind of theoretical and empirical tools the analysis should adopt to give account of the multiple actors, types of knowledge, artefacts, socio-technical systems and governance configurations and sectors engaged in the definition of such practices? By adopting a theoretical approach inspired by Actor-Network Theory and STS, the suggestion in this paper is to consider the adaptation practice not as standardized top-down solution but rather as the result of specific connections among different actors, materials, discourses beyond the boundaries of formal organizations. The analysis proposes to take into account local narratives in the definition of adaptation policies and to consider implementation practices as distributed knowledge.

Rivers, reservoirs and riparians: The multiple dimensions of flood control

Franz Krause

The stark seasonal variations of the discharge of the Kemi, largest river in the Finnish province of Lapland, have long formed an integral part of the rhythmic dynamics of social and ecological life along its banks. With the spread of permanent infrastructure and activities, however, the annual spring-flood is increasingly conceived as a hazard.

Fuelled, among others, by recent flooding events, climate-change scenarios, a growing opposition to hydropower developments and an EU directive, plans are being debated to construct flood control reservoirs in hitherto protected areas in order to decrease flood-risk in the provincial capital.

This paper presents the divergent perceptions of floods, security and the nature of a river, on which the debate is based, and indicates how regulating the rhythms of the river also implicates managing places, biological processes and river dwellers.

'Environmental citizenship' in energy-related community projects: Probing theoretical approaches and exploring empirical material

Anna Schreuer, Inter-University Research Centre for Technology, Work and Culture (IFZ), Graz, Austria

Transition processes that are taking place in the energy sector towards more sustainable systems of energy provision not only include the diffusion of new technologies but also involve new forms of social organisation and social practices. In particular, multiple roles have now emerged for end-users or 'the general public', e.g. as active consumers, deliberately choosing the utility company they purchase energy from, as energy providers in micro-generation at the household level or in energy cooperatives, as financial investors buying shares of renewable energy companies or as initiators or opponents of local or regional energy projects (Devine-Wright 2007; Walker and Cass 2007). These roles may also be seen as forms of 'environmental management' in energy issues that citizens may or may not choose to engage in.

Against this background the paper reviews different conceptions of active citizenship in energy issues, in particular looking at concepts of 'environmental citizenship' and 'energy citizenship'. The paper critically examines what these concepts imply about humans' relations to the environment, about the role of (collective) citizen action in relation to other spheres of action, in particular the state and the market, and about the forms of action involved in 'practising environmental citizenship'. In a second step the paper introduces two case studies of local citizen initiatives in energy issues and explores this empirical material in relation to previous theoretical considerations. The paper outlines the actual practices constituting engagement in the community projects studied and the understandings people involved in these initiatives have of their actions.

A tale of Two Communities: Mutual and Overlapping, or Divergent and Confused?

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This paper addresses two 'community' initiatives in the transition to low carbon futures: a Carbon Conversations course, and SOSO. It is based on original, empirical data gathered on many such initiatives, in Edinburgh, Scotland. At the outset it outlines the particular origin, nature and mode of operation in these two case studies. To advance the analysis an exploration of the wide and varied use 'community' plays in these two examples is undertaken.

One initiative – a Carbon Conversations course – where participants meet weekly, envisions a 'community' of mutual support and motivation to meet individual carbon footprint targets. The other, SOSO, a bespoke project targeting one particular urban street, envisions a 'community' primarily based on location. In the ensuing discussion, issues of communities of place and of interest are teased out. Alongside this is the role played by concepts of place, scale, territory and location in the envisioning and practicing of 'community'.

Energy and Climate: Organizations and Consumers

Organizational development of renewable energy

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The research is concerned with the organizational aspects of renewable energy in the UK. It outlines a new approach to the study of organizational processes of renewable energy projects drawing on a range of perspectives including social constructivism and theories of socio-technical networking. The methodology is mainly informed by theorists who have contributed to STS and especially to actor-network theory (ANT).

The aim of this research is to discuss some of the theoretical constructs that have been proposed to frame ANT research and to relate some of these ideas to aspects of the empirics in a qualitative case study. The case study is a technological innovative project in renewable energy sector – Wave Hub, a project in North Cornwall, UK. Through this case, we examine how organizational forms emerge, investigate the alliances and networks built up by heterogeneous actors, explore the dynamics of technological systems in situations where interactions of the social, technological and political are regarded as particularly important and present a construction of the actor-network in chronological terms. Evidence from the case research is used to exemplify aspects of the theoretical constructs.

Unbundling of District Heating Co-operations in Stockholm?

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The Swedish energy sector, and especially the district heating sector, has gone through rapid changes over the last 15 years. The electricity market was deregulated in 1996 and following that, many of the previously municipality owned energy companies, who sold both electricity and district heating, was sold to private or larger municipal energy companies; it´s fair to say that a concentration in ownership occurred. This affected the relationship between many district heating companies, not the least in Stockholm where previously regional co-operations was conducted through a regional energy company, called STOSEB. Through STOSEB, founded in 1978, for example, many interconnections of the systems were conducted, resulting in three large systems in the central Stockholm region today. Co-operations occur still to this day, but from a different logic than earlier, with economic measures being most important, rather than the delivering security and the environment.

The aim of the paper is to analyse how the changed prerequisites through the deregulation and concentration in ownership have effected the regional planning and governance of the system. How was the co-operations conducted before and after the deregulation, and what influence does this have on environmental, economic and social factors?

The methods used for the study is document studies in STOSEBs archive and interviews with representatives from STOSEB, energy companies and regional planning authorities. The results will be analysed through the Splinter Urbanism thesis, introduced by Stephen Graham and Simon Marvin. The results will give a better understanding of regional governance of infrastructure in changing conditions.

Patterns of energy use in energy-aware households

Lisa Bohunovsky & Sigrid Grünberger, Sustainable Europe Research Institute, Vienna, Austria

With rising efforts towards a transformation to more sustainable energy systems, the role and the responsibilities of individual end-users and 'the general public' are receiving increasing

attention. It is widely recognized that the development of more energy aware lifestyles will have to constitute an important part of a shift to more sustainable energy systems.

But do people who pursue "energy aware lifestyles" in fact exhibit different energy use patterns? Does their energy consumption actually differ from the average energy user? Detailed information on actual energy behaviour and consumption patterns is required in order to learn about quantitative effects of citizens' engagement. In order to gather information on these questions 40 energy-aware households from two case study regions in Austria were asked in detail about their energy use. The sample consisted of 20 people who are actively engaged in the so-called "Ökoregion (eco-region) Kaindorf" as e.g. working groups leaders. The other 20 interviewees own a private, small scale PV-unit and take part in the Austrian initiative "Ökostrombörse".

The results of this survey, which was carried out in summer 2010, were compared to a similar Austria-wide representative survey in order to statistically analyse differences in the consumption patterns. The results suggest that energy awareness leads to significant differences in household patterns, such as energy saving patterns, hot water use patterns, driven km per capita, etc. However, their endeavours are confined by existent structural conditions. Thus, the resulting differences are mostly too small in order to lead to significant savings in energy demand.

Energy Poverty: a sociological case study in Austria

Thomas Berger, Inter-University Research Centre for Technology, Work and Culture (IFZ), Graz, Austria

This case study explores energy poverty in Austria. I compare these findings with research from other EU states, particularly Great Britain and Ireland, and bring them into the context of social inequality and environmental justice.

In Austria, social scientific research on energy poverty is underdeveloped. These issues are also peripheral in government policy and in the agendas of non-governmental organisations. My first step was a critical analysis of „energy poverty" definitions and the construction of a locally-relevant conceptualisation for Austrian research. The definition of energy poverty used in this research includes all energy consumed in a home, rather than only energy used in heating, reflecting complex socio-technical assemblages of energy distribution, accessibility and consumption.
This analysis, based on a qualitative field study in Styria, an Austrian province, is research-in-progress. The Austrian social welfare system is among the highest ranking in the European Union, but the inability to pay monthly energy bills is growing considerably. A dynamic of constant growing debt on the household level can be observed among vulnerable homes. Considering this socioeconomic development my presentation will identify the social groups most affected by energy poverty. I will emphasise particularly on the concepts of social inequality and environmental justice, because future energy systems must also include parts of the population that lack the individual ability to invest in energy efficiency or to participate in the shift towards more sustainable forms of energy.

Issues of Inclusion and Exclusion in Web 2.0

Informal learning with social media and its potential for a democratisation of education

Anita Thaler, Inter-University Research Centre for Technology, Work and Culture (IFZ), Graz, Austria

The European Parliament and the Council of the European Union (2006) have published recommendations on eight key competences for lifelong learning which are "necessary for personal fulfilment, active citizenship, social inclusion and employability in a knowledge society" (Council of the European Union 2010, p. 5). Beside communication in the mother tongue and in foreign languages, mathematical competence and basic competences in science and technology, learning to learn, social and civic competences, sense of initiative and entrepreneurship, cultural awareness and expression, digital competence is explicitly mentioned.

However, digital competence certainly comprises a basic understanding of information and communication technology, the recognition of patterns, the transfer of one's skills to new digital media applications, and a capability of 'self-teaching' (to a certain extent). Therefore, especially online spare time activities like discussing with other people in chatrooms, commenting or posting on weblogs, sharing knowledge in wikipedia or being involved in other online activities (cf. Schelhowe 2006) are of increasing importance for education processes as they enable informal learning processes and raise hopes for a democratic educational scenario.

But there are already critical voices warning that, for instance, Web 2.0 technology is not gender democratic per se (Herring et al. 2004). Especially spare time media, like TV, internet, and computer games, conceal much implicit gendered information, for instance about technology and engineering as a gendered – masculinely connoted – topic (cf. Rommes 2002, Bath 2003).

Age is another crucial factor regarding capability and frequency of private computer and internet use. Although 60% of all European households (EU-27) have internet access (Lööf 2008), the usage is much higher among younger people. About 70% of young people (16 to 24 years old) use a computer and go online almost everyday, whereas this can be said only for 20% among the 55 to 74-year-old (European Commission 2008). One question is, whether digital competence is distributed unequally among different social groups.

Taking Oskar Negt's definition of technological competence as "perceiving technology as a societal project" (Negt 1999, p. 228) into account – meaning a critical assessment of new technologies, consideration of risks, recognition of societal and ecological connections, and the refusal or adaption of technological artefacts or practices based on basic knowledge – one could assume that for instance older generations have different knowledge from younger generations.

However, the goal should be that, regardless of any social category (age, gender, ethnicity, etc.), people should be technically competent because it is part of a "society-critical basic competence" (gesellschaftskritische Grundkompetenz, Brock et al. 2005). It is something "[…] every citizen should have in order to judge societal interrelations and to engage actively and critically constructively, alone or in the respective context of life and work." (ibid., p. 1, translation A.T.).

And informal education gives hope that for instance by learning with so called social media (Web 2.0 applications) people without access to formal education can acquire necessary key competences informally. But one question still remains: Is this hope true for all people?

Reflecting the individual use of Web2.0 tools

Jutta Pauschenwein & Anastasia Sfiri, FH JOANNEUM, Graz, Austria

Nowadays the Web is playing a major role in living, learning and politics. The aim of the project "Web Literacy Lab" (1) is the research if and in which ways companies are using Web tools and the design of proper trainings to support companies in their dealing with new technology. The Internet will influence internal and external communication processes in companies and by the way weaken hierarchical information processes and democratize the exchange of information.

Heinz Wittenbrink refers in his blog (2) two levels of web literacy, the level of skills and the level of sensemaking in the web. At the level of skills Heinz relates the Model View Controller Pattern (3) - models for maintaining data, views for displaying data, and controllers for handling model or view – to the web users' activities: production of text and media, organization of information and networking. The approach of sensemaking (4) takes into account the construction of the web by active and passive internet users and by the creation of identity and relations.

In a first step of investigating these levels of web literacy a survey tends to examine the individual handling of web tools among the members of the web literacy lab. On the one hand we collect the names of the tools we are using, how long we are using them and how our practice changed during the last years and we reflect competences connected with the use of the web. On the other hand we reflect our sensemaking in the web via storytelling. First results of this survey taking into account our diverse and individual approaches will be presented.

(1) http://www.fh-joanneum.at/aw/home/Info/News_Events/News/~ccwk/Web_Literacy_Lab_JPR

(2) http://heinz.typepad.com/lostandfound/2011/02/zwei-ebenen-der-web-literacy-.html

(3) http://www.enode.com/x/markup/tutorial/mvc.html

(4) Weick, K. E., Sutcliffe, K. M., & Obstfeld, D. (2005). Organizing and the process of sensemaking Organization Science, 16(4), 409-421. http://citeseerx.ist.psu.edu/viewdoc/download;jsessionid=BF89AFA5C95A9065253B56C643950950?doi=10.1.1.125.6080&rep=rep1&type=pdf

Gender Struggles in Web 2.0

Tanja Carstensen, TU Hamburg-Harburg, Germany

Although web 2.0 is claimed to be democratic and user-centred, from a queer-feminist perspective a range of exclusive, stereotypical and discriminating characteristics of social network sites, wikis and weblogs come into view.

In my contribution I would like to focus on gender relations in social network sites, wikis and weblogs. First, I consider the gendered design and use of web 2.0 technologies as well as the presentations of gendered identities in social network profiles and weblogs. While in the design and use of social network sites an insistence on binary gender roles can be observed, weblogs offer space for diverse identity constructions as well as for queer subject construction without referring to offline identities.

Second, I would like to consider the possibilities for feminist, queer and gender politics, and the negotiations of gender topics in web 2.0. Especially in social network sites and on the free online encyclopedia Wikipedia, feminist users carry out struggles for feminist content, for the use of gender-sensitive language as well as for registration and profile forms beyond binary gender and heteronormative concepts. However, although feminist users have a voice, develop clear ideas of desired design and are able to articulate them within web 2.0,

their power and agency to participate and change content and design of web 2.0 are restricted socially and technically.

Towards a feminist ethics of knowledge modeling for the future Web 3.0

Corinna Bath, Humboldt-University Berlin, Germany

The term Web 3.0 is widely used to denote future developments of the internet. So far we have witnessed the emergence of Web 1.0 in the nineties and an increasing popularity of social software applications/ Web 2.0 during the last five years. There is, however, another hyped web future called Semantic Web. This rather formalist account was already proposed in 2001 by Tim Berner-Lee and his colleagues, but has not yet become established. The Semantic Web idea is currently interpreted as "Linked Open Data" resulting in acquisitiveness of structured data. Simultaneously it socio-technically converges with Web 2.0 technology. The specificities of Web 3.0 are thus still contested.

Most of the internet scenarios mentioned were first embraced as participatory movements that promise the inclusion of diverse users, a free flow of information across borders and undermining hierarchies, and a resolution of the use-design dichotomy. A second glance, however, reveals that well-known social and epistemic orders do permeate the virtual space (see e.g. Carstensen 2009 or the F/LOSS report 2006). Inclusions and exclusions are closely entangled with epistemologies exploited in the processes of knowledge (or information) modeling. Whereas e.g. first attempts to build expert systems in AI were based on naïve realism aiming at copying "reality as it is", wikis embody a rather social epistemology that seems to be promising from a feminist perspective. However, since mainly dominant voices are those who speak and represent their worldview in wikis, joint knowledge production still repeats existing orders of knowledge on the web.

As an alternative to these developments my contribution aims to outline a new ethics of modeling knowledge for the databases of the Web 3.0. Based on Karen Barad's and Donna Haraway's concept of diffraction I will propose a theoretical account of understanding the design and the production of knowledge and its epistemology, ontology and accountability – called "ethico-onto-epistemology" (Barad). This approach will be exemplified by results of recent studies and own empirical material on knowledge for the future internet.

Revitalizing East Asia's Old Virtue of Filial Piety in 21ˢᵗ Century Informational City? Social Shaping of New Media for Inter-Generational Communication in Global Ageing

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In East Asia, the thousand-year-old Confucian virtue of filial piety (FP) has been structurally instrumental to shape inter-generational dynamics in families, kinships and social reciprocity; this has particular significance in the 21st Century Informational City (as coined by Manuel Castells) when younger generations are working in a globalizing world, and in a nomadic mode, in which they are less likely living together with their ageing parents. Yet, we are also moving into informational age: mobile communication gadgets can help to maintain the inter-generational communication, say the least. This paper draws the contours of the contradictions and dynamics of ageing societies in East Asian informational societies; it examines socio-familial-spatial (social networking and place) relevance of mobile communication, emphasizing the use of information and communication technologies (ICT) by/with/for ageing population, for rejuvenating the cultural virtue of filial piety. The research question is: can ICT-enhanced new media revitalize old virtues for better ageing and society at large? More specific, how senior adults use new media for better quality of life and in what way, mobile communication helps to facilitate inter-generational dynamics in ageing societies. This paper has four parts. After introducing the offerings of ICT in for inter-generational communication, Part 2 examines several case studies in Asian societies. Part 3

critical discusses the comparative (dis-) advantages of new media-based communication for enhancing inter-generational reciprocity. The paper ends with critical remarks on the prospects for better inter-generational communication in the informational city.

Energy and Climate: Issues of Regional Development

Transition to Bioenergy Systems in Transition Economies: Case of Ukraine

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Philip C. Peck, International Institute for Industrial Environmental Economics at Lund University, Sweden

Economies in transition (EiTs) (e. g., Ukraine (UA), Belarus, Moldova, etc.) are characterised with significant dependence on energy imports, require revitalisation of their agricultural sectors and improvements in the state of environment. The development of the countries' bioenergy potentials could help resolve these problems. However, EiTs face technical, political, financial, and capacity-based constraints in their transition to bioenergy. This field is significantly under-researched. In particular, there is an urgent need for the knowledge development that could support the formulation of national strategies and policies to overcome the mentioned barriers.

In UA biomass can supply 1 EJ per year (18% in the country's energy balance), the major part of which is formed by agricultural residues and energy crops. Currently the biofuels sector in UA is not institutionalised although a number of initiatives have emerged. Biomass supplies only 0.5% in UA's energy balance. This paper aims to identify facilitating and constraining factors for the transition to bioenergy in UA and suggests strategies to stimulate such transition.

The approach applies conceptual framework of a technology innovation system (TIS), which is expanded to include four categories of analysis: actors and networks; natural resources; technical and non-technical components. Seven TIS functions are analysed in relation to each of the category within UA's bioenergy sector. These include: entrepreneurial activities, knowledge development, knowledge diffusion, guidance of the search, market formation, resource mobilisation, support from advocacy coalitions.

This work establishes prerequisites for a legitimate agro-industrial bioenergy sector in UA and thus is unique of its kind for Ukrainian and EiT context. It emphasises the engagement of various stakeholders (e.g., business entrepreneurs, farmers, industries, policy makers, etc.) to facilitate the transition to bioenergy with the help of a new framework developed by the authors. The latter can also be applied in a variety of settings for the analysis of bioenergy initiatives and the degree of bioenergy development.

The results are presented in the form of constraining and facilitating factors for bioenergy in UA in relation to seven TIS functions. The main constraining factors include flaws in bioenergy legislation; imperfections of incentive-based systems for renewable energy/bioenergy; existence of market incumbents lobbying for conventional fuels; lack of collective action between bioenergy actors; lack of national technology production lines; low access to funds, knowledge and technology by local and sub-regional actors.

The major facilitating factors include significant bioenergy potentials; existence of a national bioenergy leader with a potential for networking, knowledge development and diffusion; existence of national biomass equipment producers; low costs and competitiveness of agro-biofuels; fast payback of biomass boilers; interest of foreign actors (e. g., businesses, researchers, consultants, etc.) in biomass-to-energy activities in UA.

The paper concludes with the suggestion of strategies for the enhancement of each function of a bioenergy TIS in Ukraine.

Urban batteries/incubators: recognizing and using the energetic potential of small urban and rural areas of Vojvodina region

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The goal of the research is firstly, detecting the appropriate models of implementing the principle of active energy efficiency regarding planning new as well as regenerating existing smaller settlements in Vojvodina region and secondly, their linking into active, productive and wired energetic systems. When addressing the matter of sustainable energetic systems from the architects and urban planners viewpoint the tasks that emerge as the most important ones are for connected cities to join the networks of energetically active settlements that are not only sustainable in a way that they cover their own consumption, but are also able to produce additional energy that they can distribute to bigger urban areas of regional or global significance.

This approach is placing the principles of energy efficiency and active energy-saving roles in the group of most important goals in the process of making strategies of spatial and regional development of Serbia. That is why it is necessary to pay attention to the climatic, geographical, social and economical characteristics of smaller urban and rural areas in order to gain a realistic image of potentials for their future inclusion in settlements networks. It is also necessary to introduce the basic principles of active and passive system networks, technologies and possibilities of their interconnecting and coordinating to urban planners and architects.

Overall SWOT analysis is therefore the initial step in forming the strategy of energy efficiency of settlements and geographical regions of Vojvodina, which would be the main determinant for future concepts concerning spatial, that is urbanistic planning and design of its smaller urban and rural areas.

Urban Future On Trial: Creative Response(s) To Climate Change

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Today, it is obvious that climate changes cannot be prevented, but only reduced and modified. Contemporary architecture, urban planning and design reflect various visions of the future combining the elements from e-e/eco/e-topia(s) with more 'mundane' scenarios imposed by reduction strategies, policies, building codes and laws. However, it is still difficult to estimate what is really efficient, sustainable, affordable, renewable, user/environmentally-friendly and, above all, ethical in our 'reinvented' perception of energy transition. In the meantime, UN Habitat has detected several innovations which occurred globally and all of them represent options which should facilitate the expected level of synergy:

The projects and initiatives conducted on different levels and scales reveal some weaknesses and discrepancies between expectations and outcomes, but the exchange of ideas, their assessment and blending certainly trace new trends in architecture and urban planning. Therefore, the main aim of this paper is to analyze these trends, define relation(s) between new planning/architectural approaches and contemporary visions of urban future and to identify new spatial models and modes of their application (themes, levels, scope, structure, flexibility/adjustability).

The examples which demonstrate a high level of creativity within a complex social, economic and/or cultural framework will be emphasized and evaluated according to the imperatives of energy efficiency, eco-friendliness/awareness and electronic interconnectedness.

Sustainable Consumption and Production

What does it take to be ecological? : Discussing the contrasting characteristics of what makes something ecological in the case of plastic bags

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This work is product of a year research on controversies around the 'plastic problem' and solutions proposed. If once the polymer was presented as a sustainable option – creating synthetic products would reduce the need to 'use' nature –, plastic degradation is nowadays among the biggest environmental problems.

The municipality of Belo Horizonte, Brazil, created a law enforcing companies to adopt an environmental friendly attitude towards plastic bags. Nevertheless, it did not specify what an ecological bag was. I analyze different solutions proposed: oxo(bio)degradable (d2w is added in the fabrication process, which would promote a faster degradation through carbon-carbon bonds rupture); biodegradables (made from manioc); stronger and more resistant plastic bags; and charge for bags or give discount to clients who do not use plastic bags. These four solutions are still plastic bags, nonetheless, transformed in ecological ones.

Each of them tries to be characterized as ecological and at the same time attempts to define the other ones as non-ecological. As Michel Callon (1986) reminds us, mobilization of allies depends on mechanisms that can be put between two actors and all other entities that wish to define their identities in another way.

In this case study, it means that convincing to use one solution also includes convincing that other possible solutions are not as good or viable. Thus, I discuss how contrasting and competitive characteristics of what makes something ecological emerge and how this flexibility of definitions relates to policy-making.

"Overcoming Leviathan" – Setting up alternative agro-food systems in Eastern Europe: network theory perspective

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During the last few years there has been a noticeable increase, within the field of sociology of rural areas, in the study of the agriculture's role in the environmental, cultural and social landscape of the countryside. The question whether food production systems or, in a wider sense, forms of agriculture are compatible with the concept of sustainable development has recently fueled an on-going debate. Modern, sustainable local food systems are build on base of social networks which linked different actors in a coherent, horizontal web. Producers, processors, consumers are bonded by the common vision, and values which go far beyond simple market production. Issue of sustainable food production and consumption gain a special importance in post-transformation countries of Eastern Europe. Structural dualism of agriculture which manifest in dominance of small scale family farming, specific structures of food provision system which based on green markets and unfinished industrial revolution open a potential to develop alternative agro-food networks in such countries as Poland and Hungary. At the other hand, heritage of system transformation left scares such as: low level of trust between citizens and states, incapacity to cooperation, dominancy of bureaucracy, cultural and social disorders.

This speech will be focused on the conditions of Alternative Agro-Food Networks strengthening in specific context of Eastern European post transition countries. Presentation will be embedded in the network theory tradition and will be base on the field studies results.

Sustainable Consumption, Work and Private Life

Relevance and perspective of informal consumption in the context of environmental change

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This paper looks at the relevance and perspective of informal consumption, like DIY and self help, in the context of sustainable consumption. It is based on the assumption that forms of informal consumption meet standards of sustainability, and, in terms of their environmental impact, are superior to many market based forms of consumption. It is being proposed that practicing DIY and self help affect an individuals consumption behaviour on two levels towards having less environmental impact: While being involved with material, their characteristics and techniques to transform them in desired ways, practitioners from experience gain awareness of the physical nature and related environmental effects of the world off stuff – made for consumption. On the basis of this awareness, additional qualitative criteria are being formed, beyond the monetary price, which have an influence on future consumption decisions. The other dimension where impacts are being assumed is the total consumption level of practitioners. It is being argued that the involvement with making, the joy experienced in learning applied techniques and the affirmative effect a hand made product has for the maker takes away from an individuals interest in getting pleasure out of purchasing products and what they promise.

Nevertheless, informal consumption doesn't seem to be recognised for its ecological impacts. As an economic and social practice it remains rather invisible and marginal. Though there is a growing demand for environmentally sensitive products offered on the market, the various forms of eco-efficient informal consumption don't seem to spread out accordingly to this apparent trend. In this paper ecological potentials of DIY are being identified and the lack of recognition for its potentials to contribute to sustainable development in the field of private consumption is being analysed.

Working within and beyond the market – Individual and societal recognition for sustainable work

Linda Nierling, Institute of Technology Assessment and Systems Analysis (ITAS), Karlsruhe Institute of Technology, Germany

Already since 20 years, the debate on "end of work" focuses on holistic concepts which stress the societal and individual importance of unpaid work in relation to paid work. The main idea of these debates (e.g. Bergmann 2004, Rifkin 1996) is to overcome the centrality of paid work on a societal and individual level in order to find new modes of social integration and cohesion. Whereas in the beginning, the debate was motivated from high unemployment rates due to automation, today the debate seems to be still highly relevant. It seems that under current working conditions the individual and social dependence on paid work becomes even reinforced in all industrialised countries, whereas at the same time, fields of activities which are dedicated to unpaid work are loosing more and more in importance (Hochschild 1997, Fraser 2009).

However, the strong orientation on market-based work obstructs the view on the manifold potentials of unpaid working spheres. These are not profit oriented but organised in individual spaces. In addition to paid work, unpaid work has the potential to open up new spheres in society. In the perspective of sustainability, it can strengthen political participation and the role of local communities by personal involvement into voluntary charity work or citizen engagement; furthermore reproductive activities like cooking, gardening, or doing handicrafts contribute to sustainable life styles and consumption pattern (Brandl & Hildebrandt 2002).

In this contribution, "recognition" in the approach of Axel Honneth (Honneth 1994) serves as analytical frame for the presentation of empirical results of qualitative case studies in sustainable working concepts. Hereby, intrinsic qualities and possibilities of individual and societal recognition of sustainable working pattern will be highlighted.

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Green work-life-balance – a new concept of promoting sustainable lifestyles

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Work-life-research has conducted a plenty of research on the interface of working life and private life (for an overview see e.g. Edwards/Rothbard 2000; Guest 2002). Established approaches that draw on reciprocal influences between working life and private life are helpful to better understand possible interactions between environmental behaviour in both life spheres.

Human resource management already considers interactions between employees' working life and private life by setting up work-life-balance policies (e.g. Kossek 2003). Up to now, work-life-interventions mainly disregard environmental aspects. Research on reciprocal influences between working life and private life in regard of environmental behaviour is scarce (as exception see Schultz/Seebacher 2010).

We propose a green work-life-balance-concept, which considers employees working life and private life in regard of environmental behaviour. We understand green work-life-balance as the reconciliation of working life and private life with regards to environmental values, attitudes and behaviour.

On the one hand, the company can promote environmentally friendly consumer behaviour in employees' private life (Muster 2011; Schultz/Seebacher 2010). On the other hand, companies can encourage employees to use environmentally relevant ideas and experiences they have developed in their private life within their working life.

In the presentation, we first illustrate the theoretical and practical background of our approach by giving an overview of existing approaches that explain the linkages between working life and private life and by outlining the work-life-balance concept. Second, the green-work-life-balance concept and possible interventions are presented. Last, possible chances and risks of that approach are discussed.

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Ethical, Legal and Social Aspects of Biotechnology and Biomedicine

Bio-Luddism: uneven diffusion and national context. Explaining diverging patterns of GMO trial site vandalism in France, Germany, and Spain.

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In the social studies of science and technology (STS), technology controversies are recognized as alternative shapers of technology, which operate beyond, and against, the imperatives of military advantage, commercial profitability, or national competitiveness. Social movements, in turn, are the prime movers of technology controversies. Theirs is the role of the technology's vocal detractor, whose motives often arise from a profound critique of industrial, market-driven society, a critique with little prospects to find representation by political parties or state actors. As STS pays surprisingly little attention to social movements, the presented research project attempts to foster the cooperation between the STS and the new social movement research field. Its subject is Bio-Luddism, i.e., a radical critique of modern biotechnology which resorts to the similarly radical protest method of GMO field trial vandalism. For both STS and new social movement research Bio-Luddism is worth close inspection: STS traces the impact of radical critique on the expert-guided policy process; theories on social movement try to explain why particular protest methods are being adopted, and succeed or fail under given circumstances. Episodes of Bio-Luddism occurred in various countries around the world (most dramatically in India and Brazil); in Europe epicentres of Bio-Luddism were the UK, France, and Germany. This project investigates Bio-Luddism in France, Germany and Spain (where it occurred only on one single occasion). It discusses the varying political effect of this form of radical activism, reviews empirical evidence for the method's trans-national diffusion, and the reasons for its political success or failure under different national circumstances.

Discursive aspects of GMO risk policy in Latvia

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This paper explores discursive aspects of GMO's risk policy in Latvia. The case is based on discourse analysis of media texts, political documents and participant observation in conferences, seminars, public lectures and presentations, which concerns GMO. Analysis shows, that, on one hand, policy is based on judgment, that GMO endangers environment and public health, but, on other hand, it is shaped by relationships between nature and culture, Latvianness discourse and conception about qualitative food. Framing GMO risk policy and rejection of agrobiotechnologies as benefit, this paper reveals problems also in the context of appraisal procedures of technologies and development of country.

Governing Agrobiotechnology in Developing Countries: the Case of South-East Asia

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Agriculture is the main economic driver for many developing countries.

In middle and low-income countries, in fact, three out of four people depend, directly or indirectly, on agriculture – which includes livestock, fisheries and forestry – for their subsistence. Due to this reason, agriculture is essential in their economies, and has a big influence on their gross domestic product. It is indeed basic source of food for most of population.

Due to the great predominance of agriculture and to its importance in developing countries and the high value of biotechnology, the step to combining the two of them was quite unavoidable; therefore, the attention posed to implement agrobiotechnology in these areas is not surprising and the great investments in this field (both from the governments and oversees companies) are understandable. Specifically, agrobiotechnology is seen as the main tool to improve food quality, increase food production, promote sustainable use of natural resources and enhance economic growth.

Interest towards agricultural biotechnology has been observed in developing countries for the past 30 years, shown indeed by the efforts made by the governments to promote research in genetic engineering, attract foreign investments and develop collaborative projects with western countries. Developing countries, moreover, in order to release into the environment or place on the market transgenic products have been working actively to develop legal framework to rule the products on genetic engineering, according to the main international agreements and guidelines.

South-East Asia is one of the most dynamic regions in the world, and at the same time, one of the most diverse. The countries composing this region are different in terms of economic regimes and development, but also in terms of structure of their society, undoubtedly influenced by the predominant ethnic group, their value systems, often diverse and subjective, and the official religion. In South-East Asia, agricultural biotechnology has been the centre of many investments from governments and international firms for the past 15 years, with the subsequent implementation of biosafety and regulation policies; it is in fact considered an incredibly useful tool to address the needs of poor people and governments that every day fight against hunger, overpopulation, undernourishment and unpredictable climate changes that causes huge losses in their harvesting. According to the data FAO, some GM crops are already present on the market and many are still under development. Great attention, however, is posed towards the so called "non-GM" techniques as well.

What can be foreseen for the next decade, based on the data I collected in my work, is an increase presence of modified crops on the market coming from developing countries and that South-East Asia will be more and more present in the international market, due to the huge investments, policies and efforts these countries are doing to compete with the "big ones".

Economic Issues in Agricultural Biotechnology

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The integration of biotechnology in agricultural sector becomes increasingly debatable in several countries. While several countries have realized potential benefits from adopting biotechnology in crop breeding e.g. genetically modified (GM) technology and undoubtedly produced and exported GM commodities, other countries still oppose to GM technology, especially for food crops. The social and economic environments are major elements shaping country's agricultural biotechnology policies. This paper will provide a brief summary of current situations in R&D and commercialization of GM crops, and discuss major economic issues related to agricultural biotechnology. The emphasis will be on divergences of international regulations adopted by different countries such as Codex Alimentarius and Cartagena Protocol on Biosafety, which have resulted in several international trade disputes.

Integrating socio-economic assessment of GMOs into decision making - exploring the challenges

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In December 2008 EU Council of Environment Ministers were asking the European Commission to explore the possibility to consider other factors beyond health and

environmental risks, i.e. "socio-economic benefits and risks and agronomic sustainability" in GMO market authorisation. With this proposal the EU Commission is moving into a policy minefield as there is very little experience with broader risk-benefit assessment of GMOs and because there are complex legal and governance problems to tackle. This paper explores some of the challenges for establishing socio-economic assessment in the EU regulatory regime for GMOs. It thereby takes into consideration the recent report of the European Commission on socio-economic implications of GMOs issued on 15 April 2011.

Policy impacts of ethical advisory bodies on the societal regulation of biotechnology: the case of national ethic committees in selected EU countries

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In this paper, we will analyze the impact of expert advisory bodies regarding the societal regulation of biotechnology. The thematic spectrum of expert advisory bodies is very broad with regard to policy issues, and the focus of our interest will be the expert opinions on the ethical, legal and social aspects of biotechnology. Namely, in the last two decades, we are witnessing two concomitant processes. On the one hand, we are seeing tremendous progress of biotechnology in synergy with other domains of new and emerging technologies such as nanotechnology, ICT and cognitive science. The synergetic combination and integration of these emerging technosciences is also known under the term "converging technologies". Such advances bring many societal benefits, but an uncontrolled societal development of the new emerging technologies could also significantly challenge the social and ethical norms that have been established in society in the past decades. Thus, such technologies carry many potential risks.

The tremendous progress of biotechnology and other new emerging technologies is accompanied by the production of various kinds of evaluations (opinions) coming from diverse types of expert advisory bodies. It could be said that in the last one and a half decade, expert discourse held great influence across many European policy domains, despite the fact that the citizen's revolt against GMOs radically changed the relation between the expert and policy decision-making subsystems. Because the whole institutional landscape of expert policy advice regarding the ethical and social issues of new emerging technologies has been institutionally proliferated (some new institutional structures formed in recent times are actually not expert bodies in a strict sense), the focus of interest in this paper will be restricted only to some of them. In that sense, our primary interest will be to present the results of our theoretical and empirical study regarding the political impact of national ethics councils in selected EU countries on crucial policymakers. In the framework of our empirical overview of institutional expert structures in Europe, the primary goal will be to present the main typology of policy impacts of national ethic committees which are members of the EU NEC Forum.

In order to acquire the relevant empirical information, we will also use various databases (for example: EGE, COMETH, Global Ethics Observatory, etc.). The main issues which might be highlighted with the help of deep empirical data will be: do national ethic committees provide only basic information on EHS (environment, health and safety) and ELSI (ethical, legal, social implications) issues of biotechnology without any significant impact on policymakers? Or do they have a crucial influence on the policymaking processes in individual EU countries? If their influence is very strong, how do they use their political impact? Do these expert bodies also provide a space for broader democratic inputs such as lay public engagement?

Poster-Session

Development of a Decision Supporting System to improve risk analysis related to GMO's releases into the environment

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The fast development of agrobiotechnologies ask for an harmonised approach in risk analysis of GMO's applications, meaning with "risk analysis" risk assessment, management and communication.

In 2003, based on the information requested by the European legislative framework on GMOs, a multidisciplinary group developed a methodological proposal to perform environmental risk assessments of genetically modified plants' (GMPs) field trials. The proposal consists of a questionnaire and a software. The software allows to follow the questionnaire with a step-by-step approach and allows the identification of potential impacts on a case-by-case basis.

In the LIFE+ (MAN-GMP-ITA) project, we aimed to implement the methodology in order to become a computer-aided Decision Supporting System (DSS) that could be utilized to elaborate risk hypotheses, to apply management strategies and to plane land utilization.

The DSS will be user-friendly and could be easily modified and adapted to specific situations. Furthermore, even if different expertise have been requested in its development and a multidisciplinary approach in its application is welcome, it would be applied without specific technical expertise or equipments. Moreover, the system could allow the gathering of observations and proposals strictly referred to a specific step in the risk assessment procedure submitted by interested parties (including general public stakeholders, risk assessors and managers).

Such standardized procedure in performing environmental risk assessment and in collecting data would improve information sharing and risk communication on genetically modified plants and/or crops.

Social Media and Self-Organization – Potentials for Knowledge Processes and Social Change

Robert Gutounig

As Social Media are becoming the world´s predominant form of media, there is a need for detailed analysis of this phenomenon. Theory of Self-Organization provides us with a suitable model when analysing the complex systems of Social Media and the implications of these media as forms of dynamic states of equilibrium or disequilibrium. These system models are process-related, evolutive, and are more adequate for the level of complexity of these systems than causal-deterministic ones. Such systems exhibit capacity for auto-synthesis and damage-repair, and they show that micro-processes are cooperative and have a high degree of emergence. Successful systems (e.g. Wikipedia, Open Source etc.) show that circular causality is becoming predominant.

It will be shown what effects (ethical and political) the structure and high-level dynamics of Social Media can have on society and especially on groups with special interests, and what the democratic and ethical consequences of the ongoing changes are. Theory of Self-Organization finally allows us to draw conclusions for shaping a more democratic and open Internet.

The importance of suits – transport planners co-constructions of gender, technology and sustainable mobility

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As an effect of the need for a more ecological sustainable transportation system, to change travel behaviour is becoming highly prioritized within Swedish municipal planning. However, who will have to change behaviour? Are there any special groups of users that attract the attention of planners? How do planners construct user identities within Swedish municipal transportation planning?

In recent STS literature, concepts such as gender, sexuality, and class are proven highly relevant when constructing user identities. Is gender depicted as significant when planners imagine sustainable mobility? How is masculinity and femininity connected to transportation technologies? What complicate the relations between gender and sustainable mobility?

In the paper, I analyze semi-structured interviews with municipal planners (both women and men). In the interviews, pictures of users (different in regards to gender, age, ethnicity, and handicap) of different means of transport (cycling, car use, public transit) where used as stimuli. The pictures enabled different interpretations of sustainable and unsustainable mobility. In what way do planners position themselves in relation to the images?

I investigate the theoretical and methodological implications of studying the links between constructions of gendered users, urban planning, and transportation technologies. The merging of two perspectives, construction of users and feminist planning theory, is an important contribution. Many of the studies dealing with the construction of users touch upon producers and designers within a consumption context. Does the planning context enable different perspectives?

Bionetworking over DNA: critical design and policy issues

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Personal genetic information services (PGI) or direct-to-consumer genomics (DTC) presents a convergence of web 2.0 platforms with consumer-oriented genetics that brings together issues of policy and design. The rise of networking over DNA profile and biodata (bionetworking) challenges the common design and HCI (Human Computer Interaction) notions of interaction, social networking and user needs. It confronts design thinking and HCI with various biopolitical and biosocial issues discussed in STS studies. These interfaces intensify the troubled relationship between what is social and biological, collective and individual, public and private, natural and political, material (embodied) and based on data or discourses. At the same time, this fast evolving convergence of biosciences with social networking transforms scientific practices in a way which demonstrates the importance of design in discussing issues of STS and policy. While debates on biosociality and biopolitics connect policy to issues of "biologization of politics from the perspective of citizenship" and "political economy of hope" (Nikolas Rose and Carlos Novas), "biovalue" (Catherine Waldby) and "practices of life and autoproduction" (Paul Rabinow) leading to the original discussions of "governmentality", "pastoral power" and "technologies of the self" (Michel Foucault), "cosmopolitics" (Bruno Latour, Isabelle Stengers) offers a possibility to think of policy in terms of design. Bionetworking as a "cosmopolitical" tool connects design and politics by testing how newly defined parts (units, actors) form new assemablages and communities. The notion of cosmopolitics as "collective experimentation" and "progressive composition of the common world" (Bruno Latour) offers a framework for understanding this connection between philosophy, policy and design. Bionetworking interfaces in this sense serve as probes for testing future collectives which transform the notions of human subjects, community and politics. I would like to present my research on nutrigenomics and design related to food – gene interactions and discuss issues of future clinical 2.0 trials.

Approximation of abatement cost curve

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The economic cost of environmental policy is determined by both, direct and indirect costs of pollution reduction. The direct economic effects are given by marginal abatement cost and can be captured by bottom-up models, but indirect effects can be captured only by computable general equilibrium models, because bottom-up models adopt only a partial framework. The vast majority of top-down models assume that end-of-pipe technologies are not available or prohibitively costly compared to fuel switches and therefore can be neglected in the model. In order to properly assess economic costs of environmental policy, top-down models have to include abatement costs explicitly. For this purpose, a trans-disciplinary research is required in order to combine an engineering modeling with economic one. We propose a methodology to approximate a smooth function from a step function in order to explicitly specify abatement function with top-down models. We consider a constant elasticity of substitution technologies with decreasing returns to scale. A comparison of alternative calibration strategies is provided. We found that the ordinary least square method provides a similar precision of approximation like other methods, but it is the simplest one. The results of the abatement curve approximation are values of two parameters: elasticity of substitution between production factors and value share of production factors in abatement process. Once this results are implemented into a top-down model, we are able to define endogenous abatement function and to improve economic modeling of environmental policies.

Negotiations of Gendered Boundaries in Science. The Example of the Interuniversity Cooperation of Science in Graz

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Current Gender Studies scholarship in the field of Sociology of Science indicates that the low proportion of women in some disciplines and in higher positions in the (natural) sciences is not due to their assumed 'hardships' and also not necessarily due to social factors external to scientific work itself like e.g. the question of work-family- reconciliation. It shows rather that successful research by women in (natural) science is bound profoundly to their social integration into the field. The question of how 'successful' integration into a scientific discipline works is hence vitally important for studying gender relations in science. Furthermore, scientific disciplines and sub-disciplines vary widely in regard to their disciplinary culture and mechanisms of inclusion, therefore, more detailed information on how the horizontal segregation of young scientists in different specialties of disciplines takes place is important. The hypothesis that 'boundary work' inside of disciplines and between different disciplines and sub-disciplines constitutes gender boundaries too is the major focus in this project. This focus is especially directed towards the natural sciences, namely, on the one hand, as it is considered a heterogeneous field of research and, on the other hand, as its research practices are increasingly characterized by technologies (keyword: technoscience). In this project, the disciplinary cultures of the interuniversity cooperation of the sciences, named NAWI Graz, and the specific characteristics of the professional profile of disciplines and sub-disciplines will be analyzed qualitatively. In this manner and in the context of this research, the connection between professional boundary work and social (gender-) differentiation will be explored more precisely.

Gendering of Boundary Work in Engineering. Presentation of a Currently Running Research Project

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In our presentation, we will give an overview of our project's theoretical presumptions, the central questions posed, its methodological approach as well as initial results.

The central starting point of the project is the assumption that distinctions made in professional engineering knowledge are relevant for gender research. Especially in the history of German engineering, the theory/practice difference has been of major concern for the emergence of the modern understanding of technology. The questions of whether engineering is a fully rationalistic scientific endeavour, whether it is mainly an applied science or whether it is a practice-oriented science, have remained crucial for its self-conception. As a result, there have been different variations of „boundary work" between theory and practice within the field.

Consequently, the project aims at analyzing the constructions of gender that accompany these distinctions. The central questions are: Which social constructions of gender are connected with the theory/practice boundary and can be found in historical as well as in current ways of drawing the boundary? How are different constructions of masculinity co-produced with professional understandings of technology and of the field?

The empirical investigation will first comprise a longitudinal study: The professional discourse and its reflection in general knowledge will be studied comparatively. In addition, a qualitative cross-sectional study is designed for investigating different sub-domains of today's engineering.

The broader aim of the project is to contribute to the de-construction of stereotypical gendered images of technology, arguing on the basis of the very fundamentals of engineering professional knowledge.

The Problems of Making Social Change Prognoses in View of Generational Change

Danuta Zalewska, Wroclaw University, Poland

Making social change prognoses, specifically in the scope of technological and ecological change, should be preceded in many cases by epistemological and empirical theories and methods. The fundamental problem of the majority of social change analyses is that they are covered in ideology. Many analysts take for granted the assumption that the more technological contemporary society is, the more advanced the level of development. Another assumption is that, whatever change advances ecological needs, automatically advances humanity. Third is that nature tends to have a greater value than society. Long range thinking, as a result, is disconnected from societal developmental planning. It is important to state clearly that, what has been accepted as beneficial by one generation may be considered dangerous to further functioning of society by a subsequent intergeneration. Furthermore, longitudinal timeframe analysis often begins to show the deep effects only after changes have already taken place. This is why it is important to begin to question at what tempo these changes should take place, and in what time frame knowledge should be pursued. The point of the current poster session is to argue that there are enormous benefits of technological and ecological prognosis extended beyond one generational cohort. The ultimate goal therefore is to model technological and ecological reality in ways that are responsible for the actual needs in an active generation in a given timeframe. Prognosis of this type should ultimately be a prognosis of future generational cohort needs in light of strategic planning.