# List of panels

**Panel 1: "Ageing contested". Exploring anti-ageing bio-hacking and repair practices in later life.**

**Panel 2: The more-than-human politics of urban inequalities**

**Panel 3: Sociotechnical assemblages and practices of crisis planning and preparation: Imaginaries of infrastructure breakdown and its governance**

**Panel 4: How to design socially inclusive, healthy, and sustainable food systems? Exploring the legislative-policy gap**

**Panel 5: 'Outbreak': Science, governance, and responding otherwise to challenges to come**

**Panel 6: The Sars-CoV-2 emergency narrative: A discursive-material approach**

**Panel 7: Where's the 'intelligence' in AI? Mattering, Placing and De-individuating AI**

**Panel 8: Where Sunstainable Plastic-transitions are going? Historical, Political and Social Lifes of plastic consumption and waste**

**Panel 9: Digital fieldwork after the pandemic – a 'new normal' of researching the social?**

**Panel 10: Games, experiments and redesign – Testing STS multimodal approaches**

**Panel 11: The digitazation of amateur film archives and the making of corporate-based collective memories**

**Panel 12: The interfaces that inform security knowledge and practice**

**Panel 13: Artistic Intelligence? Making it together in the Multispecies World**

**Panel 14: Securing worlds to come: Methods and interests in digital security**

**Panel 15: Boundary struggles: truth, interest and epistemic authority in a changing world**

**Panel 16: Developing a robust food system applying a transdisciplinary approach beyond academia**

**Panel 17: Electricity Futures: materialising promises and disappointments**

**Panel 18: Interests in the circulation of knowledge: science communication as dissemination of ignorance**

**Panel 19: Imaginary organisations for reinvented professions. Technological expectations and the construction of the world.**

**Panel 20: Extracting Humanness, Exploiting Labour: The Inhumane Face of Artificial Intelligence**

**Panel 21: A caring interest for the planet: making archives and readers *sensitive* in times of the new climatic regime**

**Panel 22: How are STS interested in robotics?**

**Panel 23: Unpacking the entanglements of governance with technoscience: is it an 'interesting' challenge in addressing good governance?**

**Panel 24: Questioning the material and infrastructural dimensions of social research: methods, tools and practices**

**Panel 25: Interesting failures to come: history, actors, and scenarios in unsuccessful digital technologies projects**

**Panel 26: Interesting worlds as matters of caring and commoning**

**Panel 27: Critical posthumanism: interrogating cyborg imaginaries, practices and politics**

**Panel 28: The politicization of infrastructures. European transformations in the name of geopolitics, security, and crisis.**

**Panel 29: Materiality and research in museums of science, technology and medicine**

**Panel 30: Algorithmic organizing and workers' well-being**

**Panel 31: Global Pathogens, Local Pathologies: Toward a more than human understanding of biosecurity**

**Panel 32: Big politics of small things**

**Panel 33: Technologies, devices and ways of engaging with citizen science in the context of research and innovation: co-producing knowledge, co-designing technologies and co-creating research to address sustainability challenges**

**Panel 34: Earthly and otherworldly challenges. On the mutual shaping of imaginaries, practices and discourses about Earth and Outer space**

**Panel 35: The obsession with techno-futures in education**

**Panel 36: Diagnosis, prognosis, treatment - Towards fair and sustainable care provisions in health systems and pharmaceutical innovation**

**Panel 37: Interesting participatory processes in science, technology and innovation: conditions, challenges and prospects for bottom-up innovation**

**Panel 38: Disruptive crises? Reflecting on innovations, strategies and bottlenecks for the food worlds to come**

**Panel 39: Resistance in action. Understanding countersurveillance practices, imaginaries, and activities in a digitally dense environment**

**Panel 40: Publish or perish reloaded: The matrix of contemporary scientific publishing facing institutional research arrangements and the marketization of academic environments**

**Panel 41: More-than-human medicine? Unpacking the use of Artificial Intelligence (AI) technologies in healthcare settings**

**Panel 42: Revisiting identification and registration of humans and more-than-humans: long-term perspectives and implications**

**Panel 43: Social Innovation: Forms, Evidence, and Perspectives**

**Panel 44: Exploring Promising Technologies in Neuroscience**

**Panel 45: Questioning institutional science and expertise supporting complementary, alternative, or refused knowledge**

**Panel 46: Looking at borders through an infrastructural lens**

**Panel 47: Gender, sexuality, and digital media between challenges and reproduction of hegemony**

**Panel 48: STS in Italy before STSItalia**

**Panel 49: More than human decentered design: which competences, which methods, which tools for intersting worlds to come?**

**Panel 50: Technologies of Discontinuation. Towards Transformative Innovation Policies**

**Panel 51: Agency: A Key Concept for a Political STS**

## Panel 1: "Ageing contested". Exploring anti-ageing bio-hacking and repair practices in later life.

**Organizers: Francesco Miele (1); Michela Cozza (2)**

**1: University of Trieste, Italy; 2: Mälardalen University, Sweden**

**Topics:** *Everyday life and design of the mundane; Algorithmic knowledge, media ecologies and artificial intelligence; Innovation imaginaries, practices and policies; The value of science, technology, innovation and research practices; Heterogeneous assemblages in biomedical research*

**Keywords:** *Anti-ageing, bio-hacking, gerontechnologies, socio-material practices.*

Over the last decades, the nexus between biological ageing and functional decline has been more and more 'contested' (Vincent, 2006), especially by critical scholars – among them, also STS scholars – committed to emancipating from biological and psychological naturalisations of age categories. The relationship between ageing and technoscientific innovation can be analysed by focusing on the constellations of socio-material practices through which the relationship itself is performed. Our panel aims at exploring material-discursive textures associated with ageing, by focusing on two interrelated macro-topics.

The first topic refers to the so-called bio-hacking, defined as the use of "science-based tools and shortcuts for optimizing your own biological potential" (Lee, 2015: 8) and for maximising longevity. In line with processes of biomedicalisation of the body (Cozza et al., 2022), discourses and initiatives related to bio-hacking populate online communities and social movements, which generate, share, and reproduce technoscientific practices to counteract and reverse ageing (e.g., the quantified-self movement). Scientific communities and markets are also involved in extreme anti-ageing practices to extend lifespan (e.g., gene editing). The phenomenon of bio-hacking relies on neoliberal principles which, in turn, dictate the ultimate goal of enhancing the human body through technologies that 'improve' its otherwise deteriorating functionalities well beyond what is actually necessary to sustain or repair the body itself.

From the first topic descends the second focus related to a process that we would call repairing ageing. In this case, we bring attention to the maintenance of aged human bodies, rather than to deep manipulative interventions upon them. We may refer to the softest forms of anti-ageing medicine to cure diseases associated with old age and to extend life expectancy as much as possible (Vincent, 2006). The underlying ethic of care induces patients, families, and clinicians to refrain from saying "no" to medical solutions as embodying a promise of better ageing (Kaufman, 2004). In parallel, also most of assistive gerontechnologies aim at repairing the effects of ageing processes on the human body, matching with an imaginary of older people as 'in need' of being helped, in accordance with the ideals of 'independent living' in later life.

Having this framework as our starting point,here is a not exhaustive list of indicative topics that might be considered:

- Enhancement technologies for aged human bodies.
- Hacking age.
- Repairing practices in later life.
- Algorithmic elderly care.
- Ageing and self-quantification.
- Assistive technologies and emerging care practices.
- Ageing and neo-liberalism.
- Ageism in design practices.
- Clinical interventions and life-extensions.
- Ethical dilemmas related to bio-medical anti-ageing interventions.

**References**

Cozza, M., Kirsten L. E., and Katz S. (2022). Hacking age. Sociology Compass, 16(10), e13034.

Kaufman, S. R., Shim, J. K., and Russ, A. J. (2004). Revisiting the biomedicalization of aging: Clinical trends and ethical challenges. The Gerontologist, 44(6), 731-738.

Lee, J. (2015). The biohacking manifesto: The scientific blueprint for a long, healthy and happy life using cutting edge anti-aging and neuroscience based hacks. CreateSpace Independent Publishing Platform.

Vincent, J. A. (2006). Ageing contested: Anti-ageing science and the cultural construction of old age. Sociology, 40(4), 681-698.

## Panel 2: The more-than-human politics of urban inequalities

**Organizers: Rivke Jaffe (1); Francesca Pilo' (2)**

**1: University of Amsterdam, The Netherlands; 2: Utrecht University, The Netherlands**

**Topics:** *Sociomaterialities of conflict and peace; Postcolonial technoscientific futures; Sociotechnologies of (in)secure worlds to come; Right to and sociotechnical imaginaries of the city; Extractivist powers, imaginaries and asymmetries*

**Keywords:** *more-than-human politics; urban inequalities; power relations; cities; socio-technical transformations; inter-species relations*

Cities emerge not only through relations between humans but also through their interactions with a range of non-human entities: from biophysical flows and animals to infrastructures and technological devices. These entities play a crucial intermediary role in producing and/or mitigating forms of urban inequality: socio-technical change, natural disasters and animal-human interactions, for instance, affect different urban populations in distinct ways. This panel seeks to further scholarship on urban inequalities through a more-than-human perspective that emphasizes the political role of non-human entities in mediating urban power relations and distributions of risks and resources, in different domains ranging from security and public health to energy and transportation. Connecting insights from science and technology studies (STS) and urban political ecology, the panel welcomes empirical case studies focusing on specific socio-technical transformations or inter-species relations that shed new light on the formation of urban inequalities. We approach urban inequalities as a political outcome emerging from the relations between human and non-human entities that have distinct if sometimes overlapping interests. What is the role of specific technologies, construction materials, animals, or viruses in forming inclusionary/exclusionary socio-technical imaginaries, solidarities, and political mobilizations? How do they feature in the everyday negotiation and imagination of current and future urban socio-political orders? How are the interests of different urban populations exacerbated or mitigated through the specific material-technological or biological affordances of such non-human actants? We invite papers that address these questions ethnographically and seek to include cases from cities across the world in order to diversify the geographies through which we theorize more-than-human politics of urban inequalities.

## Panel 3: Sociotechnical assemblages and practices of crisis planning and preparation: Imaginaries of infrastructure breakdown and its governance

**Organizers: Silvia Rief**

**University of Innsbruck, Austria**

**Topics:** *Technoscientific promises, imaginaries and expectations; Everyday life and design of the mundane; Sociotechnologies of (in)secure worlds to come*

**Keywords:** *imaginaries of crisis, preparedness, critical infrastructures*

The multiple and compound crises the world has been facing in recent years have nourished growing concerns about possible and serious breakdown of large-scale critical infrastructures due to natural disasters, shortage of energy, droughts and water scarcity, war or terrorism. While states and public authorities are propping up the protection of critical infrastructures, individuals too are increasingly called upon to 'be prepared' for interruptions of energy, communication services or water provision, to name a few. This panel invites papers that explore how social actors at various levels and in different contexts imagine and gauge possible crisis scenarios and what measures they adopt to control such imagined possible futures. In line with the theme of the conference, contributors are invited to reflect on how the notion of "interest" is framed within imagined crisis scenarios and within the practices of 'preparation' by individuals or groups as well as within techno-scientific programs and policies for crisis-management. Possible themes and questions to be addressed are suggested below, but other subtopics are equally welcome:

1) Citizens, state and civil society

How do citizens and private households respond to narratives of crises and their imagined sociotechnical consequences? How do their practices of planning and preparation relate to public provisions for controlling possible crisis situations? Are the former expressions of trust or mistrust in the state's and public authorities' capacity to prepare for possible crises? Are the latter expressions of trust or mistrust in citizen's willingness to cooperate? How do 'prepping' practices at different levels evoke an orientation towards autarky vs. dependency? How are individual interests and needs for security related to, balanced with, or exclusive of, collective solidarity and collective interest? Comparative analyses of crisis management policies and governance might also focus on the representation of interest and solidarity.

2) Sociomaterialities of preparing

What visions and tools for technological governance of crisis situations are developed? What notions of interest are implicitly inscribed into communication and planning tools (e.g. the role of data and algorithms, simulation and forecasting, social media, apps, websites)? Papers might address the commercialization of 'preparedness' along with DIY and learning processes geared towards 'prepping': what markets and commodities have emerged that cater for 'prepping' needs and desires for autarky and security? What assemblages between markets, media, expert cultures and citizen cooperation have been created and how is "interest" configured in these networks?

3) Popular culture

Of interest would be (comparative) cultural analyses of how crisis scenarios due to infrastructure breakdown and their governance are depicted and discussed in films, documentaries, literature, magazines, podcasts and social media. What designs for securing or repairing the socio-technical normality of everyday life are presented in popular culture?

4) Social structure

A recent paper asked 'Is preparedness a discourse for the privileged?' (Blake Marlowe, Johnston 2017)? Which social groups are addressed by preparedness discourses and how are interests and needs of vulnerable groups identified and considered? How does social structure influence who prepares for crisis and who doesn't, and what practices of preparation social groups engage in?

## Panel 4: How to design socially inclusive, healthy, and sustainable food systems? Exploring the legislative-policy gap

**Organizers: Marco Borraccetti; Matteo Vittuari; Elisa Iori; Susanna Villani**

**University of Bologna, Italy**

**Topics:** *Health policies, governance and practices in a postpandemic era; Knowledge co-creation, citizens science, co-design processes, material publics and grassroot innovation*

**Keywords:** *Co-creation, Healthy and sustainable behaviors, European Green Deal, Public participation*

At the European Union level, the European Green Deal lays the basis for an updated legal framework seeking to improve environmental protection while maximizing benefits for health, quality of life, resilience, and competitiveness. Moreover, the EU and its Member States are parties to the Aarhus Convention that also strengthens the rights of the public to receive information about environmental law – to include legislation protecting human health. In effect, although the great effort in shifting food systems towards a more sustainable transition, feeding a fast-growing world population remains a challenge with current production patterns. Food production still results in air, water, soil pollution, biodiversity loss and ecosystems degradation, causing negative externalities such as climate change, exploitation of natural resources, and an important share of food wasted. At the same time, unhealthy diets are one of the major risk factors for Noncommunicable diseases (NCDs) related to the 74% of all deaths globally (WHO). Cities are acknowledged as the main protagonists in shaping the transition. Additionally, the direct involvement of citizens is crucial to design and support strategies towards healthier and more sustainable behaviors, giving to consumers better information.

Against this background, the panel intends to explore the evolution of participatory and inclusive approach involving public authorities, civil society, and other different stakeholders, to deliver knowledge and skills related to local food environments, interconnected system of shared knowledge, boosting resilient practices and stimulating large-scale behavioral changes.

The panelists will critically discuss the current normative and policy framework concerning food habits and food waste at the EU and national levels under the lens of the European Green Deal. Moreover, attention will be paid to the level of access to decision-making procedures, i.e., public participation in plans and programs aimed at reducing food waste and improving healthy and sustainable behaviors.

## Panel 5: 'Outbreak': Science, governance, and responding otherwise to challenges to come

**Organizers: Kari Lancaster (1); Tim Rhodes (1,2)**

**1: University of New South Wales, Australia; 2: London School of Hygiene and Tropical Medicine**

**Topics:** *Health policies, governance and practices in a postpandemic era*

**Keywords:** *Outbreak, health, pandemics, governance, temporality*

Outbreaks and outbreak science are key concerns in light of Covid-19. How 'outbreaks' are thought about and materialised through scientific practices and technological solutions shapes what is possible in the governance of crisis, health, and populations, with profound social and material repercussions. There is growing investment in new methods and infrastructures of knowledge coordination to prepare for threats to come, and to improve epidemic preparedness and emergency response. The fast changing field of outbreak science is developing and testing new technologies of detection, prediction and projection, and creating new platforms to coordinate data on outbreaks as evidence for decision-making. But whether configured as crises, emergencies or aberrations subject to routine risk management, 'outbreaks' are not neutral. Outbreaks are dynamic forms of anticipatory governance which through their evidence-making constitute problems and responses in particular ways, especially in their temporal relations (Anderson, 2021; Lakoff, 2019; Lancaster & Rhodes, forthcoming; Rhodes & Lancaster, 2019). What are the effects of framing and foreseeing 'outbreaks' in this mode? What ways of knowing and doing preparedness and response do the practices and infrastructures of outbreak science open up and foreclose through their promise of fast, actionable information in situations of uncertainty? How can we think about evidencing outbreaks otherwise?

In this panel, we trace how configurations of 'outbreak' are problematised and govern, through scientific practices. Looking across different forms of outbreak in relation to health – from viruses and diseases, and other hazards – the panel considers the rationalities and effects of outbreak imaginaries, and their entanglements with science, policy and publics. In addition to tracing how different scientific technologies enact outbreak – such as methods of early warning, detection, surveillance, modelling and projection – we ask what outbreak makes absent or obscures, especially in relation to the long and slow emergence of health concerns (Lancaster & Rhodes, forthcoming). In doing so, the panel deliberates on how outbreak science might be made otherwise (Stengers, 2018). We invite papers which aim to open up alternative modes of problematising outbreak, which emphasise complex ecological and more-than-human relations of health, disease and crisis (Anderson, 2021; Hinchliffe et al., 2021; Wigen et al., 2022). Through this critical engagement, together we consider the politics involved in the production, coordination and governance of the real that is constituted as 'outbreak', stimulating inter-national, inter-species and inter-generational justice perspectives in this post-pandemic era and for the challenges to come.

## Panel 6: The Sars-CoV-2 emergency narrative: A discursive-material approach

**Organizers: Andrea Miconi (1); Simona Pezzano (1); Lorenzo Donghi (2); Alessandro Ricci (3); Sara Gandini (4)**

**1: IULM, Italy; 2: University of Pavia, Italy; 3: University of Bergamo, Italy; 4: European Institute of Oncology, Italy**

**Topics:** *Health policies, governance and practices in a postpandemic era; The value of science, technology, innovation and research practices*

**Keywords:** *Pandemic, COVID-19, Emergency, Media Coverage*

We propose to analyze the Sars-CoV-2 narrative based on the discursive-material model, already put to the test of the social shaping of European memories [Carpentier; The European Assemblage, 2021; Carpentier, Hroch, Cannizzaro, Miconi & Doudaki, Bridging the Discursive and Material Dimensions of Europeanity and Europeanization, 2022, in press]. We will bring in data from the Italian case, while asking for contributions coming from other countries. On the material side, we will analyze the spreading pattern of Sars-Cov-2, by drawing on biostatistics data, in one way; and in the other way, how the epidemic and the following political measures re-shaped the physical spaces of daily life. At the discursive level, we will study the coverage of the pandemic on the part of Italian mainstream media, with a focus on the use of the war metaphor for its framing.

More precisely, we will deal with:

- systematic reviews and meta-analyses of data related to virus transmission and hospitalizations, which unravel critical evidence: the selective nature of Sars-CoV-2 infection, actually putting at risk specific cohorts of people;
- the reshaping of physical milieu in the 2020-2022 biennium, with two categories put to question: the alleged de-materialization of human life, and the spatial dimension of discipline;
- content analysis of all prime-time TV news, broadcast from February 2020 to February 2021, with a focus on the use of the war metaphor for framing the pandemic.

The confirmed panelists will also bring in the findings coming from their participation to the Lack of Scientific Freedom initiative, jointly launched by the Oxford University Center for Evidence-based Medicine, and the Institute for Scientific Freedom in Copenhagen.

For what concerns the call for papers, possible topics to be included in the panel are:

- Systematic analyses of media narratives related to the Covid-19 emergency;
- State of public debate, with a focus on freedom of expression and scientific freedom;
- Distortions in public communication and public understanding of science, with a focus on role played by the so-called TV doctors or medical celebrities;
- Interpretations of the state of emergency and state of exception, related to the Sars-CoV-2 pandemic;
- Representation and reshaping pf public spaces during the Sars-CoV-2 pandemic.

## Panel 7: Where's the 'intelligence' in AI? Mattering, Placing and De-individuating AI

**Organizers: Ludovico Rella (1); Fabio Iapaolo (2)**

**1: Durham University, United Kingdom; 2: Oxford Brookes, United Kingdowm**

**Topics:** *Technoscientific promises, imaginaries and expectations; Technofeminism and interspecies solidarities; Algorithmic knowledge, media ecologies and artificial intelligence; Ethics, innovation and responsibility in technoscience*

**Keywords:** *AI, Materiality, Hardware, Distributed Cognition, Individuality*

This panel seeks to interrogate the multiple – and sometimes contradictory – world visions, political imaginaries, and social expectations underlying conceptualizations of the human and, by extension, AI. From Pygmalion to Ex Machina, one source of our perennial fascination with the thinking machine originates in the prospect it evokes that attributes deemed uniquely human – e.g., consciousness, intelligence, autonomous action – might be replicated in mediums other than the human body. In its historical attempt "to reproduce the quintessence of our humanity, our faculty for reason" (McCorduck, 2004, 4), AI research often and perhaps inevitably has incurred anthropocentric and anthropomorphic fallacies. This is particularly manifest in the scientific and cultural imagination of AI as discrete technologies operating in ways different from, yet fundamentally similar to, the sovereign human subject – as the repeated insistence on notions like autonomy, rationality, control, and decision-making attests to. With its tendency to abstract away embodiment from intelligence (Hayles, 1999), XX-century cybernetics paradoxically reinforced this imaginary, often by association with the liberal autonomous subject, whose sense of agency lies in Enlightened self-interest. This panel, conversely, aims to bring together novel perspectives precisely on the materiality and de-individuality of AI, to complicate and destabilize intuitions about how to understand our technologies and ourselves. Following Beatrice Fazi (2019, 821), if we are to "recast the metaphysical question of the nature of thought", we need to move past the simulative paradigm where AI merely imitates human thought.

For that to happen, a re-apprehension of the specific corporeal and technological materialities of intelligence is necessary. While even for human intelligence the mind-body connection is fundamental to cognition, Machine Learning and AI systems are predicated upon a very different form of materiality and embodiment. Resembling more a kind of "infrastructural intelligence" (Bruder, 2017) comprising multimodal sensing capabilities, ground truth data, training datasets, Edge AI hardware, graphic card-powered datacentres, and emerging neuromorphic microchips, the materiality of AI is key to the problematization of individuality that this panel wishes to explore. Rather than insisting on the individual – whether human or machinic – as the sole locus of intelligence and the base unit of ethico-political concern, we embrace the provocation that intelligence is "distributed across human and technical agencies" (Amoore, 2019, 4), including the broader socio-computational spaces where their embodied interactions occur. As human and machine interpretative decisions become ever more closely intertwined, the crucial question arises of how to envision adequate ethico-political responses beyond the terms (and terminology) dictated by liberal individualism.

Conceived as an experimental venue for interdisciplinary encounters, this panel seeks contributions exploring themes including, but not limited to:

- Imaginaries of AI personhood and their hidden ideologies
- Affordances and limitations of machine intelligence
- Space and computation
- Law and AI
- Genealogies of 'artificiality', 'agency', and 'subjectivity'
- Algorithmic knowledge production and (re-)conceptualizations of intelligence
- Embodiment in posthuman, post-colonial, feminist science, queer, and critical race studies
- New perspectives on human subjectivity and technical agency vis-à-vis advances in AI
- Sociotechnical assemblages and automated decision-making
- AI hardware accelerators, neuromorphic microchips, sensors, and Edge AI
- The materiality of algorithms and robotics

## Panel 8: Where Sunstainable Plastic-transitions are going? Historical, Political and Social Lifes of plastic consumption and waste

**Organizers: François Dedieu (1); stephanie Barral (1); Sebastien Dalgalarrondo (2); Tristan Fournier (2); Céline Pessis (3); Baptiste Monsaingeon (4); Laurent Pordier (2); Benjamin Raimbault (5)**

**1: Inrae, France; 2: Cnrs, France; 3: AgroParitech, france; 4: University of Reims-Champagne Ardenne, france; 5: ESIEE, france**

**Topics:** *Ecological transitions and climate justice; Heritage industry and the production of collective memory; Innovation imaginaries, practices and policies*

**Keywords:** *"transition"plastic"governance"*

After the discovery in 1997 of the 7th continent of plastic in the oceans, a broad political consensus to reduce plastic consumption arose. Despite recent European and national regulations on plastic ban and recycle obligation, global plastic waste production continues to increase. Why does transition toward plastic waste reduction appear so hard to implement? So far, STS scholars have mainly studied how plastic waste become politicized. By considering waste material as a problem and a participant, "political material" process (Hawkins 2013) explains how waste politics takes different forms: mundane or controversial. Yet this perspective tends to focus only on the form of plastic policies and obscures the concrete effects of regulations on plastic waste reduction. The proposed panel seeks interdisciplinary papers able to grasp the deep historical, social, cultural and economic factors explaining why plastic sustainable transitions take different pathway: completed, halfway, or the status quo (Smith, Vos & Grin, 2010). In particular, the panel expects contributions in three (but no exclusive) researches directions. First, STS approaches studying the interplay of plastics technologies and social practices (Gabrys and alii, 2013, Evans and alii, 2020 notably) to highlight the conception and the (non) impacts of ecological regulations. In particular, how does plastic materiality (transparence and plasticity particulary) shape public regulations of plastic pollution, consumers habits, social imaginaries and social movements? Also, how do social networks and digital technologies shape these social practices? Second, contributions describing historical hegemony of plastics. Why and how did plastics become dominant technologies in different sectors (construction, food...)? Third, political economy approaches aim to understand how the relationships between private and public interests impact transitons pathways. Can private actors shape regulatory standards to make them less stringent? Does plastic industry brake sustainable transitions or favor plastic-alternative innovation? Do petro-chemical industries take advantage of non-restrictive regulations such as recycling obligations to subtly continue to produce polluting plastics?

## Panel 9: Digital fieldwork after the pandemic – a 'new normal' of researching the social?

**Organizers: Julie Sascia Mewes (1); Frauke Rohden (2); Mace Ojala (1)**

**1: Ruhr University Bochum; 2: University of Oslo**

**Topics:** *Sociotechnologies of (in)secure worlds to come; Sociomaterial learning processes and/in digital worlds*

**Keywords:** *digital methods, digital fieldwork, methodics and methodography, ethnography of/in the digital, the 'new normal'*

This panel focuses on the 'new normal' of digital ethnographic fieldwork in post-pandemic STS research. During the COVID-19 pandemic, universities were among the first institutions to go into lockdown, moving academic work off-campus and limiting access to non-digital field sites. At the same time, digital solutions became integrated into various work practices and personal lives, moving field sites online at least partially or temporarily. This required ad hoc re-adjustments to suit the new social, material, and technological needs of remote research as much as the spatial configurations of ethnographic methods. Long-term effects included the increasing normalization of work-from-home and the (temporary) rise of digital methods in STS ethnography and beyond.

A widely shared collaborative online document for 'doing fieldwork in a pandemic' (Lupton, 2021) highlighted the potential of digital research methods, drawing on a range of fields such as critical data studies, media studies, platform studies, or digital sociology. Grappling with messy and complex datasets and intertwined technical and social effects, qualitative research traditions have much to offer, suggesting that reflexive 'digital fieldwork' (Lindgren 2019, Venturini & Rogers 2019) could be a valuable approach to dealing with digital field sites.

STS researchers have contributed to such discussions. For example, Moats (2019) explores the tensions of 'following the medium' and following controversies, and Ribes (2019) comments on the challenges and opportunities that can be found in the intersection of STS and data science, or Marres (2020) suggesting a 'situational analytics' to bring interpretative methodology into computational settings. Vertesi and Ribes (2019) collect an array of examples of digital STS scholarship in their book. Munk (2019) goes into detail on how qualitative and quantitative moments of analysis can be combined, distinguishing four styles of analysis: A complementary style using both side by side, a single-level analysis using the seamless nature of digital data, a curative approach using computational methods to select data for qualitative analysis, and algorithmic sensemaking to find patterns in data that are interesting to the researchers.

This panel invites papers concerned with the practicalities of conducting digital fieldwork along these four styles of analysis in the post-pandemic 'new normal'. We are particularly interested in research exploring a) the concrete doings of digital ethnography and methodographic reflections on how our research concerns, objects, techniques and textual representations are enacted through the respective devices in use (Greiffenhagen et al., 2011; Lippert and Mewes, 2021), and/or b) reflections of the potential future implications of the (at the time of writing ongoing) closure of the pandemic as a historical period. We ask panel contributions to critically reflect upon potential exclusions and limits, frictions as well as delights of digital fieldwork, its methods and methodologies, and the academic infrastructures they are embedded into.

The panel creates a collaborative space for STS researchers interested in 'the digital' as an empirical, theoretical, or methodical concern, field site and/or field device to gather the learnings of pandemic digital fieldwork and discuss the present and futures of digital STS.

## Panel 10: Games, experiments and redesign – Testing STS multimodal approaches

**Organizers: Lorenzo Olivieri; Annalisa Pelizza; Claudio Coletta**

**University of Bologna, Italy**

**Topics:** *Knowledge co-creation, citizens science, co-design processes, material publics and grassroot innovation; Methodological challenges in a more-than-human world; Building alliances in public participation and engagement*

**Keywords:** *Interventions, experiments, games, performativity*

Following Law's call (2004) to develop new methods for addressing the messiness of social science, STS scholarship has explored modalities of research which could complement more traditional paradigms, practices and dissemination of knowledge production. Inventive, experimenting and playful methods have been adopted to explore new, alternative configurations of socio-technical worlds and imaginaries (Lee Downey & Zuiderent Jerak 2021, Collins et al 2017, Farías & Criado 2017). These methods include, among others, art, design, interventions, and games. Overall, these approaches emphasize the heuristic value of creativity and experimentation, of material engagement and performativity (Marres, Guggenheim and Wilkie 2018). By creating temporally and spatially circumscribed settings, these methods allow imagining multiple scenarios and envisioning possible futures. Within these settings, researchers and artists, designers and citizens are simultaneously the agents and the interpreters, leading to a progressive collapse of the distinction between representation and experimentation, between knowledge-making and world-making. Consequently, these approaches also challenge and problematize a linear model of knowledge production, whereby the collection of data, the production of knowledge and the 'application' of such knowledge to societal issues rigorously follow each other (Zuiderent-Jerak 2016). Lastly, due to their highly participative and engaging nature, multimodal approaches have the potential to unleash new ethical and reflexivity issues (Lenette 2019). How can these methods allow us to learn about more-than-human interests and perspectives? To what extent multimodal approaches can provide us with experimental ways for understanding and thinking about heterogenous networks of humans and non-humans? Drawing upon these considerations, this panel invites scholars, artists and designers to test their games, interventions or performances. Unlike traditional panels, contributors are expected to engage with the audience according to the nature of their works.

Contributions are expected to address, but are not limited to:

- Ecological transitions
- Migrations and migration governance
- Health practices and infrastructures
- Urban imaginaries
- Ethics and responsibility in digital environments

## Panel 11: The digitazation of amateur film archives and the making of corporate-based collective memories

**Organizers: Federico Pilati; Ilaria Ferretti**

**IULM, Italy**

**Topics:** *Heritage industry and the production of collective memory; Extractivist powers, imaginaries and asymmetries*

**Keywords:** *Amateur archives; Corportate firms; Collective Memory;*

Amateur film archives are spread around Europe at local, regional and national level with the aim to preserve and harness the non-professional, family, corporate and independent film, a still hidden and inaccessible huge European audiovisual cultural heritage. By the term 'amateur film' we mean images in movement that have association with any aspect of our daily life in society. These include family films, but also documentaries and fiction films, works of experimental and independent filmmakers, scientific films, corporate film and other materials. These artefacts document evidence of the past, in most cases the everyday life of people who visually recorded their holidays, trips, collective rituals, public events, work, landscape. The audiovisual documentation from the archives' collections is therefore an enormous and extraordinary portrait of European history, heritage, memory, identity and cultural interaction. Since the early '90s some of the major Italian corporates started a reflection on their own identity articulated through the possible use of corporate archives. Commonly these collections are characterized by a multimedia and multidimensional structure (e.g., artifact products, advertisements, documents, personal folders, etc.) that can be adopted to investigate new meanings and perspectives concerning corporate values and communication. Thanks to the digital era the access and hence dissemination of corporate archives has become a real opportunity. However, due to the cost required for the digitalization, audiovisual heritage has remained often in the background. Considering the amount of opportunities connected this heritage, this panel would like to analyze the peculiarities connected to this materials and it will focus specifically on "unofficial" corporate audiovisual archives. The gaze of workers or owners, unpublished and private images that document life, private moments and the workers communities, images hidden for years in attics and drawers that can gave us a glimpse of the company's history, but at the same time, can show how big corporate and industries appropriate the meaning and making of a bottom-up collective memory.

## Panel 12: The interfaces that inform security knowledge and practice

**Organizers: Claudia Aanonsen (1); Rocco Bellanova (2); Georgios Glouftsios (3)**

**1: NUPI, Norway; 2: Vrije Universiteit Brussel, Belgium; 3: Scuola di Studi Internazionali, Università di Trento, Italy**

**Topics:** *Governance of and by data infrastructures; Sociotechnologies of (in)secure worlds to come; Algorithmic knowledge, media ecologies and artificial intelligence*

**Keywords:** *Interfaces, Security, Practices, (Critical) Security Studies, New Media Studies*

When data analysts sit in front of a screen to identify a potential security threat, it is not only their user interface that is at play. There are many other interfaces that make hardware and software work together (Cramer & Fuller 2008). Besides, these interfaces also translate regulations, security visions and socio-technical controversies bringing together a heterogeneous set of public and private actors that design, use, operate and maintain them (Bellanova & de Goede 2022; Glouftsios 2021). STS and New Media scholarships generally understand interfaces as sites and processes of interaction between humans, hardware and software (Galloway 2012; Suchman 2006). Other approaches see interfaces as trade-zones where actors, knowledge and practices from different worlds meet and influence each other (Amicelle 2022; Barry 2006). We would like to foster the conversation about the promises and challenges of studying those interfaces that inform security knowledge and practice. We would like to ask how interfaces can be conceptualized through the lenses of STS and (Critical) Security Studies, what kinds of interfaces emerge in the wider field of security, what modes of power and ways of doing security they allow for, and how we can empirically study them. By foregrounding interfaces, we do not want to recycle just another buzzword but to explore their analytical potential to better make sense of security knowledge and practice. We also want to understand how the notions of interface and interfacing can enrich the conceptual exchanges between STS and (Critical) Security Studies (Bellanova et al. 2020), and thus how these notions relate to concepts such as 'assemblage/dispositif', 'security chains' and 'translation' (Hookway 2014; de Goede 2018; Pelizza 2021). Therefore, in response to the conference theme focusing on new worlds to come in the face of more-than-human challenges, our non-exhaustive list of potential themes for panel contributions includes:

- Border security and migration management. How databases shape practices of border control, and the management of migration and asylum.
- Cybersecurity. How algorithms shape the protection of 'critical' information infrastructures and how they mediate surveillance, digital forensics or the production of e-evidence.
- Intelligence. How 'covert' monitoring and surveillance infrastructures contribute to the production and dissemination of security intelligence and how to make such infrastructures public.
- Policing. How digital technologies implemented in 'smart' cities feed into the urbanisation of security and everyday policing work.
- Warfare. How semi-autonomous weapons systems shape contemporary warfare and what are their ethical, legal and socio-political implications.

**Reference**s

Amicelle, Anthony. 2022. "Big data surveillance across fields." BD&S, 9(2).

Barry, Andrew. 2006. "Technological Zones." EJST 9 (2):239-253.

Cramer, Florian, & Fuller, Matthew. 2008. Interface, in Matthew Fuller (ed.), Software Studies. Cambridge: MIT Press.

Bellanova Rocco and de Goede, Marieke (2022). "The algorithmic regulation of security." R&G 16(1): 102-118.

Bellanova, Rocco et al. 2020. "Taking the Trouble." CSoS 8 (2):87-100.

Galloway, Alexander. 2012. The Interface Effect. Cambridge: Polity.

Glouftsios, Georgios. (2021). "Governing border security infrastructures." SD 52(5), 452–470.

Hookway, Branden. 2014. Interface. Cambridge: The MIT Press.

Pelizza, Annalisa. 2021. "Identification as translation." SSS 51(4):487–511.

Suchman, Lucy. 2006. Human-Machine Reconfigurations. Cambridge: CUP.

## Panel 13: Artistic Intelligence? Making it together in the Multispecies World

**Organizers: Silvia Casini (1); Gediminas Urbonas (2); Roberta Buiani (3); Philippe Sormani (4)**

**1: University of Aberdeen; 2: Massachusetts Institute of Technology; 3: ArtSci Salon; 4: University of Lausanne**

**Topics:** *Ecological transitions and climate justice; Knowledge co-creation, citizens science, co-design processes, material publics and grassroot innovation; Methodological challenges in a more-than-human world; Technofeminism and interspecies solidarities; Embodied identities, genders and interests*

**Keywords:** *multispecies research; organism-oriented ontology, composability and cohabitation, sympoiesis, art as research*

In recent years, academia has sought new approaches to tackle phenomena that couldn't be grasped through traditional discipline-specific research methods. Anna Tsing expresses the difficulties of examining and communicating the system known as the Anthropocene and calls for "new kinds of storytelling" that can "tell empirically grounded stories of particular times and places and positions and [that can] tell them with some much curiosity and wonder". In practice, this means to abandon the "god's view from nowhere" (Haraway), which leads to the prioritisation of anthropocentrism. Tsing proposes an embodied approach that takes in different positionalities, that is, she exhorts us to become-with the non-human and more-than-human, instead of just observing them from afar. To this end, the feminist and more-than-human curatorial work of Haraway and Tsing with her platform Feral Atlas (2021), the collaborative thought-exhibitions by Latour and Weibel at ZKM (Iconoclash 2002, Making Things Public 2005, Reset Modernity! 2016, and Critical Zones 2020 all devoted to the crisis of representation in art, science, and politics), and the visual STS approach by Galison in his collaborative work all use curatorial and artistic practice as research. These forms of research embodied, situated, and materialised knowledge that matters (Turkle 2011: 7). Moreover, they foreground storytelling, invention, and fictionality as tools for 'getting real' and challenging anthropomorphism (Skiveren 2022). All these collaborative endeavours might offer the coordinates of new zones of friction and creative resistance, asking us to engage with indigenous perspectives and traditions, forging alliances with symbionts, imagining anew the social and material fabric of the world. Perhaps from these zones new ways of being can become thinkable along the lines of what Ingold suggests with the concept of a «mycelial person» (Ingold 2003).

With this panel, we encourage proposals coming from both academics and practitioners for creative/performative presentations (regarding curatorial practices and/or exhibitions and storytelling), interactive sessions (bearing on material objects), and/or traditional academic papers. In particular, we ask prospective contributors to reflect on how exhibitions understood as "more-than-human alliances" might contribute to STS research and methods, demonstrating the importance of cherishing the process rather than the results; the significance of relational thinking; and the importance of interrogating the epistemological contributions of exhibitions.

At a time when some of the prominent venues promoting collaborative work in art, science and technology studies have closed (Science Gallery Dublin) or are under threat (SymbioticA), we call for forms of engagement, critical zones and methods capable of nurturing a "slow art-science" practiced by amateurs and connoisseurs in the guise of what Isabelle Stengers (2017) suggests in her manifesto for a slow science. What are the coordinates of such zones? How can we draw a map to chart our ways through a changing world? How to be alive in the "regime of the human," characterised by the lure of progress and "techniques of alienation," and "still exceed it" (Tsing 2017: 19). How can artists and scientists use their observatory stations not as ivory towers but as scaffolding for 'engagement all the way down" (Stengers: 2019, 19)?

## Panel 14: Securing worlds to come: Methods and interests in digital security

**Organizers: Matt Spencer; Daniele Pizio**

**University of Warwick, United Kingdom**

**Topics:** *Sociotechnologies of (in)secure worlds to come*

**Keywords:** *digital security, methods, models, architectures, infrastructures*

Securing is a powerful form of anticipatory orientation, rendering worlds-to-come in terms of threats-to-come, and opening up a range of preparatory and pre-emptory mitigations (de Goede 2014, Bourne et al. 2015, Folkers 2019). Such anticipation informs the design of systems, services and networks of many kinds. Security problematics also deeply inform our basic conceptualisations of technological systems as complex, societally-entangled, infrastructure (Collier & Lakoff 2015). If, as Graham Smith suggests, '[s]ecurity is not a value in itself, but is the reflection of, and an attitude towards other values' (2005: 586), we can always analyse any formulation of a security problem, and any security intervention that mitigates it, in terms of the worth and interest it performs.

This panel will focus on methods and interests: those of digital security and those of security research. Security methods entrench particular values, but they also create openings for challenging orthodoxies (Ermoshina & Musiani 2022) and enfold innovative future-making forces (Spencer 2021). The turn towards 'critical security methods' in critical security studies (Aradau et al. 2015) adds a reflexive dimension: how do methodological choices constitute securities, interests and futures in particular ways, for researchers as well as other kinds of practitioners.

We would like to invite scholars of digital security to use the panel to examine the intersection of methods and interest in their case studies, field sites and in their own research practice. Some of the questions contributors may explore include:

- How are different forms of worth, value, or interest enacted in the methods and models of security practitioners and/or researchers?
- What characterises securing as a particular form of anticipation, and how and where is securing challenged by alternative stances such as that of hope, faith or care?
- How do new models, methods or architectures of digital security challenge notions of future threat and opportunity?

### References

Aradau, C., Huysmans, J., Neal, A., & Voelkner, N. (2015). Critical security methods. *New frameworks for analysis. London and New York: Routledge*.

Bourne, M., Johnson, H., & Lisle, D. (2015). Laboratizing the border: The production, translation and anticipation of security technologies. *Security Dialogue*, *46*(4), 307-325.

Collier, S. J., & Lakoff, A. (2015). Vital systems security: Reflexive biopolitics and the government of emergency. *Theory, Culture & Society*, *32*(2), 19-51.

De Goede, M. (2014). Preemption contested: Suspect spaces and preventability in the July 7 inquest. *Political Geography*, *39*, 48-57.

Ermoshina, K., & Musiani, F. (2022). Concealing for Freedom.

Folkers, A. (2019). Freezing time, preparing for the future: The stockpile as a temporal matter of security. *Security Dialogue*, *50*(6), 493-511.

Smith, G. M. (2005). Into Cerberus' lair: Bringing the idea of security to light. *The British Journal of Politics and International Relations*, *7*(4), 485-507.

Spencer, M. (2021). Creative Malfunction: Finding Fault with Rowhammer. *Computational Culture: A Journal of Software Studies*, 8

## Panel 15: Boundary struggles: truth, interest and epistemic authority in a changing world

**Organizers: Luigi Pellizzoni (1); Giuseppe Tipaldo (2); Barbara Sena (3)**

**1: University of Pisa, Italy; 2: University of Turin, Italy; 3: Unitelma Sapienza, Italy**

**Topics:** *The value of science, technology, innovation and research practices*

**Keywords:** *boundary struggles, truth, epistemic authority, technoscientific conflict, conflicts of interest*

Although debated for a long time, the demarcation between expert knowledge and common sense has seen an evolution linked to social and technological changes in recent years.

The tension between conflicting dynamics of i) evidence-based policy making, ii) digital platformization of everyday life and news consumption and iii) the progressive loss of relevance of factual evidence in both public opinion forming and decision-making processes [a reconstruction of a quite turbulent debate is provided by Pellizzoni 2019] not only (re)brings to the fore the debate on the demarcation of epistemic authority [Gieryn 1983], but also requires that the issue be addressed taking into account the changing political, technological and social context.

The topic of health protection in emergency conditions, for instance, has become an issue on which ordinary citizens now feel they can actively intervene, making a useful contribution [Collins e Evans 2002: 236]. From another point of view, the increasing production of Big Data in medicine and science is transforming global healthcare and patient participation, by replacing the traditional expert knowledge with impersonal "expert systems [Dash et al. 2019]. It should also be noted how the "positioned" nature of "expert" viewpoints, not only outside, but also within so-called "official" or "orthodox" science, has become increasingly salient. Some of the most recent conflictual instances of public relevance – not only the Covid-19 pandemic, but also the conflict in Ukraine and the climate emergency – have in fact made evident that the (un?)deliberate confusion between the figure of the scientist (generalisable but perfectible knowledge) and that of the expert (contextual but effective knowledge with respect to the problem) creates insidious short-circuits between the request for reliance and the discharge of responsibility.

Even though the topic of "post-truth" seems to have lost momentum, what the expression implies has by no means waned in importance, with a shift from the classic "archetypal" conception of "truth" to a "prototypical" conception [Nordmann 2017].

Given the context above, submissions are solicited on, among others, the following themes:

1. epistemic struggles as conflicts of interests and boundary demarcation within the «orthodox» scientific community or between «official» scientific knowledge and alternatives;
2. relevant discoveries in the construction of the "expert" and "counter-expert";
3. the symmetry postulate: its potentialities, and possible side effects (e.g. false balance, relativism, science-related populism, etc.).
4. truth, post-truth and competing understandings of truth in the debate over the societal diffusion of technoscience, and its unintended and unpredicted socio-ecological "side effects";
5. the contrast between "expert" and Big Data knowledge in determining citizens and patients decision-making process in science related issues.

Collins, Evans, 2002   3rd wave of science studies, in «Social studies of science», 32

Dash, Shakyawar, Sharma, Kaushik, 2019   Big data in healthcare, in «Journal of Big Data», 6

Gieryn, 1983   Boundary-work and the demarcation of science from non-science, in «American sociological review»

Nordmann, 2017   Vanishing friction events and the inverted Platonism of technoscience, Routledge

Pellizzoni, 2019 Innocent, Guilty or Reluctant Midwife? On the Reciprocal Relevance of STS and Post-truth, in «TECNOSCIENZA», 10

## Panel 16: Developing a robust food system applying a transdisciplinary approach beyond academia

**Organizers: Carl Walter Matthias Kaiser (1); Cordula Scherer (2); Agnese Cretella (3)**

**1: Centre for the Study of the Sciences and Humanities, University of Bergen, Norway; 2: Centre for Environmental Humanities, Trinity College Dublin, Ireland; 3: Department of Philosophy and Communication, University of Bologna, Italy**

**Topics:** *Ecological transitions and climate justice; Knowledge co-creation, citizens science, co-design processes, material publics and grassroot innovation; Food networks and governance in postpandemic times; Building alliances in public participation and engagement*

**Keywords:** *Just and sustainable food systems; Transdisciplinary research; Food governance; Food futures*

The current food system needs restructuring and innovation, locally, regionally, nationally, and globally. While knowledge is required to transform peoples' food-ways to sustainable production and consumption, the traditional role of the sciences as instigator and premiss-supplier of transformative social processes cannot be maintained. As STS research has convincingly shown (Jasanoff et al 1995, 2004, 2011, 2016), in the age of post-modernity we need to turn to a co-creation of actionable knowledge by utilizing citizen science (Irwin 1995) and devise transdisciplinary proposals (ref. post-normal science; mode 2 science) for social change. Innovations come from Living Labs (Westerlund & Leminen 2011) and change is bottom-up, based on participatory action research, and often aiming at identifying local value-based food-identities. This panel is based on the insight that no robust shifts of our food provisioning system will happen unless they start in the minds of the people first, respecting food justice and food sovereignty. To this end, we invite empirical and theoretical contributions exploring innovations to inform on food futures while embracing food heritage including diversity of local value landscapes, which may include (but are not restricted to) the following themes:

(i)     Knowledge co-creation, citizens science, co-design processes, material publics and grassroot innovation
(ii)    New governance forms targeting ordinary citizens, food networks and governance in post-pandemic times
(iii)   Integration of humanistic research into food studies strengthening local identities and values
(iv)    Initiatives channeling local diversity in nutritional and dietary needs while tack-ling the challenge of 'reconciling the economy with our planet'.
(v)     Ready-made solution to urban food production and closing biological food cycles

## Panel 17: Electricity Futures: materialising promises and disappointments

**Organizers: Costanza Concetti (1); Leonard Schliesser (2)**

**1: Durham University, United Kingdom; 2: Durham University, United Kingdom**

**Topics:** *Ecological transitions and climate justice; Technoscientific promises, imaginaries and expectations; Methodological challenges in a more-than-human world; Everyday life and design of the mundane; Innovation imaginaries, practices and policies*

**Keywords:** *(smart) grid, power, futures, sociotechnical imaginaries, more-than-human agency, material politics*

In light of the looming perils of climate change and the stark warnings from the IPCC, the need for 'sustainability' has become generally accepted. The heterogeneity of the literature on sustainable transitions (T2S) towards carbon-neutral/low-carbon futures however exemplifies the diversity of visions for and pathways to such futures. Many of these visions hold conflicting technoscientific promises, imaginaries and expectations that are seldomly clearly articulated in the literature or in public debates.

One area of this debate centres around the decarbonisation of electricity generation. The replacement of predictable yet polluting centralised fossil power plants with volatile renewable generation and with decentralised prosumption practices challenges existing power systems. Activists and scholars calling for the proliferation of such practices discuss them as political alternatives to centralised and unjust previous/current energy systems. Similarly, industry representatives, policymakers and scholars alike evoke digital technologies and (big) data to discuss the 'smart' grid as a more efficient solution to secure the flow of electricity. Both these framings tend to oversimplify the dynamic tensions and the non-linearity of these 'power' infrastructures, their politics, and their change, as well as ignoring altogether the agency and affordance of their non-human elements.

We invite papers interested in sociotechnical transitions involving electricity generation, transmission, and distribution and investigating the tensions between the promises, imaginaries, and expectations of 'smart', decentralisation, and prosumption and the intricacies of their more-than-human materialisations. We ask: How do we study electricity futures both imagined and in their materialisations without flattening their complexity? We invite papers discussing, among others:

- empirical findings on smart grids pilot projects, decentralisation schemes such as collective self-consumption or renewable energy communities, and the implementation of microgrids (off-grid or integrated).
- Theoretical and methodological reflections on how to study more-than-human transitions in-becoming and how to account for the power and politics of emerging electricity futures.

## Panel 18: Interests in the circulation of knowledge: science communication as dissemination of ignorance

**Organizers: Jorge Escobar-Ortiz (1); Jorge Márquez-Valderrama (2)**

**1: Instituto Tecnológico Metropolitano, Colombia; 2: Universidad Nacional, sede Medellín, Colombia**

**Topics:** *Knowledge co-creation, citizens science, co-design processes, material publics and grassroot innovation; Technoscientific promises, imaginaries and expectations; Postcolonial technoscientific futures; Ethics, innovation and responsibility in technoscience; The value of science, technology, innovation and research practices*

**Keywords:** *Science communication, ignorance studies, circulation of knowledge, science popularization, popular science*

Science communication is a hypernym for terms like science popularization, public understanding/awareness/communication of science, and public engagement with science, and terms in other languages like vulgarisation scientifique, divulgação científica, divulgazione scientifica, apropiación social de la ciencia, Wissenschaftspopularisierung, among others. It appeals to practices, processes and activities that attempt to establish a communicative relationship between two groups, the scientists and the public, about different aspects pertaining to science and technology.

What can be seen as the dominant view in science communication maintains that, through this communicative relationship, people gain knowledge or improve their knowledge about certain aspects of science and technology. Knowledge dissemination would be the main purpose of science communication. Through it, an individual may get to know or know better the contents and processes of science, including conceptual, theoretical, and experimental elements, but also the historical, philosophical, sociological, and even psychological, cultural, and religious circumstances surrounding them. Likewise, an individual may get to know or know better how she and others can make decisions about what to do with science in society, its risks, its socioeconomic implications, and other factors related to control, power, and authority over science.

For the dominant view, science communication creates responses to science, and through them, knowledge about science. However, as ignorance studies have taught us, any production of knowledge always comes hand in hand with the production of some variety of ignorance. To take Kourany and Carrier's metaphor, the quest for knowledge operates as a searchlight, in which illuminating certain aspects of experience will inevitably leave others in the dark. The connection between knowledge and ignorance may thus be described as a bifront phenomenon—they form a unity like the Greek god Janus, whose two faces could not be meaningfully separated from each other. Or like a coin, whose obverse cannot be thought independently of its reverse, and vice versa.

In introducing these considerations, ignorance studies help us see science communication from a broader perspective, and pay more attention to its agendas and inclinations. Science communication is not a neutral way to disseminate knowledge, but an intentional strategy to disseminate certain bits of knowledge and ignorance simultaneously, according to different interests. For this panel, we want to explore how science communication, also understood as a process of ignorance dissemination, help to perpetuate certain images of science and hide others, both about science and society, and about how science is or becomes related to society.

We invite abstract proposals about (but not limited to) these areas:

- Science communication as a means to produce and maintain ignorance about science and technology in society.
- Typologies of ignorance in science communication.
- Uses of ignorance in science communication.
- Unmaking ignorance about science and technology produced by science communication.
- Ignorance dimensions of the history and philosophy of science communication (philscicomm).
- Science communication, ignorance and transformational HPS.
- Science communication, ignorance and epistemologies of the south.
- Dissemination of ignorance through forms of science communication (e.g., documentaries, books, podcasts, journalism, public talks).
- Practices of ignorance in science communication.

## Panel 19: Imaginary organisations for reinvented professions. Technological expectations and the construction of the world.

**Organizers: Enrico Maria Piras (1); Roberto Lusardi (2)**

**1: Fondazione Bruno Kessler, Italy; 2: University of Bergamo**

**Topics:** *Technoscientific promises, imaginaries and expectations*

**Keywords:** *Organization, Professions, Innovation, Imaginaries, Scenarios*

Social studies of science and technology have a longstanding interest in Expectation Studies since the pioneering and (now) classic reflections on the mutual shaping of social and technology order (Bijker & Law 1994). Anticipations are crucial in understanding sociotechnical change given their role in every stage of the process and they have a generative role in securing funding, ensuring coordination of groups of actors and across time (vertical and temporal coordination) (Borup et al. 2006). From use cases crafted to guide designers in the development to the definition of pilot implementation settings, yet-to-be-created artifacts are narratively artefacts are narratively placed in scenarios whose realisation is the first moment in which heterogeneous engineering is practised. In this respect, expectations inscribed in use cases participate in users' configurations just as scripts embodied in the technical artefact (Grint & Woolgar 2013). Expectations regarding the reconfiguration of organisational and professional practices can be constructed in a rigorous and formalised manner. They can follow the detailed analysis of the context or even with the full involvement of future users, as in the traditions of Computer Supported Cooperative Work or Participatory Design. Or they can or simply be sketched to justify the new artifact and attract potential investors.

This panel intends to propose a reflection on a specific dimension of expectations focussing on those relating to new organisational configurations and new ways of interpreting professional roles. While imaginary organisations for reinvented professions can be created with the sole purpose to provide a working scenario for developers, they are part of a transformative-normative device that aims to shape new arrangements by proposing an ethos to which actors should conform. Scenarios illustrate the conditions under which technologies can exist, showing how organisations and practitioners must reconfigure themselves and anticipating who should be blamed if they fail. In this respect, organisational configurations and professions are both the precondition and the outcome of the introduction of technical innovations.

The panel aims at gathering and promoting confrontation between scholars working at the intersection of STS, organization and profession studies and design. Even if to the trained eyes of scholars from such traditions such imaginary organizations and reinvented professions may appear at times naïve if not completely unrealistic, we would like to devote our attention to their analysis to investigate the implicit assumption they are based on and their word-making role in the process of innovation.

We invite contributions to explore how technoscientific promises create imaginary organizations and professions and how such scenarios are created, contested, and enacted at all stages of innovation.

Bijker, W. E., & Law, J. (Eds.). (1994). Shaping technology/building society: Studies in sociotechnical change. MIT press.

Borup, M., Brown, N., Konrad, K., & Van Lente, H. (2006). The sociology of expectations in science and technology. Technology analysis & strategic management, 18(3-4), 285-298.

Grint, K., & Woolgar, S. (2013). The machine at work: Technology, work and organization. John Wiley & Sons.

# Panel 20: Extracting Humanness, Exploiting Labour: The Inhumane Face of Artificial Intelligence

**Organizers: Fabio Morreale (1); Elham Bahmanteymouri (1); Brent Burmester (1); Matteo Pasquinelli (2)**

**1: University of Auckland, New Zealand; 2: University of Arts and Design Karlsruhe, Germany**

**Topics:** *Working conditions and organizations interested in and by automation; Algorithmic knowledge, media ecologies and artificial intelligence; Ethics, innovation and responsibility in technoscience; Extractivist powers, imaginaries and asymmetries*

**Keywords:** *Labour exploitation; immaterial labour; AI-training; data extractivism; digital labour*

An ever-growing number of digital and non-digital companies and governments embed forms of artificial intelligence (AI) in their technical infrastructure. The dominant AI technique, Machine Learning (ML), is based on the paradigm that computer systems can emulate humans when provided with enough "training data". In most cases, this training data is the product of human labour, and the way in which it is collected is problematic. Data collection procedures are opaque; business models fail to account for the value of the labour being contributed by individuals, and consent to collect and use this data is not explicitly requested.

Particularly widespread are systems in which the training data is gathered simply by virtue of users voluntarily engaging with digital platforms and online tools for purposes other than contributing data to a training set used by AI systems. For example, an internet user filling out a reCAPTCHA is actually generating data that is then collected and used for various Google AI applications. As another example, Spotify's music recommendations are informed by many different types of human input, including user interactions with the platforms (e.g. the music they like or skip, the playlists they create) and music reviews and comments written by music journalists and aficionados on blogs and forum that are scraped by Spotify bots to extract music taste automatically.

Individuals interacting with AI-powered systems are commonly unaware of the ongoing extraction of value as they volunteer their preferences, intelligence, and behaviours to AI owners. They are also commonly unaware of how their information and actions generate corporate profits. Using a Marxian lens, we frame these extractive practices as forms of labour and specifically immaterial labour that has an external value that individuals are steadily but inadvertently producing. Consequently, they cannot use the collective power this affords to make demands of their 'employers'. The Marxian approach suggests a classification of knowledge class for all individuals whose interactions with AI generate value that is expropriated from them. Framing this issue using the theme of the conference, an interesting world to come would see new political struggles of the knowledge class whose work is exploited by digital capitalism and new ways to break the circuits of surplus value/surplus data as the engine of this type of capitalism.

The topic of this panel is aligned with current STS discourses, including digital labour, AI ethics, and asymmetric power relations between digital corporations and their users. Given the highly interdisciplinary nature of this issue, we argue that STS is the perfect venue for these conversations to be finely clarified, confronted, addressed, and resolved. In this track, we encourage submissions across different domains discussing instances of labour exploitation and humanness extractivism in AI. Possible contributions include the following i) political and philosophical lenses to frame this phenomenon; ii) initiatives to uncover issues at the intersection of labour and AI; iii) methods to audit AI training sets; iv) proposition of possible forms of resistance; v) discussions of case studies to which this issue applies.

## Panel 21: A caring interest for the planet: making archives and readers *sensitive* in times of the new climatic regime

**Organizers: Claudio Coletta (1); Paolo Giardullo (2)**

**1: University of Bologna, Italy; 2: University of Padua, Italy**

**Topics:** *Ecological transitions and climate justice; Knowledge co-creation, citizens science, co-design processes, material publics and grassroot innovation; Methodological challenges in a more-than-human world; Extractivist powers, imaginaries and asymmetries*

**Keywords:** *New climatic regime, care, interest, sensitiveness, publics, infrastructures*

This panel addresses the sensitiveness of infrastructures and publics in times of entangled climate crises, focusing on the concepts of care and interest, archives and readers. Sensitiveness is thus intended as materially enacting and enacted by things, knowledge and practices, whether they be digital, organizational, bodily, or else. The idea of the panel draws on the following words by the writer Georgi Gospodinov in the novel Time Shelter (our translation): "*Time and epochs mingle, somewhere in Siberia seeds which rested 30000 years beneath the thawing permafrost started blooming. The earth is going to open up its archives, although it is not clear whether there will be readers".* We believe that the quote raises challenging issues for STS: how to read and re-present the layered and connected crises featuring the new climatic regime? How to take care of more-than-human archives and make sure that there will be more-than-human readers? During the last decades STS scholars addressed in many ways the composition of the new publics brought by the crises, and yet such engagement and effort must be constantly actualized and maintained. The panel is inspired by the seminal work of Susan Leigh Star on invisibility and infrastructures and by the political-ecological endeavour of Bruno Latour, as well as by the many (STS) scholars that in the last decades contributed to unfold key STS concepts including care, ecology, publics, affectivity, attention, sensing. The panel invites thus to address the climatic regime by 'working on the fringes' between care and interest, taking into account the following question: how to compose new publics and materialize them into durable archives that mobilize attention and interest, and whose readers could become agents of care? Therefore, we invite to discuss approaches and ways of seeing, listening, doing and feeling that contribute to align archives and infrastructures as well as readers and publics, so as to be conducive to forms of sensitiveness and ethical-political agency for climate justice and just transitions. The panel welcomes theoretical/empirical contributions and experiments from SSH and STEM (including design, planning, art, and activism) where interests and calculations interact with attention and care, addressing (but not limited to) the following topics:

- the making of archives and readers through scientific activism, 'citizen sensing', including the quasi-scholarly practices of artists, writers, activists, and more-than-human communities;
- the modes of organizing sensitiveness and unsensitiveness in climate transitions;
- the practices of care, as institutionalised, infrastructured and/or made visible/invisible;
- the methods and the 'arts of attention' for developing a caring interest.

## Panel 22: How are STS interested in robotics?

**Organizers: Letizia Zampino (1); Ilenia Picardi (2); Assunta Viteritti (3)**

**1: Sapienza, University of Rome, Italy; 2: University of Naples Federico II, Italy; 3: Sapienza, University of Rome, Italy**

**Topics:** *Technoscientific promises, imaginaries and expectations; Algorithmic knowledge, media ecologies and artificial intelligence; Innovation imaginaries, practices and policies; Sociomaterial learning processes and/in digital worlds*

**Keywords:** *Robots, digitalization, humanoid robots*

In the first half of the last century, robotics penetrated the human imagination with stories of Karel Čapek's *Rossum's Universal Robots* of the 1920s, but also with Isaac Asimov's science fiction novels *I, Robot*. It then crosses over to the cinema with HAL 9000 from *A Space Odyssey*, the supercomputer on board the spaceship Discovery that rebels against the human, until the TV series *Westworld*, which features humanoid robots populating a strange amusement park.

All these imaginaries have fuelled an idea of the humanoid corporatisation of robots, technical objects that 'come to life', black boxes that relate, collaborate and sometimes oppose humans. On the other hand, scholars and robot designers believe that robotics - particularly in its interactions with other technologies, such as Artificial Intelligence, 5G, the Metaverse - will bring about profound social transformations that will affect every aspect of human life. STS studies over the past 30 years have promoted perspectives on analysing technology as networks and as interconnection processes, opening up the various black boxes. How have STSs studied and are studying robots and robotics? This is the basic question this track aims to answer. Robots and robotics are now interconnected in many spheres of social worlds, constructing complex techno-scientific processes that promise future worlds capable of supporting, enhancing and expanding the skills of humans by replacing them in the most strenuous jobs or empowering them in the most advanced spheres (from the study of cognition, to space technology, to nanorobots to liquid robotics). Which epistemic communities are involved in the design and production of robots and robotics? How do the fields of robotics shift or connect the worlds of designers to those of users? How do STS take an interest in robotics and the study of robots as they take forms and specialisations in the various fields? What categories, concepts, theoretical frames are translated into the study of this broad field? Which theories and concepts from the STS tradition are enlisted in the social study of robots and robotics?

Empirical, theoretical and methodological contributions from different STS fields of study and application in robotics are welcome, and may include (but are not limited to):

- design, uses and applications
- arts and everyday life
- gamification for adults and children
- healthcare and medicine
- education and learning
- ecological transition and climate change
- space exploration
- security and arms
- work and industry,
- automatisation and computing
- digital transition
- agriculture robotics
- liquid robotics

We do not know whether the more than human alliances that robots and robotics foster will lead us to interesting times, but we will certainly experience times that will be interesting to study, and STS perspectives can help us in this.

## Panel 23: Unpacking the entanglements of governance with technoscience: is it an 'interesting' challenge in addressing good governance?

**Organizers: Anwesha Chakraborty; Alice Fubini**

**University of Bologna, Italy**

**Topics:** *Knowledge co-creation, citizens science, co-design processes, material publics and grassroot innovation; Technoscientific promises, imaginaries and expectations; Governance of and by data infrastructures; Innovation imaginaries, practices and policies; Ethics, innovation and responsibility in technoscience*

**Keywords:** *good governance, sociotechnical imaginaries, responsible institutions, technological affordances, ethics and technology*

The world is facing existential challenges of such a magnitude that conversations around them have become part of our everyday lives. Problems as wide-ranging and complex as long-drawn conflicts and the possibility of nuclear war, global climate change and related catastrophes, weakening democratic institutions and the rise of authoritarianism, and large-scale corruption leading to misallocation of resources which in turn exacerbates multidimensional poverty: all these issues already threaten the efforts of sustained peace and human well-being as attempted in the long 20th century. At the heart of all these problems lies the core issue of ensuring good governance, a desirable condition for the world(s) to come, based on fostering the following (but not limited to) elements: robust institutions, transparency and accountability, less corruption, and peace and justice in all sections of the society.

This panel aims to address the issue of good governance looking at the "interesting" role that technologies might play within the process. Some scholars frame this issue looking at the development of e-governance tools and the improvement of governance metrics, especially in countries of the global south (Haque and Pathrannarakul 2013; Juiz et al. 2014; Malik et al. 2014; Saidi and Yared 2003). Others consider the challenging role played by the introduction of artificial intelligence to governance processes (eg. Ulnicane et al., 2021).Technoscientific innovations to address present-day problems have been on the rise with governments, public and private institutions, civil society and the general public all treating such innovations as the panacea (Pfotenhauer et al. 2019; Pfotenhauer and Jasanoff 2017). However, we argue that technological innovations (re)present an "interesting challenge" in themselves that may (or may not) foster good governance and may even raise additional challenges related to unintended consequences resulting from use.

A major goal of this panel is to unpack various aspects of the entanglements of technoscience with governance, considering that the pursuit of better governance requires more than human solutions, but at the same time more human collaborations at different levels as technologies might foster alliances between a variety of human actors as a way to address the crucial problems of today and the near future.

In particular, these are some of the questions which the panel seeks to interrogate:

- What kind of agency does technology lend to institutions, governments, organisations, civil society and members of the public to ensure better governance?
- Are there intrinsic affordances of technology which can be designed by different groups of actors? Do certain affordances come to the fore only through use of technological tools?
- What instances of technoscientific innovations do we find in the area of governance? Do we see instances of co-production of technologies by different actors (both top-down and bottom-up)?
- What are the sociotechnical imaginaries of good governance at local, national and international levels of institutions, organisations and actors? Are they always within neoliberal frameworks?
- Can technology lead to more ethical and responsible institutions? Are those technologies inherently ethical themselves?
- (How) can technology manage controversies arising from unintended consequences of its use?

## Panel 24: Questioning the material and infrastructural dimensions of social research: methods, tools and practices

**Organizers: Attila Bruni (1); Paolo Magaudda (2)**

**1: University of Trento, Italy; 2: University of Padua, Italy**

**Topics:** *Methodological challenges in a more-than-human world*

**Keywords:** *research practices, digital tools&methods, infrastructure, online ethnography*

In the last decade, social research practices have intensely evolved. The increasing digitalization of everyday life (including the prominence of internet-based interactions and the proliferation of social media and digital platforms) led to the introduction of new digital tools, techniques and artefacts for data collection and analysis. At the same time, also the traditional material infrastructure of ethnographic and qualitative research (pen, notebook, camera, tape recorder) has been sided by new digital devices and technologies (smartphone, software for qualitative analysis, online data repositories).

While a reflexive turn in social research led to problematize the supposed neutrality of the researcher and of the accounts that s/he produces, the same cannot be said in reference to technologies, infrastructures and artifacts today adopted by researchers and research collectives. From a STS perspective, tools, artefacts and techniques are not just inert objects, but active elements in building the relationship with the field and in constructing research outcomes. New digital tools and methods (e.g. data mining, topic modelling, or sentiment analysis), together with the rhetoric that sustain them, require to be understood for their non-neutral role in producing knowledge, carefully inspecting their scripts and internal logic, as for any other technique, software, or epistemic object. As it is common in STS, the point is not whether digital tools are new or old, but how can they be configured to further develop social research and how do they configure social research itself. For instance, several new research tools basically rely on old forms of statistical analysis; and big data or so called 'naturally occurring data' are not 'natural' at all, as digital contents and actions are often highly formatted and standardized. This also applies to search engine query data (which very much depend on the way the search engine itself works), and to software for qualitative analysis (with their own internal logic) or online ethnographies (where the digital infrastructure set the possibilities of action and observation). In a few words, the current reshaping of digital methods, online ethnographic works and the data generated with these approaches raise much more questions and controversies that they aspire to solve:

Accordingly, main topics of interest of this panel include, but are not limited to:

- Technical and material infrastructures of social research in today's digital society;
- challenges and changes in research practices since the adoption of digital-based research tools;
- materialities of digital ethnography, digital methods and software-based analysis;
- maintenance and repair practices in research infrastructures and artefacts of social research;
- challenges posed by platforms, social media and other internet-based environments to established methodologies in social sciences;
- technical standardization and interpretative situatedness in data collection and analysis.

## Panel 25: Interesting failures to come: history, actors, and scenarios in unsuccessful digital technologies projects

**Organizers: Olga Usachova (1); Ginevra Sanvitale (2)**

**1: University of Padova, Italy; 2: Eindhoven University of Technology, Netherlands**

**Topics:** *Technoscientific promises, imaginaries and expectations; Innovation imaginaries, practices and policies*

**Keywords:** *digital technologies failure, unsuccessful technological development, maintenance and repair, consequences of tech failure, failure acceptance*

For a long time innovation in the development of digital technologies has been portrayed only from the successful side. In contrast, the recent review emphasizes that "innovation projects [that] failed either completely or partly range from 40 to 90%" (Rhaiem & Amara, 2021). Unsuccessful digital technologies project development has been addressed from different fields, such as government information system (Pelizza & Hoppe, 2015), digital media (Magaudda & Balbi, 2018), organizational management of ICT project implementation (Ungerer, 2021), the environmental history of technology (Jones-Imhotep, 2017), the history of telecommunications (Lipartito, 2003). This evidence shows how failure is an unavoidable and multifaceted process in the development of digital technologies.

Designing interesting worlds to come thus also implies expecting interesting failures to happen. And learning from past and present technology failure is a crucial step to future success in addressing the more-than-human challenges ahead of us. This panel will focus on two connected aspects of digital technologies failure. On the one hand, we discuss the controversies in current developments of digital technologies, drawing attention to the so-called unsuccessful development. On the other hand, we are interested in historicizing failure in the development of digital technologies, looking into both exceptional and recurring cases of digital technologies failures across time. We envision digital technologies failure as a societal, technological and political construct, typically resulting from the interaction of multiple human and non-human actors. digital technologies failure is therefore also a pointer to failures in our relationship with the natural environment, in our societal order and norms, in our technopolitical arrangements.

We invite submissions from science and technology studies, history of science and technology, and other related disciplines that address the following questions (but not limited to):

- How can we define "failure" in digital technologies? What is the role of non-human actors in existing conceptualizations of digital technologies failure? How can discourses and practices in different contexts contribute to the definition of digital technologies?
- What is the role of maintenance and repair practices in digital technologies failure? Which more-than-human alliances are implied by these practices? What is the relationship between digital technologies failure, more-than-human-challenges, and repair and maintenance practices?
- What conditions underlie the institutional acceptance of technology failure? Why do some digital technologies failures receive more public attention than others? How do processes of accountability work in publicly-funded failed digital technologies projects?
- What are historical and contemporary examples that address learning from digital technologies project failure? How are these learnings recorded and transmitted (but also forgotten and omitted) over time?
- What is the relationship between digital technologies failures and the promises sustaining the implementation and diffusion of these technologies? Can technology promises be understood as a counterpart of technology failures? How do past technology failures inform future technology promises?

## Panel 26: Interesting worlds as matters of caring and commoning

**Organizers: Mariacristina Sciannamblo (1); Maurizio Teli (2); Giacomo Poderi (3)**

**1: Sapienza University of Rome, Italy; 2: Aalborg University; 3: IT University of Copenhagen**

**Topics:** *Knowledge co-creation, citizens science, co-design processes, material publics and grassroot innovation; Methodological challenges in a more-than-human world; Everyday life and design of the mundane; The value of science, technology, innovation and research practices; Extractivist powers, imaginaries and asymmetries; Building alliances in public participation and engagement*

**Keywords:** *caring, commoning, collaborative research, co-design, engagement*

The concept of 'interest' has been central in STS since its inception (Callon and Law 1982; Callon 1982), when it was introduced to describe networks of relationships between human and non-human actors through the employment of devices, the development of interpretations, and the mobilization of alliances. The discussion of the formation of interests and its related processes of translation has brought the issue of power, and its reconfiguration(s), under the spotlight, as meaningfully articulated by Callon through the questions: "Who speaks in the name of whom? Who represents whom?".

More recently, the increasing prominence of critical approaches - e.g. feminist and postcolonial STS - and the intersections with cognate research fields - e.g. participatory design, information science, environmental humanities - have stressed the politically engaged character of STS which emphasized its 'activist interest' (Sismondo, 2008). That has spurred the emergence of a "collaborative turn" in STS (Farías, 2017) that we see as a direct consequence of STS concerns with power. The collaborative turn has brought about questions on the ethical, affective, and political dimensions of researching by means of collaborative and committed action-research projects based on dialogue, mutual learning, and caring relationships within heterogeneous collectives.

These concerns have been troubled and further elaborated by feminist thinking in STS, in particular with the prolific reflections on the concept and practice of care (Mol et al. 2010; Martin et al. 2015), which emphasize the ambivalent, situated, and material character of care as well as our own care and concerns as STS researchers and practitioners (Puig de la Bellacasa 2017).

In parallel, STS research has explored the importance of the commons whether these are natural, material, human made, or immaterial (Papadopoulos 2018). Commoning practices can indeed be considered matters of care as they attend to everything we do to maintain, continue, and repair our world (Tronto 1993). Additionally, commoning prompts us to reconsider human-nature and more-than-human relationships in ways that challenge dominant existing extractive capitalist models, towards "the production of ourselves as a common subject" (Federici 2018). These allow us to stay with the troubles that attend to matters of care and the related implications of unpacking the logics, contradictions, and multiple ruptures generated by capitalism. Against this backdrop, we hope to make visible the neglected and often invisible labor of reproducing the commons, and to question which and whose material, political, and ethical orders come into play when researching and intervening in/for the commons.

This panel invites presentations that explore the intersections between caring and commoning in the context of STS intervention-oriented research. Both empirical and theoretical contributions are welcome. These may include (but are not limited to):

- disciplinary intersections among STS, design, and commons/-ing studies;
- knowledge co-creation, co-design processes, material publics and grassroot innovation;
- ICT, labor, and precariousness;
- theories and methodological approaches as forms of caring and commoning;
- complexities, opportunities, and contradictions of making new alliances between researchers, activists, local populations, and institutions;
- sites of ambivalence and contradictions in caring and commoning practices.

## Panel 27: Critical posthumanism: interrogating cyborg imaginaries, practices and politics

**Organizers: Erika Cudworth (1); Delia Langstone (2)**

**1: De Montfort University, UK, United Kingdom; 2: University of East London**

**Topics:** *Ecological transitions and climate justice; Technoscientific promises, imaginaries and expectations; Sociotechnologies of (in)secure worlds to come; Technofeminism and interspecies solidarities*

**Keywords:** *cyborg, interspecies, posthumanism, technoscience*

There are many posthumanisms. Posthumanism is an elastic term that has varied understandings, meanings and deployments. It can be considered as a form of critical enquiry. While critical thought has been concerned with questions of exclusion of various kinds, it has tended to concentrate on human interactions. Critical posthumanist thought however, seeks to extend the area of social enquiry to all that lives. Posthumanism provides a challenge to our perceptions of what it means to be human on a planet containing a multitude of other forms of life. 'This shift in the social and individual perception of the human', Francesca Ferrando (2016, 168) argues, 'is one of the most important challenges we are facing as a species, as individuals, as moral, ethical and social beings'. While not wanting to reject all of the potentially progressive elements of humanism, critical posthumanists reject this central separation of the human species from other species and the rest of nature. This is often described as human exceptionalism, succinctly defined by Donna Haraway (2008, 11) as 'the premise that humanity alone is not a spatial and temporal web of interspecies dependencies'. Hence a prime feature of posthumanist work has been to de-centre the human by asserting that how we act cannot be abstracted from the ecology in which we exist.

Posthumanist influenced work is a new but rapidly growing area across disciplines, and has engaged with a variety of issues. This panel is open to the consideration of a range of posthuman imaginaries. It is concerned with the nature of technoscientific futures and their ethical and political critiques. It seeks to examine critical posthumanist perspectives on the mutliple crises the planet and its pluriverse of species and their ways of being, confront. The panel considers the ways posthumanist theory and empirical research might illuminate our understanding of and possible responses to exclusions, extractions and explusions; to various kinds of existential threat. The panel considers the practices and politics of technonaturecultures, and their embedding in intraspecies assemblages, spaces and relationalities. In addition, the panel seeks positive intervention for most sustainable futures and liveable worlds in terms of posthumanist allyship, solidarities and communities.

Posthumanist influenced work is a new but rapidly growing area across disciplines, and has engaged with a variety of issues. This panel invites abstract proposals including, but not limited to:

- Posthuman imaginaries
- Critiques of technoscientific futures
- Critical posthumanism and existential threat
- The practices and politics of technonaturecultures
- Intraspecies assemblages, spaces, relationalities
- Posthumanist approaches to exclusions, expulsions and extractions
- Posthumanist allyship, solidarities and communities

## Panel 28: The politicization of infrastructures. European transformations in the name of geopolitics, security, and crisis.

**Organizers: Benedict Lang; Jan-Hendrik Passoth; Silvan Pollozek**

**European University Frankfurt (Oder), Germany**

**Topics:** *Sociomaterialities of conflict and peace; Methodological challenges in a more-than-human world; Governance of and by data infrastructures; Sociotechnologies of (in)secure worlds to come*

**Keywords:** *Geopolitics, security, crisis, politicization, infrastructures*

Already in dealing with the pandemic, but even more so with the Russian war in Ukraine, infrastructures in Europe became a focus point of public and political debates. From underwater cables and pipelines to electricity or data infrastructures, infrastructures are now finally prominently discussed in terms of geopolitics, vulnerability and threats. In a breathtaking way, huge investments in new projects, hectic construction work, and the (re)assessment of critical infrastructure and emergency plans hint to the many attempts and interventions of states actors in the name of security and crisis.

This is all the more remarkable - and concerning - given that infrastructures are shaped not by governments and parliaments alone, but also by experts and committees, associations and citizen initiatives. Infrastructures have development lifecycles and roll out schedules and are often interdependent with other Infrastructures as well. They grow spatially and thus intervene into and reconfigure many different regional ecologies. And they are not built de novo but need to be built upon installed bases. By this, infrastructures take shape at many sites and in and through many arenas and publics, where many voices and concerns are assembled.

In this panel, we ask how the politicization of infrastructure in terms of security, geopolitics, and crisis (re)configure arenas and publics, affect their development, implementation, and reassessment, and transform Europe in various forms and on various scales.

It invites contributions that focus on topics (among others), such as

- the shifting of boundaries between the "technological" and the "political"
- the (re)configuration of different arenas and voices of infrastructural development and implementation through politicization
- which issues do (and do not) deserve credit
- strategies and effects of polarization, scandalization, devaluation and silencing
- imaginaries, visions, promises of infrastructures in the light of geopolitics, security, and crisis
- the reassessment of infrastructure as critical, vulnerable, or outdated
- roll-out of infrastructure projects on local, regional, national, and EU scale

## Panel 29: Materiality and research in museums of science, technology and medicine

**Organizers: Simona Casonato**

**Museo Nazionale Scienza e Tecnologia Leonardo da Vinci, Milano, Italy**

**Topics:** *Heritage industry and the production of collective memory*

**Keywords:** *Science Museums, Research, Artefacts, Materiality, Heritage*

How are "interests" conceptualised in the science and technology museums (STMs)? What interests animate the ideal scopes and practical actions of the many actors moving in the field of STMs and in their practices of research, communication, and artefacts collection? How do these interests shape ideas of long-term perspectives and put contemporary challenges in a historical frame?

The International Council of Museums recently stated that museums must be "in service of society" and that their first task is "research" (ICOM, 2022). In museums, research is often related to collecting artefacts, which is substantial to knowledge production in disciplines such as art history, archaeology, and natural history. But the science and technology cultural heritage reveals a different status that has not been approached in the same way. STMs have often been conceptualized as a monolithic yet ambiguous category that includes institutions as different as national museums and science centres, overlooking the field complexity (Bud, 2017). Social sciences (and namely STS) have mainly looked at STMs in terms of exhibitions and public engagement, missing a deeper view of their social and technoscientific practices, especially in deeply characterizing activities related to the past of science and technology, like collecting and heritage building (Spada, 2022).

In general, in the last decades, the museum as an institution has been increasingly defined by its social role, almost questioning the role of collections in the very concept of "museum" (Brown and Mairesse, 2018). The concept of heritage has been enlarged by dematerialized bottom-up perspectives, like the Convention of Intangible Cultural Heritage (UNESCO, 2003) and the Faro Convention (Council of Europe, 2005), focusing on education and social activism.

In this scenario, what does it mean for museums to be socially oriented, to produce autonomous research, and to be concerned – at large – with science, technology, and medicine in terms of material culture, heritage, and history? STMs need fresh perspectives on the social and cultural agency of technoscientific artefacts that they collect, which can be interpreted in their more-than-human facet, as actants of the heritage industry.

The panel addresses scholars in STS, social sciences, and humanities, as well as curators and practitioners, inviting to look "behind the exhibit", focusing on the interests at stake in STMs and the role of museum research and artefacts in the construction of collective memories and technoscientific imaginaries (Canadelli et al., 2019). We encourage to consider the long historical tension between two (supposed) opposite views of museums, conceptualized as the "forum-versus-temple", that has become a standard starting point of the museological reflection since the 1960s (Cameron, 1971; Poulot, 2020). Following the path traced by the Anglo-American museology, we would like to include both the perspectives of curators and scholars, addressing topics such as heritage co-production, public history, material culture of science and technology, power imbalances between museums stakeholders and museum audiences, and the role of history in the contemporary science and technology debate (Artefacts Consortium, 1993; Boon, 2011; Graham, 2016; Alberti, 2022).

## Panel 30: Algorithmic organizing and workers' well-being

**Organizers: PAOLO ROSSI; LIA TIRABENI**

**University of Milano Bicocca, Italy**

**Topics:** *Health policies, governance and practices in a postpandemic era; Working conditions and organizations interested in and by automation; Algorithmic knowledge, media ecologies and artificial intelligence*

**Keywords:** *Algorithm, control, organizing, well-being, workers*

Contemporary organizations are increasingly adopting an 'algorithmic' logic for realizing artefacts, services and, more generally, different kinds of output [Giardullo and Miele 2020]. Algorithms take the form of procedures that support the elaboration of large amounts of data, and these processes affect a growing number of organizations' stakeholders, including their workers. In this frame, many authors already suggested the role of algorithms in fostering standardisation, normativity, capitalistic objectives, and rationality. Lash [2007, 71], for example, observed that algorithms figure as ''pathways through which capitalist power works''. Also, algorithms can embed rules of rationality, and are then characterised by inscrutability and normativity: they can be considered to participate in the political, ethical, or accountable [Ziewits, 2016], and are performative [Introna, 2016]. Further, while traditionally, algorithms have been mainly developed to improve production processes' effectiveness and flexibility (e.g., in smart automation practices), today algorithms are increasingly being developed and adopted for further enacting managerial control over workers. From this point of view, algorithms can be expressively devoted to tackling the issue of workers' well-being, that is monitoring their health status, promoting healthy lifestyles, and collecting data for the design of public health policies.

Workers' reactions to introducing this algorithmic control of their well-being can take different shapes. While some workers may accept these algorithms, benefitting from the support they supply for the control of health status, others may sharply reject them, claiming their refusal to what they consider an intrusion on their lifestyles. Likewise, different forms of appropriation can be observed, too, as workers can adapt these technologies to their needs and priorities [Bruni, Andrei and Tirabeni, 2022] deviating from the designers' intents.

The diffusion of algorithms and the emergence of an algorithmic paradigm for handling workers' well-being can be considered an instance of neo-taylorist entrepreneurial strategies. Likewise, the algorithmification of workers' well-being can contribute to the re-emergence of companies' paternalistic ambition to care for and control their employees. Still, algorithms can represent a trigger for the increasing commodification of healthcare assistance. Notwithstanding, if we accept the idea of the algorithm as a "sensitising concept" [Ziewits, 2016], then we allow more room for reflection and opportunities for resistance and, above all, for appropriation, that is an issue, this last, which normally goes unnoticed in the current debate [Miele and Tirabeni, 2020]. Starting from these considerations, the panel promotes a reflection on the implications of the algorithmic processes of organizing workers' health and well-being. Both theoretical and empirical contributions are welcome with a focus on (but not limited to):

- Algorithmic techniques of organizing and workers' health and well-being;
- Control and monitoring of workers' productivity through the algorithmification of well-being;
- Acceptance, resistance and appropriation of algorithmic practices of well-being promotion;
- Health and safety of workplace environments under algorithmic control;
- Institutional engagement and arrangements for the algorithimic control of workers' health and well-being;
- The enactment of control and surveillance through workers' well-being;
- Neo-taylorist and neo-paternalistic control of workers' well-being.

## Panel 31: Global Pathogens, Local Pathologies: Toward a more than human understanding of biosecurity

**Organizers: Michele Bandiera (1); Christian Colella (2); Chiara Vacirca (3); Lucilla Barchetta (4); Pietro Autorino (5); Giulia Arrighetti (6); Enrico Milazzo (1); Jasmine Pisapia (7)**

**1: UNIPD; 2: CNR-IREA; 3: UNISALENTO; 4: UNIVE; 5: SNS; 6: UNITO; 7: SSHRC**

**Topics:** *Ecological transitions and climate justice; Health policies, governance and practices in a postpandemic era; Sociomaterialities of conflict and peace; Technoscientific promises, imaginaries and expectations; Food networks and governance in postpandemic times*

**Keywords:** *Biosecurity. Agriculture. Livestock farming. Plants. Animals. More than human health*

In an agricultural context the term "biosecurity" refers to practices that control the spread of disease both onto and within the farm (Dargatz et al., 2002), but in the 'world-ecology' of the plantationocene (Haraway 2016) and capitalocene (Moore 2015) plants, animals and pathogens travel quickly around the globe, often undermining any institutional attempts to control vegetal, animal and microbial life (Lorimer 2020). Biosecurity science and policies operate to safeguard crops, plants, and domesticated animals - as 'productive forms of life' (Bandiera 2020) - from the 'infected life' constituted by pests, vector species or wild animals (Cassidy 2019). This panel will focus on the modern biosecurity paradigm and its possible alternatives such as the ecological and relational understanding of human and non-human coexistence, intercepting the current STS debate around ecological reparation (Centemeri, 2021; Ghelfi e Papadopoulos 2022). Drawing inspiration from critical biosecurity studies (Lorimer 2013) and the scholarship focused on the spatial (Hinchliffe 2013, 2015; Barker, 2015) and the temporal aspects (Pellizzoni 2019, 2021) of governing non-human life, we have identified three thematic interrogations:

- Sanitation: How the socio-historical legacies of sanitation and immunity, which build on the epistemological division between spaces of health and sickness (Lynteris 2019), influence contemporary biosecurity/sanitation practices.
- Surveillance: What role technologies play in the implementation of sanitary and phytosanitary monitoring measures, in the proliferation of borderlines, topographies of control, and conservation-driven surveillance (Sandbrook et al. 2018). What is the connection between technologies of surveillance of pathological bodies with the control over marginalized humans (Browne 2015)?
- Standardization of practices: How and to what extent biosecurity regulations, homogenized zootechnical and agricultural modes of production, procedures, and spatial arrangements are historically linked with the global expansion of monocultural models (Uekotter 2011) and intensive livestock breeding (Shortall et al. 2016).

This panel will welcome both theoretical and empirically grounded contributions to current biosecurity practices and its alternatives such as non-anthropocentric approaches to the health of plants, animals and the environment, including but not limited to:

- Accounts on methods to trace topologies of infected networks, intensities and circulations (Hinchliffe et al. 2013) and the invasibility of ecological networks (Waage & Mumford 2008).
- The intra-active character of disease emergence (Reisman 2021) and technoscientific reframing of pathogenicity (Stengel et al. 2022).
- 'One Health', and similar technoscientific reframing of health beyond the human (Hinchliffe 2017)
- Emergent bottom up and/or institutional practices of 'resilience' such as agroecology, reforestation and rewilding.

The panel is also interested in contributions that analyze the epistemological and political effects of animal and plant diseases, especially regarding the relationship between scientific cultures, experts, institutions and organized publics (Colella et al. 2019), but also practices of care and 'living with' infected animal and vegetal bodies (Vacirca & Milazzo 2021) and emotional attachments with the latters (Gatti 2022).

## Panel 32: Big politics of small things

**Organizers: Andrzej Wojciech Nowak (1); Wiktoria Woźniak-Konieczka (2)**

**1: Adam Mickiewicz University, Faculty of Philosophy, Poland; 2: Adam Mickiewicz University, Doctoral School of Humanities**

**Topics:** *Sociomaterialities of conflict and peace; Knowledge co-creation, citizens science, co-design processes, material publics and grassroot innovation; Technoscientific promises, imaginaries and expectations; Everyday life and design of the mundane; Postcolonial technoscientific futures; Sociotechnologies of (in)secure worlds to come; Technofeminism and interspecies solidarities; Innovation imaginaries, practices and policies; Ethics, innovation and responsibility in technoscience; Embodied identities, genders and interests; Building alliances in public participation and engagement*

**Keywords:** *small science, hegemony, ontological politics*

Since the turn of the century, a concern with small ways of knowing and doing science has been noticeable. We want to draw attention to the revolutionary potential of the so-called small science within STS research and find examples of research and theoretical directions that reveal previously invisible hegemonic processes appropriating the spaces of technology. We aim to intentionally recognize the ontological politics embedded in practices, rituals, things, technologies, and artifacts to give them an emancipatory direction. We want to find examples of small science research that could help answer the question of how technologies are used to maintain political hegemony. Our goal is to show that small science in the area of STS allows us to detect unconscious hegemonic policies often and then take political action.

We raise the question: How can the so-called small science in STS research reveal various hegemonic actions that we are unaware of and seemingly imperceptible? One example is technofeminist research, which aims to discover and explain the usually unnoticed inequalities inherent in technological systems and find answers to how to combat them. This is an example of peripheral science that focuses not only on detecting excluding and violent processes, but also on reflecting on possible change, the potential of technology, and the need to take action, and is often associated with social activism.

We welcome contributions, both theoretical and empirical, that show how STS research helps to reveal political hegemony and political practices through which, for specific purposes, empty meanings are filled, and empty signifiers are defined. We are also interested in research showing how the political and hegemonic processes detected in the technological area can be re-used for positive ends.

## Panel 33: Technologies, devices and ways of engaging with citizen science in the context of research and innovation: co-producing knowledge, co-designing technologies and co-creating research to address sustainability challenges

**Organizers: Helena Solman (1); Julia Kirch Kirkegaard (2)**

**1: Wageningen University, Netherlands, The; 2: Danish Technical University, Denmark**

**Topics:** *Knowledge co-creation, citizens science, co-design processes, material publics and grassroot innovation*

**Keywords:** *citizen science, knowledge co-production, co-design of technologies, research and innovation, material participation*

Solving key contemporary sustainability challenges, such as climate change, energy transition or biodiversity loss requires firm evidence-base, robust definition of the environmental problems and innovative solutions. Research and innovation however tend to prioritize expert definition of problems and technological innovation as means to solve these problems. At the same time, the outcomes of research and innovation often impact the lives of citizens or require committed action from them. Expert knowledge alone is not sufficient in tackling the complex social and environmental challenges, but what tools and methods can help to engage citizens to contribute own knowledge, to share their concerns and to participate in processes of research and innovation? What tools or (digital) technologies can be used to generate a citizen science evidence base? Can (digital) technologies help in connecting the different kinds of expert and lay people expertise? How citizens can and experts can co-design new technologies, co-produce new definitions of environmental problems or to co-create research projects?

This panel brings together experiences, ideas, reflections and observations about ways of doing research and innovation with citizens to arrive at science and innovation that is supported by citizen data-driven, that focuses on socially relevant problems and that leads to socio-technical innovation and hance to socially robust solutions that can make an impact on addressing the sustainability challenges of our times.

Key references:

Antal, A. B., Hutter, M., & Stark, D. (Eds.) (2015). Moments of valuation: Exploring sites of dissonance. Oxford University Press.

Asdal, K., Coïnte, B., Hobæk, B., Reinertsen, H., Huse, T., Morsman, S. R. & Måløy, T. (2021). 'The good economy': a conceptual and empirical move for investigating how economies and versions of the good are entangled. BioSocieties, https://doi.org/10.1057/s41292-021-00245-5.

Turnhout, E., Metze, T., Wyborn, C., Klenk, N., & Louder, E. (2020). The politics of co-production: participation, power, and transformation. Current Opinion in Environmental Sustainability, 42, 15-21.

Jasanoff, S. (2005). Technologies of humility: Citizen participation in governing science. Wozu Experten?, 370-389.

Chilvers, J. (2008). Deliberating competence: Theoretical and practitioner perspectives on effective participatory appraisal practice. Science, Technology, & Human Values, 33(3), 421-451.

Funtowicz, S., & Ravetz, J. (2018). Post-normal science. Companion to environmental studies, 443-447.

Irwin, A. (2006). The politics of talk: coming to terms with the 'new'scientific governance. Social studies of science, 36(2), 299-320.

Helgesson, C-F. & Muniesa, F. (2013): For What It's Worth: An Introduction to Valuation Studies. Valuation Studies 1(1):1-10. https://doi.org/10.3384/vs.2001-5992.13111.

## Panel 34: Earthly and otherworldly challenges. On the mutual shaping of imaginaries, practices and discourses about Earth and Outer space

**Organizers: Valentina Marcheselli (1); Marco Serino (2); Chiara Vassillo (2)**

**1: University of Trento, Italy; 2: University of Naples Federico II, Italy**

**Topics:** *Ecological transitions and climate justice; Technoscientific promises, imaginaries and expectations; Methodological challenges in a more-than-human world; Innovation imaginaries, practices and policies; The value of science, technology, innovation and research practices*

**Keywords:** *Outer space, futures, earthly challenges, extreme environments, analogues*

The present age is one in which the challenges about the present and future of human and more-than-human life are proliferating and becoming more and more urgent. What is questioned is, ultimately, the idea and perception of the world we live in and the related implications (Latour, 2017). While climate crisis, pandemics, and war are currently threatening life forms and forms of life (Helmreich, 2012), a renewed tension to move beyond our "terrestrial" horizon is springing from international and inter-institutional partnerships. Recent space exploration programs at once address and are shaped by new and competing challenges. Technoscience is chiefly involved in these challenges. In particular, research on outer space prospects future scenarios at a global and (inter)planetary levels. In this context, technoscience builds new worlds and reshapes old ones, with projects that improve the feasibility of space missions while attempting to use or reconvert space technologies for terrestrial needs. These include, among others, communication, travel, weather forecasts, harvesting (often in extreme climates). What is at stake is also the way technoscience provides means to familiarize with what is other (the "alien" par excellence), to produce new kinds of knowledge and to reframe our view of the planet we live on.

The proposed panel thus aims to address the different trajectories by which technoscience meets outer space, with an eye to how these perspectives situate themselves at the interface between "our world" and "other/outer worlds". The clash or the harmonization between these two horizons is a matter of scientific endeavors that translate into societal challenges and cultural views at the same time. For instance, critical geographers of outer space (e.g. MacDonald, 2007) have reflected on how outer space - and especially the Earth's orbit - is already inhabited by humans and technologies which are part and parcel of our everyday life. How do advances in space technoscience as well as the increasing popularization of everyday lives on the ISS create a sense of familiarity? What does it mean to rethink our ideas about our world with reference to outer/other worlds and to consider "alternative topologies of environmental relations" (Olson and Messeri, 2015)?

Moreover, sociological inquiries into current ways of "placing outer space" (Messeri, 2016) call for a reflection on how research and experiments in different subjects - physics, engineering, agricultural science, medicine, architecture, as well as all the "astro-related" sciences like astrophysics and astrobiology - contribute to reframe humans' perceptions and activities on both terrestrial and extraterrestrial environments. Central to this panel is also the discussion and problematization of notions like the "analogues" and outer/extreme environments (eg. Helmreich, 2012; Marcheselli, 2022), as well as the challenges that humans and non-humans - sharing the same oikos (greek word for "house", and etymological root of "ecology") - have to face in this planetary and inter-planetary perspective.

## Panel 35: The obsession with techno-futures in education

**Organizers: Paolo Landri (1); Leonardo Piromalli (2); Assunta Viteritti (2)**

**1: IRPPS-CNR; 2: "Sapienza" University of Rome, Italy**

**Topics:** *Sociomaterial learning processes and/in digital worlds*

**Keywords:** *education, technology, acceleration, techno-future, time*

Everything about technology in education seems to have happened already. Most notably since the COVID-19 pandemic, digital technology in the educational worlds appears as a new 'state of nature'—we only realize it exists when it fails (Bowker & Star, 1999). Just like Benjamin's Angel of History, education has lost its state of wise expectation as it is continually drifted across multiple techno-futures that narrow it down along obligatory passage points.

The social worlds of education are deeply intertwined with accelerating technological change today. Caught up in processes of interessement and enrolment (Callon, 1986), schools and universities are implicated in attempts at educational futures-making grounded in increasingly new, innovative, engaging, and seemingly essential data-intensive technologies. They are interested by narratives, imaginaries, and scientific perspectives that redefine the field, perimeter, boundaries, objects, subjects, and the very categories of analysis on education—what it is, what it will be, how it is done, who does it, and where it happens. Scenarios are thus constructed around the worlds of education that produce an ongoing presentification of technologically dense, perpetually looming, and ultimately speculative futures (Decuypere & Vanden Broeck, 2020).

Multiple labels encompass educational environments—platforms, virtual immersive environments, educational robotics, virtual learning, gamification, metaverse, machine learning—and draw them into increasingly incorporated frameworks that are pervaded by futuristic technologies which promise post-human—or 'super-human'—improvements and enhancements of educational processes. These technologically-driven acceleration processes produce effects on the practices of local educational actors. Schools and universities are indeed infiltrated by rapid and accelerated information and technology flows driven by the big players of the edtech market (Williamson & Komljenovic, 2022)—who pioneered the obsessive anticipation of imagined techno-futures—and transcalar policy networks and 'real-time' governing instruments (Williamson, 2016).

The future of education thus appears as a process of ongoing production which still risks running out of steam in the scope of a present obsessed with technological scenarios that anticipate, amplify, and enhance practices, environments, and teaching models (Sellar & Cole, 2017).

This track welcomes contributions interested in problematizing the obsession with techno-futures and acceleration in the fields of education. A space of reflection will thus be open for interrogating possible ways out to slow down the present of education without relinquishing the non-human and creative power of technology. Issues of interest include (but are not limited to):

- educational technology, educational environments and futuristic techno-utopias: vulnerabilities and perspectives;
- edtech markets and speculative futures-making;
- governing by techno-futuring: policy-making, governance, and policy networks;
- the tempos, rhythms, and hauntologies of techno-futures: present pasts, real-times, and problematic nostalgias;
- success and failure in techno-futurist educational acceleration: euphoric and apocalyptic educational scenarios in social worlds and pop culture;
- technological acceleration and (dis)empowerment effects on local educational practice;
- escape routes from technological obsession: cheating, gaming, desistance, resistance, rebellion, and the creative use of technology in educational practice.

## Panel 36: Diagnosis, prognosis, treatment - Towards fair and sustainable care provisions in health systems and pharmaceutical innovation

**Organizers: Hadewych Honné (1,2); Conor Douglas (3)**

**1: University of Edinburgh, United Kingdom; 2: KU Leuven, Belgium; 3: York University, Canada**

**Topics:** *Health policies, governance and practices in a postpandemic era; Innovation imaginaries, practices and policies; Ethics, innovation and responsibility in technoscience; The value of science, technology, innovation and research practices; Heterogeneous assemblages in biomedical research*

**Keywords:** *Access to treatments, pharmaceutical innovation, commodification of health, healthcare sustainability*

For years STS scholars have been critically engaging with medical hope and hype associated with advances in genetics and genomics (Hedgecoe & Martin 2008; Martin, Hopkins, Nightingale, & Kraft 2009). Associated promises of transformations in the pharmaceutical sector failed to deliver to the point in which the revolution in biotechnology was seen as a myth (Nightingale & Martin 2004; Hopkins, Martin, Nightingale, Kraft & Mahdi 2007). However, we are now witnessing real reorganization within the pharmaceutical industry from mass chemical production for the treatment of common illnesses towards research and development into ever more expansive screening, testing, and therapies for complex conditions with advanced cell and gene therapies (Dolgin 2010). Accompanying such advancements in medical care, however, is a number of challenges pertaining to the commodification of healthcare and treatment. It has become evident that market logics, geared towards returns on investment and profit maximisation in monetary terms, are insufficient for meeting unmet medical needs – particularly in rare diseases (Douglas, Aith, Boon et al. 2022). In order to start unpacking the multiplicity of interests at play in therapeutic development and healthcare, we need to appreciate first the co-production of social, scientific, and technological factors that shape this landscape. Policies, laws, institutional arrangements, and economic and ethical assessments shape the development and marketisation of advanced therapies while, vice versa, the latter simultaneously shape the former. In the panel, we want to promote reflections on what STS can contribute towards devising more fair and sustainable healthcare systems and pharmaceutical innovation processes. How can we formulate 'diagnoses' of the problems at stake in healthcare systems and pharmaceutical innovation today, what 'treatment plans' can we formulate for these issues, and what are our 'prognoses' for the future?

### References

Dolgin, E. (2010). Big pharma moves from'blockbusters' to'niche busters'. Nature Medicine, 16(8), 837.

Douglas, C. M., Aith, F., Boon, W., de Neiva Borba, M., Doganova, L., Grunebaum, S., ... & Kleinhout-Vliek, T. (2022). Social pharmaceutical innovation and alternative forms of research, development and deployment for drugs for rare diseases. Orphanet Journal of Rare Diseases, 17(1), 1-13.

Hedgecoe, A. M., & Martin, P. A. (2008). 32 Genomics, STS, and the Making of Sociotechnical Futures. The handbook of science and technology studies, 817.

Hopkins, M. M., Martin, P. A., Nightingale, P., Kraft, A., & Mahdi, S. (2007). The myth of the biotech revolution: An assessment of technological, clinical and organisational change. Research policy, 36(4), 566-589.

Martin, P., Hopkins, M., Nightingale, P., & Kraft, A. (2009). On a critical path: genomics, the crisis of pharmaceutical productivity and the search for sustainability. In The Handbook of Genetics & Society (pp. 171-188). Routledge.

Nightingale, P., & Martin, P. (2004). The myth of the biotech revolution. TRENDS in Biotechnology, 22(11), 564-569.

## Panel 37: Interesting participatory processes in science, technology and innovation: conditions, challenges and prospects for bottom-up innovation

**Organizers: Simone Arnaldi (1); Stefano Crabu (2); Paolo Magaudda (2)**

**1: University of Trieste, Italy; 2: University of Padua, Italy**

**Topics:** *Knowledge co-creation, citizens science, co-design processes, material publics and grassroot innovation*

**Keywords:** *co-creation, bottom-up innovation, participation, open science*

In recent decades, participatory models of technoscientific innovations have garnered more and more attention both in academia and practice. In particular, a broad array of concepts has been introduced to describe bottom-up processes taking place outside institutional R&D settings and involving a broad range of social actors, such as citizens and end-users. Examples of these notions include but are not limited to: "deliberative" and "participatory" public engagement (Burgess 2014), co-creation (Voorber et al. 2014), user-driven innovation (Franke et al. 2016), research in the wild (Callon and Rabeharisoa 2003), Responsible Research and Innovation (RRI) (von Schomberg 2013) and Open Science (Levin and Leonelli 2017). Despite their differences, all these emerging notions share an emphasis on participation as a condition to align technoscientific developments with the values, expectations and needs of concerned communities and stakeholders.

Yet, existing assessments of these experiences highlight the difficulty to set up interesting processes that are capable to engage and coalesce social actors and ensure long term sustainability, efficacy, effectiveness, and transferability. Issues such as unequal power distribution among participants, lack of reflection and reflexivity, insufficient support from regulators and the scientific community, all seem to contradict the expectation that bottom-up innovation can change dominant institutions and policies for better aligning technoscientific practices and social needs.

The panel welcomes theoretical, empirical, and methodological contributions by STS scholars, social scientists and practitioners exploring the interesting processes that underpin these participatory experiments in science, technology and innovation. The overall goal of the panel is to map and examine the features of these alternative forms of innovation, as well as the conditions enabling them to gain further ground.

## Panel 38: Disruptive crises? Reflecting on innovations, strategies and bottlenecks for the food worlds to come

**Organizers:** Agnese Cretella (1); Alice Dal Gobbo (2); Francesca Forno (2); Stefano Spillare (3)

1: Department of Philosophy and Communication, University of Bologna, Italy; 2: Department of Sociology and Social Research, University of Trento, Italy; 3: Department of Sociology and Business law, University of Bologna, Italy

**Topics:** *Ecological transitions and climate justice; Sociotechnologies of (in)secure worlds to come; Food networks and governance in postpandemic times; Innovation imaginaries, practices and policies*

**Keywords:** *Food crises; Socio-technical Food Inovations; Alternative Food Networks; Just and Sustainable Food Systems*

The effects of Covid-19 first and of the conflict in Ukraine thereafter have been nothing less than seismic from the perspective of production, consumption, distribution, retail and export on food supply systems worldwide. The issues faced are common across a variety of countries, evidencing above all the scalar interdependency of global food chains. Challenges ranged from the shortage of seasonal labour for agriculture, to restraint on exports, or the collapse of specific food industries and businesses. But if specific crisis conjunctures do raise obstacles to established food systems, they also open windows of change and transformation. In this context, the rise of digital platforms for food sales is of particular relevance. For instance, the share of people who regularly used ICT services for food provisioning was very low before the pandemic. The measures for the prevention of contagion, nevertheless, pushed people towards these technologies. Some alternative food provisioning ventures fully implemented ICT to expand their markets and sales for the first time. For others, it was an occasion to better implement and strengthen their service. In this way, many alternative food networks managed not only to strengthen their presence on territories but also to partially address problems of access, fragility and inequity with relation to food. Overall, many of these initiatives go in the direction of strengthening local, sustainable and solidarity food systems. There are however open questions in this regard. First, can these socio-technical transformations, which emerged from the peculiar pandemic situation, produce long lasting changes in the food system - or should we expect to be back to 'business as usual'? Second, taking into account that innovative food ventures tend to be accessed disproportionately by privileged communities: what implications do these innovations have in terms of justice, equity and access to "good food" for urban populations?

This panel invites contributions exploring the ways in which communities, cities, national and supra-national governments have worked together to address the enormous economic and social impacts caused by Covid-19 in the food system - in particular through the use of technology and social innovation. To this end, we invite empirical and theoretical which may include (but are not restricted to) the following themes:

- How Covid-19 disrupted the conventional food system and re-shaped everyday life
- How the 3C crisis of Covid, climate & conflicts has affected the way alternative food networks operate in terms of their discourses and practices
- Urban-scale strategies to enable local producers to access local and diverse food markets
- The role of ICTs in the reconfiguration of food production, distribution and consumption
- Power and injustice in the digitalisation of food retail. Strengthening already powerful actors or an opportunity for alternative food networks and poor eaters?
- How the economic and social impact caused by Covid-19 have affected access to food among ethnic, minority and marginalized groups

## Panel 39: Resistance in action. Understanding countersurveillance practices, imaginaries, and activities in a digitally dense environment

**Organizers: Veronica Moretti (1); Alessandro Caliandro (2); Barbara Morsello (3)**

**1: University of Bologna, Italy; 2: University of Pavia, Italy; 3: University of Padova, Italy**

**Topics:** *Algorithmic knowledge, media ecologies and artificial intelligence; Innovation imaginaries, practices and policies; Extractivist powers, imaginaries and asymmetries*

**Keywords:** *countersurveillance, resistance, alternative imaginaries, social and personal activism, digital environment*

The panel aims to promote reflection on how people avoid surveillance measure and policy thus realizing countersurveillance practices in a digitally dense environments. Despite being central to the dynamics of surveillance, the concept of resistance remains underdeveloped within the surveillance studies.

Counter-surveillance is the task of making surveillance difficult or to avoid it. Resistance subverts various components of the surveillance process (Wood & Thompson, 2018) in many fields. Countersurveillance can be employed by individuals and communities to protect privacy, civil rights, and against abuses regarding personal information and sensitive data in public spaces, online and offline. Additionally, counterveillance it may be engaged to make pressure to the public and private surveillance systems by identifying potential vulnerabilities and errors.

Moreover, resistance, activism, and counteraction to institutionalized surveillance system implies to avoid the action of many actors involved in the process of surveillance such as: algorithms, cookies, traced payments, terms of services, informed consent, tracking health apps, populations screenings, just to name few.

There are multiple examples of countersurveillance activities. Consider, for instance, how citizens using media and participatory journalism converge to expose and sabotage governmental systems of surveillance (Ataman & Çoban 2018; Velkova & Kaun, 2021). Counterveillance practices and imaginaries within the healthcare system show how people can resist algorithms by interacting with them. This was especially visible across the international contact tracing and risk assessment system, where some of the prominent cases (including the Italian one) failed because of massive and explicit resistance to institutionalized surveillance (Moretti and Caliandro forthcoming). In addition, with the emergence of platform capitalism, countersurveillance practices are getting traction in the domain of consumption as well. Consider for example those consumers installing Ad blockers and/or VPNs to escape targeting advertising (Ruckenstein & Granroth, 2020). Finally, as pointed out by Monohan (2006) counter-surveillance operates within and in reaction to ongoing global transformations of public spaces naturalizing forms of social control and exclusion of economically or culturally marginalized groups through architecture or infrastructure. Digitally dense environments also shape dystopian imaginaries and technological surveillance narratives that have given rise to the counterculture as cyberpunk and/or forms of digital and data activism.

Through this panel we propose to frame countersurveillance as an ensemble of individuals, technologies, data flows, practices, knowledge that work together to counteract surveillance measures.

Contributions may cover, but are not limited to, the following topics:

- Algorithmic surveillance resistance
- Dataveillance resistance
- Internet-facilitated countersurveillance activities (through social media)
- Cyberpunk culture, practices and imaginaries
- Resistance to the biomedical surveillance and health policy
- Emerging practices of counterveillance during Covid-19 pandemic
- Environmental counter-action from below
- Resistance to surveillance capitalism (e.g., targeting advertising, algorithmic monitoring of consumers' behaviors (on/offline), vocal assistants, shopping surveillance, etc.)
- How counter-surveillance imaginaries and practices changes across different social segments (communities, classes, ethnic groups, age groups, etc.)
- Making surveillance visible through data visualization (and other visual aids)
- Innovative methods to frame countersurveillance practices

## Panel 40: Publish or perish reloaded: The matrix of contemporary scientific publishing facing institutional research arrangements and the marketization of academic environments

**Organizers: Stefano Crabu; Federico Neresini**

**University of Padova, Italy**

**Topics:** *The value of science, technology, innovation and research practices*

**Keywords:** *publish or perish; Open Access; academic piracy; Academic predatory practices; academic publishing oligopoly*

The "publish or perish" (PP) aphorism – with its creeping necropolitics of knowledge – still informs the everyday work of academics. Although it appeared at the beginning of the last century, the PP principle still normatively orients the assessment of academics and researchers on the basis of their success in publishing, with an emphasis on productivity as potentially impacting the innovativeness, significance and social impact of scientific outcomes. Moreover, we can argue that this principle continues to act as a pivotal subjectivation device for the thousands of academic workers from both the Global South and Global North.

Despite its sharp relevance in shaping, reshuffling and igniting research trajectories, the PP phenomenon requires careful analysis. Hence, what now seems urgent and politically exigent is to initiate a lively debate for the purpose of theoretically and analytically grasping the conditions – political, economic, epistemological, institutional and technological – surrounding the culture of contemporary scientific publishing. Academic publishing is indeed a global techno-service industrial complex worth more than USD 19 billion. However, this market is highly concentrated, with few for-profit publishers exercising oligopolistic power in managing academic journals and generating substantial profits for publishers and high costs for public universities (e.g., cost of subscription to scientific journals). Thus, the current political economy of academic publishing potentially compromises the free access to academic scientific knowledge, essentially contradicting the mandate of many public policy schemes. Although digitalization and open access (OA) were intended as liberating forces for academics and research organizations, they appear to have somewhat contributed, alongside key university ranking indicators, to boosting the oligopoly of for-profit academic publishers and translating the digital platform culture within the academic publishing sector.

Within this scenario, it is also important to underline emerging forms of academic piracy, violations of intellectual property rights (e.g., the subject of editor lawsuits against Sci-Hub) and the emergence of "predatory publishers" associated with the potential decline in the academic quality of research. The aim of this track is to explore current scientific publishing practices and the related political, economic, epistemological, institutional and socio-technical arrangements surrounding the PP imperative.

We therefore encourage social scientists, STS scholars, policy scholars as well as practitioners in the academic publishing industry to submit theoretically, empirically and/or methodologically oriented contributions that aim to explore the following: -  The emergence and consolidation of the academic publishing oligopoly;

- Current OA policy implementation and related challenges in the context of the academic publishing oligopoly;
- Emerging forms of "academic piracy";
- Academic predatory practices;
- The platformization of academic publishing and the use of metric, "alter metric" and scientometric indicators provided by digitalization;
- New business models associated with OA and emerging forms of self-organized open publishing;
- How (digital) citation index databases influence the academic publishing industry and scientific publishing practices;
- Gaps and inequalities between the Global South and Global North in accessing scientific publications and implementing OA policies.

## Panel 41: More-than-human medicine? Unpacking the use of Artificial Intelligence (AI) technologies in healthcare settings

**Organizers: Manuela Perrotta (1); Alina Geampana (2)**

**1: Queen Mary University of London, United Kingdom; 2: Dutham University, United Kingdom**

**Topics:** *Health policies, governance and practices in a postpandemic era; Technoscientific promises, imaginaries and expectations; Algorithmic knowledge, media ecologies and artificial intelligence; Innovation imaginaries, practices and policies*

**Keywords:** *medicine, Artificial intelligence, algorithms, biomedical research, healthcare*

During the past few years, the (potential) use of Artificial intelligence (AI) technologies in different medical fields has been at the forefront of public debates and conversations. The dominant narrative is imbued of over-optimistic expectations that see algorithmic technologies as able to resolve uncertainties surrounding medical diagnosis and treatment. Central to these narratives is an emphasis on the large amount of data such technologies can process and analyse. However, heightened expectations may often lead to disappointment. The purportedly value-neutral nature of algorithmic technologies has been sharply criticised by the STS literature emphasising their opacity and inscrutability. In addition, studies exploring the use of AI in medical practice have shown that complex dynamics are involved in the delegation of decision-making to algorithms and the reconfigurations needed for new technologies to become embedded in medical work.

Drawing on these premises, this panel aims to explore the multiple and interconnected ways in which AI and algorithmic technologies are contributing to transformations in healthcare and medical expertise. Therefore, we invite (empirical, theoretical, and/or methodological) contributions looking to unpack the use of AI technologies in healthcare practice. Contributions exploring the following topics are especially welcome:

- The integration of AI to support diagnosis and treatment
- The relationship between AI and biomedical research and innovation
- The regulation and governance of AI in biomedical research and innovation
- The tensions between the introduction of AI in medicine and evidence-based medicine
- Ethical issues arising from the introduction of AI in medical practice
- The role of AI in shaping expectations about the future of medicine
- Implications and consequences of popular narratives of AI systems as outperforming human expertise
- Engagement of patient groups in the development and use of AI in medicine
- Digital health technologies, data generation, and transparency of algorithms

## Panel 42: Revisiting identification and registration of humans and more-than-humans: long-term perspectives and implications

**Organizers: Chiara Loschi; Annalisa Pelizza; Paul Trauttmansdorff**

**University of Bologna, Italy**

**Topics:** *Health policies, governance and practices in a postpandemic era; Technoscientific promises, imaginaries and expectations; Methodological challenges in a more-than-human world; Postcolonial technoscientific futures; Governance of and by data infrastructures; Sociotechnologies of (in)secure worlds to come*

**Keywords:** *registration, identification, infrastructure, longue durée, chain of translation*

This panel aims to reflect on the long-term perspectives and implications of today's societies and their interest in identifying and registering human and more-than-human life. Practices of identification and registration shape the realms of human, artefact and animal mobility, policing, health and medicine, education, or the climate transition, to name a few. They are often rightly criticized as attempts at control and surveillance, but this criticism usually adopts a temporally punctual perspective and is less inclined to examine their long-term implications. Our panel suggests exploring, and discussing, the longue-durée of identification and registration.

Groebner's (2007) history of identification traces the imperative to "register everyone and everything" back to the sixteenth century in Europe. Authors like Carroll (2006) and Mukerj (2011) have highlighted a link between identification and registration and nation state formation. Mitchell (2002) has extended this argument to imperial and colonial ambitions. Establishing data systems and relying on more or less stabilized infrastructures, identification and registration enact new and old subjectivities, orders, knowledges, practices, and classifications as "spatial, temporal, or spatio-temporal segmentation[s] of the world" (Bowker and Star 2000, 10). Forms of monitoring and screening, information-sharing and categorization can become catalysts for new institutional orders and relationships (Andersson 2015). Kloppenburg and Van der Ploeg (2020) demonstrate how recent biometric techniques of identification are "producing and enacting [new] gender and ethnic classifications and identities" (p. 57). Pelizza (2021) has proposed to see registration and identification as a chain of translation which enacts specific subjects, enrols stakeholders, and alters institutional orders. And yet today, identification and registration do not only concern humans, but also animals, artefacts, plants, commodities, and other heterogeneous assemblages (see Tsing 2015). What are, for example, the long-term consequences of the identification – the reductio ad unum – of novel inter-species viruses? And what novel orders may emerge in the long run?

The panel invites conceptual and empirical contributions that help shedding light onto long-term methodological perspectives and implications of processes and practices of (human and more-than-human) registers, databases, infrastructures, or other sociotechnical knowledge practices such as monitoring, screening, categorization, and selection (considering also critical events such as global epidemics recurrent in the history). We would like to engage with (the interaction between) past, present, and future genealogies, epistemologies and power relations, as well as conflicts, compromises, and ambiguities revolving around identification and registration.

This panel welcomes a broad range of papers that leverage genealogical and/or STS concepts and methods to explore, amongst others, the following themes:

- Genealogies of data systems and/or population registers
- Identification and registration in the realms of medicine, mobility, security, climate transition, citizenship, and others
- The coloniality of identification and registration systems
- Their consequences for power relations and geographies of responsibility
- Human and more-than-human population censuses, taxonomies, systematizations, and other technologies of knowledge-based governance
- Statistics and the production/circulation of numbers
- Futures and future-making practices and their governance implications
- The role of sciences and scientists in societies of identification and registration

## Panel 43: Social Innovation: Forms, Evidence, and Perspectives

**Organizers:** JOSÉ FRANCISCO ROMERO-MUÑOZ

**BENEMERITA UNIVERSIDAD AUTONOMA DE PUEBLA, Mexico**

**Topics:** *Knowledge co-creation, citizens science, co-design processes, material publics and grassroot innovation; Innovation imaginaries, practices and policies; Ethics, innovation and responsibility in technoscience; The value of science, technology, innovation and research practices*

**Keywords:** *responsible innovation, social value, social collaboration, social change, community development*

Social Innovation (SI) continues to gain importance as an alternative paradigm to other forms of innovation, focusing on generating social value and not just private value. The interest in SI can be seen in the growing academic literature of the last two decades. Likewise, it is included in various political speeches of international organizations such as the Organization for Economic Cooperation and Development, the United Nations, the European Commission, The World Economic Forum, among others. SI is often introduced as the most convenient paradigm to face the social, economic, political, and environmental challenges of the 21st century. Although certain academic literature presumes various positive experiences of SI, frequently, it is difficult to find clear conceptions about what it means with evidence that shows its existence and effectiveness. In general, when talking about SI, it is presented as an aspiration. Various criticisms are frequently mentioned in the available studies. It has been said that the body of literature is inconsistent, ambiguity persists in the term, and that it is not clear whether it should be considered as a phenomenon or a theoretical framework. Despite all, the current global context requires SI to reduce the problems that are common to everyone. Problems such as climate change, the eradication of poverty, gender equity, cannot be tackled without forms of social collaboration and innovation. In response to this outlook, through this open panel we invited STS scholars to join a discussion on SI. The STS analyze ways in which science and technology is constructed and distributed. Likewise, there are some efforts to promote cross-fertilization of STS and other studies on Innovation and Technology, for instance Hess, D. J., & Sovacool, B. K. (2020). Sociotechnical matters: Reviewing and integrating science and technology studies with energy social science. Energy Research & Social Science, 65, 101462. Our discussion aims at fostering cross-fertilization of such theoretical frameworks to explore cases that present construction and application of scientific-technological knowledge that clearly finds social benefits (one example is the case described in Stewart, H., & Watson, N. (2020). A sociotechnical history of the ultralightweight wheelchair: a vehicle of social change. Science, Technology, & Human Values, 45(6), 1195-1219.). In this way, contributions from various disciplinary fields will be welcome; specially those that present empirical research results that uncover evidence-based forms of social innovation.

## Panel 44: Exploring Promising Technologies in Neuroscience

**Organizers: Barbara Morsello**

**University of Padova, Italy**

**Topics:** *Technoscientific promises, imaginaries and expectations; Innovation imaginaries, practices and policies*

**Keywords:** *neurotechnology, innovation, embodiment, promises, ai*

The aim of the panel is to host empirical case studies and theoretical reflections on the technological promises, future visions, and expectations embodied in recent trend in neuroscience. The study of the brain is a powerful activity in providing new ways for understanding ourselves and societies, (Pickersgill and Cunningham-Burley et al 2011). Understanding the formation and mobilization of expectations is crucial to analyze emerging technology concerning biomedicine (van Lente, 1993) where knowledge is coproduced by new socio-technical relations (Hedgecoe, Martin 2003) among heterogenous actors. This is particularly true when it comes to neuroscience where, for example, artificial intelligence opens multiple scenarios and possibilities ranging from advanced diagnostics, treatment of certain diseases, as well as human enhancement. In this context, promises and imaginaries are fundamental feature to examine the "horizons of hope" where expectations of technoscientific actors arise (Robinson, Audétat et al 2021). There are, in fact, several "promising innovations" in neuroscience. Ai in neuroscience has a high potential in several fields: as a treatment for Parkinson disease, to control eating disorders or – potentially – to manage kids with ADHD and other compulsivity or movement disorders. Machines can assist human brain, when necessary, while neurostimulation uses electromagnetic approaches to affect the nervous system, but also research and innovation in mind-controlled robotics and intelligent prosthetics are growing. The emerging technology in neuroscience open up promising scenarios in biomedicine and beyond but also elicits fears and doubt by stakeholders, based in the idea that technology will replace the role of neurologists, of physicians or, more in general, of an idealized form of natural cognitions. An example can be the recent research on AI and deep brain stimulation that may enables a more personalized treatments by tracing and recording patients' cerebral activity, however, it has been characterized by challenges and tensions among clinical teams and patients due to its "technical opacity" (Burrell 2016). In addition, neurotechnologies are often present in the popular culture, as the case of science fictions, cyborg imaginaries, thus giving rise to sometimes dystopian scenarios from which specific visions of the future emerge. Imaginaries related to neurotechnologies are interesting elements in understanding the frames in which innovation takes shape. Thus, exploring recent innovations in neurotechnology allows to examine the conflicts that shaped the arena of biomedical innovation over time; and to explore future scenarios of living with technologies.

Contributions may cover, but are not limited to, the following topics:

1) Emerging innovation in neuroscience and/or AI;
2) Biomedicine, neurological conditions and neurodiversity;
3) Controversies among stakeholders;
4) The role of patients and lays in shaping technological innovation;
5) Subjective experience and embodiment;
6) Implantable technology and closed-loop stimulation;
7) Brain-computer Interfaces;
8) Futures, promises and expectations of AI and neuroscience;
9) Science fiction on neurotechnology and cyborg imaginaries.

## Panel 45: Questioning institutional science and expertise supporting complementary, alternative, or refused knowledge

**Organizers: Federico Neresini (1); Maria Carmela Agodi (2); Paolo Volontè (3)**

**1: University of Padova, Italy; 2: University of Napoli - Federico II; 3: Politecnico di Milano**

**Topics:** *Health policies, governance and practices in a postpandemic era; Knowledge co-creation, citizens science, co-design processes, material publics and grassroot innovation*

**Keywords:** *refused knowledge, knowledge claims, challenging institutional science, expertise*

Scientific communities and epistemic institutions seem to be under siege, as fake news and conspiracy theories are undermining the very "core set" of science. The COVID-19 pandemic has shown how this phenomenon is particularly relevant in biomedical domains and in the field of public health at large; at the same time, current cultural perspectives questioning the monopoly of science are strongly stigmatized by various academics and public commentators, supporting the idea that "anti-scientific" theories are irrational and dangerous and must be opposed in order to preserve public health, democracies, and the wellbeing of our societies.

These contemporary forms of contesting the epistemic legitimacy of technoscientific expertise have attracted the attention of STS scholars and related research fields, for example in order to analyze the intertwining between such social processes and democracy in the context of the so-called "post-truth era", to study the crisis of technoscientific expertise to reflect on their possible overlapping with conspiracy theories as well as the political appropriations of these contestations by different and sometime opposing parts.

On this basis, the panel aims at exploring how the criticisms of scientific knowledge and expertise, especially during pandemic times, take the form of social worlds shaping and sharing what can be labelled as "refused knowledge" (RK), i.e. a body of knowledge partially or totally refused by institutional and scientific authorities.

We want to address how such criticisms give birth to social worlds composed by humans and non-humans, including (media) technologies as well as by segments of scientific communities and their opponents; how actors are enrolled within those social worlds and how parts of social worlds can be re-assembled to form a new one; how a social world can achieve temporary stability, shaping and sharing RK.

We therefore encourage STS scholars as well as social scientists in general to submit theoretically, empirically, and/or methodologically oriented contribution that aim at exploring:

- the assembling or re-assembling of groups, communities or movements that contrast scientific claims;
- arguments leveraged to support and spread RK, e.g. by linking the un-appropriateness of science to the conflicts of interest caused by the relationship with Big Pharma and the "establishment";
- the role of such RK within the political arena and the public sphere at large;
- ways of contesting RK, e.g. by associating it to cognitive biases, ideologies, and interests;
- epistemological implications of mobilizing the "symmetry principle" to study RK claims and related social phenomena;
- the emergence, organization and practices of RK-based communities and how they are framed in the public sphere discourses;
- any other aspect deemed to be relevant for a better understanding of RK, RK-based social formations and their implications within the so-called post-truth era.

## Panel 46: Looking at borders through an infrastructural lens

**Organizers: Timothy Raeymaekers; Noemi Bergesio; Anna Claudia Martini**

**UNIBO, Italy**

**Topics:** *Technoscientific promises, imaginaries and expectations; Governance of and by data infrastructures; Sociotechnologies of (in)secure worlds to come; Extractivist powers, imaginaries and asymmetries*

**Keywords:** *borders, infrastructures*

In an era apparently characterised by the progressive dissolution of borders, scholars have been studying the ways in which borders are actually multiplying and deepening through space and time. The interdisciplinary field of Critical Border Studies has been pushing forward a "processual shift" in the study of borders, leading to the re-conceptualisation of borders as active processes and social practices of spatial differentiation and racialisation. More recently, academic contributions have been looking at biometric borders and at processes of data extraction and circulation, but also to the digital and physical infrastructures that play a role in facilitating, channelling and/or filtering human, non-human and more-than-human "flows". As such, bordering processes have direct effects on the bodies of mobile subjects while becoming important devices for the extraction, elaboration, and management of biometric and biographical data of people on the move.

When focusing on the processes of borderwork, it becomes paramount to acknowledge the role of infrastructures in the creation, shifting, alignment and contestations of borders, and their direct effects on the bodies of people on the move. In this panel, we broadly conceptualise infrastructures as physical or digital networks that facilitate the flow of goods, people, or ideas and allow for their exchange over space (Larkin 2013: 328-329), which includes mobility infrastructures, such as vehicles and roads, bordering elements such as sediments, natural elements (rivers, mountains, etc.), and the propelling force of human movements, which itself contributes to shaping borders, as well as patterns and processes of circulation (Thomas, 2021).

A focus on bordering infrastructures has the potential to open a lens towards the study of the socio-material entanglements of border control. It may also encourage analyses of borders as embodied technoscientific and political intervention and extraction, and it may open up the emotional and affective relations between human and non-human forms of actorness, practices of activism and struggle that continuously re-negotiate borders. In this panel, we invite scholars to reflect on the ecological, affective, and socio-material dimensions of contemporary border work through an engagement with digital and physical infrastructure scholarship. Areas of interest involve, among others, biometrics and data mining, control and circulation, but also the dynamic interactions and relations between human and more-than-human elements as socio-material entanglements in which such multiplication of borders unfold and come to matter.

We prioritise panel contributions that focus on one or several of these dimensions:

- The human, non-human and more-than-human entanglements of contemporary border work;
- Affective border(ing) and the affective politics and assemblages involved in such entanglements;
- The socio-material and socio-ecological dimensions of contemporary border(ing) infrastructures;
- Border management through digital border infrastructures, biometric databases, and data mining;
- The relation between border(ing) infrastructures and bodies (embodied borderwork);
- Border infrastructures as sites of struggle and contestation;
- Methodological and ethical problems that can arise when conducting research on border infrastructures;
- The biopolitics and governmentality of border(ing) infrastructures.

## Panel 47: Gender, sexuality, and digital media between challenges and reproduction of hegemony

**Organizers: Cosimo Marco Scarcelli (1); Manolo Farci (2)**

**1: University of Padova, Italy; 2: University of Urbino, Italy**

**Topics:** *Embodied identities, genders and interests*

**Keywords:** *Gender, Sexuality, Digital Media, feminist media studies*

The connection between digital technologies, gender and sexuality has a long history and feminist theories of gender and technology have come a long way over the last forty years (Wajcman 2007; Burgess et al. 2016) and it represent a remarkable part of the interesting worlds to come because is ambivalent form different points of view and because it shows important intertwines between technology and society.

Indeed, if the approach of the second-wave feminism considered technology mainly as a reproduction of patriarchy, the 1990s scholars started to celebrate digital technologies as liberator for women. This gap between technophobia and technophilia has been filled by the recent feminist, media and STS scholars that produced an important number of studies that, in one hand, are more critical about technoscience and, in the other hand, are aware of its potential to open up new gender dynamics (Mowlabocus 2010; Light, Fletcher, & Adam 2008). Furthermore, the most recent studies focus on the mutual shaping of gender and technology, underlining how neither gender nor technology is taken to be pre-existing, nor is the relationship between them immutable (Van Doorn and Van Zoonen 2008; Krijnen and Van Bauwel 2022).

All these studies shows that digital media could reproduce and reinforce the most conventional (and hegemonic) social logic connected to gender and sexuality, favouring some users at the expense of others (young people, women, non-binary people, LGBTQIA+ community, black people, etc.) (eg. Noble 2018), but that they can also help users to perform different gender identities and practices or challenging more conservative vision of gender and sexuality.

With this panel we want to question how gender and sexuality are constructed in media production and consumption identifying dominant ideas and discourses and how symbolic materials are outcomes of social arrangements that legitimize an essential social division. Understanding technology (and in this specific case, digital media) as producing meaning, subjectivity, and agency shaped by power relations and adopting a critical perspective of contemporary digital media, this panels invites scholars to analyse digital media affordances, grammars, platform politics and content, as well as their uses, appropriations and embodiment, in order to make sense on how they are shaping normativity and also challenging traditional gender practices and identities in a challenging and ambivalent word where, in the one hand, issue connected to gender and sexuality seems to be even more visible compared to the past, but, in the other end, they are continuously under attack.

## Panel 48: STS in Italy before STSItalia

**Organizers: Gerardo Ienna (1,2); Alvise Mattozzi (3)**

**1: Università di Verona; 2: University of Maryland; 3: Politecnico di Torino**

**Topics:** *Sociomaterialities of conflict and peace; Knowledge co-creation, citizens science, co-design processes, material publics and grassroot innovation; Ethics, innovation and responsibility in technoscience; The value of science, technology, innovation and research practices; Building alliances in public participation and engagement*

**Keywords:** *History of STS, Italy, movements, Marxism, sixties and seventies*

Italy has gone through various interesting times. Among them, one of the most relevant has been the season of struggles, contestations and reforms that occurred between the 1960s and the 1970s ('68, autunno caldo, '77). During such season, a Marxism inspired reflection about the relations among science, technology and society emerged, together with alternative ways of engaging in such relations. At the time, questioning, reframing and experimenting with the relations among science, technology and society regarded, among others,

- the social and political responsibility of physicists
- the role of public and occupational health, life sciences, environmentalism in industrial conflicts, a battle that anticipates more acknowledged lay-experts involvement in health research and policies,
- the impact of the emergence of computer science in advanced capitalist societies (e.g., division and organization of labor; uses in health care; impact on scientific production; surveillance, etc.)
- various forms of citizen re-appropriation of technology (e.g., "radio libere", etc.) that may be considered precursors of various groups that promote innovation from below studied today by STS scholars.

These reflections and engagements were, of course, not an exception. For instance, during the same years Science for the People in the US, the British Society for Social Responsibility in Science and the Radical Science Journal in Great Britain, as well as intiatives connected to the idea of the "Critique des sciences" in France, were developing similar practices of reflection and engagement.

However, whereas the relevant role played by social movements in US, Great Britain and France has been investigated in order to understand their contribution to the genesis of STS and similar fields of research, the role of Italian movements, groups, organizations and initiatives has not been considered in connection with STS.

Though there have been contacts between specific Italian groups and initiatives and those of other countries more directly related to the birth of STS, there is no a direct connection between what happened in Italy and the development of STS. Thus, the analysis of what happened in Italy in the 1960s and 1970s in the field of science, technology and society still remains not only largely unexplored, but also completely removed from the narratives of the STS field, in Italy and, of course, elsewhere.

However, we deem that the Italian way of questioning, reframing and experimenting with the relations among science, technology and society has original aspects that deserve to be explored and put in tension with the development of STS and with the present STS knowledge and researches, thus remediating a situation characterized by an almost neglect.

This call asks for papers of historical and sociological nature, as well as for epistemological-methodological reflections about these almost forgotten paths (in Italy or elsewhere), with the threefold goal of 1) reconstructing a narrative of STS history that takes into account the mentioned marginalized threads, 2) understanding the reasons of the neglect these threads have undergone, 3) consider what can be learned from those experiences for interesting worlds to come.

## Panel 49: More than human decentered design: which competences, which methods, which tools for intersting worlds to come?

**Organizers: Micol Rispoli (1,2); Gianluca Burgio (3); Alvise Mattozzi (1); Ramon Ernesto Rispoli (4)**

**1: Politecnico di Torino, Italy; 2: BAU, Centre Universitari d'Arts i Disseny; 3: Università degli Studi di Enna "Kore"; 4: Università degli Studi di Napoli Federico II**

**Topics:** *Ecological transitions and climate justice; Knowledge co-creation, citizens science, co-design processes, material publics and grassroot innovation; Methodological challenges in a more-than-human world; Everyday life and design of the mundane; Building alliances in public participation and engagement*

**Keywords:** *cosmopolitical design, more than human design, inventive methods, pedagogy, design anthropology*

Since few years, an intense and systematic dialogue between design disciplines and social sciences has thrived. Such dialogue has happened, on the one hand, when design research has started to get interested in social science methodologies and, in particular, in the ethnographic method, and, on the other, when social sciences have started to get interested in the social role of artifacts in a systematic way, especially thanks to STS. Such dialogue has never been limited to a simple exchange between two disciplinary fields, where one took simply something from the other. In many cases such dialogue has contributed to transform both design and social sciences and to give way to various experimental practices, which have had an influence also on pedagogy.

More recently many STS scholars, designers and design researchers felt the necessity to further expand the notion of sociality, in order to include other beings besides artifacts, as a way to address present and future challanges and interest future worlds to come. As the general theme of the conference indeed say, today, the multiple eco-social crises we are experiencing highlight the fact that co-existance is not just a human issue, but rather something that engages all the beings (living ones or not living ones) that take part to the biosphere ecosystems.

Any design project cannot but be conceived interdipendently participative: it is an activity of negotiations among multiple and heterogenous beings with differe agencies. Because of that, design, emerged along the unfolding of modernity and its late and slow fading as designed itself around the human or, better, around various specific figures of the human,need to be redesigned: the very notion of project, its background and its modalities need to be redesigned.

Today some designers (architects, engineers, product-interaction-graphic-service-social-younameit designers) are trying to engage in this challange, often starting from the pedagogical field. This panel intends to provide a stage, a place for reflection and discussion and a laboratory for further investigation and exploration of more-than-human design reflections, researches, projects, interventions and experimentations.

We invite papers, prototype presentations and performances, enaging, reflecting and discussing the following issues (among others)

- interspecies co-design;
- experiments in design and architecture pedagogy, addressing the more-than-human challenge;
- what competences and kinds of knowledge more-than-human designers need
- co-designing with neglected actors;
- dismantling modernity, embracing complexity in design;
- architectures of care in times of crisis;
- design anthropology and its reframing through inventive methods to investigate more-than-human worlds.

## Panel 50: Technologies of Discontinuation. Towards Transformative Innovation Policies

**Organizers: Stefan Kuhlmann**

**University of Twente, Netherlands, The**

**Topics:** *Ecological transitions and climate justice; Technoscientific promises, imaginaries and expectations; Sociotechnologies of (in)secure worlds to come; Innovation imaginaries, practices and policies*

**Keywords:** *discontinuation, socio-technical systems, governance, ecological transitions*

This open special session/track is organised on the occasion of the launch of a book entitled "Technologies of Discontinuation - Towards Transformative Innovation Policies" (Spring 2023, Edward Elgar Publ.). The main authors will present key outputs of their research. Other authors working on related themes are invited to present their research, too.

Getting rid of incumbent socio-technical systems has become a pressing issue for governments as well as economic and societal actors, certainly since the 2020s. Climate change and accelerating global environmental devastation ask for fast abolition of unsustainable ways of energy production and consumption, of agriculture and food production, or of transportation (IPCC 2022). On top of this, since the last turn of century, the global economic and security architecture is dramatically changing in a way that suggests national governments to reduce dependence on international provision with natural resources (such as fossil fuels) and foreign technologies: countries feel the need to abandon vulnerable technological infrastructures and replace them by innovative, more sustainable "local" alternatives (e.g., Edler et al. 2021). So radical change is required. But how to do this?

In science, technology and innovation studies (STIS) little was known about how incumbent socio-technical regimes cease to exist when there are governance efforts to discontinue them in active ways. For a few years now, however, there has been an increase in research and publications that address this question or at least deal with general questions of the destabilisation of sociotechnical regimes (Turnheim 2012; Turnheim and Geels 2012, 2013; Stegmaier et. al. 2014; Koretsky et al. 2023; Goulet and Vinck 2023).

After a series of case studies carried out by the session organisers and by a growing international group of researchers, it is possible to sketch basic patterns and concrete case examples of actively governing the discontinuation of sociotechnical regimes in different countries and on different (organisational, state and supra-state) levels. Cases include the ban on the insecticide DDT in France, UK, and the USA, the phase-out of the incandescent light bulb in the EU, and the exit from nuclear energy in Germany compared with its almost-phase-out in UK.

There is evidence that the discontinuation of a sociotechnical regime and its governance becomes possible when a misalignment of problem, policy, and political streams opens up a 'window of opportunity'. Various discontinuation pathways can be identified, including an Ending Pathway ('phase-out' and 'ban', incremental and abrupt misalignment and ultimately discontinuation of a trajectory), a Weakening Pathway (control, restriction, reduction), a Life-cycle Pathway (what is discontinued, gets replaced or disappears), and a Continuity Pathway (when discontinuation governance fails).

Contributors of the session/track include (with working titles):

- Peter Stegmaier: Pathways to discontinuation governance – Incandescent Light Bulb phase-out
- Pierre-Benoît Joly: Continuous discontinuation - DDT ban as a trigger for incremental change in the pesticides sociotechnical regime
- Phil Johnstone & Andy Stirling: Understanding (dis)continuity in German and UK nuclear power policy (tbc)
- Stefan Kuhlmann & Peter Stegmaier: Discontinuation as key element of transformative innovation policy - strategic options
- Other paper submissions …

## Panel 51: Agency: A Key Concept for a Political STS

**Organizers: Giovanni Fava (1); Giulia Gandolfi (1,2); Pietro Daniel Omodeo (1); Francesca Putignano (1)**

**1: Università Ca' Foscari di Venezia, Italy; 2: Université Paris 1 Panthéon-Sorbonne**

**Topics:** *Health policies, governance and practices in a postpandemic era; Knowledge co-creation, citizens science, co-design processes, material publics and grassroot innovation; Methodological challenges in a more-than-human world; Technofeminism and interspecies solidarities; The value of science, technology, innovation and research practices*

**Keywords:** *STS, agency, Anthropocene, political epistemology, feminism, health*

Agency is a central concept of contemporary debates surrounding science, technology and society. It became an established conceptual tool in the sociology and cultural studies in the late 1970s, often as a reworking of the Gramscian concept of praxis in opposition to structuralism. It then extended its field of application to the most diverse disciplinary areas, such as anthropology, philosophy, STS – this concept almost signalises a praxeological paradigm in the study, in their mutual and conflicting relationship, the forms of life and discourses of our time. The aim of the panel is to frame the concept of agency through a methodology that can be defined as "historical-political epistemology" or "Political STS." This approach aims to investigate the preconditions underlying epistemic formations understood as the product of collective actions. Science and scientific practices always represent the outcome of sedimented and historical social practices. So-called scientific practices are the outcome of the mediations between the socioeconomic, ideological-cultural and technical-informational spheres. On the one hand, historico-political epistemology attempts to investigate how science provides both the production and reproduction of social configurations; on the other, how the "ideological" efficacy of science modifies, reorients, and transforms social structures.

This panel attempts to reflect and eventually redefine agency from the aforementioned Political STS approach, in order to show that the various forms of agency should be framed within complex socio-historical structures that are modified by them while, in turn, affecting the former.

Examples of such entwined cultural dynamics, in the medical field, are the practices that defined and redefined illness thanks to feminist groups such from the Boston Women Health Collective up to the contemporary practices of reading imaging reports by women's groups gathered in the oncology units of British hospitals. Moreover, the concept of agency enables interesting connections between feminist reflections and subaltern approaches. Feminism contributes to the empowerment of marginalized subjects; hence, it pays great attention to the capacity of action and reaction, especially by those subjects that are crushed by power structures as the latter tend to limit and harm the agency of certain individuals over others. Finally, the concept of agency has a pivotal role in the debate concerning the Anthropocene. Many environmental thinkers claim that the Anthropocene should be read as the epoch in which human agency is confronted with non-human forms of action. An historical-political epistemology of agency in the Anthropocene should be able to link those discourses to the broader technological and social contest in which they interact and are structured.

The panel welcomes contributions that deal with the issue of agency according to the mentioned outlooks and with the following topics :

- genesis and development of the concept of agency;
- agency from the point of view of its political and epistemological effects;
- agency as counterpower in subaltern knowledge and practices;
- agency as an epistemological issue in new technologies studies;
- agency as fundamental background for biomedical fields;
- agency and the Anthropocene;
- the concept of agency and new historical materialisms.