RRI has a greater role to play in imagining its possible futures. Cutcliffe, S. H. (2000). Ideas, machines, and values: an introduction to science, technology, and society studies. Rowman & Littlefield. Jasanoff, S. (2010). A Field of Its Own: The Emergence of Science and Technology Studies. In R. Frodeman, J. Thompson Klein, C. Mitcham & J. Britt Holbrook (Eds.), The Oxford Handbook of Interdisciplinarity, (pp. 191-205). Oxford University Press. Rip, A. (1979). The Social Context of 'Science, Technology and Society' Courses. Studies in Higher Education, 4(1), 15-26.

Sculpting Responsibility? Historicising Nanoscience and Technology Development in Attendant Research and Innovation Ethics Practices *Nicholas Surber, Chalmers University of Technology; Karl Palmås, Chalmers University of Technology; Rickard Arvidsson, Chalmers University of Technology*

This paper surveys the literature on responsible research and innovation (RRI), exploring how it emerges from the normative predecessors of ethical, legal and societal aspects (ELSA), anticipatory governance and upstream engagement, specifically in the context of nanoscience and technology. The literature study – which will focus on both academic papers and policy documents – seeks to identify and critique narratives regarding the manifold rationales for responsibility in the field of nanotechnology. This will extend to broader narratives about environment and society in relation to such technoscientific development. This focus is motivated by the fact that the field, since its very emergence, has juxtaposed technoscientific exploration with concerted and highly motivated efforts to introduce RRI practices, influenced by scholars within science and technology studies as well as social science. Further, nano-technosciences can now provoke discussions relevant to analogous, albeit less mature, "key emerging technologies" through emerging historicity. In exploring the above-mentioned narratives, the paper will interrogate how narratives around RRI can be situated historically in relation to particular problematics that emerged in the context of nanotechnology. Second, the paper will explore the extent to which narratives are informed by concepts and debates within recent social research, such as neoliberal governance (-00s) and risk society/reflexive modernisation (-90s). Third, the paper seeks to analyse these narratives by revisiting classic/seminal social scientific concepts, for instance, "ideology" (Mannheim) and "legitimation crisis" (Habermas).

Session Organizers:

Wouter Van de Klippe
Ingeborg Meijer, Leiden University
Roger Strand, University of Bergen
Erich Griessler, Institute for Advanced Studies
Anne Loeber, University of Amsterdam
Ralf Lindner, Fraunhofer ISI

Chair:

Wouter Van de Klippe

022. STS, Technoscience and How Discontinuation Matters II

10:00 to 11:40 am
virPrague: VR 24

Abandonment of technologies and socio-technical systems occur not infrequently. However, the social construction of technology, everyday use, innovation management, technical maintenance and governance of technologies and socio-technical systems have preferentially been associated with advancement and innovation. Discontinuation is, at most, discussed as regime change, innovation setback or failure—as if advancement and innovation was the only direction in which socio-technical development and its governance would go. STS is no exception to this observation, although there are in STS important studies addressing the issue of ending directly, like Aramis in France (Latour 1992), or studies that can, in retrospect, be seen as descriptions of technologies that were, after all, abandoned, like the "male pill" (Oudshoorn 2003). Script analysis may offer another lead, e.g., when Akrich and Latour (1992) are referring to 'de-inscription', Geels and Schot (2007) to 'de-alignment', Kuhn (1962) to 'paradigm shift', or Utterback (2003) to 'product and manufacturing discontinuities'. The empirical cases are legion, though. However, it is crucial to see how socio-technical systems, technological regimes, or technologies are (or have been) disappearing or are being brought to an end.

Participants:

Phasing out and in – policies of discontinuation in the German energy and lighting sector *Martin David, Helmholtz Centre for Environmental Research - UFZ; Nona Schulte-Römer, Helmholtz Centre for Environmental Research - UFZ*

Past scholarship has brightened our understanding of policy instruments aiming for discontinuation (Kvimaa and Kern 2016) despite deep incumbency (Johnstone et al. 2017). This paper explores the 'making of ends'. It focuses on policies that intentionally create discontinuity in socio-technical systems by out-phasing well-established technologies. More precisely, we compare policies for phasing-out coal and lignite energy production in the context of the German energy transition and the out-phasing of light bulbs and mercury vapor lamps as part of the German national climate initiative. In both case studies, complementary innovation policies helped fill the emerging gaps by 'phasing in' other technologies—renewable energies and LED lighting. In our analysis, we explore these national policies of discontinuation in relation to policies of energy production and consumption on the European and local level. Conceptually, we re-read Michel Callon's (1984) proposition of Some elements of a sociology of translation (1984) and use it as a framework for understanding 'policies of discontinuation'. By focusing on the interplay of 'phasing out and in', we propose 'disolution' as the flipside of enrolement and a fifth aspect in the Sociology of Translation. In other words, the out-phasing of well-established technologies—the dissolution of socio-technical configurations that work (Rip & Kemp, 1998)—facilitates the enrolement of renewable energies, LED luminaires and their users in energy production and lighting. We argue that dissolution is a necessary, but not a sufficient condition for new enrolements.

Ending the coal energy production in Germany: doing discontinuation governance *Peter Stegmaier, University of Twente*

There is a broader trend to divest from fossils. This paper examines the coal exit in Germany. The discontinuation of coal energy production in Germany is linked to increasing de-legitimation. There is a sense that the status quo of coal energy production bears risks and that it becomes both unnecessary and unacceptable. We can find that legitimation of is mainly based on coal being seen as the fastest growing energy source globally which holds large reserves and which in Germany estimated enough for several generations. It is perceived as a secure, unrestricted, competitive source for long-term energy supply as well as economically important. High investments in plants have been made. De-legitimation is based on considering coal combustion as one of the most harmful practices to environment, health, and climate. Besides, government plans to generate 80% of all electricity from renewables. Discontinuation finds ever greater spread: with coal, there is again another discontinuation trajectory in energy policy under way after nuclear. There is an on-going open political conflict over the coal phase-out, not just in committees and orderly governance settings, but also on the streets, around the coal-pits, and in the forests. The conflicts didn't end with the report of the coal exit commission. Court decisions are partially halting and even delegitimising coal policy and business. This continues existing work on phasing out incandescent light bulbs, nuclear energy production, DDT and internal combustion engines for cars in a multinational ORA project.