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TOWARDS DATA SHARING IN STS

Niki Vermeulen

Let me start this new edition of the *EASST Review* by thanking Ignacio for his superb work in leading its recent transformations, and making it such an exciting platform for information and exchange about the STS community in Europe and beyond, while also rejuvenating the outlook. As such, I did not hesitate for a second when he asked me to join the editorial board, and it is a pleasure to work with him and the others of the *Review* and EASST to generate ideas and topics for future publications. This edition features the PAST centre in Syberia, the feminist journal *Catalyst*, Latour's *"Reset Modernity!"* exhibition, as well as two events partially funded by EASST. Many thanks to everyone contributing and we hope you will enjoy reading.

Building on Ignacio's previous editorial that diagnosed a collaborative turn in STS, I would like to point at the important new development of data sharing in STS, which can also enhance the collaborative spirit of our field. Many STS scholars are studying transforming scientific practices around data collection, curation and preservation, and how these are changing scientific collaboration and data sharing, but we are just starting to think of the implications of this for our own research practice. How do we as STS colleagues share our data, not only with our close collaborators, but also within our field – with current colleagues and future generations of scholars – and beyond the borders of our own community, with stakeholders and various publics?

This topic has been on the agenda of the science and technology studies community for a while, especially since the US National Science Foundation now requires proposal applicants to include a data management plan. This resulted in a workshop in which colleagues from history, philosophy, and social studies of science and technology¹ met last year at the National Science Foundation to discuss the opportunities and challenges of storing and sharing data in science and technology studies (involving two EASST members, Sally Wyatt and I). Workshop members reported on their work during the Denver 4S meeting and also discussed the need for a European discussion on this topic, in line with requests from various national councils and European funding bodies regarding data management and our own wishes as a community. However, as the European STS landscape and its funding sources are quite diverse, we will need to find ways to deal with national diversity, so national STS organization may also provide a role in forwarding these discussions, along with EASST.

What follows is a short summary of findings from the US National Science Foundation workshop² to serve as a starting point for framing European discussions within this more global initiative on data sharing in STS.

The 4S/NSF Workshop participants identified four main benefits of data sharing for STS which are summarized as follows in the report:

¹ Three societies were involved in the workshop: the Society for the Social Studies of Science (4S), Society for the History of Science (HSS), Philosophy of Science Association (PSA).

² With a special thanks to John Parker and Ed Hackett for organising the workshop and to all participants for the ideas and discussions. This summary is derived from the report of the workshop and a more elaborated article discussing the conclusions of the workshop will appear in Science, Technology and Human Values shortly.

The National Science Foundation Report on Data Sharing in Science and Technology Studies (2015).

First, data sharing has the potential to **transform the practice**, **substance**, **and scope** of science and technology studies. This includes allowing scholars to ask broader research questions, conduct large-scale and cross-case comparisons, and create more rigorous and replicable methods, while also enabling the systematic accumulation of STS knowledge via analysis and synthesis of existing data. Such efforts may also enhance the value of STS data and scholarship for policymakers.

Second, data sharing has the potential to **advance STS methodology and data curation practices**. This includes improvement of measurement and data collection methods to ensure reuse and replicability, protection against faulty data, and archiving and making sustainable STS data rather than allowing them to decay and disappear at the end of a research project or professional career.

Third, data sharing has the potential to **provide professional development opportunities**. This includes new research training opportunities for advanced techniques for data sharing, synthesis, and reuse, and facilitating scholars' abilities to meet granting requirements. New training programs may also help establish a cultural shift in STS whereby datasets, data preparation, and data sharing come to be valued as important scholarly products worthy of professional recognition.

Fourth, data sharing has the potential to make **STS research more en**gaged, democratic, and practically relevant by making data and research findings available to scholars and citizens without access to funding and research materials.

We also discussed ways in which this cultural shift towards sharing can be stimulated, recognizing the value of data sharing while also safeguarding the diversity of data produced in different fields and specialties, and via different research methods. Most importantly, it seems necessary that different forms of data can have different levels of openness or access, with some data not being suited for actual sharing due to ethical considerations and anonymity. Moreover, and to promote a culture of data sharing within STS, the topic should become part of the agenda of workshops and projects in STS, as well as the training of (young) scholars. In this context, the development and sharing of example data management plans might also be helpful. In order to enable sharing efforts, alliances with publishers, libraries, archives, and museums can be useful to share expertise about data curation and management.

Last but not least, the topic of data sharing within STS is deeply embedded in existing discussions about open data that are taking place in our EASST community, and it is also quite visible in the 4S/EASST Barcelona programme. Tracks on 'The Lives and Deaths of Data', 'Open science in practice' and 'Critical data studies' will certainly be showing various ways in which we are already engaging with this topic, and can perhaps also provide opportunities to discuss these topics in relation to our own work and interests.

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STS MULTIPLE

STS Multiple offers a platform for presenting and learning about the heterogeneous ways in which STS is practiced in and across Europe. University departments, research centers, local networks and other groups engaging with STS can present themselves in this space. The section begins with an extended summary of the contribution in the working language of the group. This aims at highlighting the linguistic diversity of STS as an intellectual practice, as well as reaching local audiences.

PAST AGAINST THE CLOCK — CENTRE FOR POLICY ANALYSIS AND STUDIES OF TECHNOLOGY, TOMSK STATE UNIVERSITY, RUSSIA Evgeniya Popova

Научно-образовательный центр социально-политических исследований технологий (PAST-C) организован в Национальном исследовательском Томском государственном университете в 2012 году. Цель Центра - развивать новое для российских социальных наук направление "социальные исследования науки и техники" (STS), и как исследовательское поле, и как образовательную дисциплину. Основной фокус исследовательской программы PAST-C: исследование технологий в контексте не западных стран, в частности, в России. Мы фокусируемся на исследованиях инноваций в больших технических системах и на исследованиях инноваций в медицине.

В образовательной сфере в настоящее время работаем при поддержке программы "Эразмус+" в коллаборации с рядом европейских университетов над развитием магистерской программы "Инновации и общество: наука, техника, медицина", которую открываем в 2017 году.

MISSION AND HISTORY

The mission of the Policy Analysis and Studies of Technology center (PAST-C) is to contribute to the development of the Science & Technology Studies (STS) in Russia as a research field and educational discipline. The main focus of the PAST-C research agenda is the study of technology in the context of non-Western countries, mainly in Russia, with the aim of making a contribution to global discussions.

The team's chief objective is to establish PAST as the single most important ground for various activities related to social studies and policy analysis of technological change in Russia and in this way to contribute to a consolidation of research, to an effective communication of its results to a broader public, and to setting up educational standards in this field, rather novel for Russia.

Relying on the already established institutional resources and its network of domestic and international partners, and institutions, the PAST team constitutes one of few key hubs that carry out and coordinate the social studies and policy analysis of technological change in the country. A challenge for us results from the still marginal position of Russian social researches in S&T policy and the field of STS is just making the very first steps in its development.

PAST-C opened in 2012 with financial support from Higher Educational Support Program, Open Society Institute, as a part of collaborative project of European University at St.Petersburg (EUSP). The aim of the Project initiated by EUSP was to create sustainable pockets of growth in the new fields of social sciences in a number of regional universities in Russia. Now we are moving from the concept of regionally localized center to the idea of becoming a bridge connecting different disciplines, territories and institutions; science and education; researchers, practitioners and policy-makers. Initiated as a small local center at one of the oldest regional universities in the country, we have rapidly become an institutional landmark in the STS field in Russia. At the next stage our goal is to make more prominent contributions to global STS, producing, in particular, new knowledge on how politics works in science and technology innovation in non-Western countries.

RESEARCH AGENDA

Scientists in STS have long been interested in policy issues. Much work has been done by them on issues of democracy, its relationship with technoscience, accountability and public participation in the governance of innovation in rapidly transforming contexts. Many such studies have observed a reduction of nation-state centralized governance of science and innovation processes, while pointing to decentralized networks and power assemblages in the field of S&T governance (Jasanoff, 2004; Irwin, 2008). This growing attention to the processes of governance occurring outside of the official governments and nation states has contributed to a more reflexive understanding of the organization of innovation management and knowledge models inscribed in it. However, despite such meticulously implemented studies of democratic tendencies in technoscience development, the existence of other, non-democratic methods of governance and government signals the need for attention to differences within and between countries and their organization of innovation (for example, Rajan, 2005). While empirical work on politics and science and technology, as well as innovation, has been mostly focused on established liberal democracies of the West, the main focus of PAST-C research agenda is on how and by whom decisions on S&T policy are being made, represented and 'framed', what kinds of assumptions operate within these processes, how choices are being legitimised and stakes negotiated in various kinds of societies. Within this frame, PAST-C faculty works on different spheres:

1) MEDICAL INNOVATIONS BEYOND THE WEST

Since 2015 we have been working with colleagues from Maastricht University on a collective monograph about politics and medical innovations in non-Western world (Zvonareva, Horstman, Popova). What types of power and conflict are dealt with in various societies beyond the Western high-income world, including those with transitional and hybrid political regimes without long established democratic traditions and institutions? What kinds of responses to the politicisation of (bio)medical science and technology are being constructed and institutionalised?

Several research fellows of PAST-C concentrate on studying medical innovations from the STS perspective. The first project is investigating social embeddedness of drug research and development in Russia (Zvonareva et al., 2015). The second one considers Russian maternity care system from viewpoint of interrelations between technology, state policy and doctor's decision-making (Melnikova 2014; Borozdina 2013).





Andrey Kuznetsov, Senior Research Fellow



Olga Ustyuzhantseva, Research Fellow



Ivan Tchalakov, Senior Research Fellow



Katerina Guba, Junior Research Fellow

2) INNOVATION AND TECHNOLOGY IN NON-WESTERN WORLD

We are also interested in studying the varying political features in different technology fields. Our research projects focusing on non-Western innovation system investigate, first, how Russian top-down innovation policy enforce close positions between academic and industrial partners, a development that is often discussed as 'coerced innovation' and, second, how the available technological equipment and how different human agents shape such innovation systems (Bychkova, Popova, Chernysh 2015; Popova 2015).

We are also conducting a 4-years project on academic journals as organizations. It studies how the dependence on professional, commercial and state resources influences journal's organizational behavior in Russian sociology (e.g. the choice between networks and open peer review as different forms of governance) (Guba 2015).

Another direction of research is devoted to the issue of inclusion of marginalized groups of society in innovation system, i.e. informal innovation, problems with their recognition, institutionalization, and diffusion. The research has focused on India and Russia. This educed new challenges to inclusion connected with the specifics of each policy regime (Ustyuzhantseva O., 2015). Networking with scholars from China, Africa, India and Brazil allows extending this agenda for BRICS.

3) URBAN INFRASTRUCTURAL TRANSITIONS IN POST-SOCIALIST COUNTRIES

Another research field concerns end-user interactions with urban infrastructure in post-communist context. One research project on smart utility meters draws attention to the ways in which end-users of smart technologies in centralized city infrastructures can undermine the proposed policy tasks of 'commodification' of public utilities, i.e. transformation of these quasi-public goods into economic goods (Bychkova, Popova, 2016; Bychkova, Popova, 2011).

A related research focus lies at the intersection of STS (particularly ANT) and mobilities studies (Kuznetsov, 2015). The project *City, Transport Mediation, Social Justice* studies the practices of mundane critiques and justification within sociotechnical assemblage of marshrutkas (Russian type of collective taxis) (Kuznetsov, In print). Recently we launched new two-year collective project aimed at sociotechnical analysis of the consequences of public transport infrastructure transformation in the preparation to the World Cup 2018 that will be held in Volgograd in 2018.

NETWORKING AND COLLABORATION

We collaborate on issues of science and technology policy with the Center for STS and Center for Governance and Public Policy of the European University at St. Petersburg. In field of technology assessment we have approached the Institute for Technology Assessment and Systems Analysis, Karlsruhe Institute of Technology, and the Perm Polytechnic University in the Urals (see: https://www.itas.kit.edu/english/2015_043.php). The main idea was to make pilot research on the topic of TA in non-western world. Two workshops devoted to grassroots innovation and public policy for inclusive innovation development were hold together with member of Science Policy Research Unit of Sussex University. Together with the School of Social Science of Jawaharlal Nehru University, PAST-C is currently exploring the possibility of implementing some of their courses for the Master Program being developed by PAST-C.

Aiming at consolidation of Russian research and educational community in fields of STS and related disciplines, PAST-C hold conferences with participation of leading researchers and most importantly we began an audit of interested parties in Russia (Popova, Simakova, 2013). Two conferences on «Social Studies and Medical Innovations" in Tomsk (O.Zvonareva, O. Melnikova 2014 and 2015) were held in collaboration with Department "Health, Ethic and Society", Maastricht University (HES). The conferences resulted in establishing links and cooperation with the Siberian Medical University, the NGO Academy of Evidence-based Medicine, as well as technological companies in the field of health.

Summer Schools were hold to attract the attention of Russian young researchers to STS, focusing on "STS for Seven Days" (2013) and on "STS and Urban Studies" (2015). This year we prepared the summer school "Science as a form of life: Watching heterogeneous communities in the 'field" in collaboration with Laboratory for Social and Anthropological Research (TSU), Centre of Excellence 'Bio-Clim-Land', Scientific Research Institute of Biology and Biophysics (TSU) and Plovdiv University. The school aims to train young scholars in applying new theoretical approaches in the anthropology of science, with the process of researching being conceptualized as a heterogeneous community inhabited by different types of agencies (actors) – human, non-human (domestic and wild natural beings), artifacts, and other technical facilities, which are included in various forms of association and cohabitation. It will explore the world of scientists that work at biogeochemical laboratories and will study their methods of remote environmental monitoring through in-city participant observations.

Well-known researchers and practitioners have acted as key-note speakers in different PAST-events: Arie Rip, Stephen Hilgartner, Steve Fuller, Ignacio Farias, Anil Gupta, Guy Ben-Ary, Klasien Horstman, Boel Berner and Jessica Messman.

EDUCATION AND TRAINING

PAST-C supports student exchange program with HES, Maastricht University (UM), providing co-supervision of UM students' Master thesis in collaboration with Tomsk medical organizations and sending local students to attend the spring semester in Maastricht.

In 2015 PAST-C began developing master program "Innovation and Society: Science, Technology, Medicine". One of the program's areas is dedicated to medical innovation and is held in collaboration with Maastricht University and the Siberian Medical University a collaboration that received a grant from the European Commission Erasmus+ (see: http://www.maastrichtuniversity.nl/web/Main/Sitewide/News1/ InternationalConsortiumLedByUMReceivesEUfundingOf865.000Euro.htm)

It is also important that following the spirit of STS of fostering a dialogue between and beyond disciplines, the Center also aims to work as a part of civil society. While contemporary Russian policy-makers generally are not open for dialogue with NGO and other non-political groups, PAST-C seeks to attract the attention of general public, politicians, administration, etc. to policy issues in the sphere of science and innovation. PAST-C events seek to secure the dialogue between the different groups involved, concerned and affected.

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BUILDING BRIDGES: NEW REALITIES, NEW EDUCATION APPROACHES AND COLLABORATION

O.Zvonareva, E.Popova, T.Stepurko, K.Horstman

THE PROJECT "BRIDGING INNOVATIONS, HEALTH AND SOCIETIES: CAPACITY-BUILDING IN EDUCATIONAL EASTER EUROPEAN NEIGHBOURING AREAS" (BIHSENA) SUPPORT BY ERASMUS+ PRO-GRAM AIMS TO RESPOND TO THE LACK OF EDUCATION OPPORTU-NITIES IN THE INTERDISCIPLINARY AREA OF HEALTH, INNOVATIONS AND SOCIETY IN THE TWO COUNTRIES OF RUSSIA AND UKRAINE. SINCE THE 1990S, EASTERN EUROPEAN SOCIETIES AND THEIR RE-SPECTIVE HEALTH CARE SYSTEMS HAVE BEEN UNDERGOING A SE-**RIES OF MAJOR TRANSFORMATIONS - SOME OF THE CHANGES HAVE** WORKED OUT SUCCESSFULLY, OTHERS HAVE HAD MINOR POSITIVE EFFECTS. ONE OF THE REASONS FOR LACK OF PROGRESS IN THE FIELD OF HEALTH CARE AND THE MEDICAL INNOVATIONS IS THAT POST-SOVIET GOVERNANCE MECHANISMS ARE NOT WELL ATTUNED TO THE NEW REALITIES. WE BELIEVE THAT INTERSECTORIAL COL-LABORATION AND NEW EDUCATION APPROACHES MAY HELP TO OVERCOME THIS PROBLEM, AS IT PREPARES RESEARCHERS, PRO-FESSIONALS AND POLICY MAKERS FOR ANALYSING AND DEALING WITH THE SPECIFIC PROBLEMS THEY MEET



Bridging Innovations, Health and Societies

Since the 1990s, Eastern European societies and their respective health care systems have been undergoing a series of major transformations – some of the changes have worked out successfully, others have had minor positive effects. One of the reasons for lack of progress in the field of health care and the medical innovations is that Post-Soviet governance mechanisms are not well attuned to the new realities. We believe that intersectorial collaboration and new education approaches may help to overcome this problem, as it prepares researchers, professionals and policy makers for analysing and dealing with the specific problems they meet.

The project "Bridging Innovations, Health and Societies: Educational Capacity-Building in Easter European Neighbouring Areas" (BIHSENA) aims to respond to the lack of education opportunities in the interdisciplinary area of health, innovations and society in the two countries of Russia and Ukraine, and to bridge a gap between (bio)medical and social scientists, academics and practitioners in these two countries, as well as between local and international communities. The common history regarding the organization of health care system (by means of the so-called Semashko's model), and the health sector more generally, as well as similar past attempts to redesign it, create a shared ground for Russian and Ukrainian partners to do research, design solutions and develop up-to-date educational programs.

The project has started at the beginning of 2016. It was supported by Erasmus+ programme of the European Union and brings together seven universities: Maastricht University (the Netherlands); National Research Tomsk State University ¹ Johnson S et al. Entrepreneurs and the ordering of institutional reform: *Poland, Slovakia, Romania, Russia and Ukraine compared. Economics of Transition*.2000;8(1):1–36.

² Chirikov I. *The Mystery of Russian Students: Poor Learning Experience, High Satisfaction.* Higher Ed. in Russia and Beyond.2015(3):10-11



and Siberian State Medical University (Russia); National University of "Kyiv-Mohyla Academy" and Vinnitsa National Pirogov Memorial Medical University (Ukraine); Plovdiv University Paisii Hilendarski (Bulgaria), and Andrzej Frycz Modrzewski Krakow University (Poland). The project is led by Dr. Klasien Horstman, professor of Philosophy of Public Health at Maastricht University. The Policy Analysis and Studies of Technologies Centre (PAST-Centre) is a key partner in the BIHSENA project.

The BIHSENA project was conceived by a group of scholars who came together in Tomsk to take a part in an international conference *Social Sciences and Medical Innovations: Doing Things Together* in May 2015 (a report on the conference can be found here: http://www.medanthrotheory.org/read/5431/social-sciences-med-ical-innovations). In the course of the conference, it became clear that, among the various post-Soviet transitions analysed and discussed at the event, Russia and Ukraine face very similar challenges in the area of health and medicine, even though they have followed relatively divergent development trajectories after the collapse of the USSR. Two central issues were identified by members of BIHSENA consortium in both Ukraine and Russia.

First, important shortcomings for the health sectors of both countries result from their education systems. Specifically, there is a major lack of higher education programs and opportunities that would adequately prepare professionals – in the field of medicine, public health, social sciences and social policy - to work under conditions of transition, to effectively govern health reforms/innovations and to conduct the kind of interdisciplinary research that is needed to adequately inform policy- and decision-making for citizens' health.

Creating educational opportunities to adequately prepare such professionals seems indeed crucial, specially for university-level teaching staff that requires an in-depth knowledge of recent approaches in the interdisciplinary field of health, innovations and society, and varied and active modes of education that fit that content. Currently, however, education programmes in Ukraine and Russia hardly address intersections of health, innovations and society and rarely bring together insights from various disciplinary fields. Traditional formats of education, emphasizing lecturing, large student groups and face-to-face learning are dominant at the expense of more interactive, student-centred and blended learning approaches².

Second, both countries lack opportunities and platforms for communication and engagement between (bio)medical and social scientists; academics and practitioners; scientists, policy makers and industry. Bridging disciplines, professions and sectors is necessary to early diagnose problems with respect to specific innovations and policies, and to promote more thorough and responsive approaches to health issues in the two countries.

The BIHSENA capacity-building project addresses both problems. In 2016 the BIHSENA team began work together and has already organised training programmes for 40 teachers from Russia and Ukraine in Maastricht University. The training enhanced the capacity of partner universities in Eastern European region to use active, interdisciplinary and blended modes of education, necessary for the development of new educational opportunities in the field of health, innovations and society. The issues, the training programme focused on, included: a. the productive use of Problem-Based Learning in practice; b. design and implementation of blended learning elements; and c. development and planning of active learning curricula. Special attention was given to ways of translating active and blended learning methodologies into different socio-cultural contexts. During the training period groups of teachers developed outlines of new interdisciplinary education modules, using the knowledge gained.

The next upcoming BIHSENA project event is going to take place in Bulgaria. During this event BIHSENA team will deliberate on the content of the new courses that are being developed within the framework of this project. The first part involves problem-based learning sessions, lectures and group discussions devoted to the recent insights from the interdisciplinary field of health, innovations and societies. The topics include critical approaches to epidemiology and metrics of disease; current health systems transition; recent perspectives on definitions, processes and implications of innovations for health; developments in governance of health care; roles of publics in public health. The second part focuses on competence-based education and specification of competences for professionals working in health, innovations and society domain. The final, third, part of the workshop consists of presentations and discussions of the new course syllabuses being prepared by BIHSENA consortium members.

The new course syllabuses will be further discussed with healthcare practitioners, representatives of business and regulators to ensure that new education opportunities fit particularities and needs of local settings. Furthermore, in line with the philosophy of student-centred education, students' perspectives and interests will be incorporated in the development and adaptation of these new educational opportunities. Thus, BIHSENA courses in the interdisciplinary field of health, innovations and society will be co-produced by project partners, students and those already working on the ground.

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CHERISH, NOT PERISH

Cherish, not Perish aims at increasing the visibility of STS journals and other publication projects based in Europe and beyond. The publications presented are invited to design the following pages as they wish.

CATALYST: FEMINISM, THEORY, TECHNOSCIENCE



CATALYST: FEMINISM, THEORY, TECHNOSCIENCE IS A NEW ONLINE, OPEN-SOURCE, PEER-REVIEWED JOURNAL THAT HAS CREATED A PUBLICATION PLATFORM FOR THE ONGOING RE-ACTIVATION AND REMIXING OF THE FIELD OF FEMINIST SCIENCE AND TECHNOLO-GY STUDIES. CATALYST EXPLICITLY EMBRACES WORK THAT FALLS WITHIN THE RUBRIC CALLED FEMINIST SCIENCE AND TECHNOLOGY STUDIES EVEN AS IT PROPAGATES THAT WORK WITHIN A BROAD-ER PANOPLY OF GEOGRAPHIC SITES AND DISCIPLINES AS WELL AS THROUGH MYRIAD PRACTICES. INCLUDING ART. MAKER CULTURE. AND NEW MEDIA PRAXIS. THE JOURNAL PUBLISHES BOTH CONVEN-TIONAL MONOGRAPHIC ARTICLES AS WELL AS A VARIETY OF EXPER-IMENTAL WRITINGS, ROUNDTABLE CONVERSATIONS, AND DIGITAL AND NEW MEDIA PROJECTS. MOREOVER, CATALYST RECOGNIZ-ES THE DISPERSED, DIVERGENT, AND INTERSECTIONAL POLITICAL COMMITMENTS THAT CONSTITUTE FEMINIST STS BY PURPOSEFUL-LY MOVING BEYOND GENDER AND SEXUALITY AS DISCRETE TOPICS TO INVITE SCHOLARSHIP ENGAGED WITH MILITARISM, BLACKNESS, DECOLONIALITY, ANTI-RACISM, QUEER POLITICS, POLITICAL ECON-OMY, AND DISABILITY. THE JOURNAL ACKNOWLEDGES FEMINIST STS AS AN INTERSECTED, MANY-SITED, UNDER REVISION, AND HET-**EROGENEOUS FIELD.**



ARTICLE

Catalyst: (Re)Mixing Feminisms, Theory, Technscience and More

Editorial Collective

Catalyst: Feminism, Theory, Technoscience is a new online, open-source, peerreviewed journal that has created a publication platform for the ongoing reactivation and remixing of the field of feminist science and technology studies. *Catalyst* explicitly embraces work that falls within the rubric of called feminist science and technology studies even as it propagates that work within a broader panoply of geographic sites and disciplines as well as through myriad practices, including art, maker culture, and new media praxis. The journal publishes both conventional monographic articles as well as a variety of experimental writings, roundtable conversations, and digital and new media projects. Moreover, *Catalyst* recognizes the dispersed, divergent, and intersectional political commitments that constitute feminist STS by purposefully moving beyond gender and sexuality as discrete topics to invite scholarship engaged with militarism, blackness, decoloniality, anti-racism, queer politics, political economy, and disability. The journal acknowledges feminist STS as an intersected, many-sited, under revision, and heterogeneous field.

This extensive vision of what might count as feminist engagements with technoscience is signaled by the journal's name. Etymologically, the word "catalyst" is constructed out of the Greek word *katálusis*, which means "dissolution." This sense of coming apart, or coming undone has been reversed in the contemporary usage of the term in social and political discourse, where to catalyze means to stimulate social change or precipitate an event. *Catalyst* embraces the word's contradictory associations, including its use as a technical term within chemistry. In chemistry, a catalyst is a substance that increases the rate of a chemical reaction by changing the amount of activation energy required without itself undergoing any permanent chemical change. The addition of a catalyst, in other words, sparks an alternative pathway for a chemical reaction to occur. In practice, this means that a catalyst can be used to trigger a reaction

Editorial Collective

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that would otherwise not happen because it requires too much energy. In other words, a catalyst stimulates other routes and relations. Drawing on this plurality of histories and meanings, the journal mobilizes the word *Catalyst* to describe the task of supporting the ongoing remaking of feminist STS constituted in the uneasy mixture of many trajectories of critical thinking, and towards the political project of a changed world. For instance, tracing an historical itinerary for the term "catalyst," one could route through the work of the Scottish female chemist Elizabeth Fulhame, who in 1794 published An Essay On Combustion with a View to a New Art of Dying and Painting, wherein the Phlogistic and Antiphlogistic Hypotheses are Proved Erroneous, a text credited with the first description of a chemical catalyst. Aptly, Fulhame's work in chemistry took as its experimental concern artistic practices, studying chemical processes used within photography, dying, and the creation of metallic fabrics. Thus, routed through Fulhame, the very genealogy of the concept of catalyst brings together the entwined histories of science and art practice, as well as the creation of technoscientific projects in the margins of imperialism and patriarchy.

The desire to create Catalyst came from the acknowledgement that scholars in feminist STS consistently struggled to find journals amenable to their work, and that this especially affected younger scholars who were often undertaking their research in the marginal corners of more conventional disciplines. Thus, it was important to the editorial board that Catalyst be a peerreviewed journal that would strive to publish work at the cutting-edge of the field. With these ambitious in mind, Catalyst is also a project built out of the labor of a small circle of academic colleagues and graduate students who work transverses the areas of feminist, queer, postcolonial, and antiracist STS and media studies in the US and Canada. The development of *Catalyst* was not launched by a professional society or academic press, but instead was created out of the work and commitment of people drawing on local and ephemeral sources of funds at their various universities. The journal is made possible by graduate student labor and creativity from UC San Diego, NYU, Emory, UCLA, and the University of Toronto, as well as a modest one-year grant provided by the Society for the Social Studies of Science (4S). Thus, the journal currently straddles DIY feminist praxis, where unwaged labor is mobilized to create possibilities otherwise institutionally foreclosed, and a commitment to scholarly rigor and recognition of work in the field.

We are keenly aware that our own composition of US and Canadian academics provides only a partial entry into the efflorescence of critical feminist STS work, and that our itineraries of feminist, anti-racist STS have emerged from particular resistances to American empire and settler colonialism, which are not necessarily the points of departure for critical, political, feminist scholarship generated in other locations. This self-reflection is another reason to embrace the name *Catalyst*, as a recognition that the work which is submitted to the journal may very well spark a rearrangement of the very terms and boundaries of constitutes feminist STS.

Catalyst publishes two issues a year. It launched its inaugural issue, which included a mixture of both established and newer scholars including

Editorial Collective

Catalyst: Feminism, Theory, Technoscience

graduate students, at the 2015 meeting of 4S in Denver. Its second issue, on Digital Militarism, edited by Lucy Suchman, Isra Ali, Marisa Brandt, Andy Rice, is about to be released in Spring 2016. The Fall 2016 issue, on the theme of Black Feminism and Feminist Technoscience, is coordinated by guest editors Kimberly Juanita Brown, Jared Sexton, and Cristina Visperas. In elevating the ongoing work of black captivity in a range of technoscientific practices, this special issue in particular provokes the question: "What would the end of the world of science – what would the end of science *as we know it* – do for feminist technoscience, and for science out of Feminist Theory," guest edited by Banu Subramaniam and Angela Willey, begins from genealogies of postcolonial and queer theory to open spaces for reconceptualizing science itself. Here the contributors will shift the focus from feminist STS to how feminisms and feminist theory can be "generative sites for producing new imaginations and theories of science and the work of knowing our worlds."

For each special issue, *Catalyst* has instituted a practice of putting out a wide call for papers that seeks to expand beyond collegial networks and invite interventions into the questions it poses. While all these special issues are purposely crafted to spark the ongoing remixing of feminist STS, *Catalyst* also invites the submission of individual papers and digital projects looking for a platform from which to stir up of technoscience, feminism, theory, and politics. We hope scholars at EASST and beyond will view Catalyst as a forum where they are welcomed and challenged to the continual remixing of feminist technoscience studies.

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STS EVENTS

This section features reports from recent workshops and conferences exploring new perspectives, topics and methods in STS.

PROCEDURES TO DEAL WITH MODERNITY WITHOUT IRONY

Arthur Petersen

THE EXHIBITION RESET MODERNITY! ADDS USEFULLY TO LATOUR'S ONGOING WORK ON MODERNITY. BY DEPLOYING A RANGE OF ART-ISTS ACROSS SEVERAL MEDIA HIS IDEAS – AS DEVELOPED IN PAR-TICULAR IN WE HAVE NEVER BEEN MODERN (1993) AND AN INQUIRY INTO MODES OF EXISTENCE (2013) – BECOME MORE ACCESSIBLE TO A LARGER AUDIENCE.

MY OWN INTEREST IN THIS EXHIBITION

Having only witnessed Bruno Latour live in a lecture over two decades ago and having recently (re-)read a large fraction of his work, including his *Inquiry into Modes of Existence (2013)*, I gladly accepted the invitation to take part in the opening event of his exhibition *Reset Modernity!* My own interest in Latour's work, including his philosophical work, stems from his combined empirical and theoretical analyses of practices of dealing with uncertainty. Besides having studied Latour's approach to science and politics (in particular pertaining to global climate change) I was recently triggered by his approach to science and religion (in, e.g., his *Rejoicing*, 2013). I will here reflect how his exhibition added a useful dimension to the readings I had done before.

EXECUTING PROCEDURES WITH MORE SENSES

Latour's approach in his books is already unconventional, for instance by using fictive narrators. In the exhibition, a whole other dimension of the problématique appears, through a variety of media, alongside what can be addressed through the ordinary mode of reading and thinking. During the opening symposium (and in the book accompanying the exhibition) Latour emphasised that in order to be able to deal with the future 'our individual instruments' need to be 'reset' (from a false modernity) by a sequence of 'procedures' that the exhibition carries out with the participants. And to be honest: I took a whole day to dutifully execute all the suggested procedures, using my guidebook and walking through the exhibition and looking carefully and reflecting on what was shown, and indeed got sensitised to several aspects that had escaped my notice from reading his books. This happened already in procedure 1, relocalising the global, when watching the precursors and Latour's criticism of the film *Powers of Ten* (Charles and Ray Eames. 1977). I immediately ordered a copy of Kees Boeke's Cosmic View: The Universe in 40 Jumps (1957). Latour highlights the 'complete implausibility' of the moves in Powers of Ten. One should not jump too quickly to the 'big picture'. Or, as Latour writes, 'Earth is not visible as long as it is hidden behind the globe'. Of course I was already open to it and quite prepared, but still the exhibition is accessible to a large audience (actually, it is more accessible than some of Latour's books).

NO IRONY

Another observation that Latour made during the opening was that none of the work in his exhibition has any form of irony: none of it is critical in the 20th century modernist sense. And he deemed that to be something positive. According to Latour, you do not want to exit from the successes of modernisation. And indeed the exhibition, although it addresses – among other topics – global problems such as climate change, embodies a pragmatist philosophy of hope. Indeed several

pragmatist elements are recognisable in the exhibition: avoidance of dualisms; the flux of experience and of the experienced world; reflexivity; responsibility; creativity and inclusivity. The exhibition hence confirms that Latour's work refers back to the early phase of pragmatism (that of James and Dewey) combined with a sharp analysis of present day connections.

RELIGION AS POLITICS

The least attractive procedure, at least for my own project, was the procedure called 'secular at last' focussed on the crossing between politics and religion. The procedure focused on religious film and highlighted the politics of religion. While the crossing of politics and religion is no doubt a problématique of global significance, I had hoped to learn more about Latour's analyses of science and religion, which he both sees as the result of transformations. In the case of science the interest is in information and representation; in the case of religion the interest is in translation and 'saving'. In *Rejoice*, Latour had focused on alterations that happen to people when they utter religious speech and engage (models of) beings that 'have the peculiar characteristic of bringing persons from remoteness to proximity, from death to life'. I would have liked to see demonstrations of how models of God are used in practice, and how deep uncertainty and ignorance about these models are dealt with and expressed in religious practices. And maybe to explore the crossing with the mode of reference, how science models nature.

GAIA

To be honest, I have always been sceptical of references to 'Gaia'. Especially of the popular reception of the Gaia hypothesis as it was put forward, defended and refined by the inventor and independent scientist James Lovelock (the hypothesis being that biota influence the environment in a way that causes a homeostasis in the face of a changing external forcing). While Lovelock and his supporters have consistently tried to accommodate scientific criticism of the Gaia hypothesis by seemingly getting rid of the metaphysical versions, the attractiveness of the Gaia hypothesis for the general public remained precisely what Lovelock cannot suppress himself to say about Earth: 'It is most certainly an organism—and alive!' Latour in this exhibition, however, does not at all allude to these metaphysical versions and is able to take a fresh look at Earth, in a grounded way. I found his visual distinctions between globe and Earth enlightening. And also what he indicated during the opening: speaking about Gaia is not about animism: it is to indicate that there was no modernist deanimation in the first place.

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RESET LATOUR!

Line Marie Thorsen, Anders Blok

BRUNO LATOUR STAGES HIS NEW CO-CURATED RESET MODERNITY! EXHIBITION AT THE ZKM IN KARLSRUHE AS A THOUGHT EXPERIMENT OR, IN OFFICIAL GERMAN, A GEDANKENAUSSTELLUNG. AS RECENT VISITORS TO THE SHOW, AND AS KEEN FOLLOWERS OF LATOUR'S VERSION OF SCIENCE AND TECHNOLOGY STUDIES (STS), THIS FRAMING STRIKES US AS RATHER TELLING. MORE THAN THE MANY PHOTOGRAPHS AND INSTALLATIONS, WHAT IS PUT ON DISPLAY IN KARLSRUHE, IN FACT, ARE THE THOUGHTS OF BRUNO LATOUR HIMSELF. AND YET, WHILE THE SETTING IS POPULATED WITH SIG-NIFICANT WORKS OF CONTEMPORARY ART, NOTHING MUCH EXPER-IMENTAL SEEMS TO BE HAPPENING TO THESE THOUGHTS ALONG THE WAY. IN THIS SHORT COMMENTARY, WE REFLECT ON HOW AND WHY THAT MIGHT BE SO. DESPITE THE PROMISING SET-UP, WE CONCLUDE, RESET MODERNITY! LEAVES YOU HUNGRY FOR MORE -INCLUDING, NOT LEAST, THE ALWAYS THOUGHT-PROVOKING (WRIT-TEN) WORK OF BRUNO LATOUR, THE STS SCHOLAR OF THE MODES **OF EXISTENCE OF THE MODERNS.**

In press releases and in the impressive catalogue, the new *Reset Modernity!* exhibition at the Zentrum für Kunst und Medientechnologie (ZKM) in Karlsruhe – (co-)curated by a certain Bruno Latour – is framed as a thought experiment or, in more idiomatic German, a *Gedankenausstellung*. Having perused through the exhibitions' 75+ works of various origins and media formats, and thus partaken in the six successive procedures of dis- and reorientation meant to achieve the promised reset, this framing seems to us both highly appropriate and somewhat symptomatic. Appropriate, in the sense that what is being exhibited here, more than photographs and video screens and installation art, is in fact the thoughts of... Bruno Latour. Symptomatic, because in this case as well, German is more precise than English: while *thoughts* are literally put on *display*, it seems as if nothing much *experimental* is happening here. In particular, the detour through other materials seems to make no real difference to how the thoughts unfold themselves.



The article's co-author engages with the thoughts on display, and in the field book, during *Reset Modernity!*

From start to end, the exhibition looks and feels like a crash course in Latour's version of science and technology studies (STS). Guided by a field book, we move from laboratory life (a, 're-localizing the global') to the anthropology of techniques (f, 'innovation not hype'), via more recent interventions aligned to the various modes of existence of the moderns: fictional art (b, 'without the world or with-in'), religion (e, 'secular at last'), morality (c, 'sharing responsibility') and politics (d, 'from lands to disputed territories'). Crashing, indeed, is what modernity is said to be doing, under the weight of ecological crises. Or, to follow the opening video of the show, perhaps the crash has already happened and we are scrambling to face up to its effects? The answer was never entirely clear; just as it was not clear just why modernity needs resetting if, as the curator might say, we were never quite modern in the first place? Perhaps *resetting* is what happens to critique of ideology, once we stop believing in *both* critique *and* ideology?

With so many interesting ideas flowing around; with such an impressive list of star artists enrolled; and with such a pressing eco-political mandate, *Reset Modernity!* frankly strikes us as something of a missed opportunity. Not that the show lacks exiting moments, far from it. Strong works of contemporary art, such as those by Simon Starling, Tacita Dean, Thomas Struth and Pierre Huyghe (to name but a few), make it well worth a visit. For anyone familiar with Latour and STS, more-over, the joy of recognition is a palpable one: if you read *Reassembling the Social*, you will surely enjoy watching Charles and Ray Eames' promotional video *Powers of Ten* (and its critical-theatrical deconstruction); and if you follow discussions on the Anthropocene, you will like the enigmatic hybrids of humans and stones conjured by Anne-Sophie Milon and Jan Zalasiewicz (himself a leading geological protagonist). Yet, at the level of curatorial guidance – of which the show has (too) much! – the thoughts on display often curiously falls short of their purported model, i.e. the ground-breaking and thought-provoking writings of... Bruno Latour himself.

Let us give a few examples to illustrate what we mean. During procedure b of the exhibition, the visitor is treated to two striking works by Jeff Wall, the Canadian artist well known for his self-reflexive inquiries into the nature of photographic representation. The choice of artist, of course, is far from coincidental. As many readers of this journal will recognize, Latour has a history of reflecting on one of these works: specifically, Wall's 1992 photographic rendition of *Adrian Walker, Artist, Drawing From a Specimen in a Laboratory in the Department of Anatomy at the University of British Columbia, Vancouver* (as the full title reads). In the picture, Walker-the-artist is seen in the laboratory, absorbed in his work of making an anatomical drawing of a detached, mummified limb from a once-living animal. It is a wonderful piece of art, dwelling as it does on the capacity of photography to capture one of those still-rarer moments in scientific practice where artistic competence remains superior in precision to automated inscription.

Latour surely agrees, to a point. As he explains in his brilliant 2005 Spinoza lecture, What is the style of matters of concern?, he is critical of Wall's gesture: Wall has been blinded, he argues, by the contrivances of this situation, failing to see that its entire aesthetics of matters of fact has been rendered improbable. To his credit, in this 2005 text, Latour re-prints a lengthy response to this interpretation by Wall himself, explaining why it misses what Wall takes to be the key point, to do with the pleasure of all depiction (his own included, of course). Here is the problem, however: at the Reset Modernity! exhibition, this worthwhile exchange is reduced to a mere assertion on the part of the curator. In particular, the other photograph by Wall allows Latour to drive home the point: here, we witness a group of archeologists at work in their field, excavating. Unlike Walker, Latour writes in the field book, scientists "are involved inside what they study". A nice STS point, for sure. But why do we need Jeff Wall's photographs in order to make it? Indeed, are we not presented here with a strangely realist, matter-of-factly way of appreciating what is, after all, a highly self-reflexive photographic practice? If scientists are active inside the worlds they study, then what about photographers? Is only STS allowed to determine where the frame starts and stops?

A second and related concern arises for us as we start embracing the full diversity of materials on display in the exhibition as a whole: tactile works by world-renowned contemporary artists sit alongside amateur scribblings and installations; videos by Peter Gallison's STS students stand around the corner from the



Elevated view of the exhibition layout, with Milon and Zalasiewicz' The *Mystery of Brunaspis enigmatica* on the floor Eames' work of design consultancy; a (copy of a) 15th century print by Albrect Dürer shares the space with excerpts from late-20th-century movies. In fact, only the large-size photographs by Armin Linke gives to *Reset Modernity!* a kind of recurrent visual mark (albeit, we think, a less interesting one than Latour lets on in the catalogue). Such material diversity is of course potentially interesting. It juxtaposes times, spaces, media and genres not usually juxtaposed. It challenges how boundary-work is usually performed in artistic spaces. However, at the curatorial level, nothing much is done with this diversity and its potentials in *Reset Modernity!*. In fact, and disappointingly, diversity of materials and stylistic genres fails to register anywhere in the thoughts on display, in the (heavy!) narrative being told. It is as if the various thoughts and the various materials, interesting as those registers are, are just not rendered that relevant for each other. Here is a split one would have trusted an STS curator to bridge – especially when that curator has done more than perhaps anyone else to bring to attention the inherent *materiality* of ideas.

Third and finally, there is the narrative itself, the narrative of what happened to us during the short experience called modernity, and how we might want to reset that experience. Here, as noted, we are treated to a tour around Latour's universe, slanted towards his more recent concerns: during the show, we move from

(ancestral) land to the (modernist) globe; get lost on the way; witness the birth of the environment (out of Nature) and its later morphing into Gaia; only to realize that our imaginary land and utopian globe have both disappeared, leaving us the task of cultivating new careful techniques of attachment to our new and inhospitable umwelt, the Earth. Anyone up to date with Latour's writings will recognize the (geo-)story. What becomes obvious in this 3-D exhibition version, however, is just hos well Latour's own wonderful concept of the panorama fits this story of his: we are presented with a 360-degrees full-color projection, with no cracks and fissures, but equally with no visible signs of connection to the world beyond the screen. The panorama, as Latour would say, is nicely suited for preparing its audience, the public, for the collective journey ahead - such, indeed, seems to us the better way of appreciating the Reset Modernity! exhibition. Yet, even the best of panoramas eventually leave you starving for more, for something tangible, connected, entangled, engaged. For the kinds of worlds, in short, which STS is so good at cultivating, and which actor-network theory feeds on, full of gaps and fissures and translations and betrayals.

Few contemporary intellectuals have done more to completely revamp, indeed to seriously reset, all the ingredients of our common world – of science, technology, nature, politics, not to mention the study of their multifarious interrelations, known as STS – than has Bruno Latour. His recent exposition of the modes of existence of the moderns adds new and interesting layers to this already-impressive intellectual edifice, as does his engagement into transdisciplinary dialogues on the fate of our Anthropocene. In the meantime, he has managed to (co-)curate three multi-media art exhibitions, at least one of which (the 2005 *Making Things Public*) stands as a model for those art-science collaborative endeavors so seriously needed. In light of all this, *Reset Modernity!* is a parenthesis; not a complete failure, for sure, but neither groundbreaking in any way. Sometimes, resetting your computer is no big deal, just something you do to refresh your extended mind. We suggest a similar procedure here: upon visiting this exhibition, remember to reset Latour (!) and refresh your memory as to just why his thinking matters so much in the first place.

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GEDANKENSPRÜNGEAUSSTELLUNG

Alexa Färber

FOR THE ANTHROPOLOGY OF KNOWLEDGE "RESET MODERNITY!" OFFERS A STUDYING GROUND FOR REPRESENTATIONAL WORK IN THE MODE OF EXHIBITION: WHAT KIND OF SPATIAL ARRANGEMENT COULD EXPRESS THIS VERY REPRESENTATIONAL WORK THAT IS THE MAKING OF AN EXHBITION? WOULD SPACE BE RESERVED FOR REFLECTION ON HOW THIS GEDANKENAUSSTELLUNG BECAME AN AUSSTELLUNG? THE EXHIBITION INCLUDES TRACES OF THE ORIG-INAL WORKING PRACTICE OF AIME IN THE FORM OF "STATIONS" IMPLEMENTED IN EACH PROCEDURE. I ARGUE THAT THESE AR-RANGEMENTS POINT DIRECTLY TO ANOTHER, VIRTUAL ACTOR - POTENTIALLY A ZETTELKASTEN OF THE AIME TEAM AND ITS COL-LABORATORS. HOWEVER THE QUESTION WHICH LINES WERE DRAWN BETWEEN ARTWORKS AND REFERENCES THAT BECAME PART OF THE SPATIALLY, TEMPORALLY, FINANCIALLY LIMITED EXHIBITION-PRO-JECT, AND THOSE THAT WERE EXCLUDED, REMAINS LARGELY OPEN WITHIN THE EXHIBITION SPACE. THE CATALOGUE AND WEBSITE GIVE SOME INSIGHT INTO THESE PROCESSES. NEVERTHELESS THE ARGU-MENT OF THIS MAINLY LARGE-SIZED-IMAGES-EXHIBITION REALISES **ITSELF IN THE MORE SECLUDED SECTIONS IN A WAY THAT THE URGE** FOR A GEDANKENSPRUNG MAY BE DIRECTLY EXPERIENCED.

> "LET'S PAUSE FOR A WHILE, FOLLOW A PROCEDURE AND SEARCH FOR DIF-FERENT SENSORS THAT COULD ALLOW US TO RECALIBRATE OUR DETECTORS, OUR INSTRUMENTS, TO FEEL ANEW WHERE WE ARE AND WHERE WE MIGHT WISH TO GO.

> NO GUARANTEE, OF COURSE: THIS IS AN EXPERIMENT, A THOUGHT EXPERIMENT, A GEDANKENAUSSTELLUNG."

(Field book, p. 1)

That voice is familiar. It appears in many texts and lectures, navigating between directly calling on the reader – never without a sense of humour, but seriously upset about the way we continue to act out modernity – and considerately trying out new ideas and forms of de-modernisation. In short: "r-M!"

"Gedankenausstellung" is one of these ideas, coined by Bruno Latour and Peter Weibel, who since their "Making Things Public" (2005), have tried to open up new ways of relating to the world through the mode of the discursive exhibition. In "reset Modernity!" it signals the theoretical work to be done by the visitors once they have gone through the six "procedures" that structure the exhibition. The "field book" is another:

"AS THE NAME 'FIELD BOOK' INDICATES, YOU ARE INVITED TO DO A BIT OF RESEARCH YOURSELF."

(Field book, p. 2).

As an impatient visitor of exhibitions, but an anthropologist passionate about analysing knowledge in the mode of the exhibition, I was most curious about the making of "reset Modernity!" when I visited it on its opening weekend. Would space be reserved for reflection on how this Gedankenausstellung became an *Ausstellung*? And if so, what kind of spatial arrangement could express the localising qualities of this very representational work? As it turns out, there was. Firstly in the catalogue, which was too heavy to carry, and will be a source for future reading. Here, a seventh procedure with the title "In search of a diplomatic middle ground" had been added. The chapter provides a visual and textual documentation of the conferences, workshops, symposia and plays that took place in the context of AIME -- the ERC-funded research project and network based in Sciences Po's médialab in Paris. The website, which has been developed as a working tool for the group, contains additional materials, including interviews with Bruno Latour on the question, "What is a Gedankenausstellung?" (http://modesofexistence.org/what-is-a-gedankenausstellung/). When it comes to learning about the making-of process, the photographs of their work sessions are potential sources of information - they show people sitting around tables covered with document folders, bottles of soft drinks and plates of sweets, discussing plans that have been projected on the wall. It features photographs and an audio-visual recording of the curators visiting the ZKM in 2015, bent over plans and examining the future exhibition space. It also shows the "statement of intent", which prompted the following comment: "It sounds exciting. Stay strong and hold on to your original vision. Alicia Flynn (a year ago)" (http://modesofexistence.org/ statement-of-intent-for-the-aime-exhibition-at-zkm-2016/)

Did they stay strong? And was that the right approach? (It shouldn't be, see Latour/ Weibel 2007: pp. 94-95) They did keep to their plan, and while the catalogue and





¹ The solo exhibition by Armin Linke in one section of the main exhibition hall, "The Appearance of That Which Cannot be Seen," tackles the issues of selection and of the archive, and translates them into an exhibition design that includes movable walls.

² In the eyes of an ethnographer, the "field book" refers to the ethnographic fieldwork notebook. This emblematic medium of ethnographic research was prominently brought into the artistic context at documenta 13, where cultural anthropologist Michael Taussig published an essay about "Fieldwork Notebooks" (No. 001 of the notebook-series "100 Notizen 100 Gedanken", or "100 notes 100 thoughts").

website document how the research network took on the risks of interdisciplinary work (intertwining research, debate and theatre with analogue and digital design in different locations and constellations) the exhibition includes traces of their original working practice in the form of "stations" implemented in each procedure. Here, thematically related quotes, notes, images and audio-recordings are provided and loosely arranged on a single white wall. These arrangements are aesthetically reminiscent of the associative Warburgian atlas production – without claiming to be exhaustive.

Quite the opposite: These stations point directly to another, virtual actor -- potentially a *zettelkasten* of the AIME team and its collaborators, which could be a probable source for the arrangements. The looseness of the wall arrangements and the virtual zettelkasten cautiously suggest the existence of selection, but not to the ways in which the selection took place. Which lines were drawn between those artworks and references that became part of the spatially, temporally, financially limited exhibition-project? Which artworks and references made their way into the exhibition while transgressing these lines? And which ones never did become a part of it, despite having the strongest of qualifications¹ Since much of the "field book" isn't a "fieldwork notebook"², the stations don't offer these types of insights into the representational work. Given that these processes are always driven by tension and passion – which shape the agency distributed between the







actors – these walls have a lightness, they breathe and invite the visitor to do the same.

But do they provide the quiet that, as Bruno Latour mentioned in an interview with Hans Ulrich Obrist (http://modesofexistence.org/what-is-a-gedankenausstellung/, 26:14), is necessary for a reset? The field book proclaims that they are "a sort of workplace ... this is where you will find more information and where you can discuss the path of the inquiry" (field book, p. 2). Here something might have been lost between the original vision and its spatialisation.

The very discreteness of this AIME-archive (the table with books at the intersection of three procedures should also be mentioned) is partially the result of the large, all-consuming two-dimensional artworks that surround these stations. Walking through the exhibition, these spectacular images again and again captured my attention: the more-than-realistic, staged photographs of Jeff Wall showing scientific practices; Armin Linke's photographic work, which seemed to be part of almost every procedure, and simultaneously points to humanity's intriguing megalomania and smallness and, visible from far away, at the end of the first exhibition hall, the floating walls of film projections in procedure five. The latter, called "Secular at Last", resonated with the large scale of the other pictures. One work in this procedure is spatially secluded by a triangular installation of screens: "Obama's Grace" (Lorenza Mondada et al, 2016). Here, the performative force of Barak Obama's combination of political statement and religious "sound" is disturbingly intensified. An analytical transcript on one of the screens, however, demonstrates the extent to which this intensity stems from both the president and his parish. When standing between these three screens, the need for a way out of modernity's binding forces could not be more obvious. Time for a Gedankensprung!

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DOES HISTORY MATTER? TECHNOSCIENCES AND THEIR HISTORICALLY INFORMED POLICIES

Stathis Arapostathis

THE AIM OF THE WORKSHOP WAS TO INITIATE A CROSS DISCIPLI-NARY SYSTEMATIC DISCUSSION ABOUT THE ROLE OF HISTORY AND MORE PARTICULARLY OF THE HISTORY OF TECHNO-SCIENCES IN TECHNO-SCIENTIFIC POLICY MAKING. EMPHASIS WAS GIVEN ON HISTORIES OF INNOVATIONS AND TECHNOLOGIES IN THE ENERGY SECTOR, ENVIRONMENTAL INNOVATIONS AND THE INFORMATION AND COMMUNICATION TECHNOLOGIES. THE MAIN QUESTIONS OF THE EVENT WERE: WHAT IS OR WHAT CAN BE THE ROLE OF HISTO-RY IN PUBLIC POLICIES RELEVANT TO SCIENCE AND TECHNOLOGY? WHAT HISTORIOGRAPHICAL PERSPECTIVES ARE MORE PERTINENT TO HISTORICALLY INFORMED TECHNO-SCIENTIFIC POLICIES? CAN A HISTORIAN OF SCIENCE AND TECHNOLOGY HAVE A ROLE IN POL-ICY AND DECISION MAKING? TEN PAPERS WERE PRESENTED OR-GANIZED IN THREE SESSIONS: INFRASTRUCTURES, TECHNOLOGIES AND THE ENVIRONMENT; INNOVATION TRANSITIONS, GOVERNANCE AND PATH DEPENDENCIES; NUCLEARITIES, TECHNO-SCIENCES AND NUCLEAR POLICIES. THERE WAS A CONCLUDING ROUNDTABLE THAT GAVE THE FLOOR TO FOUR EXTERNAL COMMENTATORS FROM INNOVATION STUDIES, SOCIOLOGY, AS WELL AS FROM NGOS AND THE CORPORATE WORLD. THEIR ROLE WAS TO PROVIDE INSIGHTS ABOUT THE WAYS IN WHICH HISTORICAL DISCOURSES AND RECON-STRUCTIONS CAN BE RELEVANT TO PUBLIC POLICIES.

This was a one-day workshop in the National and Kapodistrian University of Athens co-organized by the Department of History and Philosophy of Science of the National and Kapodistrian University of Athens and the Centre for Environmental Policy in Imperial College London. It took place on 14 January 2016. The event was coordinated by Stathis Arapostathis, National and Kapodistrian University of Athens, and Peter Pearson, Imperial College London. Funding was secured by the European Association for the Study of Science and Technology (EASST), the EPSRC funded project Realising Transition Pathways, and the project History of Nuclear Energy and Society (HoNESt). The event was based on invited papers and it was attended by 30 scholars in the areas of History of Science and Technology; Science, Technology and Society and Policy and Innovation Studies. More than 100 members of the broader audience and from NGOs attended several of the sessions while the attendance during the final roundtable went beyond 120 people.

The aim was to start a discussion about the role of history and more particularly of the history of techno-sciences in techno-scientific policy making. Emphasis was given on histories of innovations and technologies in the energy sector, environmental innovations and the information and communication technologies. The main questions of the event were: What is or what can be the role of history in public policies relevant to science and technology? What historiographical perspectives are more pertinent to historically informed techno-scientific policies? Can a historian of science and technology have a role in policy and decision making?

Those questions were formulated in the very reflexive context that seems to have influenced the international community of historians. In recent years, historians are seeking to place themselves more centrally in the making of public policies.

During the last decade, the extended and dynamic research network History and Policy (http://www.historyandpolicy.org/) has aimed to link historians with politicians, policy makers, policy analysts and journalists. More recently, the book *The History Manifesto* (CUP, 2014) by Jo Guldi and David Armitage has triggered continuous public discussions about the role of history in public policies of contemporary social, political and economic problems. Beyond this, during the last two decades, historians and sociologists of technology have worked on historically informed policy scenarios and have conducted policy relevant historical research. The new field of Transition Studies emerged through such synergies and approaches (Geels, 2002; Schot and Geels, 2007; Geels,2005; Smith, Stirling and Berkhout, 2005; Bijker, 1999). In this context the workshop aimed to bring together historians of science and technology, sociologists, innovation studies as well as policy analysts, in order to reflect on the role of history in the making of science and technology policies but in the context of the broader dialogue and taking into account existing experiences.

The event was structured around three main areas:

- 1) Infrastructures, Technologies and the Environment;
- 2) Innovation Transitions, Governance and Path Dependencies
- 3) Nuclearities, Techno-sciences and Nuclear Policies.

Furthermore, two roundtables were organized. One roundtable was about the aims and the scope of the research projects that contributed to funding the workshop. The aim was to show how large scale projects mostly in the energy sector promote multidisciplinary research that brings together historians, sociologists, innovation studies scholars and economists as well as legal scholars. The second roundtable and concluding session featured four external commentators who attended the workshop and provided both overall commentary and specific suggestions in relation to how history can be useful for science and technology policy making. These included Yannis Caloghrou, Professor of Innovation Studies in the National Technical University of Athens; Alexandros Kyrtsis, Professor of Sociology and Sociology of Science in the National Kapodistrian University of Athens; Dimitris Ibrahim from Greenpeace and Ioannis Margaris, from the National Technical University of Athens and the HEDNO (Hellenic Electricity Distribution



Network Operator). The aim was to have representatives both from epistemic communities different from that of history of science and technology, as well as representatives from NGOs and the industry that could provide the view of stake-holders in science and technology policy making.

In the morning session entitled 'Infrastructures, Technologies and the Environment', the papers addressed the construction of environment through technological infrastructures. Vincent Lagendijk advocated a historical approach based on a more symmetrical understanding of the causes and the agendas of the engineers, the state, the municipal authorities as well as the civil society. He argued for more historical sensitivity to the agency of the communities of citizens and infrastructure users in questioning engineering rationality and addressing issues emerged from the logic of civil society. Martin Ivanov provided a policy relevant history of renewable energy sources (RES) and their integration in the energy mix of the Bulgarian regime. He argued that institutional and technological path dependencies as well as the organizational and political culture defined the transition pathway of the energy mix in more sustainable directions. The transition was characterized by strong tensions and the opposition exerted by actors from the coal and nuclear lobbies, the local environmental activists and political engaged communities of citizens, distribution companies and electricity traders. Furthermore, governmental actions and decisions did not facilitate the integration of RES and the entrepreneurial activities of small scale installations. Pressures by the European Union were understood as windows of opportunity by incumbent regime actors to promote their interests, yet innovative initiatives were characterized and influenced by political corruption. Whereas Ivanov argued for the importance of institutions, governance patterns and culture in the making of energy regimes, the paper by Aristotle Tympas and Vassiliki Aggelopoulou stressed the importance of material histories in the making of policies and transitions to a more sustainable future. They argued that it is important to understand that technologies are not neutral and that different technologies are the material embodiments of different socio-political orders. Thus small scale wind parks with wind turbines of reduced





height and width organized a different sociopolitical regime from the one organized around a large scale, colossal wind farms with gigantic wind turbines. While the first coproduced the energy regime for a regional or community level, the other coproduced patterns of energy demand that maintained unsustainable urban consumption. So when decisions are to be made, it is important to link technologies with the broader political priorities and with appropriate governance patterns.

The second morning section was dedicated to technological transitions and path dependencies both at the governance and technological level. Yannis Fotopoulos and colleagues argued that the natural gas transition in Greece showed that the political priorities at the transnational, national and local level defined the governance patterns and thus the character of the transition, the allocation of resources, skills and expertise(s). Fotopoulos et al. stressed that governing a transition really matters in the making of the network and the construction of organizational and material configurations of a system. In this context they pointed out the role of experts in visioning and framing energy problems and in directing policies by translating and inscribing them in the agenda of state and government actors. Furthermore, Fotopoulos et al. argued that in the case of contemporary Greece and in the context of financial crisis transnational actors should be viewed as important players in the transition rather than as actors who only exercised pressures on the national actors. While Fotopoulos et al. studied the structural characteristics of a specific case study, Peter Pearson showed how history and incumbents matter in shaping structural regime changes and effecting sociotechnical transitions with an emphasis on low carbon transitions. He was interested in theorizing and assessing the agency of the actors and their role in promoting, directing or reacting to a transition. He argued that incumbent technologies as well as organizations can be important influences, negative or positive, on the success of low carbon technologies and policies. Pearson showed that transitions can be conducted and realized in an effective way even under tight schedule, short time scale, and within a context of strong landscape pressures. The issue at stake is to mobilize human and financial capital at state and corporate level as well as to exercise the regulatory power to facilitate the technological change and to facilitate the effective



interaction between actors. This is a dimension stressed by Ivan Tchalakov too. He argued that the recent history of information and communication technologies and digital infrastructures in Bulgaria showed that governing successful transitions necessitated choices over technologies, allocation of expertise and skills, the social legitimization through acts of legislative measures and acts of persuasion but also the synergy of local private concerns with civil society initiatives. He reconstructed the sociotechnical networks that were shaped in the struggle against the established state monopoly. The passage from the communist to the liberalization period involved intensive attempts by the private internet service providers to change legislation. Pressures from those actors were strong in order to legitimize a logic of competition. Furthermore, he argued that the low taxes and the high speed of the Bulgarian internet created the setting for entrepreneurial activity of international private interests. This is a condition that has been deemed as necessary for the continuation of the pace and the character of the transition but also of the integration of internet in the developmental patterns of Bulgaria.

In the afternoon session entitled 'Nuclearities, Techno-sciences and Nuclear Policies' the papers attempted to reconstruct the stories of the national nuclear programmes of Finland, Bulgaria and Greece from a perspective that could be informative to current trends in policy making. Karl Erik Michelsen addressed the problem of the limits of national self-determination in energy policy. His starting point was the Finnish experience and he argued that small independent nations, like Finland, have only limited self-determination when it comes to energy policy. The country's struggle to develop a sovereign and independent energy policy had been unequal since the strong pressures and enforcement by the Soviet Union to use Soviet technology, expertise and uranium for the first nuclear power station in the country, which meant that Finland was then locked into a specific technological regime and technologically dependent on the Soviet Union. Dependence continued even for subsequent nuclear power stations despite the fact that they were built with western technology provided by Asea Atom and Westinghouse respectively. The country's lock in nuclear power made it very difficult both politically and technologically to move away from this regime during the early years of the 21st century. In a context of market liberalization, the ownership of the new nuclear power plant by Russian interests triggered political contestation and conflict while it deepened the country's technological dependence. The issue of technological dependence was raised in the paper by Arapostathis and Tympas on the story of the cancelled nuclear programme of Greece. The Greek story showed

that a nuclear power station was an endemically political project in which experts played an important role in the process of framing the solutions to energy problems. They were key actors inscribing the integration of nuclear power plant not only in the energy mix but also in legitimizing the political priorities of democratic or fascist governments. They showed that the nuclear power plant in Greece was cancelled due to the critical event of a strong earthquake but also to the delegitimization and the politicization of the project that had been achieved by the anti-nuclear movement. Finally, they provided a new understanding of the 'nuclearity' of Greece by stressing the fact that while the country was cancelling the nuclear plant it established an interconnection with Bulgaria to purchase electric power produced by the Bulgarian nuclear power plant just kilometers from the north border of the country. The issue of technological dependence and network interconnections was raised by Ivaylo Hristov too. He presented a paper on the transition of the Bulgarian nuclear energy sector from the Cold War to the Liberalization and the period of Bulgaria's integration in the European Union. Hristov argued that during the Cold War the technological dependency from Russia created the political and social legitimacy of a dominant ideology in which nuclear power was considered as critical infrastructure for the model of the state's political economy. The collapse of the communist regimes destabilized the energy regime since it provided the political space and the legitimacy of actors from the environmental and anti-nuclear movement to react and question certainties and hegemonies in the energy policy of the country, while at the same time legitimized transnational pressures by the European Union that urged for the decommissioning of the nuclear reactors.

Each session was followed by extensive discussions that culminated with the final roundtable and the reflections by the commentators and the audience. In concluding we can summarize the discussion by stressing four main points that emerged from the papers and the discussions: a) understanding path dependencies is important in policy making since they shape the dynamic of actors, innovation networks and institutions. Only by mapping the sociotechnical networks involved, can a more interventionist agenda follow and effect changes; b) technologies are materialities inscribe and co-produce social order, the developmental paradigm and patterns of innovation. Thus, historically reconstructing the co-production process can inform public policies and public debates in spaces of deliberation. This is particularly important in order to secure symmetry in the engagement of different actors in the deliberation, as well as the condition for overcoming social inequalities in the design and distribution of innovations; c) studying the histories of transnational network interconnections and technological dependencies can help us to understand current technology policies and inform debates about the appropriate directions of contemporary transitions; and d) historical studies at micro and meso levels of analysis require a broader vision to address structural dimensions of sociotechnical networks and thus inform contemporary policies in an effective and efficient way.

The workshop concluded in optimistic and enthusiastic spirit about the linkages and synergies between the history of techno-sciences and innovations and public policies while discussions continued over a dinner in a historic traditional tavern in Plaka the oldest section of the city of Athens.



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TECHNOSCIENCES OF POST/SOCIALISM: TECHNOSCIENCES, MATERIALITIES AND KNOWLEDGE PRODUCTION IN EASTERN EUROPE

Zoltán Ginelli, Márton Fabók, Ivana Damnjanović

THE CONFERENCE HELD IN BUDAPEST BETWEEN 3-5 SEPTEMBER **REVOLVED AROUND THE ROLE OF TECHNOSCIENCES IN SOCIALISM** AND POST-SOCIALISM IN EASTERN EUROPE. PARTICIPANTS GATH-ERED FROM A VERY WIDE GEOGRAPHICAL AND THEMATIC FIELD, AND THE ORGANIZERS STROVE TO EXTEND THE REGIONAL SCOPE OF EASTERN EUROPE, TO ENCOURAGE REFLECTIONS ON COMPAR-ATIVE AND GLOBAL ASPECTS. THE EVENT'S FIRST AIM WAS TO CONNECT MAINSTREAM STS WITH MUCH NEGLECTED POLITICAL ECONOMICAL APPROACHES AND THE EXPERIENCES OF THE FORMER SOCIALIST BLOC IN CONNECTION TO TECHNOSCIENCES, MATERI-ALITIES AND KNOWLEDGE PRODUCTION. THE SECOND WAS TO RE-FLECT ON THE HISTORICAL RUPTURES OR CONTINUITIES BETWEEN "PRE-SOCIALISM," "SOCIALISM," AND "POST-SOCIALISM" IN LIGHT OF GEOGRAPHICAL RELATIVITY AND THE GLOBAL EMBEDDEDNESS AND INTERCONNECTIVITY OF "SOCIALISMS" AND "CAPITALISMS." SESSIONS INCLUDED TOPICS SUCH AS SUBJECTIVITIES AND MATERI-AL INFRASTRUCTURES, THE TECHNOPOLITICS OF NATURE, THE ROLE OF ENGINEERS AND ENTREPRENEURS, OBJECTIVITY AND QUANTIFI-CATION ACROSS EAST AND WEST, THE GLOBAL CIRCULATION OF HIGH-TECH, AND THE INTERNATIONALIZATION OF TECHNOCRACIES.

The conference held at the public community house and co-operative bar of Gólya in Budapest, between 3-5 September revolved around the role of technosciences in socialism and post-socialism in Eastern Europe.¹ The choice of our venue was an alternative to a "high intellectual" site, which hosts a range of cultural events and progressive social movements within a highly gentrified post-socialist urban area, provided an engaging environment and contributed well to encouraging more relaxed and intensive conversations.² Participants gathered from a very wide geographical and thematic field, from post-Yugoslavia countries to Azerbaijan, with particularly high participation of Polish speakers, apart from Hungarians. The organizers strove to extend the regional scope of Eastern Europe, to encourage reflections upon the comparative and global aspects of technoscientific endeavours. The keynote was held by Johanna Bockman (George Mason University), author of the book Markets in the Name of Socialism: The Left-Wing Origins of Neoliberalism (2011) (a video of the keynote speech is available on the conference website.). She was joined by panel discussants and session chairs Karl Hall (Central European University), Martha Lampland (San Diego University), Tereza Stöckelová (Czech Academy) and Andrzej W. Nowak (Adam Mickiewicz University), and also by our guest discussant Attila Melegh who represented Karl Polányi Research Center for Global Social Studies (Corvinus University, Budapest).

The aim of our event was to highlight issues considered by its participants as rarely present in the forefront of contemporary Science and Technology Studies. Despite the widespread and growing popularity of the field, STS have remained remarkably silent on the plethora of experiences offered by the former socialist bloc in connection to technoscience. On the other hand, various approaches in the social sciences (e.g. political economy, post-colonialism) focusing on Eastern

¹ See details of the conference here: https:// technosciencesofpostsocialism. wordpress.com.

² See detals of the venue here: http:// www.golyapresszo.hu Europe have often treated knowledge production and technology in relatively underconceptualised and sometimes even quite instrumental terms. Connecting these approaches to the rich conceptual apparatus and instructive empirical studies in STS, with the aim to contribute to our understandings of post/socialist technosciences, materialities and knowledge production remains an important theoretical challenge. In addition, empirical studies from the Eastern European region may further extend the conceptual framework of STS toward alternative re-conceptualisations of the "macro," the "global," the "political" or the "economy."

Approaching technosciences, materialities and knowledge production in post/socialism

The conference title already hinted two initial points of critical departure: first temporality, then spatiality. On the one hand, the slash in "post/socialism" was deliberately used to underline the constructed nature of chronology and the uneasy historical ruptures or continuities between "pre-socialism," "socialism," and "post-socialism" (see e.g. Bockman and Eyal 2002; Lampland 2011; Bockman 2011). On the other hand, the title also aimed to point out both the geographical relativity and the global embeddedness or interconnectivity of "socialisms" and "capitalisms," while bearing sensitivity to different geographical scales connecting "micro" and "macro" perspectives. Moreover, the plurality of technosciences refers to the spatio-temporal multiplicity of practices, experiences, materialities, modernities and developmental trajectories in "post/socialist" societies. There was wide agreement among conference participants that the liberal critique of "socialism" as an episode in the homogeneous and linear development of authoritarian modernization or "high modernism", although opening the ground for comparativity, is conceptually inadequate as an ideal-type "carrier" of interests (in J. C. Scott's words) to grasp the fine-grained cultural particularities, local structural settings, and the interconnectivities or dependencies between geographically varied "modernist" ambitions (Scott 1998). Also, the historically conditioned level of ideological and theoretical debate concerning "socialism," "modernism" or "centrally planned economy" is in itself inadequate and should be supplemented or challenged by a focus on the more mundane technoscientific materialities and practices of post/socialism.

Despite the perceived monolithic concept of "socialism" and the "socialist era," the technological developments, material artefacts, infrastructures and built environments created and bore different timescapes, and manifested in both utopian projects and mundane objects. The aim of the first, introductory panel, *Post/socialism from the perspective of technoscience* was to discover in what ways socialist societies were assembled through various technologies and materialities with different spatio-temporal legacies, and how did these change bodies, subjectivities and affective temporalities? Consequently, sessions revolved around how the everyday experiences and practices of technologies during post/socialism can change our understanding of hybridity, and the intertwined and dialectical relations between the material and immaterial, the human and non-human? Were there any specifically "socialist" regimes of knowledge production in Eastern Europe, and in what ways can the continuities or ruptures of epistemological endeavours and technopolitics change our understandings of academia, political governance, and everyday lives after socialism?

OPENING UP POST/SOCIALISM FOR A POLITICAL ECONOMY OF TECHNOSCIENCES

A body of research has shown that the often essentialized black-boxes of "socialism" and "capitalism," or "East" and "West" should be contested and opened up for alternative re-conceptualizations (Frank 1991; Verdery 1996; Chakrabarty 2000; Chari and Verdery 2009). One of the main agendas of our panel discussions was to draw on recent insights of global and transnational history in order to counter the internalism and "methodological nationalism" of isolated case studies, which departure from essential traits of the "socialist system" or its country-specific variations when accounting for Eastern European production of knowledge, technology and material infrastructures (Wimmer and Schiller 2002). Many critics have also turned to postcolonial theory to point out that the rather closed and sometimes provincial concept of "socialism", often treated in a Derridean logocentric binary as the Oriental "Other" of the West, should be situated in different local practices and trajectories, and be elucidated in comparative and global relations (Hann et al. 2002; Outhwaite and Ray 2005; Melegh 2006; Stenning and Hörschelmann 2008; Silova 2010; Cervinkova 2012). Behind the historically constructed conceptual facade of "socialism", not only is the issue of plural "socialisms" in question, but also the ways of understanding the more delicate flows, the trials and translation effects constituting the technoscientific assemblages of different actor interests and the actor-networks which had produced these "socialisms" across and beyond the "East-West" divide.

However, there seems to be a lack of popularity within STS to reach toward contemporary political economic approaches in understanding technoscience (Birch 2013).¹ Apart from previously established micro-ethnographical research in STS on how the "economy," the "market," or "value" is constructed (exemplified by e.g. Callon 1998; MacKenzie 2009), in recent years there has developed a body of research signalling concerns for theorizing the political economy of technosciences in a more wider scale (see e.g. Mitchell 2011; Lave et al. 2010; Mirowski and Sent 2002, 2008). Following from the above, the traced networks and relational processes producing "post/socialism" could also be contextualised historically along long-term (longue dureé) economic cycles, and the globally uneven circulations and relations of exchange in knowledge and technology (Tulbure 2009; Gille 2010). Thus Eastern European state-socialist ambitions and efforts toward "convergence" or "transition" can be conceived as a series of centralised top-down politics and policies of governance developed in a semi-peripheral structural setting, being deeply integrated into the capitalist world-system (see e.g. Braudel 1967; Wallerstein 1976; Frank 1977; Chase-Dunn 1980). Our conference acknowledged that the production of knowledge, technology and material infrastructures cannot be fully understood without taking into account the global divisions of labour or the specific material and epistemological positions in the hierarchy of the world-system, according to which local elites and societies produce them. One of the conclusions of the conference was that the term "semi-periphery" might be a more useful term than the region-specific and spatially locked "Eastern Europe" (or similar categories) in understanding these political economic dynamics, and could offer a more transparent and analytically enlightening framework for both comparative analyses and emancipative political agendas.

These insights might lead us not only into acknowledging the relational and networked nature of post/socialist technosciences, materialities and knowledge production, but also into accepting the need for methodologies that can situate the heterogeneous constellations of assemblages and actor-networks in structurally conditioned power relations and dialectically reproduced epistemological positions. Following from the tension of this seemingly structuralist/post-structuralist dichotomy, the organizers proposed three further questions for discussion. In what ways can the monolithic concepts of "socialism" or "post-socialism" in Eastern Europe be deconstructed geographically, to overcome methodological nationalism in a more globalized perspective? Extending the experiences of the first panel, how do our historical and geographical understandings of Eastern European "socialism" change by considering the continuities and ruptures in technology, knowledge production and material-infrastructural legacies throughout pre/post/socialism? And finally, how were then local technopolitical and developmental strategies of semi-peripheral Eastern European technocratic groups embedded into the wider political economic relations of the world-system?

The second discussion panel, *Technoscience in the global semi-periphery* elaborated precisely on the above theoretical issues, while the third, *Studying science and technology in Eastern Europe* continued this line to focus on more specific methodological challenges that should be taken into consideration when studying technosciences in the Eastern European semi-periphery. Participants exchanged ideas on their own research designs and empirical experiences, and reflected upon their positions and motivations in producing local knowledge connected to STS. Here it should be added that one of the sessions revolved around the historical conceptualization of technosciences, and more specifically, the origins or varied emergence of STS as a field in post/socialist countries. This issue was exemplified well by Ivana Damnjanović's paper on the journal Praxis published ¹ See the special issues of the journals, *Spontaneous Generations*, "Economic Aspects of Science," Vol. 7, No. 1; and *Social Studies of Science*, "STS and Neoliberal Science," Vol. 40, No. 5.



Our venue: the public community house and co-operative bar of Gólya (Budapest)

² Conference organizer Márton Fabók and speaker Sergiu Novac will convene together with Sonja Schmid a track on *Infrastructures of nuclearity: Exploring entangled histories, spaces and futures* at the 4S/EASST Conference to be held in Barcelona, 2016 August 31– September 3. from 1963–1974 in Yugoslavia, which although developed Marxist and Weberian foundations for the study of technology, later faded out largely due to recession and civil war in the 1980s. One can ponder why STS became generally neglected or in some exceptional cases established in local centres of the region. This is a critical issue, which has mostly been neglected in the field of STS. While the mainstream post-WWI history of technoscience tends to follow neo-institutionalist or neo-evolutionist grand-narratives of the global centre ("military-industrial complex," "World War II regime," "Cold War regime," "mode 2 science," "post-academic science," "big science," "triple helix," "commercial science," etc.), alternative developments are generally considered only as recipients of diffusion or belated "catching-up" attempts in the successive stages of modernization, without any reflections on local and peripheral contexts, transnational connections and dependent relations (Pickering 1995; Galison and Hevly 1992; Nowotny et al. 2001; Ziman 2000; Sent 2013; Etzkowitz 1993, 2002; Solovey and Cravens 2012). In the fourth and last panel, participants discussed in what ways practicing post/socialist STS might be different from that in the "West." It was made clear that they often face similar problems in academia, such as lack of funding or institutional possibilities, and an underdeveloped STS field. From the perspective of EASST it was worthwhile to reflect upon why these uneven relations exist or are maintained, and how can they be countered in light of historical experiences.

CONFERENCE SESSIONS

Sessions included a range of topics, such as subjectivities and material infrastructures, the technopolitics of nature, the role of engineers and entrepreneurs, objectivity and quantification across East and West, the global circulation of high-tech, and the internationalization of technocracies. Adrian Deoanca's case study of the Romanian rail reform discovered the relations between the material and immaterial, showing that actor-network approaches cannot capture everyday affective realities, like the temporal performance of rail infrastructures, or the public experience of the socialist state as the provider of modernity with its ideology of visible infrastructures (in contrast to the West). Ágnes Gagyi extended this dichotomy to demonstrate how local social movements in Hungary and Romania emerged under global pressures in the two countries' modes of world economic integration after the 1973 oil crisis, connected to the import of anti-pollution technology and the lack of hard currency.

Some contributions showed great potential for comparative analyses, for example about nuclear and antinuclear movements (Márton Fabók, Sergiu Novac), or the "socialist" computer industry.² The participants' impression was that while there are studies about some of these topics, they are usually not approached from a STS perspective. Several papers touched upon how scientist and engineer cultures bore prestige in socialist societies, and the ways the rhetoric of becoming technological nations during socialism was constructed in light of developmental strategies. Leyla Safyutdinova's paper showed that as post-Soviet Azerbaijan shifted into a resource-based development that was dependent on foreign technology, engineers became "button-pushers" and alienated from the full process of technology development. Zinaida Vasilyeva's case study elucidated the alternative places of modernity and development in the hybrid terms of the "Soviet entrepreneur" and the state-sponsored innovation "garages" of the NTTM movement for training young engineers (nauchno-tekhnicheskoe tvorchestvo molodezhi). Semiperipheral, dependent development trajectories were also exemplified by the case of hacking collectives in Poland, Germany and the Czech Republic presented by Marcin Zaród, or by the development of the knowledge economy in Bulgaria addressed by Tina Schivatcheva.

Several papers, such as by Magdalena Góralska, Sergiu Novac and Zinaida Vasilyeva offered insight into the practices of translating practical skills, professional expertise and knowledge or engineering cultures into competitive Western settings. Sergiu's paper on the nuclear plant in Greifswald (GDR) showed how German engineers developed their expertise, "learning by doing" independently from Soviet assistance. Magdalena argued from her ethnographic research that the post-socialist modernization of agriculture in Poland and the debate on GMOs in 2011 should be interpreted in light of both Soviet heritage and Euro-globalization.

An interesting session dealt with how the global discourse of statistical data and quantitative methods were conceptualized, circulated and translated between East and West in the Cold War era. Zoltán Ginelli showed how mathematics was legitimated as a "neutral" field of global discourse, and thus quantitative-rationalist theories of spatial planning were circulated from the USA into the USSR and Eastern Europe by technocratic experts in an era of global economic upturn and consequent rapproachment in the 1960s. András Pinkasz touched upon the same space and era, showing how the difference of the "socialist" from the "capitalist" statistical system was neither connected to immanent characteristics of "socialism," but to the priority of a "catching-up" industrialization strategy embedded in world-systemic relations, furthered by introducing "capitalist" methods in the 1960s. Similarly, Narcis Tulbure explored data-poor socialist states in Eastern Europe, identifying Romania's distinct socialist regime of data production through emerging technologies and forms of ideological interventions. These case studies, including Róbert Balogh's paper on the politics of Sovietized science in the botanical garden of Kámon in Hungary, clearly underlined the need for a transnational and global perspective on the understanding of technoscientific regimes and circulations in and beyond Eastern Europe.

AGAINST TECHNOSCIENCE?

The provocative keynote speech of Johanna Bockman entitled Against Technoscience, opened with the general question: what is technoscience? She highlighted that although it is about the co-production of knowledge and science (e.g. nuclear physics and nuclear society or subject, or reproductive technology and reproductive subject), but it often carries negative connotations, either related to the market logics and entrepreneurial individual of neoliberalism, or economics and governmentality (Foucauldian biopolitics), or technopolitics and hegemony. This ignites the concern, also debated in the discussion, whether the experience of socialist technosciences is to raise caution about all-transformative visions or to open novel ways to think about utopian alternatives? Were socialist technosciences liberating? Or in what sense did they follow local pragmatic goals? Although much of STS follows Latour and others in looking at technoscience as a tool of understanding, feminists have called for positive, liberating forms of technoscience. It thus remains an important issue how people can intervene in technoscientific projects, whether being elite-driven sciences, authoritarian nuclear physics, conservative and elitist Cold War mentality, etc. Johanna Bockman also disagreed with her previous article (Bockman and Eval 2002) in that socialist and capitalist technosciences may share certain characteristics, such as being atomizing, individualistic, top-down etc., because the simultaneous development of neoliberalism in Eastern Europe and the Western world cannot be universalized. Her title here referred to thinking about people who are against technoscience in order to create a different world that is not elitist and technocratic, or which might become a different form of socialist technoscience.

According to Bockman, this latter alternative can be captured both by Karl Polányi's article on "Socialist Accounting" (1922), and by the more global agenda of the Non-Aligned Movement. In the first case, Polányi drew on a popular contemporary idea by Otto Neurath, that the natural economy could be planned, and true natural prices and costs could be known. Polányi's idea of calculating prices through democracy was part of an indigenous knowledge produced in the 1920s of Red Vienna. In the second case, the representatives of the Non-Aligned Movement in the United Nations Conference on Trade and Development (UNCTAD) after its establishment in the mid-1960s, in somewhat utopian manner, were hoping to alter redistribution in the global economy. In contrast to the views of the IMF, they promoted economic cooperation between developing countries, global structural adjustment, the redistribution of the means of production, multilateral universalism, in a belief of immediate implementation through the global institutions of the UN. In sum, these were two forms of economic thinking about an alternative of technoscience: Polányi's socialist world was less elitist and top-down, while UNCTAD's was a more top-down and elitist world based on a utopian view of egalitarianism. In the discussion, Karl Hall added that early socialist experience and technoscientific optimism was not acknowledged, such as Alexander Bogdanov's idea of a technoscientific society, which was downplayed against Lenin. Attila



Karl Hall (CEU) chairing one of the paper sessions



Melegh questioned whether the belief in global intervention and planning as means or as a social technique and not as science per se is technoscience at all? Or, if it is technoscience, is it equally repressive, as it supposes to control people in social reproduction and capital accumulation, and the emergence of certain interest groups or elites? The rest of the debate discussed the contrasting realities and normalities of utopianism in socialist technosciences, and the concrete practical and material interests behind their historical emergence. Nevertheless, Bockman's keynote highlighted a global discussion of technoscientific ideas, and that many of these, like that of structural adjustment, first emerged in the Soviet Union and the "Third World," and only later developed in the "West."

Discussion after the keynote speech of Johanna Bockman

PROCEEDINGS

The proceedings of the conference outpaced the initial expectations of the organizers: not only were communication networks and collaborations successfully established, but an edited volume is also in production, including some applicants who had sent in valuable abstracts but could not participate in the event. The already accepted 15 individual papers are divided into five thematic blocks, and the volume includes a discussion section that lends space for the discussants of our conference to share short reflections on the main topics and their individual experiences of studying technosciences in Eastern Europe (for more information on this forthcoming volume, contact the editor, Zoltán Ginelli). As can be seen from the above, EASST provided an important platform for tying together Eastern European nodes of STS scholars, and also gave impetus for future prospects on developing political economic approaches to technoscience.

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Ivana Damnjanović holds a PhD in political science from University of Belgrade, where she is currently teaching as assistant professor. So far, her work was focused primarily on use of new information technologies for political participation, technologies of political violence, reproductive technologies, as well as conceptualizations of technology within political thought, especially in works of Yugoslav and Serbian authors.

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News from the Council

NEWS FROM EASST COUNCIL

EASST Council met in Copenhagen in April. High on the agenda was the on-going preparation for our Barcelona conference. Issues included the huge response to the call for papers where the organising team have managed to negotiate extra rooms in order to accommodate as many papers, presenters and participants as possible. Council also discussed registration costs which we hoped could be kept as low as possible - particularly for students and other concessions. With so many papers the programme will be very intense, with long days, but of course the Barcelona team are building in time for socialising over lunchtime and a great party! You can see all the accepted tracks and papers from the conference website - and check back shortly for details of plenary speakers.

From the conference website you can also find details of the postgraduate workshop preceding the conference on 31st August. This is being organised by representatives from EASST, 4S and the Barcelona team. There will also be an EASST General (members') Meeting where we hope to see as many members as possible and hear your views. Please look out for email communication in the run up to the conference for further information and a report of activities and finances. Another major item of discussion at the EASST Council meeting was our publications, EASST Review and Science & Technology Studies. EASST Review now involves a wider team of people supporting the editor, Ignacio Farías, and there are discussions about lots of new initiatives. EASST Review always welcomes your news, particularly reports from events and STS centres. Science & Technology Studies, our online, peer reviewed, journal has also seen changes with Salla Sariola taking over as editor from Sampsa Hyysalo. The journal is thriving with increased submissions and readership. New people are being recruited to the editorial board and Council is exploring options for fuller open access to content.

Immediately after the conference we will open a call for nominations for elections for a new EASST President and 6 Council members (including one reserved for a student). Council meets twice a year in person and communicates online between meetings. Council members are volunteers but are supported by an administrative office and IT specialists, and travel expenses are covered. There is further information in the article below and it will be included in the agenda for the General Meeting, but if you want to know more now do contact EASST President Fred Steward (president(at)easst.net).

Sonia Liff

EASST COUNCIL VACANCIES

President and six council members (including one reserved for a student representative)

The European Association for the Studies of Science and Technology fosters the scholarly study of science and technology within Europe, including their historical development and their role in society. It seeks to improve scholarly communication and exchange in the field, to increase the visibility of the subject to policy-makers and to the general public and to encourage and support teaching on the subject at all levels.

The EASST Council has seven ordinary members, a president and a student representatives and currently three co-opted members. The Council meets twice a year to discuss STS developments in Europe and to initiate and carry out measures which contribute to shaping developments. Among other issues the Council is centrally involved in organizing the EASST conferences and in nominating and evaluating candidates for awards. It allocates funds to support members to attend our conferences and to support local or regional STS-events. Council monitors and contributes to the editorial development of its house journal Science & Technology Studies and its newsletter EASST Review. Furthermore, the Council meets regularly with national STS associations and represents the interests of its members in European research politics.

Six positions on the EASST Council plus that of president of EASST will be vacant from January 2017 due to the completion of the election terms of existing members. EASST members interested in contributing to shaping the future of STS in Europe are encouraged to nominate themselves for the election which will take place by the end of 2016. In particular, the role of President of EASST provides the opportunity to influence the long-term strategies of EASST and to have an impact on the European STS community and its relation to non-European STS associations. The vacant positions are for all for four years.

Further details of the current council can be found at www.easst.net/ about-easst/easst-council-members and the role of the president and council is described in the EASST constitution www.easst. net/about-easst/easst-constitution. EASST Review carries regular reports of Council activities or you can contact one of the existing Council members for more information. The call for nominations will open shortly after the conference and the election will be held by online ballot, with results announced before the end of 2016. Applicants will need to provide a short statement (no more than 250 words) introducing themselves, saying why they are interested in standing for the Council and what skills and experiences they would bring to the role. This statement will be made available to those voting.

Estrid Sørensen (EASST Secretary)



President: Fred Steward (University of Westminster)

Council of the European Association for the Study of Science and Technology:

Elected members:

Attila Bruni (University of Trento) Marton Fabok (University of Liverpool, student representative) Ignacio Farías (Technical University of Munich) Maja Horst (University of Copenhagen) Pierre-Benoit Joly (National Institute of Agronomic Research, Paris) Vicky Singleton (Lancaster Unversity) Fred Steward, President (University of Westminster) Estrid Sørensen (Ruhr-University Bochum) Harro van Lente (University of Utrecht)

Co-opted members:

Salla Sariola (editor of *Science & Technology Studies*) Ingmar Lippert (manager EASST Eurograd list) Miquel Domenech (co-organizer 2016 4S/EASST conference) Lucy Suchman (President of the *Society for Social Studies of Science*, ex-officio)

EASST's Past Presidents:

Christine Hine, 2005-2008; Sally Wyatt, 2000-2004; Rob Hagendijk, 1997-2000; Aant Elzinga, 1991-1997; Stuart Blume, 1987-1991; John Ziman, 1983-1986; Peter Weingart, 1982.

Member benefits:

EASST organizes a biennial conference and supports a number of "off-year" events such as workshops, PhD summer schools and national/regional STS meetings. Members are entitled to apply for EASST Network and EASST Event Funds and are offered reduced registration rates for the biennial EASST conference and many other EASST events.

EASST awards three biennial academic prizes for excellence in various aspects of community-building – the **Olga Amsterdamska award** for a creative collaboration in an edited book or special issue in the broad field of science and technology studies, the **Chris Freeman award** for a significant collective contribution to the interaction of science and technology studies with the study of innovation, and the **John Ziman award** for a significant innovative cooperation in a venture to promote public interaction with science and technology.

EASST publishes the *EASST Review* and offers member access to the journal *Science & Technology Studies*.