

Multiple Matters

from neglected things to arts of noticing fragility

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Book of Abstracts

1. Keynotes

Shapiro, Nicholas (University of California, Los Angeles)

Some Ways of Struggling Against Home Sickness: Apprehending, Enduring, and Subverting Toxic Housing

What happens after communities or researchers come to notice or apprehend subtle but systematic violences? What exactly does "staying with the trouble" entail? What are the horizons of change that are made possible by STS critiques and those that traditionally are not? These are the questions that animate this talk about toxic housing in North America. The talk addresses the politics of toxic chemical remediation, civic science, and regulation and the sheer difficulty of moving from the lesser evil logic of harm minimization to one of harm abolition. The talk draws upon a medley of long-term and multidisciplinary collaborations to illustrate how the STS provocation of "it could be otherwise" is not only a way of demonstrating the historical contingency of science and technology but a forward-looking statement of possibility about the potential of STS to chart otherwise futures.

2. Round-tables

When crisis matter: Reflecting on STS methods, concepts, and interventions

Organizers: Bühler Nolwenn and Panese Francesco

Söderström, Ola, Nova, Nicolas, Guggenheim, Michael, Mützel, Sophie and Gisler, Priska

A sense of urgency demanding action in front of a collapsing world system pervades narratives around crises relating to the COVID-19 pandemic, climate change, migration, or the anticipated economic breakdown. In this round table we aim to reflect on the crisis from a STS perspective. What is in the word « crisis »? What does it produce and what can STS bring to its understanding? What are the « crises » which matter in your research? How do you address them? What do you think of the responses STS has, can or should bring to these «crises »?

Doing Online Ethical Ethnographic Research: Challenges and Opportunités

Organizers: Khamsy, Nina and Besençon, Sylvain

Bozzini, David, Tessier, Laurence, Zuntz, Ann-Christin

The coronavirus crisis urges many anthropologists to move their research online. Literature in social sciences has covered many grounds on methodologies and ethics, for instance when conducting online research such as online interviews. However, there is little literature on how to ethically go about using digital tools to research and interact with vulnerable people such as migrants, refugees, activists, or merely individuals who care about their privacy. The micro-politics of online interactions need scrutiny: while it may be valorizing to be interviewed and listened despite the distance, it is much more difficult to apprehend the many parameters, uncertainties, and unsaid of the interactions. Building trust between the researchers and their research participants is another challenge and technologies represent a new layer of complexity that concatenates with other artifacts such as consent forms and research permits. This urges us to rethink the discipline's ethical framework and risk models. Looking at online (in)security and ethics from this particular angle will be a fruitful way to think about the fragilities and strengths of online interactions for research purposes in general. How does the notions of “vulnerability” and “valorization” take on new meanings when conducting anthropological research online? How can this understanding help us respect the ethical principle of “no harm” when conducting online qualitative research? What are the fundamental differences regarding research ethics when fieldwork moves (partially) online?

Rethinking Music from and through Materiality and Fragility

Organizers: Debruyne, François, Maisonneuve, Sophie, Heuguet, Guillaume, Ribac, François and Riom, Loïc

Müller, Alain, Debruyne, François, Maisonneuve, Sophie, Heuguet, Guillaume, Ribac, François, Eriksson, Maria, Riom, Loïc, and Zimmerman, Basile

The purpose of this workshop is to reassess recent STS literature and its possible contributions or limits to the study of (popular) music. In response to Anthropocene, the last few years have seen a growing body of works paying attention to the materiality of things and fragility of existences. Music worlds have also undergone important "crises": the end of the "CD era", the digitalization of the music industry or the ecological crisis. Such crises challenge popular music studies scholars and invite to investigate new fieldworks as well as to develop alternative approaches. This workshop aims to discuss the issues raised by these perspectives and debates.

The workshop will be organized around two round tables. The first round table will be devoted to materiality. It will bring together scholars from different perspectives to discuss how paying attention to materiality helps to raise new questions for the study of music= how methodologically investigate materiality? What kinds of fieldwork arise? What new issues – infrastructure, repair, modes of existence – emerge? The second round table aims to reflect on how the ideas of fragility and precariousness can contribute to the study of music. Different speakers will examine the following questions: how can fragility be introduced to the study of music? What kind of phenomena does it unveil? Or, on the contrary, what are its (heuristic) limits?

Dis/connection Matters: Natural, Synthetic, Digital

Organizer: Bolay, Mathieu,

Bolay, Mathieu, Calvão, Filipe, Brude, Johannes Bell, Lindsay, Sikka, Tina and Vinck, Dominique

The world today is experiencing new relations between natural, synthetic and digital worlds. Rather than considering these as materially distinct or ontologically separate, this panel interrogates how they are interlocked in socio-material processes of mediation, transmutation and valuation. Can the synthetic or digital be biologic and organic? What is natural about artificial materials and processes? By conceptualizing what distinguishes and connects different matters, the contributions seek to move beyond their essential qualities to make possible the comparison and commensuration of their relationships. Each contributor theorizes the social in the dis/connection between natural synthetics, the humanness of artificial intelligence, or the materiality of digital elements: in laboratories and gold refineries, with cyborg seeds and organic batteries, and through synthetic and digitally-produced human-like natural properties.

3. Papers (by alphabetical order)

Abel, Mathilde

Digital Platforms and Public Space: From Involuntary Externalities to Controlled Interdependence

Network externalities are central in two-sided market theory. On two-sides and multi-sided markets, cross-side network effects can be generated by digital platform organizations. In emerging literature, platforms have been the subject of much research in industrial economics, management and information system (Boudreau & Hagiu, 2009; Tiwana & al, 2010; Tiwana, 2013; Choudary, 2015; Evans & Schmalensee, 2016; Benavent, 2016; Srnicek, Ibid). These new intermediaries are capturing common spaces shared by economic agents, where the externalities resulting from their actions are involuntary and uncontrollable. This utilization implies bringing together the production functions, which then become interdependent. Thus, network externalities are considered the main consideration of digital platform, which raises the following question: how do platforms ability to provoke network externalities shape their relationship to public space?

The presentation will be divided into two parts. The first part will constitute a formal first step towards deepening the economic models of network externalities by trying to understand: 1) how they are apprehended; 2) the interdependence of the production functions of each of the side of the market. The second part of the presentation will aim to understand the devices that platforms develop to maintain their ability to provoke and control these indirect network externalities. From three case studies led from the mobility sector, I will present the digital capabilities of the platforms organizations. I will use Isaac perspective and consider digital platforms as complex systems (von Bertalanffy, 1969, Morin, 1990, 1999) subdivided into three subsystems: architecture, management and technological infrastructure (Isaac, 2018).

Arancio, Julieta

Opening Tools For Opening Science: Lessons From Global Open Science Hardware Initiatives In Africa And Latin America

Open science hardware (OSH) as a concept usually refers to artifacts, but also to a practice, a discipline and a collective of people pushing for open access to the design of science tools. Since 2016, the Global Open Science Hardware (GOSH) movement gathers actors from academia, education, the private sector and civic organisations to advocate for OSH to be ubiquitous by 2025. GOSH advocates claim OSH is a means for working more efficiently and accelerating innovation within academia. They also claim OSH carries benefits for “science and technology democratization” by providing both increased accessibility to knowledge production in low-resources contexts and also a platform for more diverse actors to pursue science and new research questions to emerge. Efficiency-related benefits of OSH are studied and supported. The aim of this paper is to understand how GOSH can contribute to democratizing the knowledge-production sociotechnical system, and what that means in this context. We frame the questions of who participates, how they participate and how participation is transformed into agency by combining concepts from design justice theory, domestication theory and the capabilities approach. We use qualitative analysis techniques to examine four OSH projects in the global south: OpenFlexure (Ghana), KossamTor (Cameroon), Gorgas tracker (Peru) and Vuela (Chile). We expect to provide insights on what ‘science and technology democratization’ means and how OSH can contribute to it, in particular in global-south contexts inside and outside academia. We also expect to contribute to the methodological discussion on how to evaluate ‘democratization’ from an STS perspective.

Audétat, Marc

“Half of all Jobs will be Automated in 20 years”. The Promises of AI: Credibility, Popularity, and Scenarization.

The publication in September 2013 of a modest study on jobs susceptibility of being automated sparked a runaway of future visions, ever more disruptive and prophetic, which lasted about four years. The old though popular expression of “artificial intelligence” generated multiple meanings, massively circulated in the media, reached a large public, and moved many stakeholders. The performativity of promising demonstrated its power by triggering a rush of investments in the prospective “autonomous vehicle”, as well as a new race of technological competition in the world. Innumerable professional domains have been put to the question of being soon partially or entirely automated, including household, healthcare, accountancy, law, and education. This paper comes back on the promises of AI and asks challenging questions in order to open discussion about a series of concepts. Why, for instance, envisioning AI performed so well in the dystopian genre? How to study the massive circulation of certain visions in the media, and explain the popularity of certain stories? How to study its implications for society at large? The sociology of expectations is relevant to highlight the role of promising in the process of innovation and in the competition in research. However, the analysis, for going beyond the circle of stakeholders and broaden our understanding needs to share other approaches. The concept of “socio-technical imaginary” draws a bridge toward the domain of Arts and cultural studies. Recent media studies have also brought concepts worth for studying the regime of promising and leading STS research into new waters.

Barassi, Veronica

The Human Error: AI, Algorithmic Fallacy and The Failed Promise of Digital Profiling

One of the big promises of big data and AI driven systems needs to be found in the belief that human experience can be tracked, captured and translated into data points and that data can be processed by ‘objective’ algorithmic models that offer precise and ‘personalized solutions’. Yet, as this paper will show, when it comes to human profiling, algorithms are always inevitably fallacious for three main reasons: they rely on inaccurate and de-contextualized data (algorithmic inaccuracy), they are unexplainable and hence unaccountable (algorithmic un-explainability) and they are always biased (algorithmic bias). Those who sell the promise of algorithmic accuracy or objectivity in human profiling are doing just that: selling a promise. What they are doing in actual fact is stereotyping people, and presenting reductionist, simplified and in the majority of cases discriminatory interpretations of who they are.

This paper will bring the findings of a three-year research on the tracking of citizens from birth (Child | Data | Citizen Project, 2016 -2019) together with new reflections that are emerging from the launching of a new research project, which aims to investigate how the human error in algorithmic profiling is perceived and experienced by different sections of society (The Human Error Project, 2020 – ongoing). It will show that the human error in algorithmic profiling may be reduced but it can never be eradicated. Companies cannot fix the problem with a ‘technical solution’ or a new ‘AI ethics’ board, and individuals can’t really protect themselves. It will conclude that what is needed is a social and political response.

Bartram, Isabelle and Plümecke, Tino

Matters of Discrimination: DNA Ancestry Tests and DNA Phenotyping as Technologies of Racialization

In this paper, we investigate the newer DNA testing technologies that are used by law enforcement or in forensics to estimate certain characteristics of the potential perpetrator based on DNA isolated from crime scenes traces. These extended DNA methods are used to estimate the probability of externally visible features such as eye, hair and skin color (usually referred to as 'forensic DNA phenotyping'), or ethnic, continental or regional origin of one's ancestors (usually referred to as 'biogeographical ancestry'). In our contribution we will take a closer examination of the problems of such technologies, based on the debates in Switzerland and their applications in European countries. We do this by focusing on three issues: Firstly, we are concerned with the selective and discriminatory procedures inherent to the technologies' development as well as their application. Secondly, we examine how the debates on extended DNA analyses have repeatedly been imbedded in racial otherings and racist assignment. Thirdly we investigate the effects of application practices on the basis of some of the cases that have become known to date, and will show how in criminal investigations types of racialization and stereotyping occur. For this purpose we use the term 'racial profiling' as a heuristic tool to highlight that the used methods are anything but a 'neutral technology' and like to discuss how images of the 'dangerous others', emotions and hopes as well as how exaggerated notions of feasibility impede an important social debate on the difficulties and dangers of this technology.

Baya-Laffite, Nicolas

Fragile Intimacy Futures: Challenging the Promises of AI-Based Physiognomy

Artificial Intelligence (AI) raises major concerns within the current regime of techno-scientific promises: as for the solutions to 'grand challenges' it promises, but also for their problematic dimensions (bias, opacity, systemic risk, and hype). Social reflexivity about promises and proof thereof is key to get a grasp on trajectories. Controversies are crucial occasions for this – and also for studying processes by which statements – and related actor-networks – are produced, diffused, challenged, accepted, redefined or discarded. In the realm of digital transformations, this has been evident as regards privacy. Digital traceability of social practices, and the big data-based algorithmic systems for producing order in multiple environments, threaten privacy in unprecedented manners. In this presentation, I discuss how controversies on promises participate to making 'fragilisation' explicit. To address this question, I focus on computer vision applications in social psychology and the computational social sciences. Repurposing facial recognition technology for facial classification, recent research has claimed that intimate traits such as sexual orientation and political preferences can be systematically exposed threatening thereby the opacity of the individual – a fundamental trait of our constitutional order. As shown in Baya-Laffite, Beaudé & Garrigues (2018), a double rhetoric, combining the scientific achievement and the warning about its consequences, allowed the authors to publish their disturbing and dodgy research in high impact journals. While such promises and warnings have been challenged and considerably discredited, AI-based physiognomy seems to still be making its way through, as new research sees the day. The perpetuation of such challenged imaginations in the public space, appears as a matter of concern concerning the current regime of promises.

Berker, Thomas and Woods, Ruthampus

Reverse Salients in Infrastructural Innovation. The Case of a Neglected Building on a Zero Emission Campus

The purpose of this paper is to demonstrate the relevance and use of the concept 'reverse salient' in ambitious infrastructural change. Thomas Hughes, in his seminal study of socio-technical system building, observed that the elimination of 'reverse salients,' i.e. subsystems that because of their limited performance hold back further development, was a central driver for creativity and innovation. We argue that in efforts to transform existing infrastructures, however, such 'reverse salients' are more often neglected than addressed.

In a case study of a zero emission campus in Southern Norway, first, we demonstrate how infrastructural elements that – often for good reasons – have been neglected in efforts to reduce climate impacts can be identified with the help of an anthropological exploration of the site and through close collaboration with occupants and local facilities managers. Second, we present experiences gathered when we - together with occupants and local facility managers - conducted a temporary low-tech intervention that addressed the critical problems related to this "reverse salient."

Based on this case study, we conclude that within technology-focused, top-down initiatives, care for neglected infrastructural elements can contribute greatly to energy and emissions reductions. Occupants and facility managers are valuable allies in both the identification of such 'reverse salients' and in implementing creative and innovative solutions.

Besençon, Sylvain

Caring for the Fragile Future of an Aging Cryptographic Standard

The last few years have witnessed a promising conceptual encounter between the study of maintenance of digital infrastructures and systems (Denis et al 2015; Graham & Thrift 2007; Jackson 2014) and feminist approaches of technologies through the notion of care (Mol 2008; Puig della Bellacasa 2011). Maintenance of IT systems have been described as careful practices that require constant vigilance and improvisation (Kocksch et al 2018). Based on an ethnographic fieldwork among developers and security engineers, this paper expands on these works by approaching the field of IT security as a matter of care. Specifically, I tackle the maintenance of an aging cryptographic standard that will celebrate its 30 years in June 2021: Pretty Good Privacy (PGP). Providing email encryption and authentication, PGP was the first software program to implement public-key cryptography for civil use. Since this revolutionary step, however, PGP has been heavily criticized and attacked mostly because of its aged design, and many cryptographers and security engineers have called for its death for the benefit of more recent technologies. At the same time, several engineers, journalists, lawyers and activists still rely on this technology and show technical as well as emotional commitment towards it. Discussing the careful and invisibilized work of coders, this paper shows how aging Internet security technologies are being taken care of and indeed never cease to evolve despite their uncertain and fragile future. I argue that these practices of care fluctuate along a continuum between maintenance and innovation, oldness and novelty, evolution and revolution.

Besenval, Maxime

« It's not a Bug, it's a Feature » The Blurry Line between Maintenance and Transformation in Videogame Development

Videogames, especially the more technologically ambitious of them, are fragile objects. Because of their material heterogeneity, they require to put together numerous (and often diverging) epistemic cultures and productive inputs from thousands of developers. Their interactivity also implies to anticipate and handle the uncountable diversity of behaviors from the final users. During the development, bugs and breakdowns thus appear on a daily basis, and threaten the team's progression and the future quality of the product. Responsible for preventing decay, testers watch over transitional versions of games (builds) to identify bugs and warn other developers through the creation and update of a database. Their practices are exploratory and imply an intimate, perceptual and emotional involvement with the game. The study of this artefact-oriented form of care for an unfinished object allows us to challenge the frontier between stabilization and transformation, as we've observed many situations where what was considered a bug for a tester was in fact considered a feature by a developer, triggering both new spaces of cooperation and violent work conflicts. Labeling something as a bug, thus, is always a commitment toward the becoming of the object. Beyond its empirical and theoretical interest, interrogating this grey area bears strong political implications, as the disparity of employees' status, working conditions and visibility derives directly from this separation between creation and maintenance. Our study draws upon a fieldwork combining a six weeks ethnography into a videogame development studio, and 29 interviews conducted with both testers and other workers of the company

Bruder, Johannes

The Algorithms of Mindfulness

My paper analyzes recent shifts in the concept of "rest" that the burgeoning interest in mindfulness trainings and research on introspective methods in cognitive neuroscience exemplify. Mindfulness trainings provide cues as to this reframing, for various programs detail each in their own way how periods of idleness are to be recruited to combat the effects of stress and information overload. However, I argue that mindfulness trainings are a mere symptom of a profound, and culturally specific reframing of rest that can also be observed in cutting-edge cognitive neuroscience and through the recruitment of ideas from computing to model information processing in the brain.

Despite entirely different epistemologies, corporate mindfulness and mindfulness research in cognitive neuroscience share an interest in the "algo-rhythmization" of attention to prevent pathological behavior. Mindfulness promises brief moments of disconnection from the external environment and the recruitment of "other" modes of thought in the same go. It is accordingly reconceived as a strategy to support psychic and computational resilience in environments where information input overload is a given. I elaborate on – at times messy - interactions between neuroscience, psychology, and computing to engage with the question about how machinic agency is coming to bear on defining, categorizing, and knowing human life today (Ruckenstein & Schüll 2017).

Objectifying Participants? Data Production in the Clinical Research Center

A new figure of the 'person' emerges from 'precision' or 'personalized medicine' initiatives. Promising to improve the understanding of the 'personal' etiologies of diseases in order to tailor better preventive and medical interventions, these initiatives also promote new forms of 'participation' which blur boundaries between the roles of patient, research participant, and citizen. Applauded as new forms of democratic governance of research, these are also criticized for objectifying participants, as both clinical laborers and moral safeguards. This paper explores how objectification and subjectification dynamics are at work in data production in a 'precision public health' (PPH) initiative in Switzerland. Initially conceived as a biomonitoring program, focusing on chemical exposure, the study aims also towards advancing exposomic research. Currently in a pilot phase, it works at building the setting for a populational longitudinal national cohort comprising the infrastructure for the collection, management, and analysis of biological samples and health-related data. This setting can be understood as an assemblage of heterogeneous elements including the techniques, practices, moral values, institutional and regulatory arrangements necessary for knowledge to be produced. Cohort participants play a pivotal role in this setting as the source of health-related data and biological samples, but also as the prospective beneficiaries of its health interventions. Drawing on an ongoing ethnography of the study, including observations, interviews with cohort participants, study nurses and the research team, the paper shows how the identity and roles of research participants are conceived, enacted and negotiated. Focusing on health examinations, which serve both of clinical encounter and data and biosamples collection, I will shed light on the dynamics of objectification and subjectification at play in the 'personalization' of environmental health and show how the production of data is entangled with the production of the collective and individual identity of the 'participants'.

Vulnerabilities in the Making: Exploring Experiences of the Pandemic and Reconfigurations of Living Conditions

What makes people vulnerable in pandemic times, the virus and/or socioeconomic and environmental factors? As Switzerland, progressively releases Covid-19 confinement, some groups of the population emerge as more affected than others. In the context of the Covid-19 pandemic, living conditions have emerged as playing a crucial role in risk of exposure, viral transmission, and adoption of protective measures. (Semi)confinement, so-called "social distancing", and masks wearing, aim to create physical barriers to contain viral propagation, but affect how people relate to each other. These have led to unintended effects on individuals, such as social isolation and loneliness, domestic violence, and increased precariousness. The jointure of biological and social levels raise questions about the impact of professional activities, housing conditions and family/social relations in spreading the virus and more generally, on the creation of new inequalities or the reinforcement of pre-existing ones. How are vulnerabilities produced in the daily fabric of people's lives during the pandemic? How do they materialize and feel? And how do people tinker with their socio-material environment to cope with their perceived and assigned vulnerabilities? Drawing from an ethnographic approach, this paper will present the exploratory results of the NPR78 project SociocoVID which explores the experiences of the pandemic, reconfigurations of socio-material living conditions and their interaction with vulnerabilities in three specific groups: employees working in essential services, asylum seekers living in EVAM institutions, and index cases having contracted the virus.

Universities in Transformation. Digital Management of an Institutional Organization

New technologies are also revolutionizing the forms of organization. Contemporary innovations are particularly disruptive, because they enter the existing organizations from the outside, and can hardly be controlled with conventional New Public Management, as is currently the case at most universities. Despite the circumstance that several universities still align with this model, its implementation, for example with SAP, it is becoming increasingly obvious that control, using such instruments, will face challenges in the future. On the part of the economy, no new approaches in the organizational area are visible that – like New Public Management – could be adopted by the universities. This indicates a chance for universities to reorganize their relationship to business, state / politics and society, with an innovative organizational reform. Above all, however, their social position could be further strengthened and redefined. It would also represent an opportunity to try out new control models, which then even could be adopted by business and politics. The concept of the “academic firm” (Campbell and Carayannis) serves here as an example. However, this requires a determined willingness to shape the existing university management to develop themselves such university-appropriate management approaches. What is needed is a system that offers significantly more flexibility, allows creative and innovative freedom for everyone, and that is based on empowerment, combinatorial innovation, open data and open innovation, co-creation, co-evolution and collective intelligence. With a decentralized and subsidiary division of labour, more efficient governance structures can be created: a form of subsidiary governance. The principle of control could easily be replaced by a better coordination. All forms of networking are ideally to be suited to stop the currently excessive control mania with huge amounts of data. All approaches, which come from the area of the “commons”, would also enable a modern form of the autonomously acting institutional organization of the university. This also corresponds with the trend that transparency and participation are becoming more and more important, when being compared with more or less closed systems of decision-making. In addition, the knowledge production of the universities is networked with that of the economy, and this in the social context of (non-linear) arrangements of networks and “clouds”. This already has been asserted by the “Quadruple and Quintuple Helix Innovation Systems” understanding (Campbell and Carayannis). To this end, propositions for the organization and governance of such “network governances” also must be developed.

Chalmandrier, Maud

Urban Wild Futures: Ecology’s exploration of the city

As ecologists increasingly consider cities as objects of ecological research, new promises are emerging, which view future cities as refuges for biodiversity, laboratories for species adaptation to climate change, and opportunities to reconnect urban citizens with nature and to enhance human well-being through ecological services. Our contribution aims to analyze the relation between knowledge practices and futures in the exploration of urban life by ecologists. We address how ecologists relate to and make certain urban futures present and actionable (Anderson, 2010). Based on qualitative interviews and fieldwork with researchers working on urban environments in Switzerland, we reconstitute their trajectories, knowledge practices and epistemic communities in order to disclose the multiple forms of ecologists’ sociomaterial engagements with the city. We focus on how they experience and experiment urban spatialities. We scrutinize the sensibilities, skills and techniques – surveys, mapping and monitoring techniques, field observations – through which specific properties of urban (wild)life and their geographies are made visible. We address the relation between these practices of knowledge production and the promotion of diverse forms of ecological citizenship and management expected to influence (un)desired future ecological processes. In doing so, we explore how urban futures are figured and enacted by ecological research activities through assemblages that enhance certain horizons of “living” cities over others.

Cao, Umberto

What “Order” to Maintain and Repair? The Ethnographic Case Study of a Civil Resistance Movement from Mexico.

The contribution is about Luz y Fuerza del Pueblo, a civil resistance movement operating in the state of Chiapas, south-eastern Mexico. It was founded in 2004 to ensure, by means of civil resistance, universal and non-discriminatory access to electricity, especially for the indigenous and the poor. Luz y Fuerza implements a generalised illegal connection to the grid and a capillary control of the territory, to prevent the authorities and the state-owned electric company from disconnecting users in resistance. In this way, the movement has achieved autonomous management of the electricity grid in large regions of Chiapas. Such an autonomous management was made possible by the systematic training of electrical technicians among the activists. To date, more than a thousand activists (at least one per village), have acquired highly specialised technical skills, enabling them to repair and maintain the grid, instead of the workers of the electric utility. Therefore, drawing on the repair and maintenance studies and following Anne Tsing’s analysis, this contribution aims to explore how some forms of maintenance “have less to do with order than with precariousness and life emerging in the interstices of innovation, and even capitalism”. And it will eventually illustrate how, in the case of Luz y Fuerza del Pueblo, the repair and maintenance of the electrical infrastructure has become a technique of political struggle aimed at creating “another possible world”, inspired by an anti-capitalist ideology and relational ontology.

Chiapperino, Luca

Bio-Psycho-Social Complexity and Epigenetics: Fragilities and Agilities of Biosocial Representations and Interventions

This paper explores three strategies that scientists adopt to mitigate the epistemic fragility, and sustain the translational agility, of epigenetic modifications related to the health effects of lifestyle behaviours, the social environment and chemical exposures. First, I illustrate the ontological work of tracing that lies behind the production of an epigenetic biomarker of traumatic experiences. These experimental practices provisionally connect experiences/exposures to biological functioning and rest upon a highly precarious choreography of elements from distinct ontological orders. Technical, epistemic and moral considerations have in fact to be carefully poised to produce the embodied traces of trauma in this type of laboratory research. Second, I single out how unstable knowledge of “epigenetic biomarkers” is made to hold through extrapolation of these biological traces across different animal models and human studies. The convergence of these distant clues requires a specific work – which is conditional to the erasure of suppositions, differences, gaps and uncertainties – prioritising consistent biological pathways across species. Researchers actively transform imprecise information in animal models into a hypothesis to be tested across bio-medical settings, thus, in turn, transforming evidentiary clues of bio-social traffic into supposedly discrete, identifiable biomarkers of disease risks. This stabilisation of knowledge requires, however, a third type of work. This consists of the enrolment of biomedical actors closer to patients (e.g., clinicians, public health practitioners). This third strategy designates a shared epistemic territory of confidence in this endeavour. Interdisciplinarity- and complexity-talks play here a crucial role not only to tame epistemic uncertainties, but also to produce a discursive inclusion of other contextual considerations (e.g., psycho-social determinants of health, living conditions, etc.) in the production of epigenetic aetiologies of disease.

Dana, Mahr

Does Personalized Medicine Endanger Culturally Diverse Approaches towards Health?

Since the beginning of the 21st Century, self-reported experiential knowledge of patients (alongside other data) has often been communicated and promoted as an untapped treasure for both medical research and patient empowerment. Although this portrayal lacks historical and sociological accuracy (the sharing of experience has always been part of medical practice; e.g. the process of anamnesis) it informs a prominent discourse on so-called “P4-medicine”: “prediction”, “prevention”, “participation” and “personalization”. Within this coordinate system of concepts, practices of participatory self-reporting (via fitness tracking, information sharing in social health networks, etc.) are seen as steps towards a “New Social Contract for Medical Innovation”. This presentation explores the implications of such a “new contract” from the angle of cultural diversity by asking how its core concepts interact with traditional forms of health related self-care.

Danesi, Giada and Schneider, Tanja

Promising Future Health through Dietary Tracking Apps: An Ethnography of Digital Data-Human Assemblages

In the face of growing numbers of people living with chronic diseases, many public efforts are being undertaken to inform and educate citizens to take care of their health. Frequently, technological solutions such as self-tracking apps play a crucial role in supporting these efforts and raise hopes and promises. Both diet and physical activity are at the heart of initiatives and projects, both public and private, aiming at reducing the chances of developing cardiovascular diseases, diabetes etc. The self-monitoring of dietary intakes, food consumptions and steps are at first sight among the simplest actions to be carried out by citizens themselves. Geared towards facilitating individual self-regulation, dietary tracking offers many promises and many hopes are therefore pinned on them. Drawing from the observation and implementation of a project that aims at developing a socially acceptable digital receipt-based diet monitoring mobile health application, we present the ways in which promises of a better self are elaborated, performed and embedded in the collaboration between several actors. More specifically, we discuss how these collaborations contribute in legitimising these promises and explore potential for intervention from an STS perspective. We wish to do this with the aim of shedding light on the role of science and, more recently, of the involvement of the social and human dimension of technology through the collaborations between both the designers and the users, and engineer sciences and social sciences in dealing with the uncertainty and fragility of the outcomes in relation to the use itself and the enhancement of health. Beyond human assemblages we also attend to the digital data-human assemblages (Lupton, 2016) in the project we study.

Debergh, Marlyse

How to Produce Bodies at Risk?

This presentation aims to show how 'bodies at risk' in sexual health are socially constructed. It does so via a heuristic comparison between two molecular technologies that are central to the promotion of sexual health: the combined oral contraceptive pill (COCP) and pre-exposure prophylaxis (PrEP). Drawing on ethnographic research conducted in two sexual health institutions in the western part of Switzerland, the presentation discusses two main findings. First, it argues that bodies are constructed as being at low or high risk by sexual health professionals (based on health and lifestyle criteria). Second, it shows that access to either the COCP or PrEP is largely based on this former classification. The presentation also demonstrates that there are ambivalent situations in which sexual health professionals seek compromises between different risks, and pragmatically adapt their medical protocols. Finally, in line with the conference rationale, this presentation opens up to a broader discussion on bodies at risk in the context of fragile futures. Notably, this presentation raises the following question: what are the social impacts of the current environmental crisis, and global pandemic of COVID-19 on bodies at risk in sexual health, and on their access to molecular technologies?

Delvenne, Pierre, Hendrickx, Kim and Parotte, Céline

Careful Equivocations of Value(s) in a Translational Space: Making Sense of the Circulation and Valuation of Stem Cells in Belgium

A number of scholars have identified how novel entities like stem-cells and related medical therapies have become key sites of capital accumulation (Salter et al. 2015, Goven and Pavone 2015). However, little attention has yet been paid to how biological materials acquire value, what kinds of value, and for whom, in any understanding of the bioeconomy (Birch and Tyfield 2013). Addressing the complex question of value is key to understanding the strategic choices, market selection, pricing in the bioeconomy, and reimbursement politics for particular therapeutics. Analyzing different types of (possibly conflicting) values and ways to design a common objective measure of economic value bring us to the social and political heart of our technological society. We suggest a framework based on careful equivocation (Yates-Doerr 2019) to detect multiple, potentially conflicting, notions of 'value' (i.e. political, therapeutic, scientific) and focus on the difficulties and negotiations to objectify and perhaps narrow down this multiplicity in standards of economic value (e.g. in financial terms such as price and reimbursement). Relying on ethnographic research conducted in parallel in a laboratory of stem cell therapy at a university hospital and in a clinical stage pharmaceutical company in Belgium, we ask: How and when do stem cells circulate and acquire value down the path to commercialization? What kind of value and for whom? How is value objectified and ultimately expressed?

Informed by STS, valuation studies and the material turn in social science, our results will illuminate the mutual shaping of market, biomedical and regulatory practices.

Dietzsch, Ina

The Rhythms of Urban Water

The growing awareness in cultural anthropology of fragile worlds is shaped by unstable borders, in which people, things and ideas move. It takes place in a theoretical thinking that makes fluidity the starting point. This thinking is fed by considerations such as a "fluid modernity" (Baumann), which is characterized by volatile structures, flexible people and unexpected fears and risks that intertwine human and non-human life, be it in the form of polluted air, leaking infrastructures or through technology that fuses with the body. In my paper I will pursue this idea of fluidity in more detail using the example of urban water. I will show the different spaces that the river Rhine creates, depending on who and what it gathers and consider this in connection with different forms of rhythm (water levels, temperature measurements, digitization, water management in relation to other urban rhythms, etc.) and thus show how rhythms create order and disorder within an entanglement of divers urban waters

Edberg, Karin

E-biking as Social Practice – The Emergence of a New Travel Routine?

E-biking is a growing phenomenon in Sweden as well as in many other countries. It thus constitutes a relevant starting point to analyze challenges and opportunities included in the energy transition towards a more energy efficient and less fossil fuel dependent society. This paper investigates how everyday travel routines emerge, transform and stabilize by analyzing e-biking as a social practice. That includes to be attentive to that mobility practices do not exist in a vacuum but co-exist with other practices and are part of a broader socio-technical system. More specifically, the analysis includes what constitutive elements e-biking consist of, how e-bikers are recruited and in what ways e-biking differs from other related practices. One interesting finding is that aspects of predictability, reliability and routine, but also of flexibility and autonomy are salience. In policy, e-biking is, on the other hand, mainly framed in relation to climate change. The results are therefore a good starting point for discussing how policies and everyday practices within the energy and transport sectors interrelate. The empirical material consists of diaries written by e-bikers as well as interviews, policy material and secondary data.

Färber, Alexa

The Presence of Future: Investigating the Anticipatory Power of the City as Promissory Assemblage

In the last decade the city has controversially been discussed as urban assemblage (Fariás 2010). While the notion of urban assemblages directs attention to the emerging, multiple and virtual modes of existence of the city, to conceive of the city as a “promissory assemblage” helps to qualify the temporal modality and the quality of attachments within and to these assemblages (Färber 2019). In this conceptual contribution I propose two steps: (1) The qualification of the city as “promissory assemblage” allows to address the performative power of the promise as relying on distributed agency, and as a specific temporal structure that makes the future present. It points to the temporality of “future perfect” (Hetherington 2016) in the way that the future is made present through the promise. Here, I will differentiate the anticipatory power of the promise according to its articulation as a speech act (‘to promise to do’, Austin 1962) or as an objectified promise (‘the promise of something’, Ahmed 2010).(2) The multilayered temporality of the promise and its anticipatory power makes us aware of contradictory relational qualities: fugitivity, volatility and ephemerality, as well as endurance and duress. As we face the “elusiveness of promises” in urban development (Abramas/Weszkalnys 2013) the duress that emerges from it still needs to be worked out. Therefore, I refer to forms of “strategic detachment” from promises where endurance is not a thing that people bear but becomes an “act of endurance” and perhaps a mode of anticipation that contributes to future urban presences.

Fayez Alrafeea and Basile Zimmermann

Fake News, Social Media and the Destruction of Knowledge

With the advent of social media, information and communication technologies have entered a new era. Never before in the history of humanities, news items have circulated so quickly and widely. If many people were hopeful, or enthusiastic, by the perspective of increased access to knowledge for the average netizen, recent issues related to the circulation of false or misleading information have brought forward much darker, negative potential of digital networks. This presentation discusses a comparative analysis of the design of Facebook, Twitter, Youtube, together with the actions engaged by various fact-checking organisations to address the issue of how a piece of information may or may not change while circulating online.

Fletcher Isabel

Interdisciplinary Research and Problem Solving: Analysing European Policy Discourses

In Europe, and more widely, interdisciplinary research (IDR) has been identified as an important contribution made by researchers to tackling complex issues such as climate change, anti-microbial resistance and health inequalities. Explicitly modelled on the successful American mobilisation of science and technology to land on the moon (OECD, 1972), such understandings of interdisciplinarity see collaborative research between different disciplines as a means of producing the technoscientific knowledge required for successful policy interventions in these key areas. Using our analysis of recent policy literature on IDR for the Horizon 2020-funded SHAPE-ID project (“Shaping interdisciplinary practices in Europe”), we discuss the different narratives of IDR and its implications contained in publications produced by funding agencies, learned and professional societies, and research organisations. We argue that ideas of “mission-oriented” research have become deeply embedded in the routine activities of these organisations. They are related to a “problem-solving” discourse as opposed to critical or philosophical ones (Klein, forthcoming), more in tune with Arts, Humanities and Social Sciences perspectives. We will demonstrate how, despite their focus on collaboration, mission-oriented instrumental approaches to research prioritise particular kinds of technoscientific expertise at the expense of other kinds of expertise. This privileging occurs in the ways in which funding calls are designed, research questions are framed, evidence is evaluated and research impact is assessed. Finally, we will argue that less hierarchical and more flexible understandings of research and research collaboration are required in order to successfully undertake IDR, and in the process, perhaps, create useful new knowledge.

Franzen, Martina

On the Digital Transformation of Scientific Knowledge Production. A Look at Different Epistemic Cultures

Not digitization as such, but the emergence of digital data is widely seen as a catalyst for far-reaching socio-technological change. Authors such as Kitchin (2014) have postulated a paradigm shift in science toward a data-driven approach. But how exactly does data-centric knowledge production work, what changes are apparent in contrast to traditional knowledge production? And can more data really lead to more knowledge, or are the premises already questionable (boyd and Crawford 2012)? For a sociological analysis on the digital transformation of science, it is necessary to take into account the disciplinary characteristics of the natural sciences on the one hand and the Social Sciences and Humanities on the other (Franzen 2020). In this paper, I try to highlight the main features of data-centered knowledge production using prototypical examples from different disciplinary cultures. The underlying question is to what extent the digital transformation affects science in its basic epistemic features.

Gaillaguet, Jérôme

Epistemic Tensions around Vaccination: From Public Controversies to Private Experiences

Since the 1990's, France have been facing an increasing phenomenon of vaccine hesitancy (VH), a critical process which is not limited to isolated activists. However, the reasons for this attitude and the experience related to it are little-known. Based on longitudinal semi-directed interviews conducted between 2016 and 2019, and the analysis of controversies around vaccination, my research aims to understand what hides behind public debates, analyzing in more detail individual experience as trajectory. In this paper, through a pragmatic approach, I will show how questions or doubts can arise during everyday life, and how specific events (occurring in public or private situations) can reconfigure their relation to vaccination and related problems. Addressing VH through individual experience allows to consider the importance of personal investigation; and production of affects and percepts in the decision-making process – often regarding one's child. Thus, rather than a mechanical consequence of an activist habitus or the spread of so-called "fake news", it appears that VH arise after specific experiences (i.e. discussions, observations, health problems) that are subject to analysis, through cross-checking or linking elements together. Considering the relationship between their experience and ongoing critical processes, I explore the drivers of VH, relying on logics of action and argumentation, and also by being attentive to turning points in trajectories. In this presentation, I will show how VH arise in the everyday life, by analyzing consequences of controversies around vaccination, and the emerging problems with institutions, science, nature, body, illness, and above all, childcare.

Getto, Barbara and Kerres, Michael

Digital Transformation: Constructing the Future in Higher Education

The discussion about digital education refers to the question of what should be learned to prepare for future requirements of a digital era. Lists of competences are being developed that define which competences seem important for coping with prospective challenges. These projections are based upon assumptions about the future. However, they hide underlying suppositions and, thus, withdraw them from further debates. The presentation contrasts sociological theories about the 'next society' with mostly implicit assumptions underlying current catalogues of competences that are declared as necessary for a future society. In general, they rely on the idea of technology determining the development of society and hide design options in negotiating the future of the largely amorphous-digital technology. We introduce the concept of Bildung in a digital world that has emerged in the public discussion in Germany and describe how Bildung can be interpreted as a teleological concept that relies on generic and domain-specific competences necessary for building the digital future.

Graber, Nils

Bridging Immunology and Genomics: Fragile Knowledge and Agile Platforms in the Making of Precision Immunology

Over the last three decades, the landscape of cancer medicine has been dramatically changed by the promissory technologies of 'precision oncology'. First, cancer genetic and (later) genomic tools permitted the development of 'targeted therapies' through the identification of actionable pathways specific to each patient's tumour. More recently, since the 2010s, both monoclonal antibodies targeting 'immune-checkpoints inhibitors' and adoptive cell therapies relying on expanded or engineered T cells came to constitute a new wave of cancer precision immunotherapies. By eliciting the immunological response and specific potentialities of each patient, these therapies constitute a major promissory example of how alternative approaches to genome-centred biomedicine populate the landscape of so-called 'precision oncology'.

In this paper, we explore the forms of articulation between cancer immunotherapy and genomics within a cancer research institute in Switzerland, organized around a 'pipeline' of T-cells therapies, which generates a dynamic of epistemic dwelling (Chiapperino, Graber, Panese, 2020). Building on Löwy's (1996) understanding of cancer immunotherapy as a boundary object, which, in spite of its epistemic fragility (i.e. the difficulty to demonstrate the possibility of an immune response directed toward a tumour's antigen), has enabled the articulation of previously separated fields at certain periods of time, we ask: how is the new wave of cancer immunotherapies shaped by both genomics and pre-existing concepts and techniques of cancer immunology? To what extent is it structuring the convergence of two distinct cultures of precision within cancer medicine?

Drawing from interviews with researchers and clinician-researchers, we show that multiple understandings of precision are negotiated when scientists' experiment with the potential hybridities between immunological and genomic concepts, tools and practices in cancer research. Specifically, we focus on how researchers produce knowledge about 'neo-antigens', that is the specific immunogenic proteins on the surface of cancer cells which derive from the somatic genetic mutations accumulated by the cancer cells. Although neo-antigens are a precarious concept, and represent a disputed entity in experimentation, they offer researchers with diverse background opportunities to collaborate within emerging biomedical platforms (Keating and Cambrosio, 2003), thus re-aligning the relations between laboratory, manufacturing, and clinical practices. Overall, we argue that the current new wave of immunotherapies, while re-activating immunological concepts related to cancer and putting them in continuity with the epistemic approaches and machineries typical of cancer genomics, may result in the production of a new, hybrid epistemic culture of 'precision' in oncology.

Henke, Justus

Digitization Strategies and Digitization Policies at Universities

The proposed presentation approaches the topic of digitization at universities through the development of strategies and policies. The digitization of universities is more than what is commonly called for under this heading: not only IT concepts, not only digitally supported teaching and learning, more than digitally based communication and research. Not only technical infrastructures need to be established, but also the - always conflict-prone - interfaces between research, teaching and administration, and between science and society need to be reconfigured.

A digitization strategy describes the challenges of digitization, derives goals, systematizes decision-making situations, formulates routines and criteria for achieving the goals. However, digitization strategies of this kind are in danger of not leading to practical action programs. Policies in general focus on the procedures and interactions necessary for implementation of strategies. They begin with the identification and exact formulation of the problems that need to be solved, and then translate this into goals and possible actions. They are thus better suited than strategies alone for overcoming the dysfunctions of typical approaches to university digitization: bureaucratic hurdles, conflict-ridden power constellations, delegation of administrative work to the academic level, investment in unused instruments, a large number of parallel systems.

Digitization strategies are not yet digitization, but they can be action programs for it. To make them effective, they can be incorporated into digitization policies. However, they must not be misunderstood as instruments of planned economy management: Deviations are always to be expected.

The presentation will elaborate on these issues and complement it with some examples.

Hofmänner Alexandra

Science Policy, the Very Notion

Shortly after the turn of the millennium, Switzerland expanded its international science policies to include middle- and low-income countries. Previously, research cooperation with this group of countries had essentially been administered under the auspices of development policy. The expansion stood in contrast with Switzerland's traditional international science policy focus on Europe and accordingly led to new regulatory and administrative challenges. The complete revision of the Swiss Research Act (of 1983) was in part motivated by these challenges and the revised Research and Innovation Act of 2012 spelled out new rules for distributing federal responsibility for international scientific cooperation. These recent developments have upended the traditional distinction between international scientific cooperation and development cooperation, and between science policy and development policy. For this reason, they have put to test the concept of Science Policy as it applies to scientific cooperation beyond the boundaries of the nation state. A postcolonial empirical analysis of the Swiss case study reveals several assumptions that underlie the very notion of Science Policy. The paper proposes a set of revised assumptions as a means to address persistent stumbling blocks in international scientific cooperation. It concludes on the significance of postcolonial approaches for the field of STS.

Hummel Cornelia

Aging at Home: Materialities of Ageing & Materialities of Care.

European countries are presently facing the ageing of their populations, which represents a fragile future at the demographic level and at the individual level. The need to contain health care costs, together with consideration of most ageing people's wish to grow old in their own homes, has led to a strong public policy focus on ageing in place. Surprisingly, a lot has been written about this policy, but social sciences have rarely studied elderly people's homes as a specific ecology made up of interactions between humans and objects, of knowledge and practices as well as sensory and affective experiences. In the study of old age and ageing, the "material turn" came about first through technologies and it is therefore to STS that we owe the attention given to the materialities of ageing as well as to the materialities of care. We continue along this path by studying the things of ageing (e.g. the rollator), but by broadening our scope to include minor, modest, mundane or discreet materialities (Willems, 2010; Hahn, 2015; Artner et al., 2017; Depner, 2017) such as cushions and kettles that are not defined a priori as things of care, but which are in fact things of care for elderly people – and even things that care. The paper presents the results of an exploratory study focussing on the "entry" of a new object of ageing (a rollator) in the life and the home of frail elderly people, and how this object transforms and reconfigures the home.

Innocenti Laura

Smart Farming Futures: Sociotechnical Imaginaries of Agricultural Technology Providers

Digital and increasingly connected technologies are transforming agriculture and play an important role in visions of agricultural futures. Similar to other areas of the everyday that are increasingly digitized and automated, critical social scientists have raised multiple ethical issues with regard to shifting power relations in agriculture, primarily between users and, often international, agricultural technology providers. This paper presents my PhD research project which studies agricultural technology providers' imaginaries of 'smart' farming futures between local specificities and global forces. After situating the core research problem in relation to STS and food & agriculture studies, I outline how I mean to approach it through discourse and performance analysis. The remainder of the paper highlights first salient aspects of an initial analysis of selected local and international agtech providers' websites concerning their narratives of future agriculture. It does so particularly in respect to re-imaginings of farmers' and tech providers' roles in the wider agricultural assemblage. Based on this initial analysis and related literature, I explore ideas for further research.

Jaton Florian

Assessing Biases, Relaxing Moralism: On Ground-Truthing Practices in Machine Learning Design and Application

This theoretical paper considers the morality of machine learning (ML) algorithms and systems in the light of the biases that ground their veracity. It begins by presenting biases not as a priori negative entities but as contingent external referents – often gathered in benchmarked repositories called ground-truth datasets – that both define what needs to be learned and allow for performance measures. I then argue that ground-truth datasets and their concomitant practices – that fundamentally involve establishing biases to enable learning procedures – can be described by their respective morality, here defined as the more-or-less accounted experience of hesitation when faced with “genuine options” (James, 1912) – that is, choices to be made in the heat of the moment that engage different possible futures. I then stress three constitutive dimensions of this pragmatist morality, as far as ground-truthing practices are concerned: I) the definition of the problem to be solved (problematization); II) the identification of the data to be collected and set up (databasing); and III) the qualification of the targets to be learned (labeling). I finally suggest that this three-dimensional conceptual space can be used to map ML algorithmic projects in terms of the morality of their respective and constitutive ground-truthing practices. Such techno-moral graphs may, in turn, serve as a handy equipment for greater governance of ML algorithms and systems.

Keil, Maria and Savert, Tim

Digital Transformation and Reconfigurations in Scientific Work: The COVID19 Pandemic and its Effects on Knowledge Production in German Sociology

Whereas some scientific disciplines such as epidemiology and virology are experiencing high media attention during the COVID-19 pandemic, scientific work is at the same time highly affected by the governments’ measures taken to reduce the spread of the virus. With closing colleges and universities as well as kindergartens, scientists all over the world had to adapt to new forms of knowledge production and transmission as e.g., field research, physical lectures, and seminars were not possible. The start of the “creative” digital semester confronted most lecturers in Germany with technologies and teaching formats they were unfamiliar with. Hence, what are the implications of this new situation for the work of academics and how do researchers adapt? What does cooperation in times of social distancing look like, and how is knowledge produced and exchanged using digital technologies? Based on a survey with professors and postdoctoral researchers in the field of German sociology, we can show that the COVID-19 pandemic especially restricts the work of empirically working researchers and that some areas of knowledge production are particularly affected by the COVID-19 measures leading to the adaptation of different strategies such as the digitalization of working routines. Moreover, we can see differences in working restrictions between status groups as well as between researchers with and without children. It can be seen that digitalization has its limits for certain empirical research designs. Our results can be discussed in the light of epistemic and social impacts on scientific knowledge production in times of digitalization.

Kondratjuk, Maria

Digital Transformation of Qualitative Research in Educational and Social Sciences. Processes, Policies and Practices

In this presentation I'm going to discuss the impact of the digital transformation on qualitative research in educational and social sciences. Starting with a short socio- historical overview of digitization in qualitative research (function of media, the use of techniques, data resources, ethics, data management e.g.) to the consequences of these developments connected with (new methods, methodological developments, data production, usage, sharing, storage, implications for research policies e.g.).

Processes concerned with are: ways into the research field, ways of collecting data, ways of interpreting data and ways of presenting and publishing qualitative research as well as points like ethics and protection of data privacy, data storage and management, data usage and sustainability of qualitative research.

All these processes have an impact of the research practices of individuals, communities of practices as well as disciplines which are of high interest to get insights of how digital transformation is organized and has to be organized.

The proposal addresses the question: Digital transformation and research practices: How do digital technologies shape research processes in disciplines such as the humanities, the social sciences or the natural sciences?

Lindblad, Jenny

Contextualizing Anticipation: Planning for Futures and the Present in Bordeaux

When the city of Bordeaux initiated a revision of its land use plan, essentially an anticipatory activity drawing on pasts, contemporary concerns and aspirations for the future, the planning department and politicians assured that the plan was to become 'contextualized'. Inspired by Asdal and Moser's (2012) proposition to elaborate on "contexting," as a move that recognizes the overlapping presence of multiple contexts shaped through practices, I carry out a contextualization of what a 'contextualized plan' came to mean in Bordeaux. I do this based on fieldwork among planners, permit reviewers, local politicians and planning documents. The plan revision unfolded to the background of two interrelated shifts in France: the scaling of land use planning from municipalities towards larger metropolises, and reforms enhancing the flexibility of plans to ensure their adjustability towards unpredictable futures and unruly environments. By tracing the intentions that had been invested in the plan and how it operated in the realm of building permit reviewing, I show how the intersection of legal, technical and political temporalities was strategically made use of by different actors. Among these were local politicians' uses of the increased flexibility to insure an authority over land use decisions in spite of the plan. The anticipatory activity of plan making, I argue, was as much about the future that it laid out, as it was a political struggle over capacity to act on planning decisions in an unfolding present.

Loloum, Tristan, Bovet, Alain and Fürst, Moritz

Taking Care of Energy Infrastructure at a Distance: The Proxemics of HVAC Maintenance

Repair and maintenance interventions usually imply a personal contact with infrastructure and users. However, many basic tasks of maintenance are made far from the equipment, through control rooms or computerized information systems. Others are performed at a good distance from users, in the backstage of buildings or the back office of maintenance divisions, to access remote infrastructure or avoid unwanted interferences and admonitions. In other cases, the distance is organizational when maintenance is achieved through a subcontracting chain or a division of tasks that dilutes skills and responsibilities. In this paper, we explore the social uses of distance and proximity in HVAC maintenance, in a context of energy transition, neoliberalization and digitization which reconfigures relationships between humans and infrastructures.

Lopes, Ana Cristina O.

Mind and Life Institute and the Re-Creation of Being Human

Over the past few decades contemplative practices, and mindfulness meditation in particular, have become the object of a number of scientific investigations. These experiments have paved the way for their application in contexts as diverse as medicine, psychology, education, business management, and popular culture. This steady and powerful penetration of contemplative practices into different domains of Western societies is engendering what could be called a "globalized contemplative culture," which could lead to a deep transformation in the way we understand our highest potential as human beings and what it means to lead a fulfilling life. In this presentation I investigate how these notions of human flourishing and well-being are changing in light of the impact that scientific research on contemplative practices and its diverse applications has had on contemporary societies. I will do so by discussing the activities of the Mind and Life Institute, a pioneering organization created by the Dalai Lama, the neuroscientist Francisco Varela and businessman Adam Engle that fosters dialogues in a variety of settings between scientists and representatives of Buddhist traditions. In particular, I will present the result of the ethnographic research I recently conducted at the symposium "Beyond Confines - Integrating Science, Consciousness and Society" organized by Mind and Life Institute Europe. The general topic of this symposium addressed precisely the challenges in integrating the scientific knowledge generated over the years by the study of contemplative practices into different domains in our societies.

Lübcke, Maren and Wannemacher, Klaus

Big Data as a Transformative Force

Data science is establishing itself as a rapidly growing scientific discipline with high innovation potential at the interface between applied computer science, mathematics, statistics and other disciplines (e.g., business administration, information sciences, design and communication). Since the new methods of exploiting and utilizing large amounts of data have far-reaching effects on the international business models of companies, the scientific discipline of data science is of considerable importance both macroeconomically and for society as a whole. This importance is also leading to initial changes in the university landscape.

For example, there are signs of a steady increase in the number of degree programs, which are offered both as bachelor's and master's degrees, but also increasingly on a part-time basis (Lübcke, Wannemacher 2018). At the same time, Big Data technologies are expanding scientific work outside the core disciplines of computer science and mathematics. New forms of and infrastructures (e.g. Data Labs) for research, but also new fields of research are emerging, for example, in medicine, and the digital humanities. At the same time, driven by the high demand on the labour market and the insufficient capacities of universities, new providers are appearing on the market of higher education, competing with the traditional universities, especially in the U.S. For example, Google promises job interviews after successful completion of its 6-month online course, even without a bachelor's degree. This creates competition from players that have not previously engaged within the higher education sector (other examples are Minerva, or Ecole 42).

Mann, Anna

Worlds in the Making in Nephrology Health Care Practices: Insights from two Quality of Life-Initiatives

Since it has become possible to clinically prolong the life of patients whose kidneys have stopped functioning through dialysis, the "quality of life" that this treatment affords has been an issue for nephrology health care professionals. While STS scholars have started investigating what quality of life does in practice (Wahlberg & Rose 2015; Sjögren & Helgesson 2007), nephrology and clinical practices more generally have been left unexplored. In order to fill this gap, the presentation draws on an approach to values as enacted in practice (Pols 2004; Dussauge, Helgesson & Lee 2015) and the concept of "chronic care infrastructures" (Langstrup 2013). Based on ethnographic fieldwork carried out between 2016 and 2018 in Austria, it reports from two "quality of life"-initiatives for patients on dialysis launched by nephrologists. The first one consisted in a nurse driving to patient's home and supporting them carry out peritoneal dialysis daily. The second was a local guideline to offer multi-morbid patients the option of treatment focusing solely on "quality of life" (no longer quantity of life). While the two initiatives enact quality of life in diverging ways, nephrologists in both use quality of life to problematize existing chronic care infrastructures and reconfigure them in locally pertinent ways. Through the case of initiatives emerging in medical practice, the presentation, thus, sheds light on worlds and care for fragile lives in the making and hopes to contribute to a joint exploration of how we, as STS scholars, might account for these in attentive ways.

Meulemans, Germain

(Un)Doing Urban Soil Futures – The Trajectory of Soil Ecological Engineering in France.

Based on a sociological and ethnographical study of how French urban soil scientists engage in the construction of "synthetic soils" in order to restore or revegetate urban and post-industrial sites, this paper questions how new framings of soil as a material that can be designed reconfigure relationships between urban life and soils in a context of fast growing cities. It first describe how the emerging urban soil sciences moved away from classical descriptive approaches to soils to engage in the fabrication of soils from waste generated by human activities – a process that involved composing new alliances with soil beings (worms and bacteria). It then explores how these soil scientists soon allied up with the waste management industry, while at the same time dissociating themselves from citizen and associative protagonists which were also developing numerous experiments in soil construction. The paper describes the coordination of different actors within these experiments as practices of futuring, as they redefined what is soil or waste and the professional fields at stake (the ecologist becoming a consultant, and the excavation worker becoming an ecological engineer). These new bonds contribute to reframing soil construction as a technical response to issues brought by sprawling cities, backgrounding urban soils again under a trope centred on the management of soil services.

Mommersteeg, Brett

Making the Future in a Building Project

Architectural projects are conventionally conceived as “projects” that progress along linear timelines, from conception to completion, from idea to building. Internal to this idea of the project is the action of projection, where the building’s future waits in potentia: as a realisation of potentials that already exist. While of some necessity in practice, it tends to put the cart before the horse and betrays the experiences of indeterminacy and uncertainty in design. Building off the distinction that philosopher Étienne Souriau (2015) makes between a project and a trajectory, this paper will investigate the role the future plays in the making of a building, and what it means for the future to also be “in the making”. How does the future inform design and how is it managed? In order to do so, we will ethnographically follow the making of a theatre called Factory (OMA) in the UK to see both how the future empirically takes shape and is an active and modifiable entity in design practices, and how a building “in the making” is entangled in multiple temporalities, moving at different speeds. From different settings -- the city council, the client, and engineers and acousticians -- and through reports, schedules, and other documents involved in the making of the building, the paper will pay attention to how time manifests and is manipulated, and sometimes falling “out of joint,” requiring re-synchronisation. The linearity of a project – its future— is therefore not guaranteed but is a continuous achievement of realignment.

Oppliger, Astrid and Kul, Christian

What Autonomy? The Case of Forest Hydrology Field

Despite scientific studies agreeing that Eucalyptus may reduce water reserves due to their high-water use, in several countries where eucalypts are widely grown, the nexus between water effects and eucalypts remains contested. Forest hydrology, the scientific study of how water flows through forests, has helped to illuminate the nexus between forest and water, and has important influences on forestry and water resources policy debates. Nevertheless, it is important to consider, that forest hydrology studies are produced and circulated at the initiative of individual researchers, in collaboration with the forest industry, state services or conservation organizations, that have different interests behind them. All those collaborations could bring challenges to the process of production and circulation of science, especially, when scientific arguments become a truth for applying forest-hydrology measures in forestry policies and later in forest plantations. By drawing upon autonomy and field concepts (Bourdieu 1975, 1993, 1975, Bourdieu & Wacquant 1992, Lave 2012) I take the cases of Chile, South Africa and Australia (because of their important traditions in forest hydrology studies) to analyse the autonomy of forest hydrology field. The main research questions are: how has forest hydrology field been investigated? how is the forest hydrology field linked to the extra-academic world? How is the autonomy of the field experienced by researchers? In this talk, I will present results of my PhD., which are supported by observations from the fieldworks in these countries, and included interviews with the most important forest hydrologists from universities, governments and forestry research centers.

Pape, Madeleine

Coproduction, Multiplied: The Case of Sex as a Biological Variable

In 2015, the National Institutes of Health (NIH) in the United States (US) introduced a policy mandating consideration of Sex as a Biological Variable (SABV) in preclinical research. In this paper, I ask: what precisely is meant by the designation of sex as a “biological variable?” Moreover, how do policymakers establish sex as such a variable? Given the well documented complexity of “sex” and the degree to which it is politically and scientifically contested, such a designation is not a given. Extending recent scholarship in feminist science studies, I read the case of the SABV policy through two frameworks—coproduction (Jasanoff 2004), and multiplicity (Mol 2002)—with the aim of exploring how sex is multiply enacted through practices of policymaking in response to specific political and scientific imperatives. Drawing on textual and interview materials, I reveal how sex is simultaneously enacted as entangled with yet distinct from gender, binary yet overlapping, a system of classification yet a determining biological force in and of itself, and context-specific yet universal. I argue that this multiplicity unfolds in the ontological space created by two concurrent issues for the NIH: pervasive gender inequality in biomedicine, and the “crisis” of reproducibility in preclinical research. Ultimately, the SABV policy contributes to reconfiguring political and scientific order, yet “sex” is multiply enacted as a complex, unwieldy, inconsistent, and ultimately ideological series of objects that never fully cohere as a distinct biological variable “once and for all.”

Pergetti, Silvia

Tongue, Tape, and Time: Men's Care (Re)Produces Energy Infrastructure in the Sundarbans, India

Energy infrastructure on an island in the Bengal Delta rest on electrical workers' bodies: as they use their tongue to "taste" the presence of voltage, they become part of the energy infrastructure for which they care. Embodied acts of care produce and reproduce infrastructure and reward electrical workers with masculine status. Repeated acts of care leave permanent marks on energy infrastructure: carried out with makeshift tools and patched up with tape, repair and maintenance introduce instability into an infrastructure that becomes increasingly fragile and in need of care. Thus, care is not only an affective disposition but a process that takes time: although electrical workers understand themselves as morally bound to sustain the energy infrastructure of which they are part, new developments threaten their ethic of care as well as their electric masculinities.

Informed by fifteen months of fieldwork in a forest-fringe area of India's Sundarbans, the paper takes a feminist approach to men's electrical work. Feminist scholars in the 1970s and 1980s sought recognition for women's undervalued acts of care within the household as key to the production and reproduction of society. In a similar way, electrical workers' acts of care produce and reproduce infrastructure, weaving relations across the human-nonhuman divide and enlarging our understanding of energy infrastructure to include the men who sustain it. Refocusing the study of energy infrastructure on men's care draws attention to the affective energy it takes to care (or not to) – with important energy justice implications.

Pickard Justin

Stepwells, Tanks, and Cisterns: Regularising Water Supply in Ahmedabad, Gujarat

This paper presents three cases of situated material interventions intended to regularise water supply in and around the city of Ahmedabad, in the Indian state of Gujarat. A 15th-century stepwell, today protected as an archaeological site, taps a subsurface aquifer, providing visitors with water and a place to shelter from heat and humidity. Residents use mass-produced plastic storage tanks to mitigate the intermittencies of the city's municipal water supply. An underground cistern in a heritage guest house, once used to store and preserve the purity of collected rainwater, today conceals the co-production of an apparently continuous water supply from multiple sources. Each contingent on their material environment, and resisting wider replication or scaling, these cases show how obduracy (cf. Hommels 2005, 2008) can be, variously, a product of materiality, inertia, or the demise of supporting systems and social practices.

Pralong, Méloody

Being Allowed to Feel Vulnerable and Confident. When Adults and Young People Exchange Experiences of Living with Type 1 Diabetes

In this paper, I explore the experiences of living with type 1 diabetes. While recent work from sciences and technologies studies has drawn attention to the daily technical, social, relational and medical work required in order not to worry about their illness, in this paper, I focus on situations where people *do* worry about their illness.

Within my research, I observed many discussions between young adults living with type 1 diabetes, which took place within settings specifically designed to foster personal storytelling of one's life with the disease. Drawing from observations of one of those setting, I show how, through their stories, people describe multiple ways of worrying, and how this collective experience shapes their understanding of the illness as something that involves both fragility and agility.

First, I illustrate how people find ways to allow themselves and others to worry and feel vulnerable in any situation regarding their illness, whether "easily" manageable or not. I underline that their concerns can take multiple forms: they worry when they feel overwhelmed, monitored, misunderstood, or unable to do what is expected from them. Experiences of concern depend on spatial, temporal and relational contexts, therefore enhancing an uncertain way of living with type 1 diabetes, where a sense of fragility may frequently emerge. Second, I underline how they collectively build strategies to make the most out of this fragility. I will show that within this context where personal stories of concerns are told, worrying appears as something that can be described, shared, understood and, therefore, valued. My observations highlight that it is only by acknowledging those concerns that people can collectively think of and share "tips" for being agile and confident when living with their illness.

Therefore, my paper contributes to the understanding of chronic living by considering the multiple experiences of the illness. Analyzing how people engage collectively with their personal stories and concerns, it highlights that feeling fragile can build meaningful and shared knowledge of living with type 1 diabetes.

Riom, Loïc and Gouilhers, Solène

Bioethics in the Making: Some Thoughts on the Agility of Commissions' Decisions.

Research ethics commissions (REC) concentrate a large part of the debates on research ethics. However, few ethnographic inquiries have been carried out to investigate their work. By developing a pragmatic approach to REC, we seek to reconsider how to approach this debate by thinking of research ethics as a process in the making. This presentation is based on an ethnographic study conducted at the REC of a Swiss canton. Firstly, it focuses on the work modalities of the REC, which functions as a collective agency that evaluates submitted research projects. Secondly, we aim to characterize the work and the ability of the REC. To produce robust decisions, the REC articulates a plurality of conventional foundations that are sometimes in friction. In conclusion, we reassess the contributions of a pragmatic approach to capture and understand the production of research ethics, but also to discuss its modalities.

Saner, Philippe, Leder, Christian and Tratschin, Luca

Digital Strategies in Swiss Higher Education Policies and Institutions

Digital transformation has been a central theme of public policy in recent years. As a result, governments and government agencies have developed far-reaching and ambitious agendas and strategies to address the societal challenges associated with digitization. Many of these strategies and policies share a pronounced focus on education, research and technological innovation. Universities, as key players in national innovation systems, are thus coming to the fore as central actors contributing to the management of the digital transformation: they are not only expected to educate a highly skilled future workforce, but also to foster innovation based on scientific research. In our presentation, we shed light on how Swiss universities relate to the broader discourse on digital transformation as organizational actors and in their core tasks of research and teaching. First, we address the use of the term digitization in relation to higher education and research policy in the strategy documents. Second, we examine how Swiss universities themselves are responding to the requirements and what institutional strategies and measures they are developing to meet the challenges of digitization in different fields. Finally, we will have a closer look at the rapid diffusion of the data sciences within Swiss academia, that can be interpreted as an example of the differentiation of new research fields. We show how universities are not only responding to the digital transformation, but are also acting on the basis of institutional logics that are formative in the field of higher education and science.

Sara Vannini

Leave no Digital Traces: Elderly Volunteers' Use of Outdated Technologies in Humanitarian Work with Irregular Migrants in the United States

The growing displacement of millions of people around the world has been met with intensified surveillance and datafication of migration. As migrants, humanitarian organizations, and governments are using digital technologies to facilitate, support, and regulate migration, migrants are increasingly leaving digital traces. Along with them, risks connected to migrants' data privacy and security are increasing. Humanitarian organizations supporting irregular migrants in the United States are looking for safer information practices, which will not exacerbate risks for the migrants they serve. Their concern has become particularly relevant after the 2016 elections, with the establishment of immigration policies that many have defined inhumane. This presentation explores the information practices of an organization that supports migrants at the US/Mexico border. Run primarily by elderly volunteers, the organization's information practices include a combination of analog and digital tools, as well as the conscious adoption of outdated technologies for everyday tasks. In this way, the work of its volunteers keeps digital traces of migration to a minimum. Informed by feminist ethics of care, this study will show how the technology choices of these voluntary humanitarian workers can be ascribed not only to contextual requirements, but also to a political agenda to pursue social change.

Schikowitz, Andrea and Weller, Kevin

Balancing Tensions between Transformation, Innovation, and Participation in Urban Living Labs through Choreographies

Urban Living Labs are expected to constitute spaces which allow for dealing with complex challenges and enabling a transformation towards sustainable cities through facilitating innovation as well as collaboration between different actors. These goals are meant to be achieved through experimentation and co-creation in a 'real' but manageable urban area (Gross, 2018; Wagner & Grunwald, 2015; Yvonne, Karin, & Sarah-Kristin, 2015). However, previous studies of participatory research and urban transformation have shown that in practice, these principles do not align easily but instead might cause frictions and tensions (Blok, 2013; Evans & Karvonen, 2011; Felt, Igelsböck, Schikowitz, & Völker, 2016; Klenk & Meehan, 2015; Polk, 2014; Schikowitz, 2019). We explore how a variety of aims and interests are coordinated in urban living labs and how emerging tensions are being coped with. We argue that tensions are not resolved in a coherent and lasting way, but that they are coordinated dynamically through 'choreographies' - spatiotemporal movements of different actors (Parker & Crona, 2012; Schikowitz, 2017; Thompson, 2005) such as prototypes, lab coordinators, projects, partners, citizens, methods and concepts. In turn, we analyse the role that the specific sets of tensions (Turner, Benessaiah, Warren, & Iwaniec, 2015) and how they are handled play in constituting different lab types and possibilities for transformation. The empirical analysis is based on interviews, participant observation and documents from 'Urban Mobility Labs' in Austria. The research is conducted in the project "PROLAB – Living Labs as prototypical milieus".

Schnegg, Céline; Rey, Séverine; Dominguez, Alejandro

Postmortem Imaging, Ontology of Dead Bodies and the Future of Forensic Investigation

When a suspicious death occurs, a forensic investigation is conducted. Although the surgical autopsy still plays a central role in this process, several medical imaging techniques have been used for the past fifteen years to complement this examination. Developed in certain specialized centers, these techniques change the way experts demonstrate the cause of death: CT-scan and MRI allow to see inside of the body without "cutting" it. In addition to this power of visualization and virtualization of bodies, these techniques also induce a transformation of temporality and blur the boundary between living and dead, as the postmortem angiography artificially restores blood circulation. In this way, virtual autopsy "increases" the dead bodies – more than a corpse, they become a form of cyborg – and raises questions about the human/non-human divide.

Based on an ethnographical survey in Swiss forensic medicine department using and developing postmortem imaging, our communication analyzes how these techniques transform investigative practices and the ontology of dead bodies, in comparison with autopsy. Our results question the paradigm shift in the modalities of investigating death (use of senses versus distance, seeing with or without mediation, direct observation and photography versus digital reconstruction), but also on broader social issues (place of death, integrity of the body, objectification/dehumanization of corpses during forensic investigations).

Schneider, Tanja

Fragile Food Futures on Stage: TED Talks and Technoscientific Promises

In recent years a vanguard of entrepreneurs based in Silicon Valley and beyond has been developing novel foods technologies – so-called foodtech innovation - with the aim to transform the way we produce, distribute and consume food. Prominent examples include insect-based proteins, indoor agriculture and the manufacture of alternative proteins. In this presentation I explore entrepreneurs' promises and expectations related to novel food products. To do so, I conduct a narrative analysis of purposefully selected TED talks by food entrepreneurs. Taking inspiration from Hilgartner's (2000) research and publication on Science on Stage, the aim of this paper is to explore social processes of staging food and agricultural innovations as 'sustainable solutions' to address the problem of food security. In particular, I attend in my analysis to 'future-oriented abstractions' (Borup et al., 2006) expressed in TED talks and consider how these contribute to broader 'sociotechnical imaginaries' (Jasanoff, 2015) that privilege the use of novel technologies - over other potential ways - for achieving food security as desirable and attainable. Ultimately, I reflect on the potential entrepreneurial rationales and aims for narrating food futures in particular ways. In doing so, I pay close attention to the media and socio-technical devices employed to tell and share these promises and how they contribute to assembling constituencies for food innovations.

Schulze, Marion and Müller, Alain

Capturing Multiplicity: The Rhythms of Wayfaring as Method

In this paper we set out to understand how we, as researchers, move through time-spaces in doing fieldwork and suggest wayfaring as a method to analyze multi-scalar, multi-dimensional and intermeshed networks. We consider wayfaring as an 'inclusive' method that allows to bridge various fields of knowledge as well as actual/physical and virtual environments and thus follows the researcher across and through the investigated assemblage(s). To introduce this method, we will first lay out its fundamental methodological considerations. In a second part, we will then focus on two major rhythms that are constitutive of this type of investigation – repetition and return as well as pauses and dwelling.

Silva, Diego

The Argentinean ECOSeed System - The Promise of Seed Customization as a Strategy of Climate Change Adaptation in Industrial Agriculture

Climate change is making extreme climate events more frequent and intense, which is greatly reshaping industrial agriculture. In the last decade, Argentina has faced three of the worst droughts in fifty years, leading to significant losses in its main agricultural product: soy. As a response Argentinean scientists and seed producers are devising novel strategies to help industrial agriculture adapt to climate change. One such strategy promotes the production of seeds tailored to their specific environment. This post-Fordist promise of seed customization departs from industrial agriculture's usual reliance on the mass production of standardized seeds. It responds to the scientific debate on the production of abiotic stress tolerant seeds, commonly known as climate ready seeds. This debate centers on the difficulties posed by ecosystem diversity and the climate variability to the transferring of plants' climate resilient traits from the laboratory to the agricultural fields. In particular, this paper examines the ECO Seed, a seed system (where ECO stands for environmentally customized organism) created by the Argentinean biotech company Bioceres. The ECO seed system is a multi-species drought tolerant arrangement that combines seeds, transgenes, and microbial strains of different species and that is allegedly capable of tailoring seeds to different environmental conditions. Based on ethnographic work in the laboratories and offices of Bioceres, this paper compares the materiality and functioning of the ECOseed system, to the way customization and climate knowledge are marketed by the company in TED talks, publicity meetings, pictures and flyers.

Snider, Madison

Building a "Smart" Campus with Care

We are in the midst of an astonishing rise in the introduction of Internet of Things (IoT) in our built environments. On university campuses, this sociotechnical change impacts the work of staff, faculty, and students. Rhetoric aligned with an innovation-centric and productivist regime often celebrates IoT introduction as building a "smart" campus. This paper aims to illuminate the role of care as it shapes this sociotechnical process of change. IoT, a system of networked devices, is resulting in a convergence of infrastructures, built/material, cyber, and social. Previously disparate people and things now necessitate communication. Taking into account the interests of different stakeholders can help illuminate the ways that these positionalities are exercised in relation to care for emergent technologies. The practices of care for these technologies will be used as a heuristic for how stakeholder groups relate to the built environment and care for each other. Technologies designed to increase the energy efficiency of university buildings are increasingly networked with surveillance infrastructures now being adopted in an effort to mitigate the spread of COVID-19. These infrastructural changes are sounding alarms for those tasked with caring for the cybersecurity of the network, data privacy of occupants, and energy efficiency. This results in a confluence of built, cyber, and social infrastructures across scales. This will be examined directly through ethnographic participant observations, interviews, and artifact analysis across facilities, information technology (IT), researcher, and student stakeholder groups. Investigating the role of care can illuminate logics beyond innovation and disruption.

Sormani, Philippe

Learning to Program? A Reflexive Ethnography of Digital Education

Over the last decade, numerous “learning to program” initiatives have seen the light of day, ranging from revamped primary school curricula to digitally enhanced professional training. Each of these initiatives comes with its nexus of educational promises, highlighting “computational thinking”, “data science”, and/or “machine learning” (ML) as newly relevant, fundamentally transversal, if not professionally critical skill sets. Recently, a “sellers’ market in ed-tech” (Teräs et al. 2020) has been created on the back of the Covid-19 pandemic, whilst being rapidly criticized for ushering in a “high-tech coronavirus dystopia” (Klein 2020). What might a provocative STS approach to digital education look like in this tricky post-normal situation? To tackle the raised question, this paper offers a reflexive ethnography of a “computational artifact” (Schmidt & Bansler 2016) in the form of a book review cum programming exercise. The exercise consists in programming a “perceptron”, a well-known ML-algorithm (e.g., Mavicc 2017), whilst reviewing the handbook used for this purpose (i.e., *Programming with Python for Social Scientists*, Brooker 2019) and discussing its educational implications more broadly. The paper, then, is to be doubly “provocative” (Woolgar 2004), insofar as it both challenges emboldened digital education initiatives (notably for their reductive “just so” stories) and technologically disengaged “STS” (e.g., *Artificial Intelligence*, Collins 2018).

Turley, Laura, Bréthaut, Christian and Pflieger, Géraldine

Reoperating Reservoirs in Response to Changing and Competing Societal Water Demands: Insights from Colorado

Reservoirs can be reoperated in response to changing demands and preferences in water use. This article provides a definition for reservoir reoperation, as distinct from the more frequently cited ‘dam reoperation’, against which we assess 32 large reservoirs in the U.S. state of Colorado. Using the Institutional Analysis and Development framework, reoperation is framed as an action arena in which the arbitration of rivalry over water resources takes place. We find that ecological restoration and urbanization are the main drivers of reoperation, that property rights influence actor strategy more than public policy, and that risk tolerance to water shortage effects the extent to which user groups are willing to collaborate through reoperation events. Whereas reservoir operation and reoperation are traditionally studied through the lenses of engineering and modelling, this contribution will highlight the governance dimensions – specifically the institutions that underlie changes in infrastructure operations, that ultimately determine who gets water, when and under what conditions.

Velkova, Julia

Nodal Death: Data Centres, Temporal Work and Infrastructural Decomposition in the Cloud

This paper engages with the material and temporal politics enacted in processes of disassembly of emergent cloud infrastructures. Much scholarly attention across media studies, the environmental humanities and STS has been dedicated to the study of data centres as emergent infrastructural assemblages that transform relations between data storage and computation, local publics, and the environment, and giving them permanence. However, seldom acknowledged is that as the ‘cloud’ is being made, it is also and simultaneously being unmade. As new data centres are erected, others get dismantled or abandoned after a short-lived existence. This paper takes infrastructural decomposition and dismantling of data centres as its starting point to discuss the ways in which relations stabilised by infrastructure are cared for, thorn apart and reconfigured, and how the result of this work may be generative of infrastructural ‘gaps’— absences which remain present and continue to perpetuate earlier established relations of infrastructure, paradoxically extending its endurance over time even when it no longer exists, and few would remember it. Empirically, the paper performs an ‘autopsy’ of the recent ‘death’ of a data centre – HE2 in Helsinki, Finland owned by Equinix – which until its liquidation in 2019 had for almost a decade been part of an expanding infrastructural network that bears today most of global streaming and internet traffic. I draw upon my situated experience of visiting this data centre in a state of dismantling in early 2019, an oral history of its construction and subsequent liquidation, as well as a range of documents and interviews with related actors. Drawing on perspectives on decaying infrastructure (Cohn), and alignment work (Jackson et al) the paper illuminates the temporal politics of maintenance and repair and their centrality for sustaining large sociotechnical systems operational in moments when they partially decompose.

Vienni, Bianca Baptista

Shaping the scientific and policy discourses through problematization: a heuristic tool to disentangle inter- and transdisciplinarity

Interdisciplinarity (ID) and transdisciplinarity (TD) constitute major topics in academic and policy discourses, mainly related to the particular requirements of mission-oriented knowledge production and research funding processes. Reports and policy briefs show the increasing demand from the policy sector to integrate interdisciplinary research (IDR) and transdisciplinary research (TDR) into calls and programs. There exists, however, a gap in terms of different definitions of ID and TD: In the policy discourse, the need for a common and unique definition of ID/TD in research funding programs is seen as the response to the increasing demand to address more IDR/TDR in Europe. ID/TD are loosely defined and usually with interchangeable meanings. The academic discourse presents different definitions of ID/TD. These are heterogeneous, plural and coexist in different contexts, reflecting multiple ways of approaching and dealing with complex problems. In this paper, we argue that the heterogeneity and multiplicity of understandings in ID/TD constitute an asset in research and policy. We applied problematization as the main mode of inquiry that is complemented with a systematic literature review of academic and policy literatures. As a result, we build a heuristic tool to disentangle definitions in research and policy. Our work contributes to a growing body of critical comparative studies of ID/TD and analyses of the dynamics of ID and TD in funding programmes in Europe.

Vindegg, Mikkel

Current Demands in the Nepali Electricity Sector: For an Infrastructural Theory of Social Reproduction

This article uses work and state relations at a Nepali electricity office as a staging ground for bringing the labor of repair squarely into focus in the anthropology of infrastructure. A trio of electricians at the office had a torrid time trying to address an ever-increasing number of complaints. Customers were under the impression that the electricians were both lazy and slow, despite even compromising safety regulations to get more work done. Although the electricians' jobs may be comparatively stable and privileged, they put their bodies on the line to service an often-unappreciative public. This shows that *infrastructures are made of people*, not simply *constructed by* them. This is often skirted over in anthropological studies of infrastructures, which frame repair through its absence and insufficiency, even in rare ethnographic engagements with those who do repair work. A possible response to this lacuna is found in an infrastructural theory of social reproduction.

Viscusi, Gianluigi

Design and Testing of Robotics Innovation: Crowd dynamics, Co-creation, and Values

This article aims to study robotics innovation facilities with a specific focus on the relation between design, testing, and crowd dynamics. The goal is to question of how those dynamics eventually shape collective co-creation activities, either enabling or bounding their capacity of scaling. Furthermore, I am going to investigate the connection between those dynamics and the values informing or rather forming the outputs of co-creation initiatives, with a specific focus on innovation in robotics. In particular, the different dimensions and perspectives on values are questioned from an STS perspective in their difference through the shapes that co-creation practices may assume once moving from, e.g., value intensive setting of local groups and communities to a population assuming the dimension of a crowd characterized by seriality. The arguments will be then developed through a case study of a Robotics Innovation Facility (RIF) based in Italy, where an ethnography has been carried out in 2018-2019.

Wade, Faye

The Immutability of Home Heating

Gas central heating is the dominant form of domestic heating in the United Kingdom; it is also the most significant contributor to greenhouse gas emissions. Gas central heating systems usually extend into every room of a property, but often sit in the background of the lives of those using them. Techno-centric efforts to reduce consumption, for example improving the technical efficiency of boilers, have not delivered the emissions reductions needed to meet climate targets. In addition, alternative low carbon technologies such as heat pumps and district heating schemes will require quite different socio-technical arrangements to those in place for gas central heating.

Installation could offer a critical moment to optimise the operating efficiency of these systems, or consider alternative low carbon technologies. However, whether installation acts as one such moment of change is currently unknown. Through ethnographic data collected with heating installers, and the concepts of translation and intersement from Actor-Network Theory, this presentation explores the tensions between existing sociotechnical arrangements and the new system components taking their position in the home. Installers are found to be subject to competing requirements from industry guidance and regulation, new system components and existing domestic configurations. A process of negotiation and compromise is revealed. This results in 'like-for-like' installations and heating system components being squeezed into spaces and hidden away. These efforts to maintain the status quo reinforce the immutability of domestic heating, restrict opportunities to fit alternative low carbon technologies and limit possibilities to reduce domestic energy consumption.

Wilder, Piper Foster

Microgrid Maintenance Software for Alaska Native Power Plant Operators

60Hertz's mission is to create a culture of maintenance for village-scale microgrids and critical infrastructure around the world, to empower the maintainers, and extend the life of assets to reach their full potential. 60Hertz's initial market focus is on village microgrids in Alaska and the Arctic, given our roots in the region. Globally, we aspire to reach the 120,000 village sites across sub-Saharan Africa and SE Asia through investor partners who have an emerging market microgrid thesis.

Alaska has more than 200 remote, native villages that can only be accessed by plane or river. As such, these communities are microgrids. 60Hertz worked with 15 communities in 2018 to develop a prototype maintenance checklist software. We invested heavily in Human Centered Design re-search and spent time with an anthropologist in numerous communities deeply understanding our users. With this market understanding, we expanded with a commercial version of the software. Today we are working in 45 communities with 85 indigenous operators. 60Hertz's software helps empower these human maintainers with modern tools to get their jobs done efficiently.

Globally, rural electrification goals will bring electricity and opportunity to over 1 billion people who are under-electrified or suffer brittle power. Importantly, these mini electricity systems need a human to maintain them. In the zeal for automation, diesel/renewable microgrids can't and shouldn't be automated to bypass local operators. Development experts know that buoying local operators and retaining even one job in a poor community is critical. As we write this, Alaska Native communities in the Arctic, settlements across Mongolia, and in Igbo villages in Nigeria, local teams operate their local microgrid and care for the prime power diesel generator. Funded by development banks, this critical infrastructure is almost exclusively installed without a maintenance plan or budget. Simple omissions in a maintenance routine quickly yield expensive total failure.

A favorite success story: a new operator in one of our pilot communities wasn't sure what kind of glycol to put in his diesel generator. Thanks to our app, he posted a comment in the Operator Forum, asking if a specific glycol was correct. It wasn't! Another user corrected and helped him, preventing catastrophic failure.

Yan Zhang

Social Inclusion or Exclusion: Implementing Community Based ICT

In recent years, areas of community development and community governance experienced important changes due to the presence of numerous ICT innovations. This presentation compares two cases of community based ICT implementation which led to different results regarding social inclusion and culture diversity. Although both cases rely on similar design tools such as Bulletin Board, Neighborhood, Council Room to offer online public spaces for interaction, "Shequtong" was designed for diverse urban communities and led to many types of social inclusion phenomena, while "We Country" was designed for diverse rural communities, but failed to promote social inclusion when facing diverse cultural groups.

Yildirim Tschoepe, Aylin

Infrastructures of Sociality: Bodies, Spaces, Practices in Times of Confinement and Contagion

The production of spaces, bodies and practices in times of crisis that evoke distance and closeness through physical and digital means takes place as an ambiguous process: physical spaces are dis/connected through digital infrastructures, spaces of digital socialities arise through embodied practices, and digital infrastructures have an impact on the body through an expanding concept of sociality. Taking play, labor, and health (as technology of the self) as potent imaginaries and vital activities that structure rhythms of bodies, spaces and practices of everyday lifeworlds, I look at these mutually constitutive processes between the physical and the digital. Thereby, I focus on the emergence of new rhythms of the everyday in the context of health, play, and labor, and how the experience of these during times of confinement and contagion changes and (re)structures spaces, bodies, practices even beyond times of crisis.

Instead of "social distancing," what kind of socialities do in fact emerge as resilient response to "physical distancing" (a term I consider more adequate)? What is the role of emotion and affect in the digitalization of labor, play, and health (and the respective embodied, spatial practices)? What are embodied experiences through digital social infrastructures? Questions of health, insider knowledge and information channels?

This contribution is partly autoethnographic, but also uses ethnographic evidence collected during times of confinement and contagion: the SARS-CoV-2 pandemic and its effects (2020), the lockdown in Istanbul during expected terrorist attacks (2016), and the Boston Marathon bombings and lockdown (2013).

Organizing committee:

Nicolas Baya-Laffite (UNIL), Pauline Blaser (UNIL), Nolwenn Bühler (UNINE/UNIL), Giada Danesi (UNISG), Laetitia Della Bianca (UNIL), Anna Jobin (ETHZ), Julio Paulos (HU Berlin/UNIL), Loïc Riom (Mines-ParisTech), Tanja Schneider (UNISG).

Local committee:

Marc Audétat (UNIL), Olivier Glassey (UNIL), Cynthia Kraus (UNIL), Alain Kaufmann (UNIL), Francesco Panese (UNIL), Dominique Vinck (UNIL), Gianluigi Viscusi (Imperial College London).

Partner institutions:

Swiss Academy of Humanities and Social Sciences, Institute of social science (University of Lausanne), STS-Lab (University of Lausanne), ColLaboratoire (University of Lausanne), Confucius Institute (University of Geneva), Maison d'analyse des processus sociaux (University of Neuchâtel), Rethinking Public Participation in Science research group (University of Geneva).

About STS-CH

Since the Swiss Association for the Study of Science, Technology and Society (STS-CH) was founded in Bern in 2001, several meetings and panels have been organized in cooperation with different universities and research institutes (STS-Summer School in Lausanne, 2001; EASST conference in Lausanne, 2006; Swiss STS Meeting "ScienceFutures" in Zurich, 2008; "Kinds of Science Going Neuro" in Basel, 2010; "Collecting, organizing, trading big data" in Lausanne, 2014).

Multiple Matters

from neglected things to arts of noticing fragility

15-17.02.2021