

EASST *Review*

European Association for the Study of Science and Technology





European association for the study
of science and technology

EASST Review (ISSN 1384-5160) is published quarterly and distributed digitally to all EASST members.

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The Association's journal was called the EASST Newsletter through 1994.

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EDITORIAL

INTRODUCING STUDENTS OF STS INTO ENGAGING WITH DIFFERENCES GENERATIVELY

Josefine Raasch

'The very idea of [disciplining students to know and do] cultural and social studies of sciences and technologies is surprising, and the use of plurals rather than singulars underscores the strangeness', I want to rephrase the first sentence of Sharon Traweek's (1993: 3) early 'Introduction to Cultural and Social Studies of Sciences and Technologies'. I wonder what is happening to the tension between plurals, singulars and, I might add, multiple Science and Technology Studies as it is coming of age? STS becomes increasingly institutionalized, being taught in STS programs and STS textbooks are filling the market. It is exciting to participate in this thriving. Yet, in this process of institutionalization lurks a possibility that the tensions between plurals, singulars and multiples of STS are smoothed until they lose their generative character. This editorial aims to contribute to a discussion on how to introduce students to differences between discourses, concepts and methodologies in STS.

Recently, I gave a course of 'Introduction to STS' at a university other to the one I am employed; at an institute where I know how my colleagues are knowing and doing STS. As I tailored the syllabus to the needs of these students and the requirements of that university, I noticed we would read and discuss methodologies and stories of STS different to the one I am usually working with, and I assumed some of my colleagues might give different introductions in STS classes. I imagined the members of my small reading group in Berlin introducing students to STS. How would they introduce students to STS?

We were all disciplined in academic knowledge traditions other than STS and we work with and teach a variety of methods in different fields, cities and even countries. We all identify as STS researchers and although we all participate in performing STS, we know and do it all differently: What we know and do, how we know and do it, and what emerges in our specific daily routines is likely to be shaped by historical contingent governmental regulations as well as institutional possibilities and limitations. We contribute to bringing different phenomena into existence and to shaping them by talking, writing and visualising them in different ways, questioning, agreeing or opposing each other, by adapting and simplifying in various ways. We engage in specific ways with students and superiors, with specific curricula and specific funding. Knowing and doing STS differs in our daily routines, in how and what we know and do our work in a STS community. Most notably when discussing recent STS literature in our little group, we mobilize and enact STS discourses and concepts that often differ profoundly. We have heated discussions in this reading group and we enjoy these discussions emerging in our different knowings and doings of STS. We value the frictions as beneficial for our conceptualizing. I believe it is worthwhile to take these differences into account when introducing students to STS and to ask how students need to engage with these differences to contribute to STS in a meaningful way.

While STS is increasingly taught as a discipline, we need to take care of how these differences are taught. Helen Verran portrayed a story of different methodologies in her recent review of Pickering's 'Science as Practice and Culture' (Verran 2017). When working with graduate students in Holland, Denmark and California, she noticed a recurring story of what STS is nowadays and how different methodologies came into being in STS epistemics. In this story 'objectivism, social constructivism and ontological constitutionalism all now thrive as variant STS epistemic practices in their own niches' (Verran 2017: 78). Verran, then, wonders what is silenced in this story.

Interestingly, this story is at the same time separating as it is homogenizing. Although differences between methodologies are pointed out in this story, the friction gets lost. It generates a tolerance that acts as a truce. Students are invited to differentiate between methodologies and to sort new work into these already existing ones. This story invites an othering and closes debates, instead of nurturing them. My hope is that we do not end our stories of differences in STS here, but keep telling these stories as yet incomplete. May students of STS be invited, and maybe introduced, to explore these differences, to challenge them and to play with them. When we are introducing students to engage with these differences in such a way, they may find ways to use differences in STS as generative differences. They would become skilled to shape STS in unique ways. I do hope that students of STS can enjoy these intense discussions that I find so particularly beneficial in my little reading group.

REFERENCES

- DE LA BELLACASA, MARÍA PUIG. *Matters of Care: Speculative Ethics in More than Human Worlds*. Minneapolis; London, University of Minnesota Press, 2017.
- TRAWEEK, SHARON. An Introduction to Cultural and Social Studies of Science and Technologies. *Culture, Medicine and Psychiatry* 17:3-25, 1993.
- VERRAN, HELEN. Review: Andrew Pickering (ed.) (1992) *Science as Practice and Culture*. Chicago: University of Chicago Press. 474 pages. ISBN: 9780226668017. *Science & Technology Studies* 30:78-81, 2017.

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STS MULTIPLE

BIOMEDICINA Y CUERPOS GENERIZADOS: ARTICULACIÓN COMPROMETIDA COMO METODOLOGÍA FEMINISTA

EN ESTE ARTÍCULO PRESENTAMOS LA TRAYECTORIA INVESTIGADORA Y LOS PROYECTOS ACTUALES DEL GRUPO DE INVESTIGACIÓN DE CIENCIA, TECNOLOGÍA Y GÉNERO DE MADRID. SE TRATA DE UN EQUIPO INTERDISCIPLINAR COMPUESTO POR FILÓSOFAS DE LA CIENCIA, SOCIÓLOGAS, PSICÓLOGAS SOCIALES, HISTORIADORAS/OS, ENFERMERAS Y ANTROPÓLOGAS, EN SU MAYOR PARTE MUJERES VINCULADAS A DIFERENTES INSTITUCIONES INVESTIGADORAS Y UNIVERSIDADES, PERO PRINCIPALMENTE EL CSIC, LA UNIVERSIDAD COMPLUTENSE DE MADRID Y LA UNIVERSIDAD REY JUAN CARLOS. EL GRUPO DESDE SU PRIMER PROYECTO EN 2004 HA ABIERTO UNA LÍNEA DE TRABAJO BASADA EN ESTUDIOS FEMINISTAS Y CTS/CTG QUE ESTABA PRÁCTICAMENTE AUSENTE EN LA ACADEMIA EN EL ESTADO ESPAÑOL. A LO LARGO DE ESTOS AÑOS HEMOS MANTENIDO FINANCIACIÓN CONSTANTE DE LOS PLANES NACIONALES DE I+D+I ENCADENANDO SIETE PROYECTOS DE INVESTIGACIÓN CENTRADOS FUNDAMENTALMENTE EN LA BIOMEDICINA Y SU RELACIÓN A LOS CUERPOS, EL GÉNERO Y LOS ACTIVISMOS EN SALUD. EN LOS PRIMEROS TRABAJOS, EL INTERÉS SE CENTRABA EN ANALIZAR LOS MECANISMOS DE LA BIOMEDICINA PARA INTERVENIR EN LOS CUERPOS DE LAS MUJERES Y CÓMO SE PRODUCÍAN Y REPRODUCÍAN LAS FRONTERAS ENTRE LOS CUERPOS SEXUADOS. EN LOS ÚLTIMOS TRABAJOS EL INTERÉS SE HA CENTRADO EN CÓMO DIFERENTES FORMAS DE ACTIVISMO EN SALUD DEVIENEN "COMUNIDADES EPISTÉMICAS" (AKRICH, 2010) Y CÓMO PRODUCEN CONOCIMIENTOS Y SABERES QUE TRANSFORMAN LA PRÁCTICA MÉDICA. EN PARTICULAR, NOS HEMOS CENTRADO EN LA FIGURA DEL "PACIENTE EXPERTO" O EL "LEGO EXPERTO" Y SUS CONOCIMIENTOS HÍBRIDOS EXPERIENCIALES/ACTIVISTAS/EXPERTOS. EL TRABAJO CONTINUADO CON MUCHOS DE LOS COLECTIVOS CON LOS QUE HEMOS TRABAJADO -ESPECIALMENTE EN EL CASO DEL ACTIVISMO TRANS E INTERSEX- HA LLEVADO A QUE DESARROLLEMOS NUESTRAS INVESTIGACIONES MEDIANTE PROCESOS DE *ARTICULACIÓN COMPROMETIDA*. SE TRATA DE UNA METODOLOGÍA DE PROCESOS ENCARNADA, BASADA EN LAS EPISTEMOLOGÍAS DEL PUNTO DE VISTA FEMINISTA Y CONSCIENTE DE SUS COMPROMISO POLÍTICO. DONDE LAS INVESTIGADORAS FORMAMOS PARTE DEL PROCESO INVESTIGADOR, DE TAL FORMA QUE PRODUCIMOS PRÁCTICAS HÍBRIDAS DE INVESTIGACIÓN SOCIAL, ACTIVISMO, TRANSFORMACIÓN SOCIAL Y DOCENCIA.

BIOMEDICINE AND GENDERED BODIES: COMMITTED ARTICULATION AS A FEMINIST METHODOLOGY. THE SCIENCE TECHNOLOGY AND GENDER RESEARCH GROUP OF MADRID

S. García Dauder, Carmen Romero-Bachiller, Pablo Santoro

WE PRESENT THE RESEARCH TRAJECTORY AND CURRENT PROJECTS OF THE SCIENCE, TECHNOLOGY AND GENDER RESEARCH GROUP OF MADRID, AN INTERDISCIPLINARY TEAM COMPOSED OF PHILOSOPHERS OF SCIENCE, SOCIOLOGISTS, SOCIAL PSYCHOLOGISTS, HISTORIANS, NURSES AND ANTHROPOLOGISTS, MOST OF THEM WOMEN. FOCUSING ON BIOMEDICINE AND ITS RELATIONSHIPS TO BODIES, GENDER AND ACTIVISM, THE GROUP HAS OPENED A LINE OF RESEARCH BASED ON FEMINIST STUDIES AND STS WHICH WAS PRACTICALLY ABSENT FROM SPANISH ACADEMIA.

THE CHALLENGE OF BUILDING A FEMINIST AND INTERDISCIPLINARY STS TEAM

In contrast to other countries, STS studies in Spain have had scarce institutional support. Recognition is even more limited if STS Studies include the term “feminism”. For this reason our team was not organised by a university department or an already existing STS institution. Rather on the contrary: the very trajectory of the team has contributed to the creation of one: the Science, Technology and Society department in CSIC -the Spanish National Research Council, which is the main state research institution. The Science, Technology and Gender research group in Madrid emerged more as a personal and risky endeavour carried out by Eulalia Pérez-Sedeño (CSIC Research Professor), along with some other feminist researchers, to develop a Science, Technology and Gender field in Spain. Despite this lack of support and informality, the group has enjoyed greater flexibility and interdisciplinarity, as it has never been tied to narrow disciplinary boundaries.



Fig. 1: Eulalia Pérez-Sedeño y S. García-Dauder.

Although membership has varied over the years, the group is formed of philosophers of science, sociologists, social psychologists, historians, nurses and anthropologists, most of them women. The team brings together scholars from different institutions, particularly from the STS department at the Institute of Philosophy-CSIC, the department of Social Theory at the Complutense University and the area of Social Psychology at Rey Juan Carlos University, but also from other institutional and non-institutional locations. The original meeting ground for the group, which started to function around 2004, was a feminist epistemological proposal: that a more democratic and inclusive scientific community would result in fairer and more objective science (González-García and Pérez-Sedeño, 2002; Romero-Bachiller and García-Dauder, 2006). Research carried out by the team is characterised by the confluence of feminist epistemologies, STS, anthropology of the body and social studies of biosciences, with a particular orientation towards Science, Technology and Gender issues. Our investigations have always maintained an empirical connection to the context of Spain, building links with diverse social actors, from activist groups to scholars from other areas or biomedical professionals.

RESEARCH TRAJECTORY

Since 2004, our team has been awarded several STS and STG-related competitive projects, funded by the Spanish Public R+D Plan, which have functioned as a way of connecting individual research and the interests of the team members. The first three projects carried out by the group, *STS Interactions in Biosocial Sciences and Medical Technologies* (2004-2007, I+D+I 29/03); *Sciences and Technologies of the Body from an STS Perspective* (2007-2010, HUM2006-06327/FISO); and *Cartographies of the Body: Biopolitics of Science and Technology* (2010-2013, FFI2009-07138), featured Eulalia Pérez-Sedeño as the main researcher. The evolution of the careers of the team's junior members led to a subsequent coordinated project, *Visions and Versions of Medical Biotechnologies* (2013-2016), with two subprojects: *Governance, Public Understanding and Hidden Innovations*, led by Pérez-Sedeño (FFI2012-38912-C02-01), and *Analysis of the Production and Circulation of Lay/Expert Knowledges in Biomedical Practices*, led by García-Dauder (FFI2012-38912-C02-02). Since 2016 we have been carrying out two different but coordinated projects: *Multiple Voices, Plural Knowledges and Biomedical Technologies* (2016-2019), led by Pérez-Sedeño, and *Feminist Epistemologies and Health Activisms: Emergent Practices, Care and Knowledges in Biomedical Contexts* (2017-2020, FEM2016-76797-R), led by Romero-Bachiller.

These funds have served as umbrella projects for our team members' empirical research, teaching, seminars and academic supervision, allowing for the consolidation of a line of research which had been practically absent from Spanish academia. All of these activities carried out by the group have culminated in many papers, presentations and articles, several PhD dissertations and two edited collections, *Cuerpos y Diferencias* (Pérez-Sedeño and Ibáñez, 2012) and *Cartografías del cuerpo. Biopolíticas de la ciencia y la tecnología* (Pérez-Sedeño and Ortega, 2014). Since 2005 the group has also annually organised an international workshop in Madrid where Spanish and Latin American researchers, along with scholars from other geographic origins, can present their research, share their interests and discuss current issues related to the complex intersections between science and gender. Throughout our history we have formed ties with many other research groups, both in Spain and internationally, and we have received visits from various STS, STG and gender studies scholars. Some members of the team have also been active in different STS networks, such as Redes-CTS (the Spanish-Portuguese STS Network) or EASST.

Fig. 2: S. García-Dauder and Nuria Gregory, "Multidisciplinarity and psychosocial turn in the management of intersex", presentation at the X International Workshop Science, Technology and Gender: Visions and Versions of Biomedical Technologies, Medialab Prado Madrid (23rd-25th March, 2015).

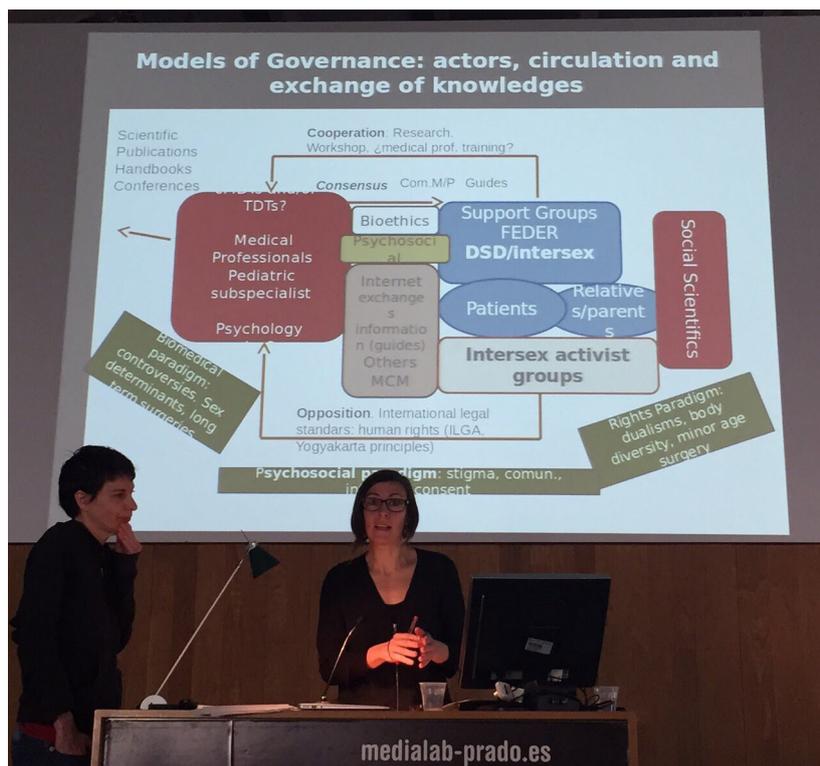


Fig. 3: Anne Fausto-Sterling and Carmen Romero-Bachiller, Anne Fausto-Sterling "Gender as Process, Not Trait: dynamic systems approaches to the origins of difference in infancy", invited conference, XII International Workshop Science, Technology and Gender: Knowledges, practices and activism from feminist epistemologies, Centro de Ciencias Humanas y Sociales, CSIC, Madrid (21st-23rd June, 2017). Photographs taken by a team member.



As the names of our projects suggest, our group maintained a special focus on bodies during the first few years, analysing how biomedical practices and discourses result in the production of particular types of bodies, and especially how they act upon women's bodies and re/produce boundaries between sexed bodies. Different empirical case studies were addressed by the team, allowing for a comparative perspective between specific biomedical technologies: from reproductive technologies or plastic surgery to sex-assignment procedures and food technologies. The comparison of these diverse technoscientific fields, with their focus always coming from the context of Spanish reality, gave way to the development of several analytic perspectives and questions, such as: How are bodies materially and semiotically produced? How are bodies gendered? What is "the human"? How do norms and differences function in biomedicine? How are logics of care and choice put to play?

We would like to highlight the critical work done by the team in its initial years on the lack of representation of women's bodies in assisted reproductive technology discourses and practices (Pérez-Sedeño, 2004; Sánchez, 2004). We also consider noteworthy the pioneering work on the situation of psycho-medical regulation of sex/gender dualisms in the treatment of intersex conditions in Spain (Gregori, 2006; García-Dauder, Romero-Bachiller and Ortega, 2007). In later works

we analyse how the “human” and “individuality” are *made* -the “individual patient”- in reproductive technologies. Whereas those technologies are deeply connected with women’s bodies, the center of attention tends to be displaced towards the “couple”, the “embryo”, or some other parts of the women’s body that become externalized (Ruiz and Romero-Bachiller, 2010; Bergmann, 2014; Pérez-Sedeño and Sánchez, 2014). In the case of therapeutic technologies, “molecular biopolitics” fragments bodies into transferable tissues that can be separated from their original settings, mobilised by clinics and reused in other bodies -cord blood banking and ova donation- (Santoro, 2009; Miranda, 2014). We have also analysed how bodies can be perfected and regulated through food, as is the case with cholesterol control and eating disorders (Ibáñez and Santoro, 2012; González Aguado, 2014), and other aesthetic medical practices, such as mammary implants (Pérez Sedeño, 2012, 2014). We additionally consider how bodies are surgically fixed as humanly livable through the medical assignation of a single sex within the sexual dichotomy, e.g., in intersex conditions (García-Dauser, 2014; Gregori, 2014).

COMMITTED ARTICULATION AS A WAY OF DOING RESEARCH IN STS/STG

Given the proximity that many of our projects have had with social movements and feminist and LGBT activist groups, a characteristic trend that has emerged throughout the different projects of our group is a way of doing research we refer to as “committed articulation”. Initially, the team employed mostly qualitative methodologies based on critical discourse and representation analysis -employing “classical techniques” such as semi-structured in-depth interviews, focus groups and discursive analysis of media or on-line productions. Later on, seeking to highlight how bodies *are made* in biomedical contexts, an ethnographic approach on these practices was favoured. Over the years, and with more than a decade of committed research on trans and intersex medical interventions *working in, with, and alongside collectives*, using Jay Ruby’s (1991) terminology, our methodological stance has adopted the form of a committed *support* rather than a detached extraction of information. This has allowed for emergent and more participatory methodologies to be constructed *alongside* collectives, whose goals very often go beyond “research” as such. We have named such an approach “*committed articulation*”. It is a methodology of *processes*, with a strong *embodied and activist commitment* (Esteban, 2011), anchored in standpoint feminist epistemologies and consciously aware of their political implications. A methodological stance where researchers are situated in an *assemblage* of relations *along with* different actors and voices articulated around a particular phenomenon. Research is, therefore, part of the assemblage itself. Thus, the impact of such a relation is part of a collective learning process, and the given results are never detached or aseptic. Yet, recognising co-production does not eliminate power relations altogether, and these need to be accounted for in any particular intervention. We may talk, then, of *hybrid practices of research, activism, social transformation and teaching*. An approach that is allowing us to recognise and bring to the fore knowledges emanated from health activism, participating in their processes of expertization, “getting undone science done” and acting as “epistemic correctives” (Hess, 2009).

CURRENT RESEARCH

Starting in 2013, our more recent research has been dedicated to two projects. In the project *Visions and Versions of Medical Biotechnologies* (2013-2016), our focus was not so much centered around how diverse biomedical technologies shape “the body multiple” (Mol, 2002), but around the different forms of public participation in the production of biomedical knowledge. We were also especially focused on how expert knowledge is constituted, in processes of expertification (Epstein, 1996), and, -questioning this dichotomy- “lay/expert” knowledge interchanges. In most cases, we aimed our attention at controversy analysis -in nosology, diagnosis, etiology, treatment and bioethical issues- and how a democratic

re-articulation of knowledge is produced in a context of digital citizenship and citizen participation in health (García-Dauder and Romero-Bachiller, 2012; Romero-Bachiller, Ibáñez and Ortega, 2014; García-Dauder, Gregori and Hurtado, 2015; Hurtado, 2017).

We have been particularly interested in the figure of the “expert patient” or the “lay expert” and their hybrid experiential/activist/expert knowledge (Akrich, 2010; Akrich, O’Donovan and Rabeharisoa, 2015). Thus, we have addressed different cases of “epistemic communities”: patient organizations and online collectives constituted around a concrete health condition, that move from serving as a counseling and emotional support role within the community, to spreading and disclosing knowledge to the outside, to their own production of knowledge. Concretely, both the International Campaign for Trans Depathologization, and some intersex collectives, such as GRAPSIA -a Spanish support group for relatives and people with Insensitivity Androgynous Syndrome- are paradigmatic examples of “epistemic correctives” in health, identifying undone science and producing *activism-based evidence*, inverting the concept of “evidence-based activism” as defined by Akrich, O’Donovan y Rabeharisoa (2013) (Ortega, García-Dauder, Gregori and Pérez Sedeño, 2017).

Stemming from that work, the current project of the team, *Feminist Epistemologies and Health Activisms*, investigates emergent knowledges -including how-knowledge, caring practices and experiential knowledge- produced by feminist activism in health. Our objective is to analyse examples in the context of Spain of what Nancy Tuana (2006) has identified as the move from “epistemologies of ignorance” to “epistemologies of resistance”. In this project we are also introducing innovative methodologies that try to connect STS/STG research, health professionals and health activism with formal and informal teaching and learning procedures, and with more horizontal and inclusive formats to favour open conversations.

TEACHING PROFILE AND RESEARCH TRAINING

Our group members have multiple institutional assignments, which increases interdisciplinarity, and also multiplies our teaching participation in various university programmes and institutions, some of them directed towards health professionals. Currently, team members teach Sociology and Anthropology for the Nursing degree programme at both the Complutense University and University Rey Juan Carlos, and Sociology of Science for the Sociology programme at the Complutense University. Our members have also been participating in several innovative teaching projects, such as “*Salud y sociedad*” (Health and Society), lead by Elena Casado Aparicio, Pablo Santoro and Pablo Messeguer, which aims to go beyond the biomedical paradigm in nursing by promoting a socio-practical knowledge based on collaboration, tinkering and caring.

In addition, the team is highly committed to training researchers, which we do by extending our teaching to postgraduate M.A. courses at different institutions: the M.A. of Science, Technology and Society (CSIC); the M.A. of Health and Gender (URJC) and the M.A. of Sociocultural Analysis (UCM). Throughout the years, our group’s research development has also opened the way for varying promotions for its members. Some of them have completed their PhDs in its framework (Miranda, 2013; Ibáñez, 2014; Ortega, 2014; Gregori, 2015; Ruiz Marcos, 2015) and some have gained seniority and are now leading research projects and tutoring PhDs themselves. New members have joined the team as well, and their presence has contributed a revitalizing and renewing effect to the group, allowing for its expansion and maturation.

To conclude, the Science Technology and Gender research team of Madrid has contributed to the development and recognition of STS/STG Studies within the Spanish context, working from a perspective of committed articulation between research, activism and teaching.

REFERENCES

- Akrich, Madeleine (2010). From communities of practice to epistemic communities: health mobilizations on the internet. *Sociological Research Online*, 15(2): 10.
- Akrich, Madeleine; O'Donovan, Orla; Rabeharisoa, Volona (2015). The entanglement of scientific and political claims: towards a new form of patients' activism. In P. Wehling; W. Viehöver y S. Koenen (ed.), *The Public Shaping of Medical Research*. London: Routledge.
- Bergmann, Sven (2014). La genética es como la masa de la pizza. El matching y la clasificación del fenotipo como práctica y decisión cultural en las clínicas de reproducción asistida. In Pérez-Sedeño, Eulalia; Ortega, Esther (eds.). *Cartografías del cuerpo: biopolíticas de la ciencia y la tecnología* (307-352). Madrid, Cátedra.
- Callon, Michel; Rabeharisoa, Volona (2003). Research "in the wild" and the shaping of new social identities. *Technology in Society*, 25: 193-204.
- Epstein, Steven (1996). *Impure Science: AIDS, Activism, and the Politics of Knowledge*. Berkeley: University of California Press.
- Esteban, M. Luz (2011). *Crítica al pensamiento amoroso*. Barcelona: Bellaterra.
- García-Daude, S. (2014). La regulación tecnológica del dualismo sexual y el diseño de cuerpos normativos. In Pérez-Sedeño, Eulalia; Ortega, Esther (eds.). *Cartografías del cuerpo: biopolíticas de la ciencia y la tecnología* (469-520). Madrid: Cátedra.
- García-Daude, S.; Romero-Bachiller, Carmen (2012). Los desplazamientos políticos de las categorías médicas: actores, discursos y relaciones en la controversia "alteraciones del desarrollo sexual" versus "Intersexualidad". In Pérez-Sedeño, Eulalia; Ibáñez, Rebeca (eds.). *Cuerpos y diferencias* (213- 240). Madrid, Plaza y Valdés.
- García-Daude, S.; Romero-Bachiller, Carmen; Ortega, Esther (2007). Cossos in-submissos i mutilació genital: La regulació tecno-mèdica dels cossos sexuals. In Armengol, Josep M. (ed.). *Masculinitats per al segle XXI* (35-45). Barcelona: CEDIC.
- García-Daude, S.; Gregori, Nuria; Hurtado, Inmaculada (2015). Usos de lo *psicosocial* en la investigación y tratamiento de las intersexualidades/DSD. *Universitas psychologica*, 14(5): 1649-1666.
- González, María (2014). Las caras ocultas de la anorexia: diferencias relacionales de lo bello, lo bueno y lo blanco. In Pérez-Sedeño, Eulalia; Ortega, Esther (eds.). *Cartografías del cuerpo: biopolíticas de la ciencia y la tecnología* (133-191). Madrid: Cátedra.
- González, Marta. I.; Pérez-Sedeño, Eulalia (2002). Ciencia, tecnología y género. *Revista Iberoamericana de Ciencia, Tecnología, sociedad e innovación*, 2. Disponible en <http://www.oei.es/historico/revistactsi/numero2/varios2.htm>
- Gregori, Nuria (2006). Los cuerpos ficticios de la biomedicina. El proceso de construcción del género en los protocolos médicos de asignación de sexo en bebés intersexuales. *AIBR. Revista de Antropología Iberoamericana*, 1(1). Disponible en: <http://www.redalyc.org/html/623/62310108/>
- Gregori, Nuria (2014). "Llegar a ser" mujer/hombre desde un diagnóstico de intersexualidad o ADS. In Pérez-Sedeño, Eulalia; Ortega, Esther (eds.). *Cartografías del cuerpo: biopolíticas de la ciencia y la tecnología* (423-468). Madrid: Cátedra.
- Gregori, Nuria (2015). Encuentros y des-encuentros en torno a las intersexualidades/DSD: narrativas, procesos y emergencias. Tesis doctoral, Universidad de Valencia.
- Hurtado, Inmaculada (2017). Asociaciones y disociaciones: agentes, discursos y controversias en torno a la hiperactividad infantil. *Salud Colectiva*, 13, 321-335.
- Ibáñez, Rebeca (2014). *Bad to eat? Empirical explorations of fat*. Tesis doctoral, Universidad de Salamanca.
- Ibáñez, Rebeca; Santoro, Pablo (2012). Elecciones inciertas en tiempos inciertos: «elección informada» en el almacenamiento de células embrionarias de cordón umbilical y los alimentos funcionales. In Pérez-Sedeño, Eulalia; Ibáñez, Rebeca (eds.). *Cuerpos y diferencias* (179-193). Madrid: Plaza y Valdés.

- Miranda, M^a José (2013). *Fenomenología de las agencialidades materiales en la investigación con células troncales*. Tesis doctoral, Universidad de Santiago de Compostela.
- Miranda, M^a José (2014). Medicina regenerativa y terapia celular: turismos, patentes y feminismos. In Pérez-Sedeño, Eulalia; Ortega, Esther (eds.). *Cartografías del cuerpo: biopolíticas de la ciencia y la tecnología* (353-389). Madrid: Cátedra.
- Mol, Annemarie (2002). *The Body Multiple. Ontology in Medical Practice*. Durham: Duke University Press.
- Ortega, Esther (2014). *La cuestión del sexo/género en medicina: tecnologías de reasignación de sexo y valores de género en España*. Tesis doctoral, Universidad de Santiago de Compostela.
- Ortega, Esther; Romero-Bachiller, Carmen; Ibáñez, Rebeca (2014). Discurso activista y estatus médico de lo trans: hacia una reconfiguración de cuidados y diagnósticos. In Pérez Sedeño, Eulalia; Ortega, Esther (eds.). *Cartografías del cuerpo: biopolíticas de la ciencia y la tecnología* (521-572). Madrid: Cátedra.
- Ortega, Esther; García-Dauder, S.; Gregori, Nuria; Pérez-Sedeño, Eulalia (2018). Practices and knowledge: philosophy of biomedicine, governance and citizen participation. In Belén Laspra; José A. López Cerezo (ed.), *Spanish Philosophy of Technology – Contemporary Work from the Spanish Speaking Community*. Springe.
- Pérez-Sedeño, Eulalia (2004). Sociedad, cultura y tecnologías reproductivas. In *Actas del IV Congreso de la Sociedad de Lógica, Metodología y Filosofía de la Ciencia en España* (pp. 438-441). Valladolid: Universidad de Valladolid.
- Pérez-Sedeño, Eulalia (2012). Ciencias y tecnologías del cuerpo: la práctica de la tecnología de los implantes mamarios. In Pérez-Sedeño, Eulalia; Ibáñez, Rebeca (eds.). *Cuerpos y diferencias* (131-152). Madrid: Plaza y Valdés.
- Pérez-Sedeño, Eulalia (2014). Feminismo, ética y cirugía estética. In Pérez-Sedeño, Eulalia; Ortega, Esther (eds.). *Cartografías del cuerpo: biopolíticas de la ciencia y la tecnología* (91-132). Madrid: Cátedra.
- Pérez-Sedeño, Eulalia; Ibáñez, Rebeca (eds.) (2012). *Cuerpos y Diferencias*. Madrid: Plaza y Valdés.
- Pérez-Sedeño, Eulalia; Ortega, Esther (eds.) (2014). *Cartografías del cuerpo: biopolíticas de la ciencia y la tecnología*. Madrid: Cátedra.
- Pérez-Sedeño, Eulalia; Sánchez, Ana (2014). Asimetrías y olvidos en las tecnologías de reproducción asistida. In Pérez-Sedeño, Eulalia; Ortega, Esther (eds.). *Cartografías del cuerpo: biopolíticas de la ciencia y la tecnología* (195-244). Madrid: Cátedra.
- Romero-Bachiller, Carmen; García-Dauder, S. (2006). Epistemologías feministas y democracia radical. In Eulalia Pérez-Sedeño (ed.), *Ciencia, tecnología y género en Iberoamérica* (263-271). Madrid: CSIC.
- Ruby, Jay (1991). Speaking For, Speaking About, Speaking With, or Speaking Alongside- An Anthropological and Documentary Dilemma. *Visual Anthropology Review*. 7(2), 50-67.
- Ruiz-Marcos, Lorena (2015). *Cuando la memoria pasa por la piel. Escenarios del cuidado en la enfermedad de Alzheimer*. Tesis doctoral, Universidad Complutense de Madrid.
- Ruiz-Marcos, Lorena; Romero-Bachiller, Carmen (2010). Embriones, no nacidos y otras especies. una coreografía de los límites de la vida humana. *Athenea Digital. Revista de pensamiento e investigación social*, (19), 29-50.
- Sánchez, Ana (2004). La investigación en células germinales embrionarias. In *Actas del IV Congreso de la Sociedad de Lógica, Metodología y Filosofía de la Ciencia en España* (pp. 442-446). Valladolid: Universidad de Valladolid.
- Santoro, Pablo (2009). From (public?) waste to (private?) value. The regulation of private cord blood banking in Spain. *Science Studies*, 22(1), 3-24.

Santoro, Pablo y Romero-Bachiller, Carmen (2017). Thinking (the bioeconomies) through care. Patients' engagement with the bioeconomies of parenting. In V. Pavone y J. Goven (ed.), *Bioeconomies: Life, Technology and Capital in the 21st century*. London: Palgrave Macmillan.

Tuana, Nancy (2006). The speculum of ignorance: The women's health movement and epistemologies of ignorance. *Hypatia*, 21(3): 1-19.

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EPISTEMIC PLURALIZATION AND HEALTH ACTIVIST GROUPS

Carmen Romero-Bachiller, S. García-Dauder, Pablo Santoro

IN THIS PAPER WE PRESENT SOME OF THE MAIN IDEAS AND CONCLUSIONS OF OUR LAST TWO RESEARCH PROJECTS, WHICH HAVE ANALYSED IN DEPTH SEVERAL CASE STUDIES AROUND THE INCREASING IMPLICATION OF HEALTH ACTIVIST GROUPS IN THE PRODUCTION OF BIOMEDICAL KNOWLEDGE. USING SOME EXAMPLES FROM OUR OWN RESEARCH, WE ARGUE THAT THE INCORPORATION OF EXPERIENTIAL AND LAY KNOWLEDGES OF PATIENTS IS TRANSFORMING BIOMEDICAL SCIENCES IN DIFFERENT WAYS, PRODUCING WHAT WE TERM “EPISTEMIC PLURALIZATION”.

We are currently developing a research cluster focused on health activism and public participation, particularly on forms of generating knowledge and care practices from a feminist intersectional perspective. This work covers our previous project, *Visions and Versions of Medical Biotechnologies* (2012-2016), and the current one, *Feminist Epistemologies and Health Activisms* (2017-2019), both funded by the Spanish Public R+D Plan. Whereas the first aimed to map out networks and the circulation of knowledge among activist groups, the second one intends to emphasize how feminist knowledges and epistemologies transform biomedical practices. The current project has a more participatory approach both to promote forms of intervention and communication with health professionals and to walk side-by-side with collectives to generate co-operative synergies.

In the different activities and publications related to *Visions and Versions of Medical Biotechnologies*, we analysed the increasing importance and diversity of forms of social mobilisation around health issues by focusing on its epistemic implications: how do they transform the knowledge production and care practices in health and biomedicine? We faced that question by focusing on several case studies, primarily with trans and intersex activism in Spain, but also with other examples of how patients are increasingly intervening in the production of biomedical knowledge. In our research, we have also identified how traditional forms of scientific communication -top-down, from “experts” to “lay people”- are currently being reconfigured, through a new reappraisal of experiential knowledges which generate “hybrid” forms of knowledge that bring together personal experiences, activism and biomedical knowledge (Wehling, Viehöver and Koenen, 2015). It is in this sense that we speak of “epistemic pluralization”: as different actors and voices gain legitimacy as epistemic agents, the distinction of “expert vs. lay knowledge” blurs somewhat, or becomes more complex. Sometimes, indeed, forms of health activism become epistemic correctives identifying undone science (Hess, 2009).

HYBRID LAY-EXPERT KNOWLEDGES AND ACTIVIST GROUPS

As its very name implies, the figure of the patient was traditionally constructed in modern medicine as a passive epistemic element. But patients are increasingly becoming actors in the production of biomedical knowledge. Within the social sciences two main analytical frameworks have derived from this idea: *lay knowledge* and *lay expertise*. *Lay knowledge* (Caron-Flinterman, Broerse and Bunders, 2005; Prior, 2003) has been used to refer to experiences, perspectives or meanings patients offer about their own illness. It also refers to their knowledge of their own body, especially the kind of practical, caring knowledge they have. Finally,

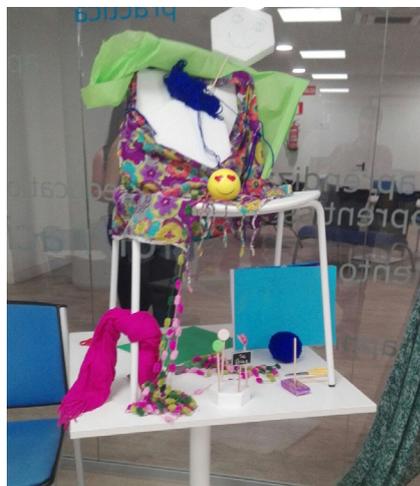
it makes reference to the knowledge specifically generated by associations and support groups, as they share their experiences as “communities of practice” or as “experts in the experience” (Akrich, 2010; Rabeharisoa, 2008). *Lay expertise*, on the other hand, refers to processes of expertification of patients, certain individuals or groups that, in the course of their condition or illness, seek information on causes, treatment, etc. becoming, thus, a specialist, one that can “legitimately speak[ing] in the language of medical science” (Epstein, 1996: 9).

In the case studies developed by our group, we have come across both types of knowledge. *Experiential* knowledge becomes part of care and self-care. For instance, the knowledges that caregivers for people with Alzheimer’s have -about the previous life of the cared person, but also about the current person’s need and tastes- function collectively as forms of sustaining the person living with Alzheimer’s (Ruiz, 2015). Another example are the oral knowledges that are passed on from mothers to daughters, between female friends or through offline or online recent mother self-support groups to respond to breastfeeding issues such as mastitis treatments (Santoro and Romero-Bachiller, 2017). But experiential knowledge also becomes part of mutual self-help processes in activist groups: for example, the stories that parents of trans minors and minors with an intersex condition share about how to communicate with their children in a positive manner about stigmatised or taboo issues. We have also analysed how online forums, blogs, social networks and collective webpages, and even mobile phone group chats, are recurring sites for sharing doubts and knowledges. These sites have contributed to the recognition of such knowledges, as some have provided material for support guides for parents, giving way to not only a medical, but instead a psychosocial turn in the treatment and care of these conditions (García-Dauder, Gregori and Hurtado, 2015).

Also, very often a process of *expertification* of patients and relatives occurs. Informational resources on association websites are a clear example of this, as they offer accessible and understandable information, adjusted to different levels of knowledge about the condition. Expertise becomes evident as well in conferences or association meetings where medical professionals are invited: questions from the public -made up of association members or relatives- show profound insight, sometimes even discussing recently published scientific articles by specialised professionals. Thus, many association members become *expert patients*, especially when they are affected by less frequent pathologies, rare diseases or stigmatised conditions. In the case of both intersex and trans individuals, sometimes the medical community itself will invite them to their professional meetings -yet with varying degrees of recognition and types of participation, from experiential testimony to expert knowledge- thereby recognizing the need to learn *from* and *with* them. Some of those “expert patients” even participate in scientific journals in collective authorship articles or as co-authors with medical professionals. In some cases, health activists and expert patients have even become instructors for medical professionals on psychosocial and gender issues -as has been the case with trans and intersex activists (Ortega et al., 2018). In some other cases, this has facilitated an inversion of the subject-object order of knowledge relationships: the very “objects of knowledge” -i.e. trans and intersex collectives or activists- have become real “experts” on the “subjects of knowledge” -doctors, scientists (García-Dauder and Romero-Bachiller, 2012). These “experts on experts” are groups with a deep understanding of the scientific literature, and they critically discuss and analyse the practices of the professionals treating them, sharing all this information with other people. Sometimes they even “experiment” with their own bodies, by regulating dosages or favouring certain prescriptions over others, for example, as in the case of male trans activists who reduce their testosterone dosage or advocate for the re-incorporation of Reandron® 1000 ml -an injectable prescription dosage of testosterone- to the list of drugs that are publicly funded in Spain (Ortega et al., 2018).

A concrete experience of committed articulation and production of hybrid knowledge we recently developed was the organization of a workshop to train psychotherapists to work with intersex people. The workshop took place in September 2017 and was organised along with a Spanish congenital adrenal hyperplasia association we have been working with for years. The training was given by two team researchers along with an adult with an intersex condition, and two mothers with girls with another condition and members of the association. The training aimed to give the participants an understanding of the specific characteristics and psychological needs of living with an intersex condition. Afterwards we participated with the trained psychotherapists in the [First Psychosocial Meeting of CAH -Congenital Adrenal Hyperplasia-](#) by organising three workshops for girls, adults and mothers and fathers that addressed issues such as needs, emotions and communication. Boundaries between expert and experiential knowledge, and the premise that knowledge circulation is unidirectional and top-bottom, were both heavily questioned through these events.

Photographs taken by a team member of First Psychosocial Meeting of CAH, September 30th, 2017. Fig. 1 (top): final moment of the workshop. Fig. 2 (left) and Fig. 3 (right): "Sculptures of the World of Hyperplasia"



Therefore, and as Wehling, Viehöver and Koenen (2015) have pointed out, we are increasingly confronted with *hybrid* forms of knowledge: scientific/biomedical knowledge is transformed and adapted to a patient's own experience, a process which is both individual and collectivized through "communities of practice" (Akrich, 2010). In the collective learning process found in patient associations, shared advice and testimonies are inseparable from scientific knowledge -even in the most critically active collectives. In a similar fashion, the dissemination of accessible biomedical information to patients is increasingly impregnated with experiential knowledge -stories, testimonies and accounts from other patients. These are ultimately examples where experiential and academic knowledge work *together*, creating epistemic pluralised networks and developing new understandings of these conditions.

A larger porosity between scientific and “anti-scientific” knowledge can be found in some of our other research projects. In the context of childbirth, upbringing and breastfeeding, apart from the fact that there are different professional conflicts over unqualified practice -gynecologists, midwives, doulas- it is not easy to differentiate between medicalised knowledge and other “alternative”, “traditional” or “experience-based” knowledges. In focus groups of inquiry with recent mothers that we carried out in 2015, the mothers’ discourses showed there was not a unequivocal opposition between medically legitimised knowledge and “alternative” options. Mothers were involved in different forms of what we term *activation of care* with a multiple, juxtaposed and complex use of medical recommendations, alternative strategies, and experiences offered by friends, family, mobile phone group chats of recent mothers, or members of internet forums (Santoro and Romero-Bachiller, 2017).

Yet a hybridisation of knowledge is also produced on the “medical” side, as experiential knowledge is increasingly incorporated into scientific literature. The proliferation of qualitative methods in health research, for instance, gives renewed value to experiential narratives as evidence. Medical training given by patients is not an oddity, nor is their participation in medical conferences. Patients are not only listened to: sometimes their knowledge has been incorporated as an epistemic corrective, transforming medical practices, and helping to develop “undone science” (Hess, 2009). In the case of intersex activism, this has given way to a genuine paradigm shift, moving from a strictly biomedical paradigm to a psychosocial and human rights one, which has opened up bioethical and legal questions on medical practices (García-Dauser, Gregori and Hurtado, 2015).

On the other hand, there are also entrepreneurial actors turning their attention to the “experiential knowledge” of patients and family. Web platforms open social networks where patients and relatives can “share” their experience of “living with a condition” -such as the website *Personas que [People that]*. This altruistically shared information is formalised, quantified and organized by the companies managing these sites, and is then purchased by pharmaceutical companies and other bio-industries. This process introduces new agents, and the need to analyse the relationship between associations and these bioeconomic organizations (Lupton, 2013): patient experiential knowledge becomes here a commodifiable product in the bioeconomy (Pavone and Goven, 2017).

Finally, most of these knowledges are inseparable from care practices. Embodied, materialised and moving through the body, care practices are found in a concrete ensemble of relational practices: a “know-how”. For example, knowledges built, shared and mobilised by caregivers for Alzheimer’s patients become *practices*: practices of recognition, memory and care. Yet, from these very practices, hybrid knowledges also emerge. Knowledges that may help to provide better care (Ruiz Marcos, 2015).

FEMINIST HEALTH ACTIVISM AS EPISTEMIC CORRECTIVE: ACTIVISM-BASED EVIDENCE

A type of activity in activist health groups which we would like to consider in certain detail is the production of knowledge that questions medical science and dominant paradigms -their conceptualisation of etiology, prevention, diagnosis, treatments. This was specifically looked at in the project *Visions and Versions of Medical Biotechnologies*, where we focused on *opponent groups* (Callon and Rabeharisoa, 2003), such as trans activist and some intersex collectives that aim to depathologize their conditions, generating epistemic “correctives” to dominant research and pressing science to act with greater social responsibility (Wehling, Viehöver and Koenen, 2015).

The role of this trans and intersex activism is especially relevant in promoting shifts in paradigms and in improving scientific practice. Yet, we are not talking about “evidence based activism” (Akrich, O’Donovan and Rabeharisoa, 2015), that is, those “hybrid” forms of biomedical/experiential knowledge from which

activists defend the “evidence” of their demands. Rather, what we see here is “activism based evidence”: that is, a problematization of the very evidence itself and, with it, of the very biomedical paradigm -especially when the main objective is to depathologize certain conditions.

We have also analysed the knowledge generated in the *International Network for Trans Depathologization* -a collective that emerged in the context of Spain which later, through different mutations, become internationalised. We have specifically focused on their production of epistemic correctives, and mostly on their critiques of the DSM-5 and CIE-10, where transexuality is still included in the catalogue of mental illnesses -although in the DSM-5 the term “disorder” has been eliminated. This critical task is complemented as well by concrete contributions, in the form of assistance protocols and alternative support procedures, such as the [Best Practices Guide to Trans Health Care in the National Health System](#) (2010) (Ortega, Romero-Bachiller and Ibáñez, 2014). A parallel process is occurring in the case of intersex organizing, where pressure from activists and support groups is causing not only a re-evaluation of the standards of care -to more patient centered ones that are based on informed consent- but also a shift to a psychosocial and human rights paradigm that is breaking down the exclusively biomedical paradigm that existed previously, which was more centered around surgeries and hormonal treatment for bodily “normalization” (García-Dauser, Gregori and Hurtado, 2015). Therefore, associations exert a mediating role between multidisciplinary approaches -biological, psychological and social ones- by pressuring science to act with greater social responsibility and by generating not only biomedical knowledges and practices, but also ethical and legal ones (Wehling, Viehöver and Koenen, 2015).

In our new project, *Feminist Epistemologies and Health Activisms*, which started in January 2017, we continue inquiring into this “scientific evidence” that emerges from health activism, by investigating recent cases where feminist social movements and collectives have been transforming practices and knowledges, thus contributing to more inclusive science (Epstein, 1996) and stronger objectivity (Harding, 2015). A new and interesting line of action has been seeking to recover the “lost history” of how the Women’s Health Movement -although never self-identifying itself under such name in Spain- and the LGBT movement in the 1970’s contributed to the improvement of knowledge on women’s health and bodies and on sexual diversity -thus, favouring the depenalisation of contraception (1978), homosexuality (1978), and abortion (1981) in Spanish society.

New researchers and new case studies have been incorporated into this project: the transfer of reproductive capacity through ova donation, human breast milk donation, participation in clinical trials and some other forms of what Cooper and Waldby (2015) have coined as “biolabour”. All these cases bring to the fore new questions, as they erode clear lines of demarcation between exploitative and depriving forms of participation in bioeconomies and empowering forms of participation in health associations (Santoro and Romero-Bachiller, 2017). These cases also move away from individuals acting in the bioeconomy through isolated decision-making and from empowered associations participating collectively in the production of health knowledge, to more informal and diffuse, yet also collective, spaces of interaction, knowledge production and participation. Spaces created by and generative of affects, bonds and reciprocity. Concrete attention to details in these cases becomes essential, as we find more entangled realities this way: sometimes forms of solidarity, belonging and obligation become strengthened by care bonds, some of which become articulated beyond traditional kin lines. Caring becomes enmeshed in chains of exchange which cannot be detached from bioeconomical interest, constructions of altruism, and emerging personal bonds. Affect, interest and obligation are all entangled in forms of “activating care” (Santoro and Romero-Bachiller, 2017), as we are illustrating in our current research on ova donation to fertility clinics (Lafuente, 2017) and on human breast milk donation (Romero-Bachiller and Santoro, in press). New questions are urgently emerging

here about interactions of everyday life and the overflowing of strict definitions and clear cut perspectives, and they are being addressed by these cases.

They can all be considered examples of what Nancy Tuana (2006) identified as the move away from “epistemologies of ignorance” to “epistemologies of resistance”, stressing not only the role that health activism can play in making areas of ignorance visible, but also how it can produce paradigm shifts or “hidden innovations”. With this research we aim to reevaluate a type of knowledges derived from embodied collective relational experience to open up to informal forms of sociality and solidarity as well as to the dense and complex bonds and relationships they provide.

REFERENCES

- Akrich, Madeleine (2010). From communities of practice to epistemic communities: health mobilizations on the internet. *Sociological Research Online*, 15(2): 10.
- Akrich, Madeleine; O'Donovan, Orla; Rabeharisoa, Volona (2015). [The entanglement of scientific and political claims: towards a new form of patients' activism](#). In P. Wehling; W. Viehöver; S. Koenen (eds.), *The Public Shaping of Medical Research*. London: Routledge.
- Barbot, Janine (2006). How to build an “active” patient? The work of AIDS associations in France. *Social science & medicine*, 62(3): 538-551.
- Brown, Phil (ed.) (2008). *Perspectives in Medical Sociology*. Long Grove: Waveland Press.
- Brown, P.; Zavestoski, S.; McCormick, S.; Mayer, B.; Morello-Frosch, R.; Gasior Altman, R. (2004). Embodied health movements: new approaches to social movements in health. *Sociology of Health & Illness*, 26(1): 50–80.
- Callon, Michel; Rabeharisoa, Volona (2003). [Research “in the wild” and the shaping of new social identities](#). *Technology in Society*, 25: 193-204.
- Caron-Flinterman, J. Francisca; Broerse, Jacqueline; Bunders, Joske (2005). The experiential knowledge of patients: a new resource for biomedical research? *Social Science & Medicine*, 60(11): 2575-2584.
- Cooper, Melinda; Waldby, Catherine (2014). *Clinical Labor: Tissue Donors and Research Subjects in the Global Bioeconomy*. London: Duke UP.
- Epstein, Steven (1996). *Impure Science. AIDS, Activism, and the Politics of Knowledge*. Berkeley: University of California Press.
- García-Dauder, S.; Romero-Bachiller, Carmen (2012). Los desplazamientos políticos de las categorías médicas. In Pérez Sedeño, Eulalia; Ibáñez, Rebeca (eds.). *Cuerpos y diferencias* (213- 240). Madrid: Plaza y Valdes.
- García-Dauder, S.; Gregori, Nuria; Hurtado, Inmaculada (2015). Usos de lo psicosocial en la investigación y tratamiento de las intersexualidades/DSD. *Universitas psychologica*, 14(5): 1649-1666.
- Harding, Sandra (2015). *Objectivity and diversity: Another logic of scientific research*. Chicago: University of Chicago Press.
- Hess, David (2009). The potentials and limitations of civil society research: Getting undone science done. *Sociological Inquiry*, 79(3): 306-327.
- Lafuente, Sara (2017). Egg Donation in the Making: Gender, Selection and (In)Visibilities in the Spanish Bioeconomy of Reproduction. In V. Pavone; J. Goven (eds.), *Bioeconomies: Life, Technology and Capital in the 21st century*. London: Palgrave Macmillan.
- Lupton, Deborah (2013). The digitally engaged patient: Self-monitoring and self-care in the digital health era. *Social Theory & Health*, 11: 256–270.
- Ortega, Esther; Romero, Carmen; Ibáñez, Rebeca (2014). Discurso activista y estatus médico de lo trans: hacia una reconfiguración de cuidados y diagnósticos. In Pérez Sedeño, Eulalia; Ortega, Esther (eds.). *Cartografías del cuerpo: biopolíticas de la ciencia y la tecnología* (521-572). Madrid: Cátedra.

Ortega, Esther; García-Dauder, S.; Gregori, Nuria; Pérez-Sedeño, Eulalia (2018). Practices and knowledge: philosophy of biomedicine, governance and citizen participation. In Belén Laspra; José A. López Cerezo (ed.), *Spanish Philosophy of Technology – Contemporary Work from the Spanish Speaking Community*. Springer.

Pavone, Vincenzo; Goven, Jonna (ed.) (2017). *Bioeconomies. Life, Technology, and Capital in the 21st Century*. London: Palgrave MacMillan.

Prior, Lindsay (2003). Belief, knowledge and expertise: the emergence of the lay expert in medical sociology. *Sociology of Health & Illness*, 25(3): 41-57.

Rabeharisoa, Volona (2008). Experience, knowledge and empowerment: the increasing role of patient organizations in staging, weighting and circulating experience and knowledge. In M. Akrich; J. Nunes; F. Paterson; V. Rabeharisoa (eds.), *The Dynamics of Patient Organizations in Europe*. Paris: Presses de l'École de Mine.

Romero-Bachiller, Carmen, Santoro, Pablo (in press). Virtuous and Wicked Bacteria at Dance: Hybrid Zones, Boundary Work and Microbiota in Human Breast Milk Banking. *Tecnoscienza*.

Ruiz-Marcos, Lorena (2015). *Cuando la memoria pasa por la piel. Escenarios del cuidado en la enfermedad de Alzheimer*. Tesis doctoral no publicada. Departamento de Sociología V, Universidad Complutense de Madrid.

Santoro, Pablo; Romero-Bachiller, Carmen (2017). Thinking (the bioeconomies) through care. Patients' engagement with the bioeconomies of parenting. In V. Pavone; J. Goven (eds.), *Bioeconomies: Life, Technology and Capital in the 21st century*. London: Palgrave Macmillan.

Tuana, Nancy (2006). The speculum of ignorance: The women's health movement and epistemologies of ignorance. *Hypatia*, 21(3): 1-19.

Wehling, Peter; Viehöver, Willy; Koenen, Sophia (eds.) (2015). *The Public Shaping of Medical Research: Patient Associations, Health Movements and Biomedicine*. London: Routledge.



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CHERISH, NOT PERISH



Science as Culture

Les Levidow

Our culture is a scientific one, defining what is natural and what is rational. Its values can be seen in what are sought out as facts and made as artefacts, what are designed as processes and products, and what are forged as weapons and filmed as wonders. In our daily experience, power is exercised through expertise, e.g. in science, technology and medicine. Science as Culture explores how all these shape the values which contend for influence over the wider society. The journal encompasses people's experiences at various sites – the workplace, the cinema, the computer, the hospital, the home and the academy. The articles are readable, attractive, lively, often humorous, and always jargon-free. SaC aims to be read at leisure, and to be a pleasure.

So reads the mission statement of the journal since its foundation in 1987. The focus has been publicly important topics, especially ongoing controversies or potential ones. Such topics become the rationale for engaging with concepts from STS, cultural studies and wider political debates. These linkages have made the journal attractive to a broad readership across and beyond academic disciplines.

From Critical Theory to cultural studies and STS

SaC was the successor of the Radical Science Journal (RSJ), which had emerged from 1970s critical science movements. This flourished under the broad umbrella of the British Society for Social Responsibility in Science, which published the magazine Science for People. As its activists argued, technical fixes were defining societal problems in ways that strengthen elite agendas for class exploitation, gender oppression and environmental degradation, while technicising and thus depoliticising such issues (Bell, 2013; Werskey, 2007; see <http://www.bssrs.org/home>).

Contributing theoretical perspectives to those strategic debates, the Radical Science Journal drew on concepts from counter-cultural, feminist, environmentalist and alternative health movements. From Critical Theory of the Frankfurt School tradition, the key concepts reification and fetishism were extended to technique and expert knowledge. As already noted by historians, basic scientific concepts have always depended on old or new metaphors; RSJ analysed how these naturalise specific values as properties of

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facts or artefacts. The critique drew on Marx' insight, 'This fetishism of commodities has its origin in the peculiar social character of the labour that produced them...' By analogy, scientific facts likewise were shaped by social relations of scientific labour yet were fetishized as products of Nature (Young, 1977).

Members participated in the Labour Process Group within the Conference of Socialist Economists, informing analyses of science and technology as a labour process. 'Capitalist science' resulted from a labour process constituted by capitalist social relations, e.g. a division of labour, professional hierarchy, proprietary knowledge, etc. (RSJ Collective, 1981; Werskey, 2007: 439). Together these concepts highlighted the implicit politics in elite agendas, while linking diverse cases around a common framework. Labour process perspectives were further elaborated in a two-volume collection (Levidow and Young, 1981 and 1985).

The Editorial Collective had close links with social movements and political campaigns, which generated topics for RSJ's monthly series of public events. Members included academics (in the Sociology, Philosophy and History of Science), medics, science teachers, psychotherapists and various political activists. The Radical Publications Group provided a wider platform for regular discussions amongst critical journals on science, statistics, history, philosophy, social work, political economy, etc.

RSJ Editorial Collective members also attended an annual international meeting of critical journals. These included Naturkampen (Denmark), Cahiers Galilee (Belgium), Science for the People (US), Kerala Sastra Sahitya Parshad (India) and Contrainformazione (Italy), as well as mass-circulation magazines such as Wechselwirkung (Germany) and Sapere (Italy). These annual discussions helped to sharpen critical perspectives on issues such as chemical disasters, automation, nuclear power, nuclear weapons, techno-torture, new reproductive technologies, etc. (Levidow and Vitale, 1981).

RSJ drew on perspectives from early STS, cultural studies and feminist studies. For example, a 1985 special issue analysed ICTs as Compulsive Technology, a title which has even greater relevance today (guest editors: Tony Solomonides and Les Levidow). A 1987 special issue explored how power is gendered and mediated through notions of science, technology and nature (Gender and Expertise, guest editor: Maureen McNeil). Meanwhile cultural studies were analysing how technoscientific developments set agendas for expert authority, social identity and social order. These interdisciplinary synergies provided a basis for the successor journal.

New journal: Science as Culture

For most of the UK's critical journals in the 1970s, an Editorial Collective handled the entire production process including subscriptions and bookshop distribution. From the early 1980s onwards, however, Thatcher's neoliberal Britain was closing down the spaces for such political alternatives and work modes. Critical journals depended heavily on substantial voluntary labour, which was becoming more difficult to sustain. For their public exposure and sales, they depended on bookshop distribution, but fewer journals were being stocked. For these reasons, most of the UK's critical journals turned to commercial publishers, even whilst recognising that these might limit readers' access through copyright restrictions and commercial pricing.

Given those general constraints on critical journals, alongside new opportunities for interdisciplinary exchanges, the Editors decided to replace RSJ with a new journal, Science as Culture (henceforth SaC). In the mid-1980s the Editors had founded a new press, Free Association Books, which now became the SaC publisher, but depended on at least five journal distributors across several continents. These arrangements were soon simplified by switching publisher to Guilford Publications (NY) and then Carfax (UK), which in turn was acquired by Taylor & Francis; its STS journals list helped to raise the profile of SaC.

Why science as culture? As noted in the first issue, our everyday mundane and aesthetic experiences are already mediated by technologies, becoming 'so much part of household furniture that we no longer experience them as technologies'. Although technological applications were sometimes debated as issues of values and power, their design priorities rarely underwent such scrutiny. And scientific knowledge remained largely invulnerable to critique, especially in the wake of science popularisation.

The mass media eagerly cater for a growing market which looks to scientific knowledge for enlightenment, entertainment, diversion.... Thus we have an abundance of science-as-culture, but it is primarily for consumption, much less often for debate about choices of values and priorities. The alternative to science-as-consumption is cultural critique (SaC Editors, 1987).

Hence SaC has analysed 'the production of meanings in scientific culture and in the broader culture as influenced by science' (ibid).

Although now positioning itself as an academic journal, SaC articles always went beyond academic disciplines and issues. Articles analysed power relations, labour processes, cultural meanings, their naturalisation and societal conflicts in diverse forms and sites. SaC presented itself as an STS journal critically analysing technoscience in its many manifestations. Open to diverse disciplinary perspectives, SaC became a crucible for the interdisciplinary exchanges characterising STS.

Going further, the journal has had a transdisciplinary orientation to societal conflicts:

Transdisciplinarity explicitly orients its knowledge production not only around disciplinary problem-definitions but also around other definitions, derived from pressures, 'applications' or from societal stakeholders.... [Yet] different stakeholders may have different views about what the problem at stake actually is... (Maasen et al, 2006: 396).

Starting from such societal conflicts, SaC articles have analysed agendas for reordering society, their stabilisation through expertise, and their destabilisation through resistances including counter-expertise (e.g. Fortun and Cherkasky, 1998). This transdisciplinary perspective has many resonances with critical STS (e.g. Jasanoff, 2004; Jasanoff and Kim, 2015; Kleinman and Moore, 2014; Pellizzoni and Ylönen, 2012).

Beyond research articles and book reviews, SaC has analysed tensions within STS. According to one critic, STS epistemological debates about truth or objectivity obscure contests over power and alternative futures (Hamlin, 2007). Johan Söderberg (2017) contrasts a 'political economy' tendency with a post-structuralist one, while tracing their differences to legacies from 1970s Marxism. SaC welcomes more articles on such tensions, especially why these matter for practice.

For the journal's remit on the wider culture, a recurrent focus has been popular media and exhibitions, particularly how they celebrate technoscience. A 1995 special issue analysed Science on Display (guest editor: Sharon Macdonald). Other essays on exhibitions include Angela Last (2017), 'Making nature, making energy, making humans'. More such contributions are sought.

SaC special issues and Forums

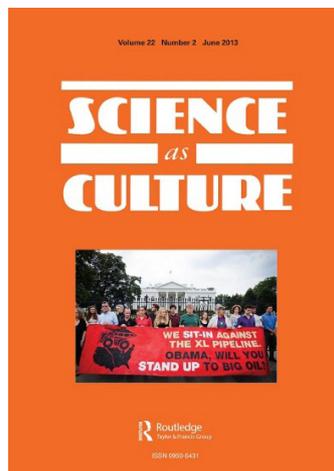
Special issues have generated and juxtaposed diverse perspectives on a topic. Through early discussion with the SaC Editors, the guest editors have sharpened the conceptual approach, drawing on more critical perspectives from STS and beyond. Reviewers of the papers include fellow contributors, whose own papers have benefited as a result.

Amongst the most popular special issues has been ‘Energy Transitions’ (guest Editors: Clark Miller, Alastair Iles & Christopher Jones, 2013). As the guest Introduction argues, ‘the key choices involved in energy transitions are not so much between different fuels but between different forms of social, economic, and political arrangements built in combination with new energy technologies’. Across the various articles, socio-technological systems perspectives linked three questions:

“What does it mean that energy systems are at once relatively hidden from public scrutiny and yet deeply structuring of social and economic arrangements that can stifle alternatives without our realizing it? Who knows about energy systems, what and how do they know, and whose knowledge counts in governing and reshaping energy futures? And what does it mean to implement a just energy transformation that will neither perpetuate the existing negative impacts of energy production and use nor create new ones?” (Miller et al., 2013).

‘Agro-Food Crises’ (guest Editors: Anne Loeber, Maarten Hajer and Les Levidow, 2011) examined the late 20th century agro-food disasters that were experienced as societal crises. Key actors made sense of these crises through specific risk framings that linked social and natural (dis)order in new ways. Contributors took a discourse-analytic approach to those societal conflicts and incipient agendas for institutional change.

To sharpen debate, SaC Editors have introduced topical Special Forums. These bring together articles of under 6k words, many written by non-academics, with a fast review procedure. This format provides a flexible means to scope new topics, to gather multiple critical approaches and to highlight their political relevance.



Energy Transitions (2013)



Agro-Food Crises (2011)

Public unease or antagonism towards some technoscientific developments has been a recurrent topic in SaC. Readers showed great interest in an article by Ian Welsh and Brian Wynne (2013), ‘Science, scientism and imaginaries of publics in the UK: passive objects, incipient threats’. They argued that elite strategy has shifted away from incorporating public unease, instead treating it as politicised threats requiring state control or even suppression. This article became the focus for a Forum on ‘Publics as Threats to Technoscientific Progress’ (2015).

Forums have taken up several other topics. 'Embedding Social Sciences?' (2014) critically analysed policy roles of the Social Sciences and Humanities (SSH). This started from an article questioning whether SSH were being appropriated for dominant policy agendas: 'the call for "embedding SSH", within lines of reasoning already predefined by sciences and engineering, translates a hierarchy and potentially limits SSH in developing its full potential' (Felt, 2014). The Forum on 'Contested Technology from the 1970s to the Present' (2016) reflected on the 1970-80s radical science movements, drawing lessons for today's analogous agendas. 'Techno-Economic Assumptions' (2017) analysed economic assumptions that pervade expert judgements about knowledge, technology design and government policy.

Future special issues will include the following topics: 'Alter-Standardising Clinical Trial's (guest editor: Achim Rosemann), 'Techno-security Cultures' (guest editors: Jutta Weber and Katrin M. Kämpf), 'Urban Techno-Politics' (guest editors: Thaddeus Miller and Rider Foley) and 'Justice and Counter-Expertise' (guest editors: Sharlissa Moore and Logan Williams). This builds on a 1988 special issue, 'Strategising Counter-Expertise' (guest editors: Kim Fortun & Todd Cherkasky).

Trans-Atlantic cover picture for 2016 SaC Forum, 'Contested Technology from the 1970s to the Present'



Future opportunities

SaC is widely available through e-journal systems. Most publishers have shifted their business models from individual subscriptions to thematic 'bundles', e.g. STS and cultural studies, several of which include SaC. Its downloads have been rising every year; some papers of broad interest are available as free downloads.

The journal has two levels of organisation. Everyday operations have been run by four people: the Editor Les Levidow, two Associate Editors in Kean Birch and Uli Beisel, and Book Reviews Editor Martin Savransky (previously David Tyfield). Advisory Panel members play important roles in advising on strategy, publicising the journal and reviewing submissions. Advisory Panel meetings are held regularly at EASST and 4S conferences.

Both the special issue and Forum formats offer opportunities for early-career academics to serve as guest editors. They gain experience in editorial judgements and responsibility, working with the SaC Editors. Several guest editors have joined the SaC Advisory Panel.

The journal invites submissions and proposals for special issues or Forums. These usually begin with a set of potential papers from an academic event, as the basis to formulate an open call for contributions. Proposals should be sent to the Editor, L.Lavidow@open.ac.uk

Les Levidow, Editor, SaC (whose historical memory was aided by Maureen McNeil)

REFERENCES

SaC articles are searchable at <http://www.tandfonline.com/csac>; see also the page listing special issues, <http://explore.tandfonline.com/page/est/csac>

- Bell, A. 2013. Beneath the white coat: the radical science movement, *The Guardian*, 18 July, <https://www.theguardian.com/science/political-science/2013/jul/18/beneath-white-coat-radical-science-movement>
- Felt, U. 2014. Within, across and beyond: reconsidering the role of Social Sciences and Humanities in Europe, *Science as Culture* 23(3): 384-396, <http://tandfonline.com/doi/full/10.1080/09505431.2014.926146>
- Fortun, K. and Cherkasky, T. 1998. Guest Introduction: Strategising counter-expertise, *Science as Culture* 7(2): 141-144.
- Hamlin, C. 2007. STS: Where the Marxist critique of capitalist science goes to die?, *Science as Culture* 16(4): 467-474.
- Jasanoff, S. (ed). 2004. *States of Knowledge: The Co-Production of Science and Social Order*. London/NY: Routledge Taylor & Francis.
- Jasanoff, S. and Kim, S.-H. (eds). 2015. *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power*. Chicago: University of Chicago Press.
- Kleinman, D. and Moore, K. (eds) 2014. *Routledge Handbook of Science, Technology and Society*, <https://www.routledge.com/Routledge-Handbook-of-Science-Technology-and-Society/Kleinman-Moore/p/book/9780415531528>
- Last, A. 2017. Making nature, making energy, making humans: two exhibitions at the Wellcome Trust, *Science as Culture*, <http://tandfonline.com/doi/pdf/10.1080/09505431.2017.1339684>
- Levidow, L. and Vitale, B. 1981. International meeting of radical science journals, *Radical Science Journal* 11: 101-110.
- Levidow, L. and Young, R.M., eds (1981) *Science, Technology and the Labour Process*, vol.1, London: CSE Books.
- Levidow, L. and Young, R.M., eds (1985) *Science, Technology and the Labour Process*, vol.2, London: Free Association Books.
- Maasen, S., Lengwiler, M., Guggenheim, M. 2006. Practices of transdisciplinary research: close(r) encounters of science and society, *Science and Public Policy* 33(6): 394–398, <https://doi.org/10.3152/147154306781778830>
- Miller, C., et al. 2013. The social dimensions of energy transitions, *Science as Culture* 22(2): 135-148, <http://tandfonline.com/doi/full/10.1080/09505431.2013.786989>
- Pellizzoni, L. and Ylönen, M. 2012. *Neoliberalism and Technoscience: Critical Assessments*. Farnham/Burlington, VT: Ashgate.
- RSJ Collective. 1981. Science, technology, medicine and the socialist movement, *Radical Science Journal* 11: 3-70, <http://human-nature.com/rmyoung/papers/pap100.html>
- SaC Editors. 1987. Editorial, *Science as Culture* 1(1): 7-11, <http://tandfonline.com/doi/abs/10.1080/09505438709526176>
- Söderberg, J. 2017. The genealogy of empirical post-structuralist STS, retold in two conjunctures: the legacy of Hegel and Althusser, *Science as Culture* 26(2): 185-208, <http://tandfonline.com/doi/full/10.1080/09505431.2016.1223029>
- Werskey, G. 2007. The Marxist critique of capitalist science: a history in three movements, *Science as Culture* 16(4): 397-461, <http://tandfonline.com/doi/full/10.1080/09505430701706749>
- Young, R.M. 1977. Science is social relations, *Radical Science Journal* 5: 65-129, <http://human-nature.com/rmyoung/papers/sisr.html>

STS EVENTS

THRESHOLD

Joanna Latimer

Threshold is an exciting new adventure in the 28 year history of University of York's [Science & Technology Studies Unit \(SATSU\)](#). In our project of extending SATSU outwards to become an interdisciplinary hub, we will be developing a series of activities and collaborations around a series interlinked themes. Led by [Joanna Latimer](#), [Rolland Munro](#), [Nik Brown](#) and Dave Beer, Threshold is the first of these thematic nodes. It draws upon a range of diverse resources and perspectives and is aimed at exploring the liminal edges of everyday, organisational and social life – and how they are crossed. Threshold is not a project with a pre-defined set of outcomes or a fixed lifespan. Instead we see it as a point of contact between different streams of work and as a center of gravity for cross-disciplinary dialogue.

Thresholds touches on so many dimensions of interest in STS and related fields and concerns. We have a [Threshold website](#) which acts as a focal point for activity and we already have posted material on: those thresholds of entanglement that cut across nature-culture; thresholds of security, insecurity and vulnerability; the borders of statehood, nation and colonialism; thresholds determining the boundaries between ablement and disablement in the politics of the body; thresholds punctured, pierced and troubled. Attracting contributions from scholars and researchers with diverse backgrounds, both nationally and internationally, Threshold is primarily geared toward political, conceptual and creative exchanges. Hence the website has been set up to communicate ideas, events and outputs in public. For example, in the '[news & ideas](#)' section we post updates and news along with reflections, ideas and relevant reviews.





As a part of getting our Threshold project off the ground, we hosted an extremely lively and well-attended pop-up symposium at York on the 22nd of September 2017. Nisha Kapoor's contribution, *Deport, Deprive, Extradite*, focussed on the extradition from the UK to the US of individuals suspected of terrorism-related offences – such cases are taken to delineate the outer dimensions of state power, positioned at the thresholds of what Saskia Sassen refers to as the 'systemic edge' of the security state. These questions of vulnerability, the thresholds between security and insecurity, were taken forward by Joanna Latimer in an entirely contrasting context, where the edgy encounters she reflects on involved rethinking companion species in a rural site in Crete – notably she recounted the mortal consequences of a collision of thresholds, and the politics of being open and vulnerable, and of becoming rendered, including the reassembling that occurs.

Reihaneh Afshari Saleh & Richard Ogden, in *Crossing the Threshold in Iran*, took the conversation forward in their discussion of the domestic threshold and social conventions and rituals of greeting, embracing, kissing, paying compliments, among others. In doing so they show how appreciating the extraordinariness of ordinary interactions leads to a better understanding of the thresholds of daily encounters. This sense of the ordinariness of encounters and crossing was further developed in Helen Wilson's contribution focussing on those moments where convention is ruptured and becomes suspended in a liminal state of irresolution and shock. That sense of shock of a threshold being breached was evident also in Sharon Winfield's contribution on gendered 'taboo' in religious tradition, namely the profound liminalities affecting female priesthood.

Thresholds are created and made passable or impassable by all of us, not just the designated institutional and disciplinary gatekeepers, some of which are human and others techno-institutional. Jocelyn Finniear and Paul White explore gatekeeping and delegation as dimension of the 'management' of maternity leave following childbirth. Thresholds also define legitimating distinctions between the proper and improper within statutory and regulatory regimes, as illustrated by Isabel Fletcher reporting on her Wellcome Trust 'Liminal Spaces Project'. For Laura Wigley thresholds provide a way into thinking about the liminal space occupied by 'disabled students' in the academy and their efforts in navigating entry to 'reasonable adjustments' to the standard university curricula.

In any number of different ways, the question of thresholds indelibly draws into its orbit the problem of the body, embodiment, bodies that do and don't fit. Julia Swallow's contribution focussed on genetic breast cancer testing, where the specific category of 'intermediate risk' illustrates how patients interpret, share and refine this ambiguous categorisation. In a similar way, Nik Brown, explores the way cystic fibrosis patients seek to limit their contact with others, steering clear of infection risks, whilst also obliged to participate in the flux of life, contact, interaction – his paper explores the role of the built environment (the architecture of the clinic) in structuring the co-evolutionary relationships between the biomes of the body and those of the building. Similarly, in the context of bodily borders Nicole Vitellone's paper explores the syringe as a tool for thinking, an attempt to reclaim the everyday experiences of injecting drugs, based in a Needle Exchange clinic. These built infrastructures for accommodating liminality also underpin Catherine Pemble's discussion of 'dementia friendly' environment, neighbourhoods, zones and districts.

Inevitably data has come to support and even supplant the kind of thresholds that were once at the heart of the identity thresholds examined mid-century by the anthropologist Victor Turner. David Hill reported on the invisible labour in van drivers meeting the deadlines incorporated into devices like Edo. More generally David Beer gave an inspiring insight into the power of intermediaries to speak with your own data to illustrate the reach and intensity of data-led thinking, judgment and ordering. The borderlines between the human and the animal also featured. The artist Max Kimber explored the porosity of thresholds between art and anthropology from the perspective of a taxidermist. Bethany Robertson's study looked into the identity of pets in the family home when their 'owners' were away at University. Away for animals but with a focus on students, Ella Taylor-Smith discussed a study set up to explore the threshold between employment and study – you can read her take on this in the form of her poem on the Threshold site.

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MAKE SPACE FOR PLACE

STS & ARCHITECTURE ON PLACE-MAKING

Dara Ivanova

IN OCTOBER 2017, THE CONFERENCE 'BUILDING CARE: INTERSECTIONS OF HEALTH AND ARCHITECTURE' TOOK PLACE AT THE ERASMUS UNIVERSITY ROTTERDAM. THE SYMPOSIUM BROUGHT TOGETHER SCIENTISTS, POLICY MAKERS, ARCHITECTS AND EVEN SOME PATIENTS TO TALK ABOUT HOW PLACES OF CARE AND PLACE-MAKING FOR CARE MATTER. THE PARTICIPANTS TRIED TO CONNECT AND EXCHANGE ON PLACE AS A UNIT OF ANALYSIS IN THINKING ABOUT HEALTHCARE. THEIR DIFFERENT IDEAS ABOUT PLACE-MAKING (BUILDING-MAKING FOR ARCHITECTS; PEOPLE AND BUDGET CENTERED FOR POLICY MAKERS, AND A PROCESS OF MEANING-MAKING FOR THE STS SCHOLARS) MADE FOR RICH INTERDISCIPLINARY DISCUSSIONS ON HOW TO THINK ABOUT AND DO PLACE.

STS AND PLACE

The idea to organize a conference explicitly dealing with places and the making of places originated in what the organizers felt was an incomplete conceptualization of place in STS. Certainly, the underlying importance of place has been there from the beginning, as knowledge production was tied to a particular site: the laboratory. From then on, STS has tended to categorize knowledge, based on the places where it happens (Henke 2000). Tom Gieryn made this relationship explicit when he distinguished between lab and field knowledge (2006) and tied knowledge production to particular truth-spots (2002). There has been STS work done on the importance of particular places as political and techno-cultural assemblages (e.g. Marres 2013 on eco show homes or Farias & Wilkie 2016 on studios), but the relationship between place-making and care has not been explicitly theorized.

How to challenge ourselves in thinking further about place? Looking beyond STS seemed like a good way to start exploring. The conference was conceived as an interdisciplinary, open conversation with policy makers, cultural geographers, historians and, importantly, the experts on place-making: architects.

PLACES: TRANSIENT AND CONCRETE

The morning session was structured around three keynotes and showcased very different approaches to place. Tim Cresswell, a human geographer, broke down place into three ingredients: location, locale and sense of place and, quoting Tuan, referred to place as "a field of care". He then outlined a theory of place, consisting of the overlapping spheres Materialities, Meanings and Practices, which are intersected by vertical and horizontal axes of temporality. This conceptualization becomes more intricate and is too complex to summarize here, but it is important to note that for Cresswell places are not bounded entities. Rather, places are intersections of numerous forces coming together and linking in nodes of relations that are always articulated in particular temporalities. In this understanding of places, they are emergent centers of meaning, transient and unbound.

The architect AnneMarie Eijkelenboom's keynote was conceived with a very different concern: how are places of care built and what can this process teach us about place-making in healthcare? Her talk focused on the way built environments affect health and perception. Place was a concrete object in this keynote – it was a building, a garden, a room. Yet, it was also a process of continuous considerations



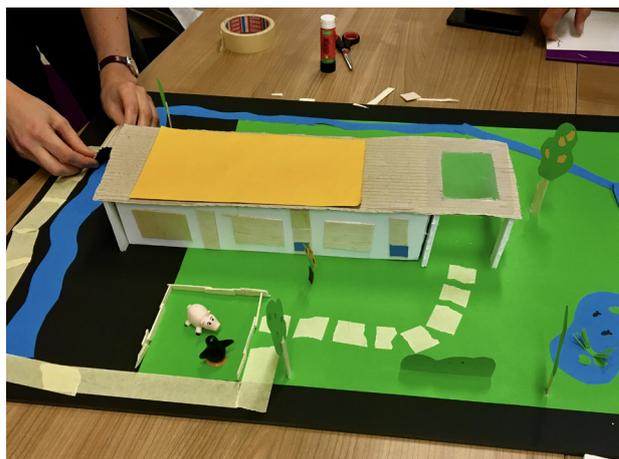
of different materials, physical elements and users. In this talk places were broken down to numerous ingredients and the three overlapping spheres – Materialities, Meanings and Practices – were made visible in the examples of care buildings that AnneMarie discussed.

Fig. 1: Participants in the workshop 'Place-making' work in groups on building care places.

Courtesy of the author.

DESIGNING DEATH AND DYING

The afternoon parallel workshop sessions encouraged participants to think through the different conceptualizations of place, presented in the keynotes. Hands-on cases were the hospice as a place for dying and Maggie's cancer centers as places of (physical and emotional) comfort. Ken Worpole, who had delivered a keynote in the morning on the history of hospices in the U.K., discussed how sense of place frames the experience of dying. The design and build of hospitals is geared toward *cure*. The materialities, practices and meanings of hospitals converge to fight for the preservation of life, often resulting in prolonged suffering for both patient and loved ones. CPR procedures have become so thoroughly embedded in western healthcare practices that it is now routine response to most deaths. The particular environment of hospices is, on the other hand, geared toward care: a dignified way of dying. This insight made an impression on the architects in the room, who started thinking about the ingredients necessary to create the intimacy and calm of places for death, but within hospitals. It is a good question to ask about place-making, as well. Does place-making consist of ingredients that can be pinned down? How can a place's transient quality be captured and scaled up or down? Place-making for care is very different from place-making for cure. Materialities must align with practices and meanings; otherwise places 'don't work'.



PLACE-MAKING IS DOING [TOGETHER]

In one of the afternoon sessions participants were challenged to build places of care in small groups. The groups were purposefully diverse, including architects, doctors, academics, policy makers and patients. Each group was given modeling foam and basic supplies to make a place by focusing on a care process. The idea behind the workshop was to *do* place, as opposed to *talking about* place. Each group had differing and sometimes divergent concerns, but these had to be articulated in very practical terms. The question ‘what is a healing environment’ was understood and answered in different ways. In the plenary discussions that followed, it became clear that place-making is about working with multiplicities, which sometimes fit together and sometimes fall apart. The doing of places – the correct lighting, sound isolation, view toward a garden, privacy, the feeling of comfort, the feeling of home – is even more complex in terms of healthcare. Places of care must be safe, for both patients and professionals, yet they must also be cozy. They must be a physical articulation of a balance between care and cure, between patient autonomy and professionals’ ability to perform their tasks. Beyond materiality, places are also “fields of care” and meaning making, but also of politics and policy. Places are made of people, objects and ideas, couched in particular temporalities. They are planned, designed and built, but are in fact contingent and emerging assemblages.

PLACE AGENDA

The conference was an attempt to set a place agenda in healthcare and STS. Borrowing insights from human geography, we know that places are not empty containers that may be filled with the importance of people and practices, but that

they are co-produced with people and practices, while producing meaning within particular temporalities. Furthermore, we may say that places are always there, acting as a backdrop, while linking practices and objects in nodes of relations.

What does such an insight offer healthcare studies? A place-centered analysis may be particularly useful for understanding governance arrangements and practices. Oldenhof et al. (2016) argue that the governance of healthcare is being done through particular spatial arrangements, which are often viewed as a neutral backdrop to policy making, but must be taken seriously as governance tools. At the intersection of architecture, design and health, place may play an important role in interrogating popular notions, such as evidence-based design (EBD) and healing environments. In STS, work on places as sites of knowledge production and even political ontology has shown that places have the capacity to unpack social complexities (cf Yaneva 2012). Using place as a productive analytic lens will mean developing the relationships between place and knowledge further and tracing the ways places are productive in multiple ways.

This 'place agenda', as the conference participants referred to it, is more of a tentative mapping of the issues and methodologies that may benefit from a place analytical angle, and certainly not a thorough program. Conceiving of places as "fields of care" in multiple may open up spaces for thinking further on governance, politics, ontology and the meaning of care.

BIBLIOGRAPHY

Farias, I & A. Wilkie (2016) *Studio Studies: Operations, Topologies and Displacements* (Routledge: New York)

Gieryn, T.F. (2002) 'Three Truth-spots, *Journal of History of the Behavioral Sciences*' 38 (2): 113-132

(2006) 'City as Truth-spot: Laboratories and Field-Sites in Urban Studies', *Social Studies of Science*, 36 (1): 5-38

Henke, C.R. (2000) 'Making a place for science: The field trial', *Social Studies of Science*, 30 (4): 483-511

Marres, N. (2013) 'Why political ontology must be experimentalized: On eco-show homes as devices of participation', *Social Studies of Science*, 43(3): 417-443

Oldenhof, L., Postma, J. & R. Bal (2015) 'Re-placing Care: governing healthcare through spatial arrangements' in Ferlie, E., Montgomery K. & Reff Pederson A. (eds), *Oxford Handbook of Healthcare Management* (Oxford: Oxford University Press)

Yaneva, A. (2012) *Mapping Controversies in Architecture*. (London: Ashgate)

The conference *Building Care* was organized by the Erasmus School of Health Policy and Management (ESHPM) with the support of the Netherlands Graduate Research School of Science, Technology and Modern Culture (WTMC).

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PROTOTYPING INTERVENTION! - A WORKSHOP AND TWO LETTERS

Laura Zoelzer, Judith Igelsböck

'PROTOTYPING INTERVENTION!' WAS A TWO-DAY WORKSHOP DEVOTED TO A COLLECTIVE EXPLORATION OF INTERVENTION AS A FORM OF RESEARCH. THE WORKSHOP WAS ORGANIZED BY JUDITH IGELSBOECK AND LAURA ZOELZER AS PART OF THE POST/DOC LAB ENGINEERING RESPONSIBILITY OF THE MUNICH CENTER FOR TECHNOLOGY IN SOCIETY (MCTS) AT THE TECHNICAL UNIVERSITY OF MUNICH. RESEARCHERS, DESIGNERS, AND ARTISTS MET TO PROBE AND DISCUSS DIFFERENT TAKES ON INTERVENTION, AND INTERROGATE POTENTIAL RELATIONS BETWEEN INTERVENTION AND INVESTIGATION. BECOME WITNESS OF AN EXCHANGE OF LETTERS BETWEEN THE ORGANIZERS OF THE WORKSHOP TWO MONTHS AFTER IT TOOK PLACE!

Dear J.

_esterday I went back to October 24th - mentally ... for now - to when we met with 30 other people who were curious to explore what exactly Prototyping Intervention! could mean. All just because I found this residue of our workshop at „Import Export“ the venue of the first workshop day.

Today, 2 months later, I am still thinking about those intense two days, realizing, how much they influenced the way I ponder on various kinds of research methods. Well, probably I am most definitely late to the party, considering I only started my 'academic career' in my early 30s.



Fig. 1: Prototyping Intervention! Two months later

But you know how, after ten years of working in theatre and performing arts, I have been thinking and wondering about how those performative skills, once combined with social sciences practices, could become a methodological superpower and therefore something that I would call an Intervention!

How lucky, we invited Friedrich Kirschner, a theatre director and software developer from HfS Ernst Busch, who re-purposes video-game structures and technology to create participatory performances. I still remember how highly discussed his intervention was, when he played rock_paper_scissors with one of the attendees and let everyone bet on the outcome. What happened between all present, was an immediate evaluation process of the degree of discomfort. The urge to not look silly was just as perceptible as the drive to be ahead of the situation. It was so incredibly interesting to observe, not quite as covertly, how the Designers and STS researchers' reacted to his explanations, as he spoke of 'situated drama' as an alternative setting for theatrical storytelling through which people actively negotiate the complexity of contemporary societies and deal with the fabrication of civil agency. For me it was rather special because, there he was, someone from this old habitat I once knew so well, suggesting and proposing practices that left the people from the academic world, I was hoping to become a part of, quite flabbergasted.

It only then occurred to me that my ambitious plan of creating an arts and science hybrid would firstly have to allow the very distinct and different incorporated logics of both of these systems, to tenderly approach each other, respectively observe each other just well enough, to maybe find a way of decoding the opposite operations.

During Friedrich's Keynote, there were several questions concerning the ethicality of methods and various worries about the responsibilities that come with the irritations of artistic interventions. In response he asked: „What would these responsibilities be and do we really have to deal with them?“ - Isn't it the participants own responsibility to lose or halt themselves in the artist's created space of make-believe? And could this, in parts, be applicable to a scientist's laboratory in which she tries to create (virtual) realities through ways of intervening? What could this mean for the researchers identities, referring to them as the main survey instrument. Maybe the scripts of actions could be rewritten, methods could be recombined and traces reassociated. Could we allow ourselves the audacity to lose ourselves in the anarchy of irritations and withstand the urge to stay safe and distant in methods and structures?

At the end of day 2, when we all got together to recollect the past two days, we concluded on some new characters we met along the way of Prototyping Intervention! We crossed paths with the "well-trained ape", the "insider", maybe remained "outsiders", offered ourselves as "smugglers", performed like "parasites", and most likely sounded like "paradoxists". My little performative heart raced during Angus Cameron's talk on 'imaginary economics' - the decade-long project 'Headless' created by Swedish artists goldin + senneby. He performed from two perspectives: as an international spokesperson of the project and as an academic commentator who sees all economics as imaginary. In his Talk, he demonstrated how much the academic world relies on and only accepts realities that have already been validated and are linearly and causally in the right course of action.

Next time instead of booklets let us sew patches that carry some of his catch-phrases. Because I agree: "Paradox is power" and "Chaos is desired". Just remember the quote from "Principia Discordia", the little pamphlet I sent you the other day :).

"Seek the Sacred Chao - therein you will find the foolishness of all ORDER/ DISORDER. They are the same!" (Wilson 1994)

When shall we meet again?

__love L.

Dear L.

_thank you for your letter and for sharing this picture. It instantly sparked nostalgic feelings in me. Just this very week another workshop participant wrote a mail too. Xaroula Kerasidou says that she was still thinking about what she identifies as a sort of "STS awakening" revolving along the lines of an "interventionist turn" or "action-oriented STS". How is this related to an anxiety to be demonstrably useful and impactful, she asks. And how might it be related to a desire to just "do something practical"?

Funnily, this somehow seems to feed into Peggy Phelan's suggestion that "a new social, psychic, and political relationship of making itself" (Phelan,1997:4) can be observed. Going back to the sexual revolution, she suggests that "the making in „making love“ marks an allegiance to nothing more and nothing less than the force of the desire to make something in the present tense." (ibid.) Is it this? Do we wish to make something in the present tense? Does the way we have come to perform STS research not feel alive enough to us?

Back then in the workshop we certainly avoided to start with a tightly pre-defined concept of "intervention" because we wanted to see who actually would feel attached to the call for "prototyping intervention!" As you know, it made me happy to see social scientists, designers, engineers, and artists (and not only 'STS people') responding to the call, and to see a great diversity of methods and approaches being represented. It was a pleasure to have Teun Zuiderent at the workshop and learn how he takes up some of Kurt Lewin's spirit to set aside potential boundaries between knowing and acting, and showing that intervening in practices and developing a scholarly understanding of them are not mutually exclusive. His idea of "prototyping intervention" varies considerably from Denisa Kera's - a "science artisan" who uses the design method of prototyping to perform material media archeology into the origins of our concept of innovation and future. This diversity makes it hard for me to pin down "intervention" as a specific method, as one mode of knowing. Many workshop participants seem to share the idea that an "interventionist turn" means cutting across the dichotomies of representing and intervening, theory and practice, thinking and acting, fact and fiction, basic and applied research, or knowing and experiencing. But I catch myself falling back to these categories. Sometimes I feel that I have to (e.g. when applying for funding). Sometimes it just happens, accidentally on the way.

Fig.2 : Workshop Prototyping Intervention @Import Export in Munich



In the meantime, there is some interesting boundary work underway. In the latest EASST Review, Ignacio Farías proposes to make a differentiation between “invention” and “intervention”. As examples for “inventive engagements in STS”, he names the composition of songs, the programming of bots, the writing of scripts, or the curating of exhibitions. He stresses that these engagements were often misunderstood as science communication exercises or alternative ways of making things public - as ways of intervening in public controversies. I fully agree that this implies “underestimating both, the capacities of the public to engage with standardized forms of knowledge and, most problematically, the role of inventive engagements as a research method.” (Farías 2017) So, Ignacio Farías points out that intervention and invention are not necessarily sharing the same aims. What do you think about this, Laura? Do you think we should have called the workshop “prototyping invention” instead? Certainly, many of the “interventions” presented at the workshop qualify as “inventive engagements” - attempted to bring forth new realities by challenging the boundaries of facts and fiction in speculative and experimental ways rather than aiming to perform political interventions in public affairs in the first place.

What I like about both inventive and/or interventive engagements I have learned to know by now, is their modesty in regard to epistemic authority and control. Be it the intention not to impose normative goals onto a field (Zuiderent-Jerak), or the reminder that we cannot “consider ourselves authorized to believe we possess the meaning of what we know”, as Wilkie and coauthors (2017) import from Stengers (2005) in their guide to “speculative research”.

But such modesties are hard to live, aren't they? During the workshop there was more than one occasion in which we tried to smuggle ‘STS-truths’ into other worlds. At the same time, designers and artists reminded us that STS researchers were often performing rather poorly when curating exhibitions, writing codes or scripts etc. “They could ask for help, we've also made some progress during the last 20 years,” they would say.

For me, “prototyping intervention!” was more than a collection of new methods or ways of performing research anyways. For me it is a way of reclaiming “scientific freedom” in the midst of all the pressures to fulfill career scripts and trying to be a “good researcher”; a way of reconsidering what we are doing when we are performing research, and what we are doing research for. I caught myself looking up my h-index on google scholar during work lately. For no reason. Can you believe this?

So, I am really grateful for Friedrich Kirschner's reminder that researchers are actors who are acting. To a considerable extent, we make the academic world in which we live. In this spirit, the best personal workshop moment was in the wrap-up session. Listening to the feedback and comments suggesting that this workshop might not have been “inventive” enough, I suddenly found myself speculating about a future meeting in which fictional STS researchers from fictional places with fictional positions and fictional affiliations apply to discuss their fictional work or work together on a fictional project - a congress of social science fiction. Would you like to participate in such a congress? In any case, we should meet at the next EASST conference! Check out these panels ;)

<https://nomadit.co.uk/easst/easst2018/conferencesuite.php/panels/6244>

<https://nomadit.co.uk/easst/easst2018/conferencesuite.php/panels/6273>

_Love J.



Laura Zoelzer During her time working in theatre and performing arts, Laura developed an unruly curiosity for how it could be possible to transform utopias into realities. She then started to study Sociology and Philosophy and stopped wondering. Her academic interest focuses on qualitative research as well as the combination of performative theories and political activism. She works as a research assistant at the Department of Sociology at the Ludwig-Maximilians-University Munich.



Judith Igelsböck Studied sociology and science and technology studies at the University of Vienna. She is a postdoctoral researcher in the Post/Doc Labs 'Reorganizing Industries' and 'Engineering Responsibility' at the Munich Center for Technology in Society (MCTS) of the Technical University of Munich (TUM). Judith finds herself on a continuous search for ways of reimagining what it means to be a social scientist. Her latest obsession is the exploitation of participatory theatre, performative arts, and fiction in industrial innovation research.

EASST ACTIVITIES

STS (IN) TURKEY AS EXTITUTION

Melike Şahinol, Arsev Aydınöğlü, Harun Kaygan

THIS ARTICLE FOCUSES ON THE CREATION OF THE STS TURKEY NETWORK AND OFFERS INSIGHTS FROM ITS FOUNDATIONAL MEETING, SHOWING HOW IT IS PART OF A LARGER STORY OF STS (SCIENCE AND TECHNOLOGY STUDIES) IN TURKEY. STS TURKEY'S FOUNDATIONAL MEETING WAS HELD ON 3–4 OCTOBER 2017 IN ISTANBUL, HOSTED BY THE ORIENT-INSTITUT ISTANBUL, TURKEY. THE GOAL OF THE MEETING WAS, FIRST, TO INTRODUCE SCHOLARS INTERESTED IN STS IN TURKEY TO ONE ANOTHER, AND SECONDLY, TO START CONSTRUCTING A COMMON VISION AND ROAD MAP THAT IS BASED ON THE PARTICIPANTS' CURRENT SCHOLARLY INTERESTS. IN TOTAL, THERE WERE MORE THAN 46 PARTICIPANTS, OF WHOM ABOUT 15 WERE GRADUATE STUDENTS. THE REST COMPRISED SCHOLARS, INDEPENDENT RESEARCHERS AND NGO REPRESENTATIVES. REPRESENTED AREAS INCLUDED SCIENCE AND TECHNOLOGY STUDIES, MEDICINE, SOCIOLOGY, ANTHROPOLOGY, PHILOSOPHY OF SCIENCE, HISTORY OF SCIENCE AND TECHNOLOGY, ENGINEERING, INDUSTRIAL DESIGN, SCIENCE COMMUNICATION, LAW AND THE LIFE SCIENCES ("BIOLAW"). DURING THE TWO DAYS THE PARTICIPANTS INTRODUCED EXISTING ACADEMIC PROGRAMS AND CURRENT RESEARCH IN STS, FORGE A VISION FOR STS TURKEY AND PREPARED A ROAD MAP.

THE BEGINNINGS OF STS TURKEY (WHICH IS OF COURSE NOT THE BEGINNING OF STS IN TURKEY)

Our own little history of working in and helping to shape Science and Technology Studies (STS) in Turkey is not very old. While and after having been trained in STS at Sheila Jasanoff's Program on Science, Technology and Society, Melike Şahinol, a German of Turkish origins, looked also for similar programs in Turkey – including ones dealing with Turkey-specific historical and cultural impacts. As she could not find similar programs, she began doing research in the field of biotechnology policies in Turkey, while at the same time looking for Turkish researchers doing STS around the world. In 2010 Arsev Aydınöğlü, an alumnus from Hacettepe University, Ankara (Turkey) but studying at that time at the University Tennessee, and Şahinol met at the 4S Conference in Tokyo, where they discussed how hard it was to find researchers doing STS in Turkey. They agreed upon the importance for such a heterogeneous country as Turkey to develop adequate methods in dealing with socio-cultural problems stemming from Science and Technology, taking into account historical, cultural and religious factors. Both agreed upon the importance of an STS network in Turkey to provide a collaborative research platform for like-minded scholars and to improve STS in Turkey – as they could not find any appropriate network. Aydınöğlü returned to Tennessee, and completed his research on interdisciplinary collaboration and Şahinol continued doing her sociological research on neuroscientific practices. In the following years, they continued to communicate about setting up a STS TURKEY network.

Şahinol's first collaboration with a Turkish scholar was with Emre Sünter, another scholar from METU, followed after having met during a workshop in Heidelberg for 4S Fellows at the European Molecular Biology Laboratory | European Molecular Biology Organization (EMBL|EMBO) Science and Society Summer School entitled "The Human Animal: Scientific, Social and Moral Perspectives." Later that year,

Şahinol and Sünter embarked on their first collaborative work on Science and Technology policies in Turkey when they jointly presented papers at conference in Paris and Copenhagen (Şahinol and Sünter, 2012a, 2012b). Meanwhile, Aydınöğlü was doing his postdoctoral fellowship at the NASA Astrobiology Institute. He was involved with the Astrobiology and Society Focus Group where as a group they focused on the societal implications of the discovery of extraterrestrial life. Aydınöğlü organized a session at the 2013 Annual Meeting of the Society for the Social Studies of Science in San Diego, U.S. and presented a paper at the 2015 Annual Meeting of the Association for the Advancement of American Science in San Jose (2013, 2015). Meanwhile, Harun Kaygan shared a rising interest in design scholarship in STS-based perspectives, especially the work of Latour and collaborators on the agency of non-humans. Kaygan completed his PhD at Brighton University in 2012 with a thesis on nationalism in technology development and design processes. He started working as an Assistant Professor in Industrial Design at METU, teaching ANT and feminist STS at graduate level, exploring the intersections of STS and design research (e.g. Kaygan 2016; Kaygan et al., 2017).

In 2015 Şahinol was hired as Research Fellow and Head of the Research Field "Human, Medicine, and Society" at the Orient-Institut Istanbul and organized STS-related lecture series and workshops (Lecture Series 2016/17: "Designing Nature, Upgrading Human Life? Reflections on how Medicine, Science and Technology Transform our Lives", Conference: "Upgrades of Nature, Future Bodies: Interdisciplinary and International Perspectives"). Since Aydınöğlü was working as a Tubitak-Marie Curie FP7 Cofund Fellow at the Research Center for Science and Technology Policies (STPS) at Middle East Technical University (METU) in Ankara (Turkey), they began making lists with people doing STS and searched again for STS programs. In the meantime, Kaygan had been in search for STS programs and scholars for interdisciplinary collaborations around design and technology development. Their first unofficial meeting together occurred in



2016. Until the foundational meeting on 3-4 October 2017, Aydinoglu, Kaygan and Şahinol identified a number of STS programs, fields including STS courses or STS networks, which have played a key role in Turkey: Ankara University, Science and Society Studies (Program on Science and Society in Turkish), Işık University, Science, Technology and Society Branch (in English), İstanbul Technical University, Science, Technology and Society (program in English), İstanbul University, History of Science Department (History of Science program in English), Middle East Technical University, Science and Technology Policy Studies (Economy and Policy based program in English), Özyeğin University, Design, Technology and Society (program in English), Bilkent STS Network (<http://ge301.bilkent.edu.tr/bilkentsts-network/>) and IstanbulLab (<https://stsistanbul.org/>). It turned out that İTÜ had started a STS program in 2000 within the European Master's Programme on Society, Science and Technology, which was closed in 2005 due to limited interest, then restarted in 2015. Meanwhile, METU's interdisciplinary graduate program on STPS that focuses on innovation, technological change, and science policy has been active for two decades.

According to the format of the foundational meeting that we, Aydınoğlu, Kaygan and Şahinol, had organized, several scholars from the listed universities above gave ten-minute talks about their STS programs while everybody else joining the foundational meeting gave brief 3-minute presentations on their topics related to STS.

STS TURKEY – VISIONS, DISCUSSIONS, EXTITUTIONALIZATION

The meeting started with Şahinol's opening speech. She thanked EASST for the funding, the Orient-Institut Istanbul for the support and many others who supported the founding of STS TURKEY, e.g. Harvard STS, STS-CH, DASTS, de-STs, etc. She was particularly grateful for Prof. Sheila Jasanoff for providing the first podcast message to STS TURKEY. She pointed out that Science and Technology (S&T) programs were important institutions for understanding how S&T shape society (and vice versa). She noted the implications of S&T for society with regards to one's expectations and ethical responsibilities, in addition to how one could become responsible designers and users, and how this also affects any area of policy, consumerism, economy, agricultural production, and healthy lifestyles. According to Jasanoff, a systematic study of S&T through a network of dedicated scholars was an important way to tackle these issues. And since STS has no venues for interaction and academic exchange like those in the natural sciences, the network, STS TURKEY, would be a valuable experiment towardsthe creation of such a venue.

Şahinol provided the audience with the details of how the core group Aydinoglu, Kaygan and Şahinol developed their vision for the STS TURKEY network together, and came to organize the foundational meeting. Their goals were focused on the improvement of scholarly communication and exchange in the field of STS in Turkey and to facilitate contact amongst scholars, advocating an interdisciplinary approach to STS using multiple methods. Underlining the network's supportive tension, they found it important to promote STS in Turkey by organizing conferences, as well as supporting various events and publications, and so increase the visibility and diffusion of the STS approach in Turkey. Another goal of the network is to stimulate and support teaching on the subject at all levels, to aid in the development of STS-related skills amongst researchers and PhD candidates, including theoretical knowledge and methodological know-how. Şahinol discussed the rapid developments in the fields of Science and Technology confronting modern societies with new challenges and creating sophisticated socio-technical, socio-cultural and socio-political processes.

The establishment of the STS network in Turkey, as Şahinol pointed out, is of particular value since Turkey, as a young and dynamic society, needs to find ways to deal with social and cultural problems arising from technology. Şahinol also

stressed the importance of bringing together critical minds as an important first step in establishing the network of STS TURKEY. It is not only focused on critical thinking; it is also open to difference and values innovative approaches. Although STS TURKEY members come from different sub-fields and branches, they meet at the same point: Science, Technology and Society of Turkey. Anyone aware of the deep transformations of their own fields due to advancing technologies and interested in the social context of these transformations must go beyond standard thinking and value empirical engagement with the ethical, cultural and political problems associated within these transformations. STS offers the theoretical background and methodologies for developing innovative ways for tackling these problems, and for providing social solutions. However, since STS must first of all provide training and the educational background for understanding the relationship between Science, Technology and Society in Turkey, the pedagogical aspect of STS programs at Turkish Universities was of particular importance.

With this in mind, Şahinol, as well as many other participants, stated that STS TURKEY's goal should be to support such programs, including providing international contacts and organizing annual meetings (in different Turkish cities), so that STS scholars and people interested in S&T could share and discuss their work. For providing that support, in both Şahinol's and other speakers' talks, the importance of creating a common vocabulary in Turkish for S&T issues was highlighted as a critical issue in order to enlarge the scope of such discussions within and beyond various existing academic circles. Şahinol concluded her talk by pointing out that STS TURKEY already had several social media channels where one could keep up to date with news and activities (<http://ststurkey.net>, facebook: <https://www.facebook.com/ststurkey/>, twitter: https://twitter.com/STS_Turkey, youtube: https://www.youtube.com/channel/UCGOQGkzklf4arKB-CEQ_EEA/videos) and reported the actual number of members. Social media coverage and membership has since doubled.

Following Şahinol's opening talk, the participants gave brief 3-minute introductions while Aydınöğlü acted as discussant. The group of participants was diverse and the debates were interdisciplinary, ranging from practitioners of medicine and biologists, to sociologists, designers, artists and specialists in law, the history of medicine, and ethics.

In the following session, the academic programs in Turkey relevant to broader STS topics were introduced by their department heads. Prof. Dr. Melek Dosay Gökdoğan talked about the newly established Science and Society Studies Master's Program at Ankara University. Prof. Dr. Aydan Turanlı of Istanbul Technical University introduced their Science, Technology, and Society Master's Program. The History of Medicine and Ethics Program (undergraduate and graduate) of Acıbadem University was presented by Prof. Yeşim Işıl Ülman. Lastly, Prof. Dr. Feza Günergun, presented activities and studies in the history of science and technology at Istanbul University's Department of the History of Science. Each presentation was followed by a Q&A session.

The overall session was followed by a plenary discussion on the problems of academic programs in Turkey. The morning session drew a compelling picture of the multidisciplinary and emergent quality of STS teaching and research in Turkey. One sees that the programs and students are not few, but currently weakly connected via personal relationships rather than as a tightly knit, productive network that is supportive of research. Yet opportunities were similarly visible, towards establishing a uniquely interdisciplinary STS approach that can bring about and support research that can span historical and disciplinary barriers.

The afternoon session was problem-focused and topical, with medical issues emerging as especially relevant, as the Turkish government defined the goal of making the country one of the world's leading destinations for medical services. Health policy and legal frameworks are also of interest, because these seem to be more accessible and broadly represented in Turkey. As STS is a field coming from



a western perspective and primarily an Anglo-American based literature, translation, including *cultural* translation, is necessary for the Turkish context. Assoc. Prof. Dr. Rainer Brömer (Faculty of Medicine, Istanbul University) discussed the differences between Science and Technology Studies and Science, Technology, and Society (Jasanoff, 2016), how to handle translations into Turkish in STS and the importance of building a terminology – also medical terminology – in Turkish. Assoc. Prof. Dr. Hakan Ertin's (Faculty of Medicine, Istanbul University) presentation focused on the resistance of medical staff to collaborate with the STS community, and discussed translation and academic publishing issues, especially in regard to medical ethics. Prof. Yücel Sayman from Istanbul Medipol University made a provocative speech focusing on the relationships between law and life sciences, especially law and medicine. The categorical distinctions between, for example, person and thing, also with regards to biomedical hybrids was a core issue. Şahinol ("Human, Medicine and Society", Orient-Institut Istanbul) briefly presented her research projects on Human Enhancement, Assisted Reproduction Technology and Enabling Technologies. As she pointed out, challenges and consequences of actual developments in S&T are rarely approached in Turkey. Therefore, there is a need to analyse these developments and interactions between science, technology, medicine and society in particular relation to the historical and cultural contexts. Finally, Zeynep Karagöz (designer, pro-maker) introduced her "Robotel" (Turkish: robot hand) initiative, which works with volunteers in providing 3D-printed rapid-prototype prostheses to young children. Robotel Türkiye is also part of the worldwide network "e-NABLE" and follows its motto: "Enabling the Future – Giving the World a Helping Hand."

The first day was closed with a discussion session, which provided the participants with topics to discuss in small groups for the second day of the meeting. The outstanding issues that came up during the presentations and the Q&A sessions consisted of the following: institutionalization of STS in Turkey, issues of funding and academic legislation, and the need for catalogues and shared databases (such as news, paper repositories, dictionaries, etc.) as well as dedicated conferences and journals.

With regards to the institutionalization of STS in Turkey, we see STS TURKEY as an “extitution”, that is, “a process of deterritorialization or extitutionalization affecting institutions, contesting power arrangements, and opening up provisory spaces for establishing new connections” (Fariás, 2017: 6). Even though the positive atmosphere of the first meeting, which was focused on discovering collaborative potentials, did not permit discussions of past and current difficulties for science and scientists in Turkey, we find the idea that an interdisciplinary scholarly network can function at an “extitutional” capacity, an exciting promise. On the one hand, there is the question whether STS TURKEY can help scholarly work thrive even under regulatory and political pressures, as well as those from within the rigid disciplinary boundaries that guide scholars’ research and publication strategies. On the other hand, we are faced with the larger question: What does “Doing STS in Turkey” imply politically, socially and culturally?

The second day started with an overview of the first day by Kaygan. Following a heated discussion on the purpose of the kick-off meeting itself, participants gathered in two meeting rooms. One was dedicated to issues of vision and terminology; the other on preparing a road map. The sessions and a concluding session had the following short-term plans established, listed by date of expected accomplishment:

- Preparing an e-mail group following the meeting to facilitate planning and overall communication;
- Preparation of a thematic session for the EASST conference in Lancaster, due 1 November;
- Improvement of the STS TURKEY website to include links to news of events and publications, as well as related university programs and persons;
- Initiation of reading groups for key STS literature in the following months to help graduate students and interested scholars;
- Launching an “STS research methods in action” podcast in Turkish in the following months to help graduate students;
- Publishing an STS glossary in Turkish in the following months to help establish and disseminate a Turkish vocabulary of key terminology;
- Organizing a second meeting in September-October 2018 in Ankara in Middle East Technical University, possibly including a small conference and interest group meetings;
- Working towards an STS journal, possibly bilingual, to be discussed further by a smaller group of potential co-editors.

The participants have considered setting up an association. As a result of the discussions, it was agreed that STS TURKEY would continue as a self-organized network (see for other STS networks as in Spain; Estalella et al., 2013), depending on the efforts of its members (currently about 120). The membership in the STS TURKEY network is free and open to anyone interested in understanding the developments in science, technology, or medicine in relation to their social contexts.

It was decided that an annually changing core team could organize future annual meetings. It was agreed that in 2018 the annual meeting would take place at the Middle Eastern Technical University, Ankara and be organized by Arsev Umur Aydinoğlu and Harun Kaygan in collaboration with the Melike Şahinol (Orient-Institut Istanbul).

In the meantime, the founding group, namely Şahinol, Aydinoğlu and Kaygan, will be responsible for the coordination of STS TURKEY until an association is set up. They deal with correspondence, handle and distribute organizational tasks, and are responsible for managing the agenda. Activities, updates and further information are provided via newsletter and social network channels.

THE FUTURE(S) OF SCIENCE, TECHNOLOGY AND SOCIETY IN TURKEY

The STS TURKEY founding meeting was, in our view, a successful start for establishing a Turkish network among researchers with interests in the study of science, technology and medicine in society. This was the first event of national and international significance with an STS orientation in Turkey. The event itself gave an excellent insight into the current scientific programs and discourses on very different aspects of science, technology and society in Turkey. Every participant had the opportunity to present his or her research and interests related to STS. Finally, the participants have indicated a common vision and road map that is based on their current scholarly interests.

First steps were taken to improve scholarly communication and exchange in the field in Turkey, to facilitate contact amongst scholars, to promote STS in Turkey by organizing conferences, to increase the visibility and diffusion of STS approach in Turkey; to stimulate and support teaching on the subject at all levels, to aid in the development of STS-related skills amongst researchers and PhD candidates, including theoretical knowledge and methodological know-how. With this STS TURKEY foundational meeting, which completes the preexisting Mission Statement of STS TURKEY as specified on the website, the network has now determined its structures. STS TURKEY represents the Turkish STS community at the national and international level. It further promotes reflection on the ever-increasing importance of science and technology in our society by encouraging a dialog between the social and natural sciences and also between scientists and society. As the founding group, we are confident that this meeting marks the beginning of constructive dialogues amongst everyone studying or interested in science, technology and society of Turkey.

REFERENCES

- Aydinoglu, A.U. (2015). *Astrobiology & Interdisciplinary Research: Filling the Gap*. Paper presented at the Annual Meeting of the Association for the Advancement of American Science (AAAS), San Jose, U.S.
- Aydinoglu, A.U., Race, M., Green, B.P. & Perkins, K. (2013). *The Question is not "Are We Alone?" but "Are We Ready?"*. Four-paper session organized & presented at the Annual Meeting of the Society for the Social Studies of Science, San Diego, U.S.
- Estalella, A., Martín, R. I., & Pavone, V. (2013). Prototyping an Academic Network: People, Places and Connections Prototyping an Academic Network: People, Places and Connections. *EASST Review*, 32(1).
- Fariás, I. (2017). O EASST Review lovers, where art thou? On STS as extitution. *EASST Review*, 36(2).
- Jasanoff, S. (2016). The Floating Ampersand: STS Past And STS To Come. *Engaging Science, Technology, And Society*, 2, 227-237.
- Kaygan, H. (2016). Material semiotics of form giving: the case of the electric Turkish coffee pot. *Design Issues*, 32 (2), 78–90.

Kaygan, H., Kaygan, P., & Demir, Ö. (2017) A Pen that "Looks Like a CEO in a Business Suit." Gendering the Fountain Pen. *Journal of Gender Studies*, DOI:10.1080/09589236.2017.1409105.

Şahinol, M., & Sünter, E. (2012a). *From Turkish Genome Project to Vision 2023: key attributes, actors, and the impact of biogeopolitics*. Paper presented at the Annual Meeting of 4S – Society for Social Studies of Science and EASST – European Association for the Study of Science and Technology, Copenhagen.

Şahinol, M., & Sünter, E. (2012b). Shifting science and technology by changing conceptions of religion and science in the case of Turkish Population Planning: Tube babies and Abortion Ban. Paper presented at the Science and Democracy Network 11th Annual Meeting hosted by Harvard STS Program (Cambridge, MA) and IFRIS (Paris, France), Paris.

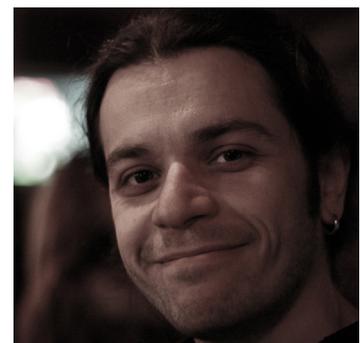
Melike Şahinol (Dr. rer. soc.) is a Research Fellow at the Orient-Institut Istanbul and head of the research field „Human, Medicine and Society“. 2016 she published her dissertation about the human as techno-cerebrally operating form. Her study based on fieldwork shows the adaptation of human and machine in neuroscience and describes the acting of a cyborg. Her current research focus is 3D printing in health care. In addition, she deals with bio-/technology politics in Turkey, particularly in the field of human enhancement.



Arsev Umur Aydinoglu is Assistant Professor at the Middle East Technical University and an interdisciplinary social scientist. After completing his PhD dissertation in 2011 at the University of Tennessee, he worked at the University of South Carolina and NASA in the US and conducted research at the ELSI, Japan. His research focus is interdisciplinary collaborative science; however, he is interested in topics as diverse as virtual teams, research data management, astrobiology, origins of life, complex adaptive systems theory, evaluation studies, design thinking, STS and science communication.



Harun Kaygan is Assistant Professor in industrial design at Middle East Technical University. A designer by training, he received his PhD in 2012 from the University of Brighton. In his research and teaching, Harun is interested in the cultural aspects and political implications of design and technology development, focusing on ethnographic and generative research methods. His current research interests include actor-network theory and new materialist frameworks; biopolitics, health and bodily interactions.



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EASST Conference “Meetings” at Lancaster University

We invite early stage researchers – graduate, postgraduate, and early-career scholars – to apply to our workshop immediately prior to the EASST conference in Lancaster.

How can we translate STS knowledge, sensibilities and practices to the job market, or how could we create jobs to make place for these capacities? For many students this seems to be a real concern. The question is a hard one to answer, however, because fast-paced changes in society push the definition of work to new frontiers, and STS is a very diverse field. This is why in this workshop for early stage researchers we turn the question upside down and ask how STS knowledge, sensibilities and practices can help us invent/imagine/design jobs for the future! We will explore this proposition in three different settings, starting with:

- *A walk shop “Wild Ideas”*. During an hour long walk in the beautiful surroundings of Lancaster, we will brainstorm in groups about what our capacities as STS scholars are and how they can be articulated into roles/careers/jobs.
- *A work shop “Prototyping Society”*. With the help and guidance of two STS scholars who have developed their own, ‘unconventional’ careers, participants will develop speculative job descriptions and discuss ways of bringing these into reality.
- *A social dinner “STS Careers of the Future”*. We will end the day with a dinner, where a group of students will be chosen as ‘Future-makers’ for having developed very unconventional and inventive speculative jobs. As a reward, this group’s job descriptions will be published in the EASST Review.

What?	A pre-conference workshop for Master students, PhD candidates and other early-career researchers to meet and share ideas, experiences, and enthusiasm.
When?	July, 24th, 11:30 am - 20:30 pm
Why?	Brainstorm about the jobs of the future and our place as STS scholars in that future. Network with an international mix of colleagues. Share refreshments and get to know Lancaster.
Cost	Free.
How?	Apply online here (http://easst.net/wp-content/uploads/2018/02/Postgraduate-workshop-application.docx)
Application deadline	May 1st, 2017

We hope to accommodate all completed applications; however, due to venue limitations we are limited to about 25 participants. Applicants are expected to attend the EASST conference in Lancaster and be or become EASST members. To apply, please provide us with a short letter of motivation (max. 500 words) and a CV.

Remember you can also apply for an EASST conference fee waiver!

Please contact

Dara Ivanova (ivanova@eshpm.eur.nl) with questions or suggestions.

Preliminary program

11.30 – 12.00 Welcome and registration

12.00 – 13.30 Wild Ideas

13.30 – 14.30 Lunch

14.30 – 15.30 Prototyping Society I

15.30 – 16.00 Coffee/Tea Break

16.00 – 17.00 Prototyping Society II

17.00 – 17.30 Free time/leisure walk to restaurant

17.30 – 18.30 STS Employees of the Future Ceremony

18.30 – End Dinner

Please download the application form here:

<http://easst.net/wp-content/uploads/2018/02/Postgraduate-workshop-application.docx>