**How to make a scientific contribution**

**Science Studies Symposium, 6.-7.6.2024, Helsinki**

# Book of Abstracts

# Table of Contents

# Timetable

All rooms in the University of Helsinki Main building (Unioninkatu 34) except for the reception.

## Day 1: 06.06.2024

| | |
|---|---|
| 9.00–9.30 | **Registration**<br>**Location:** Room Karolina Eskelin (U3032) |
| 9.30–9.45 | **Welcome** from FSSTS Chair Jaakko Taipale |
| Keynote 1<br>9.45–11.00 | **Teun Zuiderent-Jerak**<br>"Contaminated Contributions: Flows of learning between STS and its fields"<br>**Location:** Room Karolina Eskelin (U3032) |
| 11.00–11.15 | **FSSTS Master's Thesis Award Announcement**<br>**Location:** Room Karolina Eskelin (U3032) |
| 11.00–12.15 | Lunch Break<br>**Location:** Sodexo Restaurant |

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|---|---|---|
| Parallel panels 1:<br>12.15–14.00 | **Stream 1 – Session 1** (U3029) | **Stream 2 – Session 1** (U3039) |
| | Kiss (University of Exeter); Ng (University of Helsinki); Paloniemi (University of Lapland) | Barat-Auelda (Autonomous University of Barcelona); Barman (Virginia Polytechnic Institute & State University); Couto Soares (Utrecht University) |
| Parallel panels 2:<br>14.15–16.00 | **Stream 1 – Session 2** (U3029) | **Stream 2 – Session 2** (U3039) |
| | Savolainen (University of Helsinki); Schellekens (University of Amsterdam); Vuolanto (Tampere University) | Jaakola (University of Jyväskylä); Jones (Konrad Lorenz Institute); Salovaara (University of Lapland) |
| Parallel panels 3:<br>16.15–18.00 | **Stream 3** (U3029) | **Stream 4 – Session 1** (U3039) |
| | Metselaar et al. (University of Amsterdam); Serafimova (Bulgarian Academy of Sciences); Grön (University of Helsinki) | Esko (University of Helsinki); Koskinen & Mäkinen (Tampere University) |
| 19.00 | **Symposium reception**<br>**Location:** Bruket Café, Leipätehdas, Kaikukatu 4B, 00530 | |

## Day 2: 07.06.2024

| | | |
|---|---|---|
| Keynote 2: 9.00–10.15 | **Minna Ruckenstein**<br>"Collaborative explorations as breathing spaces for digital futures"<br>**Location:** Room Karolina Eskelin (U3032) | |
| Keynote 3: 10.15-11.30 | **Noortje Marres**<br>"Testing facts: On tech trials in the public sector and the politics of falsifiability"<br>**Location:** Room Karolina Eskelin (U3032) | |
| 11.30–12.45 | Lunch Break<br>**Location:** Sodexo Restaurant | |
| Parallel panels 4: 12.45–14.30 | **Stream 4 – Session 2** (U3029)<br><br>Kärkkäinen (Tampere University); Tarkkala et al. (University of Helsinki); Walker (University of Helsinki) | |
| Parallel panels 5: 14.45–16.30 | **Stream 6** (U3029)<br><br>Hannula (University of Helsinki); Moats (University of Helsinki); Nagatsu et al. (University of Helsinki) | **Stream 7** (U3039)<br><br>Eren (University of Oulu); Santaoja (University of Lapland); Välikangas (University of Helsinki) |

# Keynote lectures

**Teun Zuiderent-Jerak (Vrije Universiteit Amsterdam)**

**Contaminated Contributions: Flows of learning between STS and its fields**

Etymologically, to con-tribute means 'to give in common with others'. Making a scholarly contribution typically implies specifying those others from the outset: either they are defined as fellow scholars within a circumscribed discipline – the scientific contribution – or as societal recipients of the scholarly gift – the societal contribution. Although STS would seem less susceptible to such categorizations due to its non-linear understandings of knowledge production and travel, such dichotomous understandings do linger on in the "floating ampersand" debate: the question whether the acronym stands for Science, Technology & Society, or for Science & Technology Studies. But what possibilities for making contributions emerge if we resist the choice between making academic or societal contributions? What flows of learning may then emerge between academic and other epistemic practices? What artful contamination between STS and its fields become possible if we take Michel Serres' advice to heart to "give up the comforts of disciplinary specialism" that the scientific contribution provides, and instead "risk putting [our]selves into perpetual translation" (Brown 2002)? In this contribution I draw upon efforts to carve out spaces for STS scholarship that make and do their contributions by entwining scholarly and societal concerns and epistemic practices. I specify their potential by drawing upon ongoing work on knowledge inclusion in epistemically hierarchal settings in health care. Mobilizing methods from natural language processing AI to analyse what people post online on health topics, allows their knowledges to become part of highly methodologized guideline development spaces. It also creatively entwines epidemiological attachments to frequentist epistemic reasoning with attempts in STS to move beyond the reification of 'local knowledge'. But may I thereby also be stumbling upon the uncomfortable finding of widely shared – dare I say universal? – experiential knowledge across patients in vastly different settings?

**Noortje Marres (University of Warwick)**

**Testing facts: On tech trials in the public sector and the politics of falsifiability**

In this talk, I examine two recent controversies about tech trials in the public sector in the UK to develop an analysis of the politics of technology testing and counter-testing "beyond the laboratory": the NHS-Deepmind controversy and the use of facial recognition by the police. I will argue that these controversies demonstrate the importance of knowledge politics to the politics of innovation today. In both cases, the very status and definition of the object of technology testing in society became the

focus of public contestation. Can tech deployments in hospitals, shops and streets really be defined as test when the consequences for affected parties are real? Do tech trials evaluate algorithmic systems, or are underpinning data infrastructures part of what is being tested? The answers to these two questions not only have implications for the distribution of epistemic power in tech trials, they also determine to a significant extent whether the politics of innovation pursued through tech trials qualifies as authoritarian or democratic. I will argue that ultimately at stake here is the falsifiability of technological propositions. Today's tech trials are embroiled in a techno-politics of non-falsifiability: even as tech is continuously being tested in hospitals, shops and streets, trial designs render technology unchallengable from the standpoint of everyday life. However, at the same time, these trials are being challenged through new forms of epistemic activism, in which the creation of conditions of falsifiability and the articulation of testing facts - inaccuracy, bias and abuse of power - becomes a key contribution of activist intervention.

**Minna Ruckenstein (University of Helsinki)**

**Collaborative explorations as breathing spaces for digital futures**

My talk reflects on collaborative explorations within the MyData initiative, delineating a non-linear, recursive research approach to emerging technologies in society. Three distinct yet interconnected modes of engagement are discussed: 'creating trouble', which involves questioning those who shape the technological agenda; 'composing futures', a technique to claim expertise and broker between different ways of knowing; and 'securing breathing space', which seeks to establish reflective domains where concepts and actions concerning data practices and algorithmic systems can be deliberated. Together, these modes of engagement suggest the reconceptualization of collaborative explorations as 'breathing spaces for digital futures', thereby advocating the proactive integration of social science perspectives into the core of digital society-making. Collaborative explorations enable us to articulate research stances and evaluate ongoing debates and practices in ways that reflect our disciplinary backgrounds while also reaching beyond them. This approach allows us to find new epistemic partners and respond to the epistemic coups we witness when technology experts and policymakers define the terms of debate.

# Stream 1: Bringing new empirical phenomena into science studies

## Session 1

**Boglarka Kiss (University of Exeter)**

**Questions of Innovation in Contemporary Bacteriophage Research**

How do we approach scientific developments that are "rediscoveries" of previously explored but superseded phenomena? In contemporary microbiology, the systematic study of bacteriophages (viruses that infect bacteria) is a nascent field. Scientists have characterised phages as viruses that shape the biosphere in fundamental ways, while also configuring phages as biological agents that have a capacity for enabling biotechnological innovation in gene engineering, food security and the mitigation of antimicrobial resistance in clinical medicine. However, phage therapy for the treatment of bacterial infections was initially developed a hundred years ago, and it was deployed successfully before being replaced by antibiotics. How do contemporary scientists articulate phages' capacity for innovation when many see the use of phages as a century-old technology? How does the study of these dynamics contribute to STS?

My PhD dissertation interrogates the ways in which contemporary scientific practices configure phages as technological tools. I am especially interested in tracing the ontological changes involved in the enrolment of phages as tools in different applications. The presentation will explore key questions I have faced about the contribution this project makes to STS: is the main contribution related to theorizing the development of technological tools in science, does the study contribute to the exploration of ontological enactment in STS, or is the main contribution the empirical focus on contemporary bacteriophage research? The presentation will also interrogate how these questions relate to phage scientists' claim to novelty and innovation within their fields.

**Alicia Ng (University of Helsinki)**

**Dwelling with microbes as an empirical contribution to STS**

My paper presents finished work from my PhD project on the technoscientific nature-based solution of bioremediation, a method using microbes such as bacteria and fungi to alleviate pollution. STS literature has critiqued the double-edged nature of the technosciences as a field attributed to progress, innovation, and solutions within the capitalistic valuation and commercialization of biological entities such as soils, genes, and microbes. Based on ethnographic fieldwork and interviews with bioremediation

scientists, my research has found that the outdoor scientific pilot and fieldsites of bioremediation scientists have enabled a particular mode of involved relation between my interlocutors and the microbes they work with. This differs from human-microbe relations in the laboratory, including previous science studies of microbes in the laboratory. This involved relation I describe theoretically as dwelling (Ingold 2000 [2022]), and it affects how scientists approach the microbes they work with and shapes the practice of bioremediation. My contribution here is primarily an empirical contribution to science and technology studies on the paucity of research in scientific field studies, especially of microbial technoscientific nature-based solutions. This contribution overlaps with the social study of microbes on microbial agency in polluted environments practice of bioremediation. My contribution here is primarily an empirical contribution to science and technology studies on the paucity of research in scientific field studies, especially of microbial technoscientific nature-based solutions. This contribution overlaps with the social study of microbes on microbial agency in polluted environments.

**Petra Paloniemi (University of Lapland)**

**Practice-based research on practices on emergent digital encounters in tourism**

Digital platforms allow innovations that are characterized by elasticity that continuously create new practices, and transform old structures (Dredge & Gyimóthy, 2015). The emerging use of digital encounters, for instance sharing economy platforms, in facilitating services can be described as disruptive force (Guttentag, 2015) that have changed and will probably continue to change the business and tourism ecosystems. This PhD project is a practice-based research that explores social practices on emergent digital encounters in tourism. More precisely, this study investigates practices of hospitality and virtual experiences mediated by digital platforms which can be called sharing economy platforms. The data consists of interviews with the hosts and the guests, focus group discussions and written reflections by the guests. Practice theory provides a beneficial framework for analysis in this research. The study builds on Schatzki (1996, 2002, 2005), Reckwitz (2002) and Shove et al. (2012) in pondering the role of technology in practice theory. The study contributes to tourism research where human and nonhuman agents are discussed in relation to tourism experiences (e.g. Äijälä, 2021; Rantala et al., 2011). This article-based PhD aims to bring new empirical phenomena into science studies and to make both theoretical and conceptual contributions.

## Session 2

**Laura Savolainen (University of Helsinki)**

**Platformed AI data work within the sciences**

In this presentation, I discuss preliminary findings from our study on the use of microwork platforms in research. The data consists of interviews with researchers across fields such as machine listening, natural language processing (NLP) and medical science, as well as various examples of their crowdwork tasks.

Platformed crowdwork is routinely framed as a transitional phase in AI development due to the increasing availability of synthetic data. This has downplayed worries about poor pay and exploitative labour arrangements. However, in the longer-term, each wave of technological innovation has created new needs for human labor. Against this backdrop, the case of crowdwork in scientific research can offer important insights, given that science operates at the very frontiers of technological possibilities.

Our hypothesis is that the more complex tasks researchers want to automate, the more they need to rely on data workers' creativity, contextual understanding and ability to learn. Yet, this contradicts the reigning 'digital taylorism' on crowdwork platforms, in which labour is heavily monitored, segmented, and standardised, and workers are treated as interchangeable, untrustworthy and low-skilled. Consequently, there is a need to explore how to build trust, improve worker autonomy, and regulate – or create better – platforms to support robust and responsible data production in academic research and beyond.

**Sven Schellekens (University of Amsterdam)**

**Making scars talk: psychologisation of the Dutch asylum procedure**

This paper investigates how medical professionals conduct clinical examinations on the body of asylum seekers. They examine scars to find material traces of violence and torture. First, a psychologist investigates whether the asylum seeker suffers from trauma. Next, a physician documents the scars on the body and links them to how the asylum seeker tells they got there. While examining, professionals do not invest their medical knowledge with the aim to cure asylum seekers, rather they use it to find evidence that proves an asylum seeker is the victim of violence and/or torture (and so warrants a legal status).

By drawing on ethnographic and material-semiotic methods, I study how care and compassion is taught, learned and distributed among professionals, how they switch between practices of therapeutic care and forensic care. In so doing, I argue that professionals do not provide care per se to asylum seekers, rather it is understood as taking care for the legal and forensic system. The paper contributes to debates on identity, belonging and their relation with citizenship and political subjectivities. My aim is to complicate understandings of compassion and control in the fields of migration and

asylum by opening up the practices that guide the clinical examination of the body of asylum seekers.

**Pia Vuolanto (Tampere University)**

**Science studies and the contestation of science**

Science and scientific knowledge production is being contested in numerous fronts. Especially this appears in the contestation of medical knowledge, which appears for instance in vaccine hesitancy, or by patients coming to the consultation room with ready-made diagnoses or contested attitudes towards medical recommendations. The presentation centers around why and how science studies should be interested in the contestation of science. It also gives reasons for science studies to simultaneously delve into the different traditions to defend science, e.g. by the skepticism movement.

The aim of the presentation is to bring the empirical phenomenon of contestation of science into attention in science studies. Empirical material of the presentation consists of interviews and ethnographic observations among people who contest medical knowledge for example related to vaccine hesitancy and the use of complementary and alternative medicine, and textual materials produced by the proponents of the Finnish skepticism movement, a prime example of the defenders of science.

# Stream 2: How to make theoretical and conceptual contributions

## Session 1

**Oriol Barat-Auleda (Autonomous University of Barcelona)**

**The Role of Living Labs in reconfiguring Health institutions**

Institutions serve as the foundational infrastructure of modern societies and their knowledge production system; however, they are increasingly facing greater changes meeting the needs of contemporary society and the rapid advancement of technology. These challenges have forced institutions to seek new ways of producing knowledge and engaging with their externality. We situate ourselves in the heatlh field to illustrate this phenomenon. Through the mapping of a total of 86 health living labs in Europe, 15 interviews conducted with different living lab managers and participants, and alongside ethnographic research within a hospital-based living lab, this research illustrates the emergence of living labs as tools for the establishment of new approaches of scientific and technical work within the health domain. In contrast to the conventional attributes

of institutional models, which often prioritize disciplinary technologies and restrict movement, we draw upon the concept of "extitution" to describe institutional changes towards aspects such as control, movement, and participation. We situate living labs as a means of extitutionalisation, which encompasses instruments and methodologies capable of creating new ways of (co)producing knowledge, thus fostering institutional openness and reconfiguration. Consequently, this research contributes to a deeper understanding of how health institutions evolve through living labs in response to sociotechnological changes, ultimately shaping and changing their interactions with both internal hierarchy and external associations.

**Dhritiman Barman** (**Virginia Polytechnic Institute & State University**)

**Contentious Commodity: A Field Theoretical Perspectives on the Shaping and Reshaping of Legal Cannabis Market in Southwest Virginia, United States**

Field theory has its roots in classical electromagnetism in physics and was later adopted by the gestalt psychologists in Europe in the early 20th century. Then, in his hugely influential contribution to sociology, French sociologist Pierre Bourdieu put forward his theory of fields to explain patterns of social hierarchy and power in different cultural arenas, including science. Yet, the theory of social fields has received surprisingly little engagement so far in science and technology studies (STS). In my Ph.D. work, I will use Bourdieu's theory of social fields and American sociologists Neil Fligstein's and Doug McAdam's concept of strategic action field (SAF) to study the dynamics of social struggle around recently-emerged legal and quasi-legal cannabis markets in Southwest Virginia. Using this field theoretic frame of analysis, I examine how different groups of actors, including THC users, hemp growers, vape and headshop owners, politicians, and anti-drug activists, situate themselves in a field of contention in which the norms and rules of governance are still unclear. Groups vie for advantage, including through the use of technological skills that allow them to fly under the radar of existing law. Given that the legal cannabis market is still in a gray zone in Southwest Virginia and there are no shared rules concerning the appropriate forms of action, a crucial component of stable fields, this empirical work in STS will shed important light on tracing the social, cultural, and technological struggles of actors in a field that is yet to be established.

**Bernardo Couto Soares** (**Utrecht University**)

**The *how* question: translating STS insights in a pathology department**

Drawing from an ongoing research about the values and politics of wildlife pathology, this paper explores the ways insights from empirical inquiry can translate into other epistemic traditions and be valuable in their scientific practices and teaching. In my

access to the field, the initial introduction to the project was met with interest and several what and when questions.

What is your hypothesis? What are the interview questions? What are the potential findings? When will you know if you have reached a conclusion? Other questions concerned about my solemn focus on pathologists, and their understanding of wildlife, in a department with epidemiologists, conservationists and biologists. That attending to the object, the wild animal body, I was considering only one piece of the puzzle. These questions pertain to presuppositions of scientific inquiry and science as 'singular' (Mol & Hardon, 2020).

The research project emerges from a collaboration with a research center whose aims are to reflect ways of caring in human-animal relations and contributions within veterinary education. Beyond a publication in an STS journal, the project aims to find ways to collaborate with the pathology department. Hence, in this paper, I bring an ongoing question on my mind throughout my current research: how can my research contribute towards pathologists' research and teaching practices?

## Session 2

**Joni Jaakola (University of Jyväskylä)**

**Building a theoretical contribution: notes from comparison**

While there is a plethora of methodological guidebooks and other resources on how to conduct empirical research in the social sciences, doing theoretical research is often guided by previous theoretical work one finds convincing. This presentation reflects on the process of writing a theoretical article and building a theoretical contribution. While doing so, it builds common ground for peer feedback and theory crafting, especially for those at the beginning of their research careers.

The presentation is based on a theoretical paper in-the-making that takes comparison as its modus operandi for building a contribution. The starting point in the paper is that research in both fields of political economy of care and socio-gerontechnology criticize the ways in which ageing is perceived as a social, economic, and individual problem in societies. Although having this shared understanding, the research fields provide explicitly and implicitly conflicting conceptualizations of ageing, care, subjectivity, and technology. I suggest that comparing these different outcomes is a fruitful starting point for further theorization.

**Elis Jones (Konrad Lorenz Institute)**

11

**Conceptualising the epistemic value of ecosystems: the case of coral reefs**

It is well known that coral reefs are diverse, productive, and economically important systems, and that they are being radically transformed by human activities, something of great concern to coral scientists. There are well-defined modes of valuation associated with reef systems, operating under labels such as 'intrinsic value' and 'ecosystem services', which are used to articulate their ethical, ecological, and social significance. But reefs are also replete with features which lend themselves to knowledge production, which are not well-theorised nor incorporated into environmental assessments.

Here, I offer a contribution from STS and philosophy of science, using interview data and qualitative analysis to explore some of the ways coral scientists think with and about reef systems. I offer a preliminary and partial typology of epistemic roles for coral reef ecosystems: reefs as natural archives, as natural laboratories, and as places for producing ecological baselines (used to assess the health of other reef ecosystems). I show how these are related to ecological dynamics of reefs and affective relations between reefs and scientists, interweaving the epistemic, ecological, and affective value of reefs.

My aim is to provide theoretical resources for better capturing the value of reefs, helping to draw attention to the epistemic costs of climate change, and incorporate epistemic value into environmental assessments. I conclude by reflecting on two contributions qualitative approaches offer in this case - enriching and refining concepts - which can be used to help support the concerns of interview participants, and so contribute to scientific and societal challenges.

**Samuel Salovaara (University of Lapland)**

**Organisational networks in child protection - revealing the sociomaterial practice**

The current complexity and crisis of the child protection system creates a need to explore and conceptualise child protection in new ways. In order to develop new theoretical approaches, we need to abandon the idea of child protection as an activity taking place in clearly defined institutions and understand it rather as a flexible and complex entity (Bauman 2000; Harrikari & Rauhala 2019). In our current research project, the organisational networks of child protection are studied as manifestations of the sociomaterial practice, and attention is paid to the relationships between different actors and the structures of the networks by using the methods of social network analysis (SNA). The methodological contribution of the project is particularly relevant to the fact that the use of SNA in social work research is still rare. SNA offers considerable promise for social work research, as the focus of social work is on the relationship between the individual and their environment (e.g. Richmond 1922; Bartlett 1970, 116) and SNA offers unique

methodological tools for studying these relationships (e.g. Prell & Schaefer 2023). The theoretical contribution of the project arises from the examination of organisational networks as sociomaterial practice (e.g. Leonardi 2012). The study draws on actor-network theory (Latour, 2005; Law & Hassard, 1999) to explore the functioning of networks, considering both social and technological network elements, whose multilayered interconnectedness is examined in the light of organisational functioning and the implementation of the child protection mandate.

# Stream 3: What constitutes a methodological contribution

**Roos Metselaar, René Nissen, and Sam van der Lug (University of Amsterdam)**

**The informed citizen does not know how to swim: An auto-ethnographic experiment with public information about PFAS pollution**

In this presentation, we would like to consider how our auto-ethnographic experiment on public toxicity information may make a methodological and societal contribution. The European Food Safety Authority (EFSA) advises a maximum intake of Per- and Polyfluoroalkyl Substances (PFAS) – a toxic, persistent, and bioaccumulating pollutant – of 4.4 nanograms per kg of body weight per week. National health authorities translate this value into information that supposedly enables citizens to make 'responsible choices' to limit exposure. Distributing information thus aims to care for the health of citizens without compromising their freedom. We embarked on the auto-ethnographic experiment of trying to follow public guidance on PFAS exposure for one week, taking notes on how public toxicity information shapes our daily practices. Our experiences while aiming to follow guidelines illustrate troubles with modeling a population as rational decision-makers: (1) scientific knowledge does not map onto the messy realities of practice; (2) our practical dealings with PFAS are best described as 'juggling' and 'keeping afloat,' (not 'weighing' or 'choosing'); and (3) action does not follow (only) decisions but (also) many practical-material complexities at hand. This raises questions for authorities seeking to provide handholds for affected communities, who may care for activities beyond 'decision-making.' We wonder how to make a societal contribution with our insights that does not wallow in toxic despair but simultaneously moves beyond 'informing' as a final responsibility. We are also curious about what methodological lessons can be drawn from how our auto-ethnographic experiment interweaves public information with private practice

**Silviya Serafimova (Bulgarian Academy of Sciences)**

**On Post-Truth as Pre-Emptive Truth. Some Challenges to the Production of Scientific Knowledge**

The major objective of this talk is to outline what contributing to science should look like when refracted through the lens of the so-called pre-emptive truth; the latter is contextualized within the necessity of re-articulating categories, meanings and boundaries, as displayed by the STS post-truth debates. Specifically, I discuss the role of some post-truth imaginations that modify the idea of contributing to science as such. Extrapolating Jasanoff and Kim's theory of sociotechnical imaginaries (Jasanoff and Kim 2009, 2015), I examine whether one can define these post-truth imaginations as sociotechnical imaginaries of pre-emptive truth, as well as clarify how they affect scientific knowledge in terms of contributing. The knowledge transformations are examined 1) beyond post-truth as a catch-phrase, giving preference to its genealogical reconstruction by shifting and intensifying major public imaginations of science and politics and 2) beyond the ontology of 'traditional' truth-making by revealing the implications of the public concerns about moral values as a matter of post-truth. In this context, I explore some moral and political commitments to the production of scientific knowledge deriving from the recognition of the sociotechnical imaginaries of pre-emptive truth, as well as discuss their normative validity beyond moral relativism within the current post-truth interregnum (Ballo and Vaage 2022).

**Kirsikka Grön (University of Helsinki)**

**Navigating uncertainty: Methodological immaturity and emerging digital technologies**

When researching emerging digital technologies, researchers need to deal with uncertainty, as no one knows what kind of future effects the technology will have and how people shape it by inventing novel practices and uses with it. In public discussions, new technologies are often met with hype or dystopic visions, causing distractions for researchers to differentiate the current technological situation from the anticipatory visions. In this presentation, I advocate for the adoption of the concept of methodological immaturity as a framework to embrace and navigate uncertainty. Methodological immaturity, a concept originally drafted to critique participatory methods in child research, emphasizes how all subjects, including researchers, are immature; fallible, always learning and changing, and thus never complete. Drawing from empirical insights obtained through a participatory study on digital infrastructures in Hangzhou, China, I describe an unfinished exercise of engaging with methodological immaturity to sensitize myself to understand mundane, everyday issues with the infrastructures while also acknowledging the political economy where these infrastructures take place. With methodological immaturity in mind, I examine how our informants engage with the

uncertainty of the digital technologies around them. As the digital everyday environments seem constantly changeable and unpredictable, our informants make sense of the situation by emphasizing how human needs, that can be fulfilled through technology, remain permanent. Thus, methodological immaturity highlights the persistent unpredictability of emerging technologies as the potential to understand the sensemaking of the sociotechnical world.

# Stream 4: Thinking about social impact of scientific contributions, both in the scientific community as well as in society

## Session 1

**Terhi Esko (University of Helsinki)**

**Social impact in the era of legal tech, AI and automation**

The social impact debate has traditionally emphasized economic outputs, such as patents and spin off companies. This perspective was particularly strong in the context of innovation policy in the 1990s and 2000s placing universities at the core of knowledge production. At the same time, universities and research were to contribute to solving complex societal and political questions. In innovation policy and the research evaluation literature, the focus has been on quantifiable outputs, which tend to favor the natural and technical sciences. In other fields, such as social sciences, humanities and educational sciences, social impact is present differently. This presentation focuses on law and jurisprudence discussing their role from the perspective of social impact. Currently, there is a lot of hype around artificial intelligence, digitalization and automated decision making but the role of research in law seems to be under-represented in the debates as far as the impact debate goes. Consequently, law fails to conceptualize AI technologies as a part of broader socio-technical change, which vary across contexts. This presentation is based on an upcoming book chapter which aims to provide a more contextualized understanding of how digital technologies, and their impacts, are embedded into the everyday lives and practices of people and legal institutions.

**Outi Koskinen & Elina Mäkinen (Tampere University)**

**Scientists and the multiplicity of ethics within animal experimentation: studying the social impact of a scientific method through the framework of practical activity**

A controversial and sensitive issue, animal experimentation as a way of gaining scientific knowledge invites ethical debates both within the scientific community as well as in the

wider society. In this presentation, we will study the multiplicity of these ethical considerations from the scientists' point of view through the framework of practical activity (FPA). Developed originally for understanding academic work as a practical activity, FPA enables analyzing the tactical, political, moral, and identity-related dimensions of engaging in a given practice. As such, FPA provides us with tools for understanding the multiple, sometimes conflicting ethical demands and concerns scientists face in their daily work involving animal models. We analyze semi-structured interviews with scientists who use animal models in their work and scientists who use other methods that do not involve animal experimentation. Guided by the FPA, we are interested in the ethics of 1) *how* scientists engage in animal experimentation; 2) *what* they accomplish by doing it; 3) *why* they do it in specific ways; and 4) *who* they are becoming while doing animal experimentations in these specific ways. Our preliminary findings show that these different ethical dimensions revolve around questions of human-animal relations, justifications for scientific research, resources available for research and its consequent practical constraints. While scientists voice clear-cut political justifications for animal experimentation, the tactical and moral aspects of this work complicate the picture, emphasizing on-the-ground ethical negotiations. We suggest that paying attention to this ethical multiplicity deepens our understanding of the social impact of animal experimentation.

## Session 2

**Tommi Kärkkäinen (Tampere University)**

**Hybridity in knowledge brokering organisations – the competition and complementarity between academic and other knowledge domains**

Knowledge brokering organisations (KBOs) shape the ways academic knowledge makes societal contributions. They develop and use practices to organize the interaction between researchers and policymakers. This work is characterised by simultaneously underlining the value of academic knowledge, speaking for the needs of policymakers and seeking to achieve organizational goals. As such, KBOs are hybrid organisations that support evidence-informed policymaking, but only little attention has been paid to how evidence-informed these organisations' own practices are.

The knowledge brokering literature focuses on individuals' repertoires in brokering and portrays a myriad of practices used to mobilise academic knowledge for policymaking. With the proliferation of organisations engaging in knowledge brokering, it becomes important to address the organisational side of brokering and how organisations come to carry out brokering the way they do. Few studies have pointed out that organisations aiming to communicate research to policymaking tend to have challenges in using research relevant for their own work. This points towards academic knowledge being overruled by other considerations in KBOs.

Consequently, this study seeks to answer two interrelated questions: What kinds of epistemic and normative resources are operationalised in establishing, upholding and developing KBOs' practices? What kinds of relationships are the resources constructed to have with each other? These questions will be addressed by interviewing staff from multiple KBOs, during the spring of 2024. The study aims to contribute science-policy interaction literature new understanding of the hybridity of KBOs' practices and the role that academic knowledge has in this hybridity. To what extent are KBOs 'practicing what they preach'

**Heta Tarkkala, Karoliina Snell, and Aaro Tupasela (University of Helsinki)**

**From primary to secondary use of health data: 3 examples from Finland**

Within the European context there are multiple efforts to simplify and ease access to different types of data, including health data. Finland has been at the forefront of legal and structural changes in this movement, often referred to as a "model" country for data access policies. These changes include the Finnish Act on Biobanking as well as the Act on the Secondary use of Health and Social Data. Such policy efforts are often exemplified by the development of so-called "one-stop-shops" which promise easier access to different types of resources ranging from health and social welfare data to biobank samples. These changes are hailed by policymakers as a way of simplifying access to public resources and providing smooth service. The processes of setting up biobanks, a national authority for secondary uses and the founding of quality registers are examples of different kinds of data infrastructures and how data, and access to it, is organized for other than primary purposes. Together, these cases illustrate the manifold questions related to secondary uses of health and social welfare data and the way they are governed and organized. In this presentation we discuss these cases and pose the question whether the attempt to simplify has actually resulted in a new layer of complexity, overlap and redundancy.

**Iona Walker (University of Helsinki)**

**Human Microbe Relationships in AMR research at the University of Cityford**

I conducted ethnographic fieldwork with scientists at British research-intensive university to explore how scientists imagine, respond to and understand human-microbe relationships in the context of their research on antimicrobial resistance and respiratory tract infections. Antimicrobial substances are widely used by to treat and prevent infection in humans, plants and animals. Antimicrobials can be understood as are essential tools for controlling non-human life to the extent that they can be considered infrastructures upon which modern biomedicine, industrial agriculture and economic

productivity depend (Denyer-Willis and Chandler, 2019). Antimicrobial resistance (AMR) occurs when microbes develop resistance to antimicrobial substances like antibiotics and in doing so, resist human control. In the past, language and imagery used to frame, communicate, and understand AMR draws on an understanding of microbes as antagonists in an ongoing 'war' with humans and in the UK academic research is an important branch of the UK Government's Contained, Controlled, Mitigated AMR strategy. My work explores how researchers at the University of Cityford reconfigure their understandings of health, infection and human-microbe relationships through their AMR research away from antagonism and toward more situated, emergent forms of relations. I explore how 'balance' and 'ecology' became key framing tools used by scientists for thinking through these relations and making sense of complex data as well as the challenges scientists faced articulating these through the imperatives of academic knowledge production in the UK.

# Stream 6: Alternative ways of making scientific contributions, such as artistic exploration of scientific themes

**Riina Hannula (University of Helsinki)**

**Microbial Medi(t)ation: Multi-species Care Assembled by the Vagus Nerve**

Microbial Medi(t)ation is simultaneously a practice and ethnographic fieldwork. It aligns with the ways companion microbes are made known within the vagus nerve science. Recent scientific research has shown that the neurochemical communication of microbes via the vagus nerve affects brain chemistry and mood. Lay practices and therapeutic exercises suggest that the so-called vagus nerve activation provides overall well-being by restoring 'rest and digest mode' of the nervous system. The contribution for STS I aim to offer is to produce knowledge on human-microbial relations combining somatic practice with existing knowledge on microbes and the vagus nerve. I created a platform to think about how scientific claims materialize in society and within bodies experiencing them. To address this I produced Microbial Medi(t)ation immersive audio exercise to think and feel with microbial companions. The immersive artwork situates the gap between facts and claims on the vagus nerve and their embodiment and has served as the ethnographic field site launched in various art venues. Instead of going to do a field I create the field inside the contemporary art scene. Elaborating the neuroscientific discourse and its application to the vagus nerve activation the Microbial Medi(t)ation encourages participants to create knowledge along with their companion microbes moving on yoga mats. Participants are interviewed about their vagal and microbial experiences after doing the exercise. It softens the participants and serves as a

speculative invitation to imagine what it is to be a holobiont, human-microbial consortium shifting self-care towards multi-species care.

**David Moats (University of Helsinki)**

**Data as Contribution: The possible social science contribution of benchmark data sets in AI**

How can the social sciences and humanities contribute to Artificial Intelligence? Recent developments in AI and Machine Learning research, particularly by large tech companies, have been couched in terms of performance on benchmark datasets (like Image Net), often presented as metrics and rankings. This has also been the case for much work in so called AI Ethics and Value Alignment - aimed at removing biases and harms in AI Models. This involves developing more 'fair,' expert curated datasets to either judge model performance by or to retrain models. Much of the contribution of the social sciences to this space, however, has come in the form of critiques from the sidelines.

Drawing on Valuation Studies and work in STS on interventions, this paper analyses the rhetorical strategies involved in recent attempts to influence AI development through benchmark Datasets. It asks if more ambivalent and innovative contribution(s) can be made through the medium of alternative datasetd? Could dataset curation be a form of critique or balancing (Law 2004)? Could more subversive data sets be used to reveal the absurdity of reducing societal values to metrics?

These questions are relevant to wider studies of metrics and rankings in scientific work, the role of 'contributions' in interdisciplinary dialogue and the fate of political critique in scientific fields dominated by the private sector.

**Michiru Nagatsu, Suvielise Nurmi, Anna Rainio, and Annukka Vainio (University of Helsinki)**

**Science, Fast and Slow**

Being part of contemporary culture of speed and competition, universities embrace quasi-market logics (productivity, efficiency, ranking, index) over scientific and social ones (curiosity, collegiality, common good). Coincidentally, the volume of scientific papers has increased significantly whereas scientific progress in terms of disruptiveness (opening new directions for research) has declined (Park et al. 2023). In response, some proponents of the slow science movement (Stengers 2018; cf. Berg and Seeber 2016) have suggested that the academia-society relations should undergo a transformation. Slow science reclaims 'the art of dealing with, and learning from' "the mess": 'the irreducible and always embedded interplay of processes, practices, experiences and

ways of knowing and valuing that makes up our common world.' (Stengers 2018, p. 120) Stengers's hypothesis is that fast science has systematically impoverished scientists' social and moral imagination needed to deal with "the mess", thereby making our social-ecological systems unsustainable. Our response to this theory of science, fast and slow, is twofold: first, we mobilise our interdisciplinary expertise to unpack the underlying moral-psychological and social-epistemological mechanisms: How does fast science foreclose our moral imagination and what are its psychological consequences? How does fast science decrease the quality of scientific knowledge? Why is fast science unsustainable? Second, we as a group of concerned researchers-citizens try to practise the art of slowing down, by reflecting upon our dual experiences of knowing and feeling in the midst of socio-ecological crises. We conclude by formulating strategies to cultivate our motivations and capabilities to slow down in current academia.

# Stream 7: The relation between scientific contribution and advocating / activism

**Anita Välikangas (University of Helsinki)**

**Two invisible hands: Why is Adam Smith so visible, and Anders Chydenius so invisible?**

There are curious similarities between Adam Smith and Anders Chydenius. They both analyse the workings of the global economy in the same time period, aiming to understand the origins of national wealth. They both arrived at presenting an argument on invisible hand. Anders Chydenius published his key works on this topic, in particular The National Gain, in 1765–1766; Adam Smith published The Wealth of Nations in 1776. Adam Smith has become a central figure in the history of economy thought. Meanwhile, Chydenius has not received that much academic attention even in Finland. It seems that Smith has made a dramatic contribution to academic discussion, while the impact of Chydenius is more local and practical. Yet the central arguments of Chydenius and Smith are very similar. What explains this difference?

This paper analyses the formulation of scientific contribution in the 18th century discussion on political economy. I locate various reasons that cause the dissimilar impact of Chydenius and Smith. I argue that these differences are not caused only by language or the size of academic community. Instead, they are also caused by political reasons, academic merit structure and the dynamics of academic communities of the 1760s in the continental Europe and in Sweden. I also evaluate whether the differences in the reception of Smith and Chydenius can be explained by the nature of economic knowledge, and by the uneasy relationship between economics and politics.

**Selen Eren (University of Oulu)**

**How to transform conservation science with the lessons of the interventionist approach in science studies and from within?**

Critical social scientists, recently joined by critical natural scientists, argue that in order to tackle environmental problems in practice, environmental scientists should start from real-world problems rather than the global literature of their disciplinary fields by prioritizing excellence and publication in high-impact journals (Lahsen and Turnhout 2021, Lhoest et al. 2024).  As an early career researcher, who made a similar call for the group of ecologists I studied in my PhD project to improve their knowledge production processes (Eren 2024), first I struggled figuring out how to implement what I was recommending to the ecologists in my own work. But to what extent can we even speak of a 'frustrating duality' between contributing to and with our disciplinary fields in science studies (SS) as we do in conservation science? If not, why? In answering these questions, I will discuss what we can learn from what it means to contribute to the fields we study in SS in order to transform what it means to contribute to society in conservation science. Secondly, during the same project, I struggled 'studying up' (Nader 1972) the ecologists who thought I was wasting their time with, in their eyes, 'little prospect' of contributing to their processes as a social scientist who does not 'even' work with quantitative data and statistics. Then how can SS make contribution in such almost 'hostile' conditions? I will discuss this in relation to a specific position found in the literature, which I call the cynical position (see Turnhout 2024).

**Minna Santaoja (University of Lapland)**

**Posthumanist/multispecies challenge to environmental social research: an exploration**

Understandings of what constitutes a scientific contribution are diverse. Research funders emphasize strategic, evidence-based problem-solving capabilities of research, as well as groundbreaking research excellence. The list of epistemic tasks continues, for example: deconstructing cemented thought patterns, conceptualizing an abstract phenomenon, giving voice to the experiences and viewpoints of people, making a novel interpretation, learning and developing practice, and describing something in an understandable way.

A good way of figuring out a potential scientific contribution is to ask oneself "what do I want to say with this, and to whom". A piece of research does not have to make all possible types of contribution at once – it should probably not even try.

I explore the challenges of contributing to my field, environmental social research. I am drawn to posthumanist and multispecies research developed in environmental

humanities, and wonder how it sits with environmental social research – does it pose a challenge, and if, what kind? My hunch is that the challenge is theoretical, methodological, ethical, political, as well as practical. Posthumanism questions the anthropocentrism of social sciences and rethinks human-nature relations. To make such contribution, the challenge to a researcher is practical, testing the limits of my knowledge, capabilities and time. I have to start with giving a definition of the amoeba-like multidisciplinary research field of environmental social sciences. Am I even allowed to attempt such a contribution as a mid-career researcher? Is it enough to bring these discussions together and pose the question? One has to start somewhere, but how light or heavy the contribution can be?