

# Digital Society Research Day

## 15 November 2019

Attic, Grote Gracht 80-82

8:45 doors open



  
**Universiteitsfonds Limburg**  
| SWOL |



This Research Day was held in combination with a celebration for the BA Digital Society, which started in September 2019, welcoming 75 students from 20 different countries.

On Thursday 14 November, we organised an event, open to all members of the university, staff and students. Guests were welcomed by Sally Wyatt, Programme Director of the BA Digital Society, Rianne Letschert, Rector Magnificus of Maastricht University, and Sophie Vanhoonacker, Dean of the Faculty of Arts and Social Sciences.

There were two parts to the remainder of the programme. The first was a presentation by renowned video artist, Geert Mul (<https://geertmul.nl>) exploring not only the datafication of culture but also the cultivation of data. He presented some of his past work, including 'Match of the Day', an image-comparison-algorithm art project. Mul was introduced by Vivian van Saaze.

This was followed by a discussion with a panel of experts, including Valerie Frissen (SIDNFonds & Leiden University), Francisca Grommé (TNO & University of Amsterdam), Laury van den Ham (Province of Limburg) and Rudolf Müller (BISS & UM). They addressed three questions: what are the challenges facing digital society, how can our students be prepared to address these challenges, and what do policy makers need to know about digitalisation? This discussion was moderated by Tsjalling Swierstra.

We are grateful to SWOL (Universiteitsfonds Limburg) and the Faculty of Arts and Social Sciences (FASoS), Maastricht University for their generous financial support for both of these events.

Friday Programme (abstracts on the following pages, organised by session)

Time	Activity
8:45-9:00	Arrival with tea and coffee (set up posters)
9:00-9:15	Welcome by Sally Wyatt, Professor Digital Cultures and Thomas Conzelmann, Vice-Dean Research
Session 1: Responsibility, Chair: Darian Meacham	
9:15-9:45	Invited lecture: Jack Stilgoe, University College London <b>Rewriting the rules of the road: Self-driving cars and a digital highway code</b>
9:45-10:45	Presentations by: Bijsterveld, Gianni, Mody
10:45-11:00	Tea & coffee break + posters
Session 2: Imagination, Chair: Eliyahu Sapir	
11:00-11:30	Invited lecture: Astrid Mager, Austrian Academy of Sciences <b>"Data protection is a fundamental right". Examining sociotechnical imaginaries of search engines and Europe</b>
11:30-12:45	Presentations by: Gabriels, Ward, Tang, Aysolmaz et al
12:45-13:30	Lunch + posters
Session 3: Revolution, Chair: Mariëlle Wijermars	
13:30-14:30	Presentations by: Swierstra, Papadopoulos & Schreibman, Beiermann
14:30-15:00	Invited lecture: Nishant Shah, ArtEZ University of the Arts <b>Between Memory and Storage: Fakeness and disinformation overload</b>
15:00-15:15	Tea & coffee break
Final panel discussion, Chair: Thomas Conzelmann	
15:15-16:00	Future Digital Society research directions within FASoS (topics, methods, links to teaching, etc.) Panel members: Katleen Gabriels, Costas Papadopoulos, Jacob Ward, Mariëlle Wijermars
16:00-17:00	Farewell drinks

# Abstracts

## Session 1: Responsibility

### **Rewriting the rules of the road: Self-driving cars and a digital highway code**

*Jack Stilgoe*

The hype around self-driving cars is vast. Here is a technology, a material-world application of artificial intelligence, that promises to make our roads safer, cleaner and more efficient. However, the myth of autonomy is a bad guide for policy. An approach that assumes the technology is or will be perfect encodes responsibility within the vehicle rather than asking what else might need to change for further transport systems to accommodate new forms of automation. Technologies, following Wynne (1988) write rather than follow rules. Self-driving cars are currently governed by few new rules, but efforts are underway to rewrite the rules of the road around a still-imaginary technology. An anticipatory analysis of the disruption of the politics of road space by a new technology lets us improve upon the conventional discussion of the governance of artificial intelligence, which is currently fixated on a narrow view of ethics.

### **Screams, Shots and Breaking Glass: The Rise of Sound Intelligence in Public Space**

*Karin Bijsterveld*

Municipal authorities worldwide are increasingly installing sound detection sensors and software in public space to monitor crimes or the likelihood of upcoming violence in what they consider their most unruly urban areas. By detecting and identifying screams, gunshots or shattering glass—sounds that may disclose criminal acts or a high chance that something might occur warranting police attention, they hope to better respond to or prevent such events. But as Leonardo Cardoso (2019) has recently shown for ShotSpotter® in Rio de Janeiro and Canaons, these digital technologies come with assumptions about their universal applicability that may heavily thwart their intended effectivity, and may intervene in sociotechnical contexts in such a way that they destabilize established hierarchies. Moreover, as Xiaochang Li and Mara Mills (2019) have clarified for the history of forensic speaker identification and speech recognition, sound analysis technologies draw on wider histories of classifying and identifying sounds that display shifts from sound archives to sound data banks, and from high level to low level feature recognition. Such shifts also play out in the everyday functioning of sound intelligence. In this presentation, I aim to show the societal relevance of these typical STS-issues by drawing on examples, and to explain how I have researched and aim to examine these topics, both historically and ethnographically, in the near future.

### **Ethics in emerging technologies**

*Robert Gianni*

The SIENNA ([H2020](#) grant agreement No 741716) project addresses ethical issues in three new and emerging technology areas: [human genomics](#), [human enhancement](#) and [human-machine interaction](#). These areas all come with major socio-economic impact. They also raise issues related to human rights. Our ethical analysis is based on research and informed by stakeholders. We identify

and assess ethical issues and risks and produce three ethical frameworks: one for each technology area. Based on these frameworks, we will develop research ethics protocols and professional ethical codes. Robert Gianni (BISS Institute, UM) will introduce some of the project's findings in relation to the area of AI and Robotics.

### **Fueled by Oil: Digital Innovation and the Fossil Fuel Industry**

*Cyrus Mody*

Much discourse about the digital society pictures computing as having a small environmental footprint: bits are stored in the ethereal “cloud,” not warehouses; ecommerce is contrasted to traditional “brick and mortar” stores; cyber-libertarians such as John Perry Barlow declare “you weary giants of flesh and steel, I come from Cyberspace, the new home of Mind.” Yet the environmental costs of making, using, and disposing of computers are enormous if largely invisible. Activists such as the Silicon Valley Toxics Coalition have argued thus for decades. More recently, the intersection of environmental history and the history of computing has been one of the most lively topics in both fields.

This paper works that intersection by outlining ways in which the oil industry was ubiquitous but unseen in the creation of the digital society. Oil firms supplied money, personnel, technology, and ideas for developing key digital technologies: the transistor, electronic digital computer, integrated circuit, PC, internet, etc. Even today, Google, Microsoft, and Amazon take billions in oil company funding for research into extraction of oil and gas. Yet this pervasive influence is not well known and has little affected debates about the digital society. Recognizing oil's role in computing is necessary for both environmental progress and reform of digital industries. We need society in general – and companies such as Amazon and Google in particular – to become less dependent upon the fossil fuel industry. But in making that move, we must acknowledge how much of our current knowledge and digital infrastructure depends on oil.

## Session 2: Imagination

### **“Data protection is a fundamental right”. Examining sociotechnical imaginaries of search engines and Europe**

*Astrid Mager*

Voices calling for a European approach towards digital technology are getting louder these days. While there seems to be common sense that Europe is different from both the US with its neoliberal Silicon Valley culture and China with its authoritarian regime it is still highly unclear what the European position can (should) be in this geopolitical power play. Drawing on empirical research on negotiations of the European Data Protection Reform I will discuss how search engines (Google) are imagined in policy and media discourses and how a “European identity” is co-constructed in this particular context. More specifically, I will analyze how fundamental rights are mobilized as core European values, while at the same time falling apart when confronted with national specificities deeply rooted in different historical, cultural and economic traditions. I will then finally show that sociotechnical imaginaries are not only shaped in particular cultural contexts, but also in particular “communities of practice” further complicating the notion of a single European identity. To conclude, I will discuss what to learn from this insight in terms of the making and governing of digital technology in European contexts.

### **Rules for Robots. Ethics & Artificial Intelligence**

*Katleen Gabriels*

Google’s search engine, Facebook’s News Feed, Amazon’s Echo: many of our everyday technologies contain Artificial Intelligence (AI). Autonomous robotic vacuum cleaners and robot lawn mowers help us at home, robotic surgical systems perform operations, and therapy chatbots such as Woebot are always ready to ‘listen’. We can even delegate moral decision-making to Artificial Moral Agents.

The combination of robots and AI leads to numerous possibilities, which, in turn, also raise compelling ethical questions. Which decisions do we delegate to machines and which preferably not? And how and from ‘whom’ do self-learning AI systems actually learn?

Every designer makes numerous choices. Not just functional choices but also moral ones. Morality and technology are not separate domains at all: they are strongly interwoven. Designers, engineers, computer scientists, and programmers often see themselves as neutral and working in the exact domain. Yet, they can take their own worldviews, moral framework, or gender as the default setting. Only by paying explicit attention to the ethical aspects of a design blind spots and biases can become visible.

For a long time, ethical questions concerning technology were regarded as something that came later, namely after technology had been developed. But ethical questions must be asked prior to and during the design process. Every product made by humans is ‘made with morality’.

The purpose of this talk is to look at which ethical rules are needed: rules that robots and AI-systems must follow themselves, but also the rules for designing them, in order to assure that the design is ethical from the beginning. After all, innovation is not only about technological progress, but also about recognizing the moral choices that technology carries and consciously dealing with them.

### **The City of London's Information Revolution: Finding Finance in Histories of Neoliberalism and Digital Utopianism**

*Jacob Ward*

In 1984, Margaret Thatcher privatised British Telecom for almost £4 billion, then the largest stock flotation in history. This act now occupies a central position in histories of Thatcherism, which present BT's sale as radicalising Thatcherism into a popular capitalist ideology and turning privatisation into a key neoliberal policy.

These histories, however, overlook how BT's privatization became a meeting point for financial institutions and a nascent 'digital utopian' ideology. In this paper, which bridges my current project on Thatcherism and digital infrastructure with a planned future project on finance and ICT, I interrogate the role of finance in the technopolitics of the digital society.

I show how financial institutions in the City of London lobbied for BT's privatisation and secured preferential treatment for the City from BT, ending a decades-long policy of uniform telecommunications services across Britain. In turn, this supported the Conservative policy that privatizing BT and digitalizing City finance was essential to Britain's participation in an 'information revolution'.

I label this 1980s fusion of City finance, neoliberal politics, and digitalization, the 'London ideology', and use this case study as a starting point to discuss potential approaches to studying the role of finance in the technopolitics of the digital society.

### **Gender Inequality & Big Data. Measuring Gender Inequality in the Workplace Using Social Media Data**

*Joey Tang*

The effects of gender inequality in the workplace on corporate outcomes and employees' wellbeing are poorly understood. The results of existing research are inconclusive and often contradictory. These results are in large part caused by the incoherent use of concepts and the incorrect measurement of gender inequality. Studies tend to solely observe parts of gender inequality in the workplace, rather than to study it as complex concept. The present study will develop a composite measurement of gender inequality in the workplace. The present study attempts to gain more insight in the effects of gender inequality in the workplace and improve current understanding of measuring gender inequality in the workplace by using register-level administrative data of employees and companies in the Netherlands. Additionally, the present study sheds light on the capabilities of social media data to represent complex social concepts, by attempting to replicate the above-mentioned measure of gender inequality in the workplace by using publicly available data from social media platforms and websites about and of large companies in the Netherlands. This study therefore investigates both the possible discrepancies between a company's online presentation and reality and the ability of online data to capture complex social concepts.

## **Understanding concerns of using algorithmic decision making systems**

*Banu Aysolmaz, Darian Meacham & Rudolf Müller*

Today, algorithmic decision making (ADM) services, including machine learning and artificial intelligence applications, have become a vital part of our daily lives. Their use however remains a topic of continuous debate and tension. Public perception is seen to be a determining factor in the progress and future of ADM services. Explanations are key to developing positive perceptions and building trust in the public. Even if technical explanations can be developed for certain algorithms, it is not clear if these explanations can be interpreted by individuals or if their concerns can be overcome.

This study aims to fill in this gap in the literature by investigating the concerns and behaviours of individuals on ADM services and their use, and how those concerns can be addressed through proper explanations. The researchers use a survey to collect data on participants' knowledge and concerns about using ADM services, including fairness, accountability, privacy, and transparency concerns, and their intention to use. The results are used to investigate the change in users' intention when there is explanation about the services. 2500 respondents from the LISS panel participated in this study.



## Session 3: Revolution

### **Robot recognition**

*Tsjalling Swierstra*

Humans are social beings, very much aware of appearing for others. The respect and recognition from others constitute an important source of self-worth. We fear contempt and humiliation. A major ethical issue therefore is: what characteristics entitle one to the respect from others? This issue is highly political in the struggle for recognition by – or on behalf of – marginalized groups, e.g. strangers (barbarians), women, slaves, workers, and animals. In this struggle claims for equality get combined with claims for difference, and hegemonic standards for being entitled to respect get challenged.

Robot ethics is adding a new chapter to this never-ending story. We currently witness the first skirmishes about the right identification of relevant similarities and differences that will organize the ethical relations between humans and intelligent machines. This question is partly explored in philosophical discussions about machine morality, but at least as much in novels, e.g. Shelley's *Frankenstein*, Dick's *Do androids dream of electronic sheep*, Ishiguro's *Never let me go*, and McEwan's *Machines like me*. My hypothesis is that this prominence of novels is no coincidence, as this medium may be particularly well-suited to capture the phenomenological quality of what we nowadays perceive to be the qualities that entitle one to recognition.

I suggest to analyse the discussion about the moral recognition of machines – both within philosophy and in works of art – to then compare it to similar and previous debates regarding other groups.

The practical relevance is not primarily the recognition of intelligent robots, but the self-reflection on what we now, surrounded by more and more intelligent machines, think are the characteristics that entitle one to recognition.

### **History in a Box: A Problem-based Learning Activity for Schools**

*Costas Papadopoulos & Susan Schreibman*

History in a Box is a technology-driven, team-based blended-learning activity in the form of an interactive, inquiry-based serious game. By blending the physical and the digital, two modalities that complement and reinforce each other, the activity encourages historical thinking and teaches historical reasoning, placing participants in the position of researchers as they investigate primary source material, evaluate conflicting sources, and form new interpretations. "Played" over the course of two hours, students work together to share knowledge and technical skills, utilising a sophisticated tablet-based interface allowing them to be active generators of knowledge as opposed to passive recipients of information. The theme of the activity, an important battle of the Irish 1916 Rising, The Battle of Mount Street Bridge, is approached from multiple points of view using a variety of newly-created secondary material as well as primary sources, many of them contradictory, partial, or incomplete. Unlike a lecture or a history book that synthesises and flattens the historical record, the non-narrative aspect of the activity gives access to many voices and points of view which each group evaluates and assesses, thus generating their own interpretations in an active, team-based setting. Our presentation will discuss the design principles and the different stages of development

of the project, the difficulties encountered as well as strengths of the approach in the context of socially-engaged research.

### **“Co-operation and Friendly Rivalry”: Learning from the History of Citizen Science**

*Lea Beiermann*

Digital citizen science initiatives are engaging amateur researchers around the globe in collecting and analysing scientific data. Since these projects invite amateur and professional scientists to work together, they are often praised as a means of overcoming scientific hierarchies and democratising research. However, citizen science is not democratic by default. The technologies used to gather data are not equally accessible to everyone and outsourcing supposedly undemanding classificatory work to citizen scientists may even increase the divide between amateur and professional research. The social challenges facing citizen science projects today are by no means new. The mid-nineteenth century saw a sharp increase in cheap, participatory scientific journals, which, much like the recent emergence of online platforms, facilitated both science communication and the coordination of amateur researchers across vast distances. As Shuttleworth and Charnley (2016, 2) put it, “[if] the story of today’s science communication is . . . one of new technologies facilitating new platforms and new types of communication, this is in fact a very old story”. Drawing on examples of “citizen science” facilitated by nineteenth-century media, I show how collaborations among amateur and professional researchers changed – or reaffirmed – established scientific hierarchies. I relate these examples to my own experiences of running an online citizen science project, arguing that understanding how citizen science affected scientific hierarchies in the past may help us to build more inclusive citizen science projects today.

### **Between Memory and Storage: Fakeness and disinformation overload**

*Nishant Shah*

Fake news has been all the news lately. The anxiety around fake news is a symptom of a growing instability in our capacity to tell, discern, filter, share, and amplify that which we believe to be true, in the algorithmic state of information networks. Fake news is not so much about searching for the truth, as it is about figuring out the first principles through which claims of truth can be made. Beginning with the idea of information overload as our new default, this talk looks at the way in which our first order principles of truth claiming are being challenged, manipulated, and reformed by the algorithmic practices of computational networks. Drawing from digital cultures, software studies, network theory, feminist technologies, and humanist critique, this talk unpacks the transitions that engineer the new conditions of ‘faking it’ and potentials for possible hacks.

## Posters

### **The United Nations Cybersecurity Governance – Towards effective global Rules?**

*Xing Fan*

The rapid development of cybertechnology has brought convenience to people, but also created a series of new problems such as network infrastructure attacks, network monitoring leaks, cyber economic crimes, cyberterrorism and cyber rumours. Cybersecurity not only concerns the area of low politics, but also relates to state's military and political stability. There is therefore an increasing call for cybersecurity governance at the global level.

Such cybersecurity governance concerns not only technical issues, but also political and value questions. There is also contestation over the most appropriate form of governance. China, Russia, and many developing countries have promoted intergovernmental control of cybersecurity issues under the umbrella of the United Nations. Contrary to this, the United States promotes a multi-stakeholder format under the umbrella of ICANN, with a bigger role given to technology companies and NGOs and lesser intervention of governments. The US also oppose the leadership of intergovernmental organizations such as the UN. There are therefore two major models of global governance that are promoted in the field of cybersecurity governance: ICANN-centered and UN-centered.

This research reviews the emergence of this contestation over global rules in cybersecurity and looks at the reasons for the existing conflicts. Moreover, it probes into the ways in which the UN have sought to mediate this contestation and assesses its effectiveness in arriving at global rules in cyberspace.

### **Blockchain as emancipation: redistributing human and non-human agency in sustainable food production and consumption**

*Harro van Lente, together with Sanneke Kloppenburg (WUR) and Vincent Blok (WUR)*

Project proposal NWO Open Competition for Digitalisation SSH

For many societal domains there is the hope that blockchain technology can be used as a tool for empowerment and emancipation. This vision is particularly prominent in the food domain, where food systems are characterized by a lack of transparency, unsustainable practices, and unequal power relations. Starting from the observation that blockchain technology entails a redistribution of agency between technology and human and non-human agents, we examine how with the use of blockchain, current unsustainable production and consumption practices can be transformed.

### **Terra Mosana: Towards a Digital Heritage Framework of the Shared History of the Euregio**

*Eslam Nofal (with Vivian van Saaze & Sally Wyatt)*

Terra Mosana is a funded research project, which is a collaboration between municipalities, heritage sites, universities, and citizens to strengthen the tourist attractiveness of the Euregio Meuse-Rhine (EMR) and the sense of belonging to it through the digital exploitation of its cultural heritage. The project aims to research, to digitize and to communicate a common shared history of the EMR by

involving both citizens and tourists in designing, experimenting and evaluating the digital installations of communicating cultural heritage in the region.

The Centre for Arts and Culture, Conservation and Heritage at Maastricht University (MACCH) is a partner in this project. The main role of MACCH is to create a sound sustainability strategy for Terra Mosana by producing the necessary technical, ethical and legal frameworks. These frameworks are needed for developing an audience engagement and participation (e.g. focus groups, user evaluations, surveys) for Terra Mosana's historical storylines and digital products (app, online and on-site experiences).

### **Responsible AI in Clinical Decision Making**

*Sally Wyatt, together with Annelien Bredenoord (UU), Karin Jongasma (UU) and Megan Milota (UU)*  
Project proposal NWO Open Competition for Digitalisation SSH

The rapid development of artificial intelligence within image-based medicine (pathology and radiology) raises many challenges. While the technical possibilities of digitalisation and AI in medicine have been in the fore of academic debate, understanding and guidance for the responsible development and use of such technologies is urgently required.

The overall aim of this proposal is twofold: 1) to investigate the digital transition in image-based medicine; and 2) to ethically evaluate the role of AI in clinical decision making. Detailed ethical analyses will be conducted to scrutinize and refine central concepts in AI-augmented medicine. Empirical qualitative approaches will identify factors that influence the digital transition and perspectives on responsible development and use of AI technology in medicine. If funded, we will also develop an ethnographic film to inform patients and the public about these findings to stimulate debate and reflection.