

# CONSTRUCTING SOCIAL FUTURES

12-13 JUNE 2019 | TURKU, FINLAND



## BOOK OF ABSTRACTS

Edited by  
Jonathon Murphy  
Riikka Saarimaa

Finland Futures Research Centre  
Finland Futures Academy  
University of Turku

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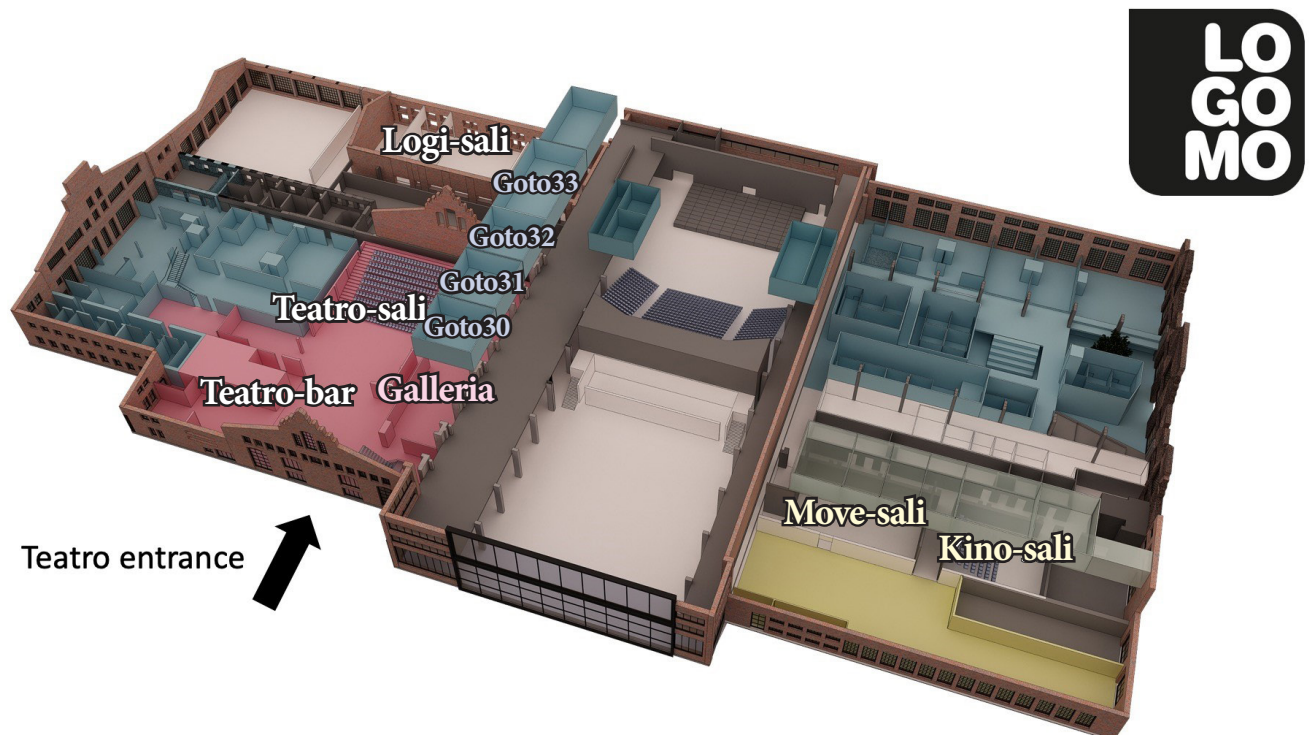
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20<sup>th</sup> FUTURES CONFERENCE

CONSTRUCTING SOCIAL FUTURES  
– SUSTAINABILITY, RESPONSIBILITY AND POWER

12–13 JUNE 2019 | LOGOMO | TURKU | FINLAND

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Finland Futures Research Centre

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# CONFERENCE PROGRAMME

WEDNESDAY 12 JUNE

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	<u>Venue</u>
08:30 <b>Registration to the conference and coffee</b>	Teatro-Bar
09:15 <b>Opening of the conference</b> Director <i>Juha Kaskinen</i> , University of Turku, Finland Futures Research Centre	Teatro-Sali
<b>An Introduction to the conference theme</b> Adjunct Professor <i>Katriina Siivonen</i> , University of Turku, Finland Futures Research Centre	Teatro-Sali
<b>An Introduction to conference survey</b> Dr. <i>Michael Jackson</i> , Shaping Tomorrow, United Kingdom	
9:45 <b>Power for, against, with and within: Futures studies as practice</b> Dr. <i>Ivana Milojević</i> , Metafuture, Australia	Teatro-Sali
<b>Chaired discussion</b> by Professor <i>Petri Tapio</i> , University of Turku, Finland Futures Research Centre	
10:45    Break	
11:00 <b>Heritage Futures: Tradition, Gain, Sustainability</b> Professor <i>Ullrich Kockel</i> , Heriot-Watt University Edinburgh, Scotland	Teatro-Sali
<b>Chaired discussion</b> by Adjunct Professor <i>Katriina Siivonen</i> , University of Turku, Finland Futures Research Centre	
12:00    Lunch	Galleria
13:00 <b>Chaired Poster session</b>	Teatro-Bar
13:45 <b>Workshop session I</b>	See details on page 4
15:30    Coffee break	Galleria
16:00 <b>Workshop session II</b> –17:30	See details on page 4
19:00    Conference dinner at the Restaurant Hus Lindman	

## THURSDAY 13 JUNE

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		<u>Venue</u>
08:30	Morning coffee	Galleria
09:00	<b>Workshop session III</b>	See details on page 5
10:30	Break	
10:45	<b>Workshop session IV</b>	See details on page 5
12:30	Lunch	Galleria
13.30	<b>Workshop Session V</b>	See details on page 5
15:00	Break	
15:15	<b>All our futures? Climate change, democracy and missing public spaces</b> Professor <i>Keri Facer</i> , Zennström Chair in Climate Change Leadership, University of Uppsala, Sweden; Professor of Educational and Social Futures, University of Bristol, UK  <b>Chaired discussion</b> by Postdoctoral Researcher <i>Minna Santaoja</i> , University of Turku, Finland Futures Research Centre & Turku Institute of Advanced Studies	Teatro-Sali
16:15	Coffee break	Galleria
16:45	<b>On responsible futures: What can we do, what should we do?</b> Professor <i>Ted Fuller</i> , University of Lincoln, UK  <b>Chaired discussion</b> by Adjunct Professor <i>Tuomas Kuhmonen</i> , University of Turku, Finland Futures Research Centre	Teatro-Sali
17:45	<b>Closing of the conference</b>	Teatro-Sali
-18:00	Director <i>Juha Kaskinen</i> , University of Turku, Finland Futures Research Centre	

*Conference programme is subject to change.*

# SESSION CHART | WEDNESDAY 12 JUNE

Venue Session	Teatro-Sali	Move-Sali	Logi-Sali 1	Logi-Sali 2	Kino-Sali	Goto 31	Goto 32	Goto 33
<b>13:45–15:30 Session I</b>	New forms of participative democracy and their consequences	The heterogeneity of actors and the many levels of analysis in social futures	Advances in methods in futures studies	Specific social futures (case studies on welfare, human relations, work, lifestyles)	Special Session: Linking futures studies, social theories, and methodologies	Foresight activities and their effect on sustainability transitions	Combining corporate foresight with corporate social responsibility	Workshop: Using critique and utopias as analytic strategies and activism; creating new sustainable futures? - A common sense of responsibility for social change
<b>16:00–17:30 Session II</b>	New forms of participative democracy and their consequences	Citizen science, power, responsibility and foresight	Advances in methods in futures studies	Specific social futures (case studies on welfare, human relations, work, lifestyles)	Panel: What are Social Futures? The View from Lancaster	Foresight activities and their effect on sustainability transitions	Combining corporate foresight with corporate social responsibility	Workshop: Becoming future-oriented in the age of digitalisation

# SESSION CHART | THURSDAY 13 JUNE

Session	Venue	Teatro-Sali	Move-Sali	Logi-Sali 1	Logi-Sali 2	Kino-Sali	Goto 31	Goto 32	Goto 33
<b>09:00–10:30</b> <b>Session III</b>		New forms of participative democracy and their consequences	Citizen science, power, responsibility and foresight	Advances in methods in futures studies	The heterogeneity of actors and the many levels of analysis in social futures	Panel: Exploring systemic innovations towards sustainability in community clusters in different countries	Workshop: National Foresight 2020 - Sharing knowledge on networked foresight	Futures education and learning	Workshop: Back to the futures we want: Envisioning and backcasting for sustainable futures
	<b>10:45–12:30</b> <b>Session IV</b>	New forms of participative democracy and their consequences	Citizen science, power, responsibility and foresight	Futures studies in the empowerment of agency	The roles of futures studies in the negotiation of values and desired futures	Film: WHO MADE YOU?	Workshop: Role-based game on Bio-economy and Justice year 2125	Futures education and learning	Workshop: Utopias to combat futures-by-negation
<b>13:30–15:00</b> <b>Session V</b>	Special Session: Reprise the results of the digital survey of the Constructing Social Futures Conference	Citizen science, power, responsibility and foresight	Futures studies in the empowerment of agency	The roles of futures studies in the negotiation of values and desired futures	Film: WHO MADE YOU?	Workshop: Interrupting the fiction of the 'risk monster'	Workshop: Advances in methods in futures studies	Workshop: Security futures in the urban age - Discussing three scenarios of 2040	

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# KEYNOTE SPEAKERS AND ABSTRACTS

## Power for, against, with and within: Futures studies as practice

**Dr. Ivana Milojević**

Metafuture, Australia

This presentation will address two central questions of the conference: “Can futures studies, as a practice, make a difference?”, and “To what extent are futures being constructed through participation that reflects moral agency and leads to better futures for all?” In doing so it will discuss the role of power in constructing social futures, especially the role of agency in action and the shift from coercive power to enabling power.

Building on her experiences in working in the area of futures studies since the mid-1990s, Dr Milojević will provide illustrative case studies drawing from her work as a university professor, consultant and workshop facilitator. The presentation will give both theoretical and practical insights, outlining some broad principles as well as concrete examples of ‘doing futures’ at the national, organisational and individual level. It will put forward an argument that a community of futures practitioners has a responsibility to use creative power in order to enable individuals and groups we work with to improve their lives. It will then specifically address the use of narrative approaches in the field of futures studies, as well as some innovative futures methods, such as The Conflict Resolution Scenario Method (CRSM) and Causal Layered Analysis (CLA). The presentation will conclude with the notion that if we are to take into account sustainability, responsibility and power in constructing better social futures we need to be aware of the ways in which power is implicated and integrated in everything we do. Thus, not only is it important to investigate the depth of power and power in depth, but the many ways in which power for, against, with and within all play a role in “building and critically evaluating capabilities necessary for sustainable futures”.

## Heritage Futures: Tradition, Gain, Sustainability

**Professor Ullrich Kockel**

Heriot-Watt University Edinburgh, Scotland

‘Futures’ in an economic context refers to profits being made by trading profits expected to be made from the exploitation of assets not yet owned (such as a grain harvest) or even discovered (such as oil reserves). As culture becomes a commodity, is there such a ‘futures market’ for traditions not yet invented or ‘reclaimed’ as heritage? Beyond a critique of the retrospective construction of heritage and cultural traditions, can we anticipate narrative ‘futures’? In recent years, the EU has been one of the main investors in such ‘futures’, largely in pursuit of a European identity rooted in a common cultural heritage. At the same time, as the political climate in many countries has been shifting to the right, ‘our heritage’ has acquired a new popular significance that threatens the gains expected from investment in these futures. This keynote critically examines tensions between different models of how we might plan for heritage futures, focusing on issues of tradition and authenticity, socio-ecological gain, and sustainability. In conclusion, a relational approach is proposed that may help reconcile at least some of those tensions from a human ecological perspective.

# All our futures? Climate change, democracy and missing public spaces

## **Professor Keri Facer**

Zennström Chair in Climate Change Leadership, University of Uppsala, Sweden

Professor of Educational and Social Futures, University of Bristol, UK

The issue of climate change has been cast as a ‘futures’ problem for the last 40 years. Scenarios, models and forecasts from experts have underpinned scientific and public debate over this period and much of the debate has been oriented towards the accuracy or defensibility of such visions of the future. Despite this proliferation of expert futures, the actions needed to mitigate greenhouse warming have not (yet?) been taken. The terrain and precondition for action has been predicated on the production of a sufficiently robust future scenario to justify action. As a result, we now see a global youth movement arguing that their ‘futures’ are being taken away from them and groups such as extinction rebellion calling for massive social change to effect transition to post-carbon futures. Underneath these debates, ecological and material processes are operating on their own temporalities and constructing their own futures.

This keynote will ask whether the processes by which ‘futures’ have been produced in the climate change debate are part of the reason why so little change has been manifested to act upon such futures. It will discuss some of the risks of expert and technocratic futures work in an era of climate change and populism, and will then explore a range of different ways of conceptualising the relationship between publics and futures, including Latour’s concept of ‘matters of concern’ and Bellacasa’s concept of ‘matters of care’. The talk will conclude by exploring new forms of activity and debate that are emerging to negotiate between different sets of expertise, including more than human knowledge and experience. It will discuss, in particular, how partnerships are developing between universities and communities to generate new forms of knowledge, the emergence of city-scale citizens assemblies, the emergence of earth rights tribunals, and the tensions that such processes face in terms of substantially challenging practices of exclusion. Finally, it will reconnect these processes with the wider field of futures studies and ask whether working with theories of symbiosis and emergence, of acting ‘as if’ the future is present today, might be a productive way of developing ethical and democratic modes of anticipation in the context of a lively planet.

## On responsible futures: What can we do, what should we do?

### **Professor Ted Fuller**

University of Lincoln, UK

The conference is asked to what extent are futures being constructed through participation that reflects moral agency and leads to better futures for all? Can Futures Studies, as an applied practice, make a difference?

“Constructing Responsible Futures” is a simple rhetorical phrase, which sounds plausible, sounds attractive, and may even have aphorismic power. The question is, what does it mean and is it achievable?

The construction of futures – which means that human futures are created through social endeavour and participation, though not necessarily equally by all – is a process of human agency. I suggest that human agency is anticipatory which is why Futures Studies is important. The creation of constructed futures requires action. Social construction is active, and social knowledge becomes meaningful through practices. In the many bundles of practices related to forming futures, judgements are made in anticipation of those futures. Inherent in the practices are moral judgements. The ethical framework in which enactment takes place is largely implicit. Robert Rosen, in discussing anticipatory systems asserted that a predictive model assumes “almost an ethical character even in a purely abstract context”.

Addressing the roles of individual, communities, organisations and institutions in constructing responsible futures is an organising principle of this conference. Human agency is modified and governed through the social interactions that make collectives coherent as groups, even if the individual agents are not aware of the structures in which they perform. Change in collective agency is emergent. If change is needed, or desired, then it must emerge through forms of collective action. Hence the degree of anticipatory capacity of multiple levels of human collective organisation makes a difference to the causal effects of such anticipations on the actions of these communities. As Peter Railton (2016) asks ‘what if morality is not evaluation of the present action, but the prediction of character and its thrust into the future?’ Morality and social norms, as with laws and technologies add structure to the future, making otherwise unavailable actions and outcomes possible.

An example of the power and limitation of anticipation in bringing about change for the better is the extent to which people believe they can improve their futures. Some groups have greater capacity than other in this respect. Arjun Appadurai identified that the “capacity to aspire” is precisely what the poor lack, this experiential deficit being virtually the hallmark of poverty.” (Appadurai 2013, 213).

This presentation explains aspects of these guiding ideas and leads to considering the relationship between the ethics of possibility and the ethics of futures education. Appadurai (2013, p295) described the “Ethics of Possibility” as “ways of thinking, feeling and acting that increase the horizon of hope, that expand the field of imagination, that produce greater equity in [...] the capacity to aspire”. This is one example of practical ethics inherent in the ways issues people model their relationships with the multiple levels of communities now and in the future. There may be others discussed at the conference, from which the presentation may draw. Futures Studies and Futures education are explicit anticipatory modelling activities and therefore are inherently ethical. What counts as ethical in the everyday practices is what produces human futures.

# CHAired POSTER SESSION

**Wednesday 12<sup>th</sup> June, 13:00–13:45**

Room: Galleria-Sali

Chair: Sanna Ahvenharju

## People Powered Future of Food

**Leena Jokinen, Anna Kirveenummi, Leena-Maija Laurén, Riikka Saarimaa & Petri Tapio**

Finland Futures Research Centre, University of Turku

At the core of the People Powered Future of Food project is the exploration of how the concept of personalisation will enable consumers to resume a more central position in the food value chain. This project will aim to contribute in creating change towards a more transparent and inclusive food value chain – and better business. The changing and evolving landscapes of consumer demographics and preferences as well as technological developments form the wider backdrop and context for this research. The utilization of big data/my data in creating new solutions for increased consumer personalization of food and sustainability issues related to climate and resource efficiency goals are included in the futures-oriented work. This is a joint project between Finland Futures Research Centre – FFRC from the Turku School of Economics, University of Turku and Finnish SME's, Invenire Market Intelligence Oy, Nemesys Oy, and Bullerobong Oy Ab.

The academic research part of the project is carried out by the FFRC. The aim of the research is to create people-oriented futures images of food. We perform environmental scanning and explore trends to understand the changing patterns of food production and consumption. We investigate cultural, societal and environmental changes driving transitions in the food system. We gather data with a survey in social media, carry out expert interviews and organize a futures workshop to find out people's expectations and desires when it comes to personalising their food consumption in the next 10 years. The research further explores questions on the challenges people will face in making food choices in the changing world. What future opportunities and solutions would there be to empower people within the food system and to create sustainable change? What would the balance between the production-oriented and people-oriented food system mean?

We invite participants of the Constructing Social Futures conference to give their input to our research and write down their ideas and hopes about the futures of the food system in the notebook left to the table next to the Poster.

*Keywords: Future images of food, Personalization of food, Food democracy, Food value chain, Sustainability*

## Exploring corporate foresight in Finnish Lapland – Case Etumatka

**Jenni Kemi, Mari Vähäkuopus & Anu Harju-Myllyaho**

Lapland University of Applied Sciences

Today businesses need to be able to produce new kind of value to customers. The commercial life cycle of products might be short and, thus, companies need to look for innovations, join up with new partners, make bold solutions, and reform the ways they think about business (Crainer & Dearlove 2018, 7). To tackle these challenges, companies need better understanding of the operating environment, competitors, customers, or internal processes.

In the poster we present experimental workshops conducted together with SME clusters exploring new ways and models to promote sustainable growth and competitiveness of the existing businesses in the region as well as supporting new businesses. The tools and methods used in the workshop vary according to a common challenge identified in cooperation by a SME cluster. The aim is to utilize both qualitative foresight methods and quantitative data.

The workshops aim at producing futures images and creating paths from the present to the best possible future. This can be achieved by combining creativity, critical thinking, learning and collaboration and empowerment as described by Vidal (2005). Foresight methods can help industries to create the desirable futures advancing both strategic long-term and shorter everyday decisions making enabling them to reach the companies' future goals (see e.g. Hiltunen 2013, Meristö & Kettunen 2011). As technology advances, the tools and methods used in foresight evolve as well.

As results we present the models used in the workshops and evaluate the possibilities of these models to foresee the changes in business environment and act as aid in decision-making. Recommendations for the further use of foresight tools and data collection is elaborated.

Crainen, S. & Dearlove, D. (2018). Introduction. In *Innovation@Work*. What it takes to succeed with innovation. Wargrave: Thinkers50 Limited.

Hiltunen, E. (2013). *Foresight and innovation. How companies are coping with the future*. Hampshire: Palgrave & Macmillan.

Meristö, T. & Kettunen, J. (2011). *Seitsemän tarinaa ennovaatiosta - Rohkea uudistaa ennakoiden*. Teknologiateollisuus.

Vidal, R. (2005). *The Future Workshop: Democratic problem solving*. Informatics and Mathematical Modelling, Technical University of Denmark, DTU. Retrieved 12.9.2018, [http://www2.imm.dtu.dk/pubdb/views/edoc\\_download.php/4095/pdf/imm4095.pdf](http://www2.imm.dtu.dk/pubdb/views/edoc_download.php/4095/pdf/imm4095.pdf)

*Keywords: Corporate foresight, Big data, Futures workshop, Experiment*

## Connecting global research facilities: Experiences of the RISCAPE-project

**Mikkel Stein Knudsen, Marianna Birmoser Ferreira-Aulu, Elizaveta Shabanova-Danielyan, Weiqing Wang, Jari Kaivo-oja & Jyrki Luukkanen**

Finland Futures Research Centre, Finland

RISCAPE (European Research Infrastructures in the International Landscape) is a pan-European project aiming to map and connect Research Infrastructures around the globe. The Horizon 2020-project will produce a landscape analysis and a comprehensive overview in form of a report that describes what kind of major research facilities exist worldwide and how the European facilities position themselves in the comparison. The report due at the end of 2019 will directly benefit the European Union's strategic RI development and policy.

Finland Futures Research Centre is a partner in the RISCAPE-project and work package-leader for the international scientific field of energy. FFRC has interviewed Research Infrastructures around the world and mapped facilities in e.g. Australia, Brazil, China, Japan, Russia, and the United States.

We present insights and experiences from these interviews with particular focus on Brazil, China and Russia, and provide illustrations of opportunities and challenges for increased international scientific cooperation which in our opinion is a key component of sustainable and responsible futures.

*Keywords: Research Infrastructures, Scientific cooperation, Energy research, Brazil, China, Russia*

# The Millennium Project and 15 Global Challenges

**Osmo Kuusi, Sari Söderlund, Toni Ahlqvist, Mikko Dufva, Sirkka Heinonen & Juha Kaskinen**

Finland Futures Research Centre, Finland

The Millennium Project connects futurists around the world to improve global foresight. It was founded in 1996 and it worked first in the frame of United Nations University. It is now an independent non-profit global participatory futures research think tank of futurists, scholars, business planners, and policy makers who work for international organizations, governments, corporations, NGOs, and universities. The Millennium Project collects and assesses judgments from over 3,500 people and has 63 Nodes around the world including the Helsinki Node. The work is distilled in the State of the Future reports that discuss how world is proceeding in the handling of 15 Global Challenges, Futures Research Methodology series, special studies, and integrated into its Global Futures Intelligence System.

The Millennium Project is especially well-known based on its high-quality global Delphi processes. Its recent main Delphi based process is Future Work/Technology 2050. The pre-publican edition of the final report of the process is available. It is an overview of a three-year study on the future dynamics of work and technology with three detailed global scenarios, results of national workshops in 19 countries, and five Real-time Delphi's that rated 93 actions suggested to address issues raised in the three Future Work/Technology 2050 Scenarios by the national workshops. Each of the 93 actions have ratings and comments from several hundred futurists and related experts.

To the recent Finnish Node of the Millennium Project belong Sari Söderlund (Chair), Toni Ahlqvist, Mikko Dufva, Sirkka Heinonen, Juha Kaskinen and Osmo Kuusi.

More information: <http://www.millennium-project.org/>

## Speaking the future: A Critical futures studies approach to the technologies of learning in post-compulsory education

**Ralph Mercer**

The Open University, United Kingdom

The aim of my research is to explore how assumptions, social structures, and culture are defined through technology and pre-constructed our public and professional narratives about the future of post-compulsory education.

The research concentrates on the Causal Layered Analysis of narratives of academics involved with technology in post-compulsory education and the futurists who explore the many alternate futures for technology and learning. The goal is to investigate the dispositions (perceptions, assumptions, worldviews, and metaphors) found within the interviewee narratives when discussing the future of technology in Post Compulsory Education and map the intergroup and intragroup traits and themes of technological beliefs and philosophies that become evident.

The direct benefit of this research is to enrich our understanding of how individuals think about the future of technology in Post Compulsory Education by identifying and mapping the layers of assumptions and structures that shape and constrain our vision of the possible futures.

*Keywords: Causal Layered Analysis, Technology, Future, Education*

## Proteins of the future. Project: PROTEIN2FOOD – Pioneering crops for future generations

**Ritva Repo-Carrasco-Valencia**

Universidad Nacional Agraria La Molina, Peru

A fast-growing global population means an increasing need for more nutritious, affordable, and environmentally sustainable food. Currently, proteins from animal sources are an important part of Western diets. These proteins have a negative environmental impact in terms of greenhouse gas emissions and usage of land and water. Recent research also suggests that diets high in animal proteins could have negative effects on human health. Moreover, there are ethical issues related to the animal farming industry.

The PROTEIN2FOOD project, which is financed by the European Union, is committed to addressing these important issues. Its aim is to develop innovative, high-quality, protein-rich food crops, in order to sustain human health, the environment and biodiversity. PROTEIN2FOOD will develop commercially attractive foods from crops with high protein quality (quinoa, amaranth and buckwheat) and grain legumes through sustainable production and processing methods. These with a high nutritional value will have a positive impact in terms of biodiversity conservation and the reduction of greenhouse gas emissions. PROTEIN2FOOD has set the ambitious goal of increasing EU protein production by 25% in relation to the baseline at the beginning of the project. This will be achieved by using novel and improved breeding techniques and crop management, while also increasing Europe's arable land intended for protein-crop production. This will improve EU protein self-sufficiency, have a positive impact on the bioeconomy and accelerate the transition towards consumption of plant-based protein in the EU, Peru and Uganda. PROTEIN2FOOD has 17 partner organizations in Europe, one in Peru and one in Uganda. The partner organizations in Peru and Uganda provide a valuable contribution to the project as these countries are both highly biodiverse and they are key sources for high-quality protein crops.

*Keywords: Proteins of the future, Quinoa, Amaranth, Vegetable protein*



# SESSION I: WEDNESDAY 12<sup>TH</sup> JUNE, 13:45–15:30

## NEW FORMS OF PARTICIPATIVE DEMOCRACY AND THEIR CONSEQUENCES

**Wednesday 12<sup>th</sup> June, 13:45–15:30**

Room: Teatro-Sali

Chair: Professor Sirkka Heinonen

### From fortune tellers to designers: What happened to our social futures?

**Paola Pierri**

University of the Arts London, United Kingdom

With the crisis of Christianity in the West, and the rise of industrialisation later we witnessed a change in the 'ownership' of the future, from Gods to humans, and consequently the emergence of new kinds of specialists, who knew how to trade and shape the future better than others. Designers were considered to be among these specialists.

Prevalent discourses on future-making in design though, take an acritical stance about the definition of 'the future' and fail to comprehend the role of power in future imagining and future making. But if, following from John Urry (2016), we start conceiving futures as 'social futures' that concern all aspects of society and encompass all of its actors, then it becomes evident what it is at stake in practices of future(s)-making and why the quest for the tools to better imagining and visioning the futures to be owned by everyone, is deeply a quest for democracy.

My research is based on these premises and explores possible ways to re-appropriate the futures, through activist design practices, that support the crafting of an imaginative, alternative and collective space of action that belongs to everyone. In this paper I will explore the question of authorship in design, as this happens increasingly within systems of distributed agency, power and expertise; and start unpacking how visions of the futures, made through design, influence our present actions, as visions of the future can indeed engender futures, as they are not just descriptive but performative as well.

*Keywords: Agency, Activist design, Democracy, Social futures*

### Self-driven Faustian bargain or opportunity for imagination? Envisioning framework for participatory expansion of socio-technical horizons for emerging mobility technologies

**Milos Mladenovic**

Department of Built Environment, Aalto University, Finland

Various emerging mobility technologies, including self-driving vehicles and Mobility-as-a-Service, bring about significant uncertainties, indicating a potential society-wide disruption. In the context of significant uncertainties, one cannot disentangle envisioning futures with these technologies from social justice questions of (re)distribution of societal benefits and burdens across present and future generations. Contrastingly, the need for strategies to cope with this disruption has recently been recognized through

several planning efforts. Despite their fruitfulness, limited understanding of technology as a socio-technical phenomenon remains an underlying challenge, often falling into traps of technological determinism. On the contrary, reclaiming technological futures as plannable spaces requires understanding that human ends are not well-defined or static, and that technology does not have unstoppable, unquestionable, momentum.

At the central point of contention, we argue for replacing the language of unintended consequences with the language of unanticipated consequences. Furthermore, we recognize the threat of anticipation inequality if we solely rely on expert-based practices. To support divergent envisioning efforts, we propose a phase of participatory expansion of technological horizons for (un)desirable futures. To this end, we provide an exemplary framework that is integrating wide expert-based PESTEL analysis, citizen's online discussion platform for reflective engagement, and ex-post scenario assessment. Societal and mobility futures with these emerging technologies are developed in a context of a neighbourhood in the Helsinki capital region. Drawing from explorations provided through this framework, we reflect about policy implications, and governance challenges for inter-organizational learning in coping with contingencies.

*Keywords: Mobilities, Technology, Envisioning, Foresight, Participation*

## Technology acceleration and the future of humanity

**Felipe Arocena**

Universidad de la Republica, Uruguay

"The sun is lost, and the Earth, and no man's wit/Can well direct him where to look for it." With these verses from "An Anatomy of the World", English poet John Donne (1572–1631) expressed the Renaissance feeling in the West. It had been near one century since Nicolaus Copernicus (1473-1543) had put the cosmos upside down proving that it was the Sun which was still and the Earth the one that orbited around it. Almost simultaneously, Christopher Columbus (1451-1506) refuted the idea that the Earth had an end, affirmed its roundness and discovered America for the Europeans. The cosmos and the world were not anymore what they had been and Europeans entered in complete disorientation.

We may feel such an intense disconcerting experience if contemporary Sweden philosopher Nick Bostrom's speculations are correct. He has put forward two hypotheses. ("¿Are you living in a computer simulation?", published in Philosophical Quarterly in 2001 and Superintelligence printed by Oxford in 2014). The first one proposes that all life on Earth could be a simulation. Indeed, a simulated reality created by a more powerful civilization with enormous computational capacity. The second hypothesis is the emerging of a superintelligent system on Earth that will dominate homo sapiens, like sapiens dominated primates. The superiority between this superintelligence and the one of sapiens could be as far as the one between sapiens and, let's say, ants. It is true, both sound as science fiction, but it was no different when Copernicus and Columbus's ideas emerged. We will analyse both possibilities.

*Keywords: Acceleration, Technology, Culture*

## SPECIFIC SOCIAL FUTURES (CASE STUDIES ON WELFARE, HUMAN RELATIONS, WORK, LIFESTYLES)

**Wednesday 12<sup>th</sup> June, 13:45–15:30**

Room: Logi-Sali 2

Chair: Dr Ville Lauttamäki

### Labour market 2035: future scenarios for Estonia

**Johanna Vallistu**

Foresight Centre at the Parliament of Estonia, Estonia

Foresight Centre at the Parliament of Estonia has undertaken a scenario-project on the future of work. Four alternative development paths called “Tööturg 2035” (Labour market 2035) for Estonian labour market were developed. The basis for the development of scenarios was research specific to the project on the topics of working flexibly, virtual work, mobile work, the developments of long-term migration and demography in Estonia and the legal status of workers. Several discussion seminars with Estonian opinion leaders in economy and society, policy makers and experts took place during the process. The main impact factors in the scenario packages are the effects of technological development on the labour market and changes in labour migration in the European Union. According to one type of scenarios, the loss and creation of jobs can be observed in the scenario, but the effect of creating jobs is dominant during the scenario period but in other types the effect of the destruction of jobs is dominant during the scenario period.

In terms of migration, the migration policy and attitudes towards labour migration from third countries may becoming more open in the European Union whereby an outcome is also possible where migration policy and attitudes towards labour migration from third countries are becoming more closed in the European Union. The specifics of the situation in Estonia play their role in every scenario, resulting in a unique scenario world and its possible development paths. As a result, the four scenarios, in short, are: 1) talent hub Tallinn; 2) Global village of vagabonds, 3) New world of work, 4) Self-reliant Estonia.

*Keywords: Future of work, Scenario planning, Labour market future, Future studies, Scenarios in policymaking, Estonian labour market*

### Evaluating the impact of futures work and foresight – Good practices and lessons learned from Sitra’s impact evaluation

**Katri Vataja & Pinja Parkkonen**

Finnish Innovation Fund Sitra, Finland

Foresight and futures work aim at imagining, rethinking and setting conditions for systemic changes in the society. The societal change as a starting point of evaluation poses challenges to the traditional evaluation approaches. To analyse impact on systemic changes we need methods that consider the dynamics of the operating environment, the multi-actor perspective and the time span of societal changes which is often long.

In this paper, we rethink the design and methodological issues of analysing the impact of actors, which have set goals for their societal impact. Our case is based on the wide scale evaluations of Sitra, which is a Finnish future-oriented think-and-do-thank. Sitra produces long-term foresight data and studies in anticipation of the future as well as supports the Finnish society in interpreting and making use of this data.

Sitra's operations are guided by eight shared goals for impact, all of which are interlinked. The evaluation is targeted towards these goals. We will focus on the impact goal concerning "the Awareness of Potential Future Developments in Finland". In the case presented, the evaluators have used mixed-methods approaches for tracing and harvesting contribution of the evaluand using data from various sources, including the Futures barometer. Our examples will present good practices and lessons learned on how to evaluate systems change and the impact of foresight activities in a future-oriented organisation. We hope that these experiences contribute to the discussion and development of foresight evaluation capacity.

*Keywords: Impact evaluation, Foresight evaluation capacity, Futures work*

## Findings from a Futures barometer in Finland

**Mikko Dufva & Jenna Lähdemäki-Pekkinen**

Finnish Innovation Fund Sitra, Finland

What do people think about futures? How well do they know key trends and what do they think about them? And most importantly, what is important regarding futures and who should be the driver of change?

These were some of the questions in a Futures barometer commissioned by the Finnish Innovation Fund Sitra to learn more about Finnish citizens' knowledge and attitudes towards megatrends and different future developments. The futures barometer was part of the overall evaluation of the impact of Sitra's activities, specifically the goal that possible future developments are well known in Finland. The futures barometer focused on three megatrends: 1) exceeding planetary boundaries and climate change, 2) international order at a turning point and democracy threatened, and 3) rapid development of technology and change in working life.

The futures barometer was done as an internet survey in a socio-demographically representative manner. The barometer had three main question categories: orientation towards the future, knowledge about the megatrends, and visioning, agency and impact to the respondents voting decision. According to the results, Finns are very interested in futures, believe they can influence futures, know the megatrends fairly well and see a bit more threats than opportunities. The biggest differences among respondents were due to perceived economic status. The findings have been used to support the foresight work in Sitra and to give food for discussion for the parliamentary elections in Finland.

*Keywords: Utopias, Visions, Transformation, Experiential futures, Dialogue*

## The cosmopolitan future of identity; The changing nature of space and time

**Johanna Raitis, Riikka Harikkala-Laihin, Niina Nummela & Eriikka Paavilainen-Mäntymäki**

Turku School of Economics, University of Turku, Finland

Our lives and identities are increasingly shaped by the mounting impact of information, technology and networks (Castells 2009). Consequently, instead of (or in addition to) a national identity, many people seem to have a cosmopolitan identity – identify themselves as citizens of the world. Increasing cosmopolitan behaviour is due to the emergence of cosmoscape, i.e. spaces, practices, objects, and networks, which make cosmopolitan engagement possible and enable the development of cosmopolitan self (Kendall et al 2009).

We argue that cosmopolitans construct their futures differently than other individuals due to their sense of place and time (cf. Brimm 2010, Skrbiš 1999). First, cosmopolitans see the world as one big, boundaryless space, where traditional location-based characteristics do not limit the opportunities to live, work, experience, and learn. Cosmopolitans can be described as nomads in the global job market; they are on a constant move that can help their professional and career development and enable them to find self-fulfilment in their work. From the perspective of time, careers are not limited to a certain company and position, but are more connected to continuous learning and temporary positions.

At the core of cosmopolitan research are the ideas of mobility, openness, valuing of different cultures and disengagement from the national and local anchors (e.g. Skrbiš & Woodward 2013). These conceptualizations bring up intriguing questions related to cosmopolitan identity and especially its' responsiveness to immediate and remote social contexts. Addressing these questions, this study aims to understand how cosmopolitan identity is constructed.

*Keywords: Cosmopolitan, Identity*

## FORESIGHT ACTIVITIES AND THEIR EFFECT ON SUSTAINABILITY TRANSITIONS

**Wednesday 12<sup>th</sup> June, 13:45–15:30**

Room: Goto 31

Chair: Dr Sari Puustinen

## Imaginary urban green design – possibilities of the method of empathy-based stories for futures studies

**Marja Mesimäki**

University of Helsinki, Finland

With expanding urbanization, the significance of green spaces for the well-being of urbanites is recognized. Within the wider context of nature-based solutions in urban areas, there are novel solutions like building-integrated vegetation that offer interesting cases to inquire perceptions for future urban greening.

Method of empathy-based stories (MEBS) is a promising tool for inquiring about desirable futures in this context (Mesimäki et al. 2017). The method produces knowledge for, e.g. urban planners to understand the value of diverse solutions to the users. The idea of MEBS is that respondents empathize with a given situation and produce narratives using their own imagination.

I will give insight into two studies using MEBS in different green design situations: 1) inquiring about mental images of green roofs with a mixed-method approach (Mesimäki et al. 2017), and 2) using MEBS as part of Appreciative Inquiry approach to explore the needs the user-groups of a to-be constructed assisted living building have for their nearby green space in a situation of change, to be incorporated in the upcoming architectural design. Studies are part of a research program aiming at producing applicable scientific results on urban green spaces, using green roofs as model systems (<http://www.helsinki.fi/fifth-dimension>).

Mesimäki M. et al. 2017. Neo-spaces for urban livability? Urbanites' versatile mental images of green roofs in the Helsinki metropolitan area, Finland. *Land Use Policy* 61: 587-600.

<https://www.sciencedirect.com/science/article/pii/S0264837715302027>

Audio slides: <https://www.youtube.com/watch?v=sDW74Y34fSU>

*Keywords: Urban greening, Method of empathy-based stories, Appreciative inquiry, Nature-based solutions, Mental images, Co-design*

## Weak signals and foresight in urban planning: The role of green in future urban cores

**Markku Wilenius & Ana Jones**

Finland Futures Research Centre, University of Turku, Finland

One of the basic assumptions of futures studies is the notion that the future has a lot of emerging properties. That explains why the future seldom materializes as a direct continuum of the past. These emerging properties make future complex web of phenomena, each them connected to others. So, what does this mean in the context of urban studies when we are trying to understand the role of the green? It means that we should always think what key connections green has in relationship to human well-being and to other ecosystems. Futures studies concerns also something we called “weak signals.” By definition, weak signal refers to phenomena that first does not seem to be more than background noise, but then, when connected to other phenomena, starts to emerge as a pattern.

Here we point to three major weak signals in the urban context of today: First, changing values towards what has been called: “postmaterial values” with people valuing more: time, social networks and more access to green. Second, citizens’ participation and co-creation with more participatory city policies. And third, strong focus on the state of our natural environment and global climate change. Thus, this study is a qualitative analysis of the role of green in the future development of urban cores. Applying foresight methods, the study looks into weak signals, urban trends, global changes and megatrends to track urban transformations of city cores from grey to green.

*Keywords: Urban futures, Sustainable urban development, Urban green, Green urban cores*

## The user experiences of the futures wheel method advancing futures thinking in the field of built environment

Saija Toivonena, Anahita Rashidfarokhi<sup>a</sup> & Riikka Kyrö<sup>b</sup>

<sup>a</sup>Aalto University, Finland

<sup>b</sup>Lund University, Sweden

There is a clear need to foresee future development and identify the possible future impacts of different elements to ensure conscious and sustainable decision making in the field of built environment. However, the level of awareness and knowhow of potential methods to assist in this task is still low among market actors as real estate education has been unable to respond to the situation. There is a growing need for versatility in the curriculums while trained experts equipped with broad knowhow are called after by the industry. The capability of futures thinking can be seen as an essential part of this sought-after skill set. This paper aims to study the user experiences of the futures wheel method known from futures studies to investigate its suitability. This was done by involving master’s level students and experts working in the real estate field through joint workshops and individual essays written by the participants. The results show that the futures wheel method could enhance future oriented thinking and decision-making. The method bears great potential to be used more widely than is has until now and could be included in the curriculums at different education levels.

*Keywords: Futures wheel, Built environment, Sustainability*

## COMBINING CORPORATE FORESIGHT WITH CORPORATE SOCIAL RESPONSIBILITY

**Wednesday 12<sup>th</sup> June, 13:45–15:30**

Room: Goto 32

Chair: Dr Juha Kaskinen

### Corporate social responsibility: A futures driver of self-development in Solapur district

**Ramesh Gadhav**

Solapur University, Solapur, India

Corporate Social Responsibility (CSR) is one of the key driver of rural development, which is recognized by policymakers and development specialist. Major CSR activities move towards promotional, innovative, strategic, participating and transformative future approach of self-employment. Some of the important social and economic problems of new investors could be solved through CSR activities. The main objective of the study has to examine future prospects of CSR projects for self-employment in Solapur District. Self-employment particularly in Solapur district depends upon agriculture and allied activities. There have various Government sponsored schemes for boosting rural development, but till today need to encourage self-employment activities in Solapur district. Corporates in Solapur District have interested to support for good projects related to future self-employment in rural sectors.

CSR activities divided into four groups i.e. NGOs, Policy Makers, Development Specialists and Trainers. CSR work for promoting futures of self-employment through the improvement of STEP (Social, Training, Economy and Planning) variables. A STEP drivers is to clarify that the future prospects of self-employment through CSR. EXIT model helps process of scanning field of possible futures of self-employment through CSR groups and STEP variables. EXIT model useful for planning, foresight and decision support tools for self-employment through the CSR expert direct interactions with scenario technique.

CSR activities have a pro-active approach and positive link between self-employment perspectives. A significant number of CSR interested to stimulate for rural development and seem benefit from it. It helps to improve efficiency, confidence, skills and capabilities of entrepreneurs for self-employment in rural sectors. Finally, the study desire and beneficial in terms of self-employability and standard of living to enhance development of Solapur District.

*Keywords: Corporate social responsibility, Self-employment, Rural development, EXIT model, STEP variables*

### Working together towards common goals. The kinship and operational compatibility of corporate sustainability and foresight

**Kati Rissanen**

University of Turku, Finland

Corporate sustainability and corporate foresight are rooted in the same values and goals, albeit their approaches may differ from each other. This paper first discusses how these two both operate as value-rational fields, contributing to business strategy as well as benefiting the society by creating a better world. Second, it looks how these values and goals are operationalized within the framework of business in a theoretical level and reflecting on some Finnish experiences.

The paper then continues to describe the operational compatibilities by comparing the methodological toolboxes of corporate sustainability and corporate foresight. The focus is on value chain, materiality and GRI standards, thus going in a very practical level. What can corporate foresight learn from corporate sustainability and vice versa? And how these two can work together?

*Keywords: Sustainability, Foresight, methods, Materiality, Value chain, GRI standards*

## Sustainability futures in a shipbuilding network

**Marileena Mäkelä<sup>a</sup>, Katariina Heikkilä<sup>a</sup>, Leena Jokinen<sup>a</sup>, Jouni Saarni<sup>b</sup>, Oana Apostol<sup>c</sup> & Helka Kalliomäki<sup>b</sup>**

<sup>a</sup>Finland Futures Research Centre, University of Turku, Finland

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<sup>c</sup>Accounting and Finance, University of Turku, Finland

This research combines two fields of research. Firstly, the paper focuses on sustainability, which is often understood as the company's responsibility of its economics, environmental and social impacts. Secondly, the research applies the concept of futures images from the futures research. Futures images are descriptions of the possible future states based on the current knowledge, understandings, perceptions, beliefs and values of a topic. Although futures images are a very basic concept of futures research, very few studies have applied this concept from the point of view of shared futures images.

In our research, we study a complex network of the shipbuilding industry located in Europe. Our data consists of 40 interviews conducted among the members and the stakeholders of the network. In addition, we organized two workshops with 31 participants of the network. As a framework, we applied Jim Dator's four archetypes of futures images to our data and created four different futures images which we named as 1) 'Gradual development of sustainability', 2) 'The most sustainable cruise ships of the world', 3) 'Economic responsibility rules' and 4) 'Overruled by the Chinese shipbuilding industry'. All the futures images are reasoned with our data and but their preferability varies. 'The most sustainable cruise ship of the world' image is evidently the most preferable future for the network. The 'Overruled by the Chinese shipbuilding industry' is the least preferable future, something that the interviewees and the workshop participants fear.

Our research makes two contributions. First, we contribute to the narrow field of shared futures images with this study of sustainability in a shipbuilding network. Second, our study gives a practical contribution to the shipbuilding network by providing them a descriptions of sustainability futures images.

*Keywords: Sustainability, Futures images, Shipbuilding industry, Economic sustainability, Environmental sustainability, Social sustainability*



## ADVANCES IN METHODS IN FUTURES STUDIES

**Wednesday 12<sup>th</sup> June, 13:45–15:30**

Room: Logi-Sali 1

Chair: Professor Petri Tapio

### Toward a scenario development using dynamic analysis: A fuzzy cognitive map based trend impact analysis method to adapt to new environs

**Raúl Trujillo-Cabezas**

Universidad Externado de Colombia, Colombia

The purpose of this article discusses the role of scenarios in an essence model to show an original approach blending reflection on the future, describes two roles of scenarios (Ringland, 2010; Varum & Melo, 2010) in supporting these process.

La Prospective and strategic foresight are two approaches in thinking about the future. Instead, the proposal show an original framework the involving current practices on the scenario planning from both approaches. The futures studies comprise a wide range of methods to analyse past, present and future.

A combination between causal mapping using fuzzy cognitive maps (FCMs) and a modified Trend Impact Analysis (TIA) are a baseline model generate possible future scenarios through simulation. The paper proposes a framework helps scenario planner to integrated the qualitative knowledge from multiple decision-makers using TIA and FCMs to generate possible futures scenarios. Thus, framework provides a well-understood methodology that permits exploration of the future. In order to locate the method combination within the field of futures studies, the framework has mutated, the well-known futures cone. Where the cone meet from internal causal dynamic and external events a method to adapt quickly to major changes, can be developed for any time frame in order to reduce the future uncertainty.

Hence, the framework suggest a new choice to allowing select the more plausible scenario, using differ degree of flexibility for anticipatory behaviour and put forward mechanism.

The decision-makers have an intuitive, cognitive mapping techniques, a set of future events and their impact utilizing prior knowledge, to face a dynamic environ. Two roles of scenarios in supporting these processes: (i) scenario as causal model and (ii) a methodology that permits exploration of the future to identify, design and choice the more plausible scenario.

The paper concludes with a reflection on the methodological framework, and suggests directions for its intended use in futures studies, in addition to future-directed actions.

*Keywords: Futures studies, Fuzzy cognitive maps, Trend Impact Analysis*

## Exploratory scenario-visioning-optimisation method; An integrated qual-quant approach

**David Chikwendu, Paul Timms & David Watling**

Institute for Transport Studies, University of Leeds, United Kingdom

Scenario planning methods have evolved as a valuable tool which has helped planners identify critical uncertainties, construct different plausible futures and develop consistent future strategies. For example, exploratory scenarios develop future plausible images by focusing on events which are beyond the control of specific industry stakeholders. On the other hand, visioning scenarios develop a set of preferred future images by focusing on issues within the control of the specific industry. In practice, outputs from visioning activities are presented as statements which are mostly vague and imprecise in terms of its quantitative details. Although this is natural, it is a limitation for future planning where quantitative concrete details are very much needed.

This paper proposes a novel method which improves the robustness and precision of the scenario process outputs through an integration of exploratory and visioning scenario methods with a method from the mathematical optimisation field. The method is inspired by the need for optimising future freight distribution networks, and uniquely designing the visioning process to elicit stakeholder perceptions of the quantitative requirements for modelling a freight distribution network. It also ensures that quantified exploratory scenario drivers are utilised as model constraints. The method provides alternative model solutions (options) for review and decision making by industry planners. We illustrate its applicability in the downstream petroleum product distribution sector in Nigeria. We believe that the method offers an opportunity for robust transdisciplinary futures methods which encourages collaborative research between qualitative interpretivist and positivist futurists.

*Keywords: Distribution, Exploratory scenario, Integration, Optimisation, Scenario planning, Visioning*

## Network-of-networks scenarios for shared infrastructure planning foresight using disaggregative policy delphi

**Robin Neef, Stefan Verweij & Tim Busscher**

University of Groningen, the Netherlands

In many Western countries, infrastructure networks – e.g. road, rail, and waterways – have aged and need renewal. This requires large investments from infrastructure managers. To ensure maximum return on investment, and cope with the long lifetimes and inertia of infrastructure, they engage in strategic foresight practices.

Current infrastructure foresight practices, however, provide insight for optimizing a single infrastructure network; insight for optimizing the network-of-networks level that includes different infrastructure networks' interactions is not obtained. Those interactions are increasingly important given infrastructure networks' increasing interdependence. Hence, there is a need for shared foresight practice and shared scenarios that address how long-term developments impact future infrastructure use at the network-of-networks level.

The aim of this paper, therefore, is to construct scenarios for the network-of-networks.

We follow a hybrid method of document analysis, Disaggregative Policy Delphi (DPD) and futures workshop. We first systematically collected future studies of five major infrastructure managers in the Netherlands that

had actual influence on the decision-making processes. Coding for trends, drivers, events, weak signals, discontinuities, and wild cards and subsequent selection yielded 15 codes (e.g. network development, infrastructure interdependencies) that informed the DPD. Next, we a priori explicated expertise selection criteria and an expertise matrix to limit perpetuation of existing biases. Then, after executing the DPD, a workshop is added to enable actual use of and gain deeper insight in the scenarios.

The results will indicate which developments, their direction, and their interrelation with trends, drivers, etc. could be vital for the shared infrastructure network-of networks in shared scenarios.

*Keywords: Disaggregative policy Delphi, Scenarios, Document analysis, Futures workshop, Shared foresight, Infrastructure renewal*

## Assessing futures consciousness of Finnish elite members

**Sanna Ahvenharju**

Finland Futures Research Centre, University of Turku, Finland

Future consciousness – or future thinking, orientation or anticipation – is typically considered an essential feature of good decision-making and a prerequisite for radical innovations and game-changing shifts in policy. The patterns and styles of future thinking have, however, rarely been studied among elite members. This paper utilises interviews and psychometric profiles of Finnish elite members to study their futures consciousness. The purpose is to identify special features of elite thinking as well as to explore the use of a psychometric scale in such analysis.

The approach builds on a novel five-dimensional model of futures consciousness. The model integrates theoretical thinking from futures studies with related psychological literature and relevant research-based psychological constructs. The model consists of the following psychological dimensions, namely, a) Time Perspective, b) Agency Beliefs, c) Openness to Alternatives, d) Systems Perception, and e) Concern for Others. The futures consciousness psychometric scale is a recently developed instrument that utilises these five dimensions to measure the presence and impacts of future consciousness in individuals.

The data includes futures consciousness psychometric profiles and interviews of 21 Finnish elite members: policy makers, executives from government ministries, city majors, heads of trade unions and other interest groups and businesses.

*Keywords: Futures consciousness, Future awareness, Future thinking, Futures literacy, Anticipation*

## THE HETEROGENEITY OF ACTORS AND THE MANY LEVELS OF ANALYSIS IN SOCIAL FUTURES

Wednesday 12<sup>th</sup> June, 13:45–15:30

Room: Move-Sali

Chair: Adjunct Professor Tuomas Kuhmonen

### Foresight to help prepare transformative R&I programmes: The case of FP9

**Matthias Weber**

AIT Austrian Institute of Technology, Austria

This paper focuses on the role of foresight for the development of transformative R&I programmes. It argues that intra- and inter-organisational foresight networks and processes are suitable means to help overcome cognitive, organisational and institutional barriers, and establish a common orientation for transformative policies that range from the supply side of research to the demand side of sectoral framework conditions and regulation. Ultimately, this should enhance the coherence between policies from different fields and levels.

In the context of the BOHEMIA foresight project in support of the preparation of the EU's next framework programme, a foresight methodology has been piloted, aiming to develop joint orientations for future policy across different areas, including both R&I policy and a range of sectoral policies. Conceptually, this process was guided by a transitions framework in order to develop possible future policy "missions". Policy mixes and agendas were formulated based on targeted scenarios in nineteen different areas of major significance for Europe at a time horizon of 2040.

The process was conducted in close cooperation with the EC's foresight correspondents' network. The work with this intra-EC network (within and across DGs) was complemented by external online (Delphi) consultations involving experts and stakeholders.

The experience of the foresight project in support of the EC's future R&I policy confirmed the potential of foresight as an intra- and inter-organisational instrument of policy coordination. Agreement was achieved on a range of candidate priority areas, but also on R&I agendas and requirements in sectoral policies.

*Keywords: FP 9, Horizon Europe, Intra-organisational foresight networks, Policy coordination*

### Radical technology inquirer. A tool for systematic, transparent and participatory anticipation of sociotechnical transformations

**Osmo Kuusi<sup>a</sup> & Maria Höyssä<sup>b</sup>**

<sup>a</sup>Aalto University and University of Turku, Finland

<sup>b</sup>Committee for the future of the Parliament of Finland, Finland

Radical Technology Inquirer (RTI) is a systematic, transparent and participatory tool for technology foresight. It is developed in the Committee for the Future of the Finnish Parliament especially for the anticipation of sociotechnical transformations (Linturi et al. 2013 and 2014, Linturi 2016, Linturi and Kuusi 2018). The systematic and transparency of the tool mean that you can step by step follow how future impacts of the 100 technology baskets are evaluated based on the 20 global value-producing networks. This means that starting from the used basic empirical material of about 1600 niche innovations you can in principle replicate the study.

The tool is participatory because the identification of the basic empirical material of promising technological breakthroughs or niche innovations is very much based on the suggestions of about 150 activists belonging to about 2700 e-followers of the tool. In the presentation, the tool that has already raised much interest is compared with other approaches and methods of participatory technology foresight.

Linturi, Risto, Kuusi Osmo, Alqvist, Toni (2014) Radical Technology Inquirer. Publication of the Committee for the future 11/2014, [https://www.eduskunta.fi/FI/tietoaeduskunnasta/julkaisut/Documents/tuvj\\_11+2014.pdf](https://www.eduskunta.fi/FI/tietoaeduskunnasta/julkaisut/Documents/tuvj_11+2014.pdf)

Linturi, Risto (2016) Technological Change 2013-2016, publication of the committee for the future 2/2016, [https://www.eduskunta.fi/FI/tietoaeduskunnasta/julkaisut/Documents/tuvj\\_2+2016.pdf](https://www.eduskunta.fi/FI/tietoaeduskunnasta/julkaisut/Documents/tuvj_2+2016.pdf)

Linturi, Risto and Osmo Kuusi (2018) Societal Transformation 2018-2037, 20 Regimes, 100 Radical Technologies, Committee for the future (English translation of the Finnish report published in 2018, forthcoming in December 2018)

*Keywords: Technology, Foresight, Transformation, Socio-technical, Regime*

## Co-creating scientific knowledge in an age of grand challenges: Connecting international Research Infrastructures

**Mikkel Stein Knudsen, Marianna B. Ferreira-Aulu & Jari Kaivo-oja**

Finland Futures Research Centre, University of Turku, Finland

The world is facing a number of societal grand challenges, distilled for example in the 17 Sustainable Development Goals (SDG) of the 2030 Agenda for Sustainable Development. From increasing health standards to securing sustainable energy systems, the international research community has an integral role in meeting the challenges. These achievements require scientific excellence, transdisciplinary research, innovation collaboration, and a global co-creation approach. Fostering collaboration between existing and future international Research Infrastructures (RIs) is a key enabling component for constructing this positive future. The concept of Research Infrastructures (RIs) covers large-scale facilities ('Big Science') and physical (or virtual) collaboration networks of a long-lasting nature. An essential defining feature of an RI is the provision of access for external scientific experts. By nature, RIs therefore promote inclusive and participatory approaches to scientific development.

The EU-funded Horizon 2020-project RISCAPE (European Research Infrastructures in the International Landscape) is mapping the international landscape of RIs. Researchers from 11 partner organisations across six countries collaborate to map global scientific facilities and create a single comprehensive report to the European Commission and other key stakeholders. The report covers research infrastructures in the fields of environment, biomedicine, physics and engineering, energy, astronomy, social sciences, cultural heritage, and e-infrastructure. Finland Futures Research Centre is responsible for the field of energy research.

The co-creation of scientific knowledge is RISCAPE's grand challenge, and several methodological approaches have been used to foster active participation from RIs around the globe. Not only the project's end result, but also its process is designed to strengthen co-creation networks for the international scientific community. This presentation highlights our research team's learning experiences from this process.

*Keywords: Co-Creation, Foresight, Research infrastructures, Sustainable Development Goals*

## Structural innovation through projects

**Peeter Vihma**

University of Helsinki, Finland

Project form is proliferating in tackling “wicked” problems because projects bring together multi-level and cross-sectoral actors who align their expertise for achieving a common goal. This so-called “projectification” is characteristic to public sphere which is increasingly relying on governance methods, to private sphere in the form of start-ups and to hybrid forms such as social innovation initiatives. Besides tackling a practical problem, it is relatively unclear what are results of this kind of short-term and task-oriented engagements to social institutions and organizations that nurture them. Yet it can be assumed that the long-term success of these efforts depends on this kind of structural changes. In order to advance knowledge in this field I am comparing the organizational, communication and power flows of projects to determine the links between short-term and long-term innovation. As data I am using innovation-oriented projects in Estonia in the fields of health and environment in public sector.

*Keywords: Innovation, Project form, Projectification, Environment, Health*

## SPECIAL SESSION: LINKING FUTURES STUDIES, SOCIAL THEORIES, AND METHODOLOGIES

**Wednesday 12<sup>th</sup> June, 13:45–15:30**

Room: Kino-Sali

Chair: Professor Toni Ahlqvist

Futures studies has been maturing and solidifying as a scientific field in the last few years or so. The field has its own tradition, and concomitant philosophies, theories, frameworks and methods. However, there are still plenty of opportunities for further deepening the linkages between futures studies and social sciences. Futures studies would have much to offer for social sciences and vice versa. Therefore, engaging in a deeper dialogue with so-called social theory, and related philosophies and approaches, would be beneficial for both the development of futures studies and social theories. In this session, we seek contributions that discuss the linkages between futures studies, social theories and societal methodologies from multiple perspectives. The contributions could address e.g. philosophical, theoretical and methodological perspectives. In addition, different kinds of theory-based empirical contributions and viewpoints from science and technology studies are welcome.

*Keywords: Futures studies, Social sciences, Social theory, Methodology, Philosophy*

## Future-oriented dialectics, socio-technical antagonisms, and radical technologies

**Toni Ahlqvist**

Finland Futures Research Centre, University of Turku, Finland

The paper discusses connections between futures studies, social theory and philosophy by contemplating a methodological framework of future-oriented dialectics. Here, dialectics can be understood as a heuristic in which the future issues are deciphered as paths that bifurcate into, at least, two parallel directions. This is the classic notion of thesis and antithesis, or, a dialectic of future path and “anti-path”. Thus, the starting point of future-oriented dialectics is to scrutinize issues through antagonisms and contradictions. The antagonisms can be generative or locking. Their tension could also be resolved, like in the classic case of synthesis. Firstly, I outline a theoretical perspective of future-oriented dialectics. Secondly, I discuss the notion of socio-technical antagonisms in the context of so-called radical emerging technologies. By applying selected theories of sociologist Pierre Bourdieu, I argue that when radical technologies are enacted at the societal level, they form fields with shared practical logic and common functionalities. Thus, fields are bundles of socio-technical antagonisms based on these functionalities. Thirdly, I present a selection of socio-technical antagonisms examined in a recent study made for The Committee for the Future, Parliament of Finland.

*Keywords: Futures studies, Future-oriented dialectics, Socio-technical, Antagonism, Contradiction, Radical technologies*

# Anticipating scored societies: Using future studies to explore and prototype the use of citizen scores and social credit systems

**Stuart Connor**

University of Wolverhampton, England

The aim of this paper is to examine the futures of scored societies. A scored society refers to projects that seek to use technology to monitor, collate and process data on people's behaviour to produce a citizen score or rank. The score or rank is then used to inform or determine access to goods and services within a social credit system.

Automated scoring systems are already in use, but to date have operated within particular domains and with a limited scope as to the purpose and type of data used (e.g. credit scores for loan agreements). Advances in a range of technologies has increased interest in anticipating the potential risks and opportunities of extending the use of citizen scores and social credit systems across multiple domains and for broader purposes.

The paper reports on the processes and results of a number of anticevents designed to develop, describe, experience and identify the conditions under which particular forms and functions of scored societies may be considered possible and desirable. The paper concludes with a reflection on how an examination of scored societies surfaces the contested anticipatory assumptions regarding the nature and role of agency within particular renderings and realisations of preferred futures.

*Keywords: Scenarios, Manoa, Incasting, Prototyping, Foresight*

## Performative participation in anticipatory spatial planning

**Ferry Van de Mosselaer**

Fontys ACI / Leuven University, The Netherlands

Policy frameworks in spatial planning increasingly advance participation as a prerequisite for anticipatory practice in terms of visioning, planning and programming. In these policy frameworks participation is overtly framed as an open concept. Open concepts create dialectical spaces that can be strategically used when understood as vague, providing ample room for contextual flexibility and anticipation. Adopting participation as an open concept makes these policy frameworks less normative and prescriptive, yet more performative in its steering capacity.

In this paper, I argue that in designing participatory processes more and critical attention should be paid to performative effects, that is how participation within a particular policy framework and context is shaped into practice and why so. In order to assess the performative effects of designing participatory processes it is pivotal to understand the political dimensions that shape such processes. The fields of design and foresight both operate in this dialectal space between meaning and action, between dependency and creation and between past and future. Over the last years these two fields are increasingly exploring common grounds, particularly around scenarios. I assert that further cross-fertilization between design and foresight can significantly contribute to this endeavour by focusing on design for meaning and sense-making and engaging people in anticipating possible futures in accessible, popular and persuasive ways.

*Keywords: Performativity, Governance, Anticipation, Participation, Design, Foresight*



## WORKSHOP: USING CRITIQUE AND UTOPIAS AS ANALYTIC STRATEGIES AND ACTIVISM; CREATING NEW SUSTAINABLE FUTURES? - A COMMON SENSE OF RESPONSIBILITY FOR SOCIAL CHANGE

**Wednesday 12<sup>th</sup> June, 13:45–15:30**

Room: Goto 33

**Facilitators:** Mette Bladt<sup>a</sup>, Frederik Aagaard Hagemann<sup>b</sup>, Janne Gleerup<sup>c</sup>, Jonas Egmos<sup>c</sup>, Signe Hvid Thingstrup<sup>d</sup>, Mia Husted<sup>d</sup> and Ditte Tofteng<sup>d</sup>

<sup>a</sup>University College Copenhagen, Denmark; <sup>b</sup>SLU Alnarp, Sweden; <sup>c</sup>Roskilde University, Denmark

<sup>d</sup>University College Copenhagen, Denmark

This workshop will present the core perspectives within the Critical Utopian Action Research (CUAR). Through theoretical presentation, methodological discussions and 'case story telling', we will illustrate how CUAR, can be a part of creating sustainable social futures, through participation.

Action research is a family of research approaches, philosophies of science, and methods which all share the view that research processes are connected to an action perspective or performative element. CUAR is a part of this family. CUAR emerged in Denmark and was inspired by a critical theoretical research tradition, a critical pedagogical research tradition, and a future oriented research tradition. CUAR underpins the notion of democracy and participatory social experiments. Springing from a critical theoretical tradition, the CUAR tradition brings critique and utopias into the research process both as a concrete way of working with actions in the projects and as a framework of understanding local and societal issues. When stressing critique and utopian ideas within participatory processes as the starting point, the CUAR tradition brings new input to the wider society of action research, insisting that transgressing change and new social futures can be created through a methodological dialogue between critical analysis and utopian thinking. In the workshop we will present the theoretical and normative approach within CUAR. After the more theoretical discussions the workshop will focus on illustrating different cases. Through pictures and 'case story telling' the 'real life utopian' perspectives will arise. Here we bring in experiences from the context of Scandinavian welfare planning, internationally representing a relatively strong institutional responsibility over public goods, currently challenged by increasing neoliberal cuts in public services. The cases presented will thus focus on different themes relevant to the conference theme, including: Eco friendly behaviour and sustainability, forms of agency for marginalized young people in suburban Copenhagen, institutional challenges in urban planning.

As an ending, we will invite the participants to reflect on how Action Research can be a part of changing societal structures in the future. For example: how can new forms of welfare organizations be developed to deal with the increasing complex problems we are facing – now and in the future?

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*Keywords: Critical Utopian Action Research, Sustainable welfare changes, Participatory research*

# SESSION II: WEDNESDAY 12<sup>TH</sup> JUNE, 16:00–17:30

## NEW FORMS OF PARTICIPATIVE DEMOCRACY AND THEIR CONSEQUENCES

**Wednesday 12<sup>th</sup> June, 16:00–17:30**

Room: Teatro-Sali

Chair: Professor Ted Fuller

### Governance scenarios for nation states: Options and context

**Meelis Kitsing<sup>a</sup> & Erik Terk<sup>b</sup>**

<sup>a</sup>Foresight Centre at Estonian Parliament, Estonia

<sup>b</sup>Tallinn University, Estonia

The capacity to set strategic goals and implement policy plays a fundamental role in governance of nation states as they adjust their economies and societies to future conditions and challenges. A more complex understanding of dynamics of various governance models in different contextual settings is needed for increasing this capacity.

Scenario planning offers opportunities to go beyond traditional debates, which often focus on the rise of global and local levels of governance in the future. It is also crucial to consider the level of national level by focusing on the balance between executive and legislative branches, the delegation of authority from national level to multinational as well as local levels in order to meet global challenges and adjust to changing circumstances.

We constructed five governance scenarios, which are based on three key drivers. The first driver is degree of centralization or decentralization. The second driver is budget constraint which can be strict or more relaxed. The third driver is decision-making process, which can be fast or analytical and calculative.

The scenario “Ad Hoc Governance” focuses some areas as priority while other areas are left behind because of government budget constraints. The scenario “Night-watchman State” is concerned about excessive government intervention. The scenario “Entrepreneurial State” is about using state for entrepreneurial purposes and enhancing government platforms globally by relying heavily on public-private collaboration. The scenario “Caretaker State” is about the massive use of policies in preventing the spread of social ills and intervention for benefit of citizens’ well-being. The scenario “Networked Governance” pictures decentralized public sector governance with high degree of involvement of different stakeholders.

*Keywords: Scenario planning, Foresight, Policy-making, Nation state, Public sector reforms*

## Deliberative anticipation

**Hanna-Kaisa Perna**

University of Vaasa, Finland

The paper discusses the interrelation of the theory of Deliberative Democracy (DD) and the Discipline of Anticipation (DoA) when addressing public policies. The arrangement conjoins the field of future studies and the contemporary administrative science discourse.

While acknowledging the pervasive concept of anticipation, covering all forms of thinking about and using the future in different sciences, DoA highlights “the conscious use of the future in the present” (Miller, Poli & Rossel 2013). DoA’s novel, “non-predictive purpose to thinking about the future” (ibid.) is to say the least, an uncommon attribute in futures studies. DoA changes the foci of futures research to the preferred futures effect on the present decisions, i.e. the motives, goals and values of the present operations (Poli 2017).

DD aspires the decision-making legitimacy by the deliberation of equal citizens. As a response to the growing discontent with the representational governance, the normative and empirical development of the theory addresses the increasing desiderata of public engagement beyond party politics and constituencies. The essence of DD theory directs attention to the processes of decision making and particularly inclusiveness, equality of the participants and the quality of argumentation.

The paper introduces the concept of anticipation and contemplates the advantages of deliberating the preferred future: deliberative anticipation is understood as a fertile soil to advance the multi discipline and participative, future oriented discussion to function as a foundation for governance and policymaking.

*Keywords: Anticipation, Deliberative democracy, Preferred future*

## The future of work in 2030: From report to participatory workshop

**Heather Russek, Jessica Thornton & Tara O'Neil**

Brookfield Institute for Innovation + Entrepreneurship, Canada

Canada lacks a holistic, detailed, and actionable forecast of in-demand skills. By applying a unique combination of mixed research methods - futures research, expert forecasts and machine learning algorithms - we are mapping how the labour market is likely to change in and around the year 2030. To expand this conversation beyond the predominant narrative focused on technological change and labour automation, the futures research incorporates an in depth horizon scan to identify broader trends impacting Canada’s labour market. This futures research will be the basis of workshops held in six Canadian locations throughout the spring of 2019. Workshops have been designed by layering multiple participatory methods, from a gallery walk to foresight game, to ensure participants can connect and engage with the horizon scan insights more deeply. Data captured from these workshops will be used to provide a skills forecast to Canadian policymakers, outlining the risks and opportunities faced by Canadian workers across skill sets, geographies, ages, incomes and other demographic characteristics, as well as to inform the design of education, training, and economic development policies and programs.

*Keywords: Horizon scanning, Foresight, Workshop, Participatory futures, Mixed methods, Technological change*

## CITIZEN SCIENCE, POWER, RESPONSIBILITY AND FORESIGHT

**Wednesday 12<sup>th</sup> June, 16:00–17:30**

Room: Move-Sali

Chair: Dr Burkhard Auffermann

### “Three Horizons” for community anticipation of flood risks

**Rocco Scolozzi & Roberto Poli**

University of Trento, Italy

As part of the LIFE FRANCA project (Flood Risk and Communication in the Alps, 2016-2019), in the Southern Alps (Italy), we have applied and adapted the "Three Horizons" paradigm, originally proposed by Bill Sharpe and Anthony Hodgson (2013, 2016), as a framework for conducting focus groups as well as for an extensive futures exercise with local communities. In short, the "three horizons" approach is a way to see and interpret changes, distinguishing between innovation and transformation, which facilitates the construction of collective meaning for different futures, the closer and the more distant ones. Each future (or horizon) has its own quality that implies different attitudes and “voices”: the concern for the present (H1), the aspirations for the more distant future (H3), the innovators and innovations of the transition phase (H2, between H1 and H3). We conducted 42 focus groups with different samples of local society (e.g. administrators, students, experts) about the community preparedness for the next possible flood events and the desirable “systems” for community anticipation. The results are at multiple level in terms of: helpful insights for the project objectives (concerning the key factors for the community-based anticipation of flood risks), and promising premises for communities to better perceive the risks and for a wider and shared understanding of their own responsibility in building desirable futures.

*Keywords: Resilient community, Participatory foresight, Natural hazards, Capacity building, Futures literacy, Anticipatory governance*

### Planning for Third Horizon futures: After the collapse

**Christopher Jones**

Walden University, United States

This presentation explores the challenges of our species survival during and after the coming [highly probable] Collapse of Western civilization and transition to a post-fossil fuel civilization a century or more from now. The presentation argues that futures studies must embrace a doom and gloom prospectus and not deny the prospect of a range of Collapse futures. I argue that we must collectively “prepare for the worst and hope for the best” because of: accelerated global warming, limits to complexity, and post-normal times phenomena, which will cumulatively result in widespread destruction, dislocation, and existential threats to human life. One task is to explore third horizon futures — to begin creating the myths and stories that can inform collective decision-making for a new paradigm, because, what is required to survive will require a radical paradigm shift. Preparing for the apocalypse is part of the solution, but also, beyond that, envisioning better futures. We must also envision a Recovery Plan for the post-apocalypse world. To survive post-normal times, we need survival plans for communities already fragmented (media, mobile society, consumerism). One model is to model "prepping" not just for individuals and families, but as a coherent post normal public policy strategy, to protect what is left of wilderness, redouble efforts to conserve genetic diversity, seed banks, and key ecological zones, and to rethink, re-create, and reimagine society after fossil fuels. The presentation ends with positive images

and reasons for hope, with suggestions for workshops and training for managers, leaders, individuals, and communities.

*Keywords: Sustainability, Collapse, Complexity, Accelerating climate change*

## The Future of Surveillance: A Critical Infrastructure Analysis of the 5th Generation Wireless Technology (5G)

**Sebastiao Teatini**

University of Oulu, Finland

In the coming years society will experience profound technological transformations that will likely impact every aspect of human life on this planet. The next step in this revolution will be in part propelled by the infrastructure of 5th generation of wireless technology (5G). This critical infrastructure of the 21st century will allow the Internet of Things (IoT) to come to fruition. In the next 5 years we will likely see the introduction of smart cities, smart grids, smart agriculture, smart vehicles and smart health care. These smart digital systems will be interconnected with billions of other devices worldwide and 5G will be a backbone that allows for enormous amounts of data to be transmitted reliably between them at hyper fast speeds. However, there are perils on the horizon. Developers and regulators are still pondering on how to better protect individual data privacy in the surging paradigm of surveillance capitalism, where the commoditization of personal information is a prevailing logic. This research consists of an analysis of the socio-political impact and possible consequences of the implementation and deployment of (5G) in Europe (for context purpose). The emphasis of this inquiry is on understanding how and to what degree the 5G infrastructure may facilitate the expansion of the seemingly ubiquitous globalized surveillance system and what bearings it could have on individual privacy rights. This sociological research follows in the tradition of and attempts to merge two emerging academic fields, surveillance studies and critical infrastructure studies.

*Keywords: Surveillance, Privacy, Technology, Infrastructure*

## Society in transition. Perspectives and consequences for civil-military relations and the armed forces in the future

**Chariklia Rothbart**

Bundeswehr Office for Defence Planning, Germany

Security is one of the essential basic human needs. Thus, security and the protection of citizens are crucial values of society and a key task of the Armed Forces in Germany.

In that context, the project presented at the conference attempts to take a closer look at possible future developments regarding polarization and radicalization amongst the German population and its implications for future civil-military relations and the Armed Forces as key provider of security.

The project intends to determine whether the current tendency of fragmentation of society is likely to continue in the future, resulting in the establishment of radical and populist groups or parties in the long term (trend analysis), and furthermore, to identify crucial causes for this trend (key factors). Based on that, possible future developments regarding the polarization and radicalization of social groups will be elaborated. Finally, consequences for future society (e.g. social cohesion and the stability of democracy) and potential effects on

civil-military relations, the acceptance of the Armed Forces as a security producer and the Armed Forces as part of society (e.g. recruitment, self-image and leadership culture, motivation, etc.) in the future will be discussed.

*Keywords: Society, Future, Polarization, Radicalisation, Armed Forces*

## SPECIFIC SOCIAL FUTURES (CASE STUDIES ON WELFARE, HUMAN RELATIONS, WORK, LIFESTYLES)

**Wednesday 12<sup>th</sup> June, 16:00–17:30**

Room: Logi-Sali 2

Chair: Professor Máiréad Nic Craith

## Designing future experiences of the everyday

**Claudia Garduño García & Idil Gaziulusoy**

School of Arts, Design and Architecture, Aalto University, Finland

It is unfortunate that human-caused climate change is still being doubted by some, as it is critical now that we direct all our efforts at transitions to post-carbon and sustainable futures. Currently, transitions are mostly handled by select expert groups who generate transition visions, scenarios and pathways, feed their findings into policy-making processes, thereby locking-in “futures” on behalf of the wider public. Scholars from a variety of disciplinary backgrounds are searching for more effective means through which more people could effectively comprehend and actively take part in futuring processes. Experiential futures is an emerging field that connects experience design and futures studies. Experiential scenarios aim to create real memories of virtual events so that alternative futures can be understood and deliberated better by publics. This article presents a review of different disciplinary fields (including speculative design, literature studies, and psychology) to explore the means by which the everyday in futures could be virtually or vicariously experienced, aiming to contribute into the theoretical and methodological base of experiential futures. Our findings suggest that, people’s ability for being immersed into a story is positively correlated with their empathic capacity. Immersion seems to be most successfully achieved when the experience shares some level of familiarity with people’s everyday reality and when the narrative is logically convincing. In addition, our findings indicate that avid fiction readers are more easily immersed in alternative scenarios than those who are not. Our findings have significant implications for designing future experiences of the everyday, therefore, on theory and methods of sustainability transitions.

*Keywords: Experiential futures, Sustainability transitions, Everyday experience, Immersion, Design for sustainability, Embodied futures*

## Craft in constructing social futures 2050

**Päivi Fernström<sup>a</sup>, Riikka Räisänen<sup>a</sup> & Ana Nuutinen<sup>b</sup>**

<sup>a</sup>University of Helsinki, Finland

<sup>b</sup>University of Lapland, Rovaniemi, Finland

Our presentation looks at alternative roles craft could have in future lifestyles. Previously craft skills were needed to cope with practical activities in life. Recent research shows that crafting enhances abstract thinking, multi-dimensional conceptualization and proficiency of ruling completeness, and it has importance in creativity, recreation and renewal. Craft has also been shown to improve individual's subjective well-being and quality of life. As digitalization increases craft has value in creating social networks and enhancing cultural and social significance and raising consumers to take sustainability into consideration.

Changes in social and working-life cause pressure on craft and calls for changes in its determinations and manifestations. We aim to focus on what is the role of craft in training the skills, values and attitudes needed to create sustainable social impact. How is craft related to social change and work competences? What is the role of craft in creative economy that challenges ideas about ownership, co-creation, joint production and ethics?

To create a versatile picture of future craft we use Delphi research methodology. Data, i.e. information and opinions of the future of craft and handwork, are gathered by qualitative and quantitative means. Snowball sampling across the Scandinavian countries is in target. The aim is to reach informants from different backgrounds, e.g. craft educational and subject professionals, entrepreneurs, craft enthusiasts and hobbyists. The findings of the study would provide an overview of craft in 2050, its roles in future lifestyles and possibilities in constructing social futures.

*Keywords: Crafting, Craft skill, Delphi, Future lifestyle, Scandinavia*

## Participatory art as a dialogic tool for constructing social futures: A case study on negotiating the Canadian Complexity for the Confederation's Sesquicentennial (Canada 150)

**Hallie Siegel**

Strategic Foresight and Innovation Lab (sLab), OCAD University, Canada

Given its ubiquity, it is hard to see text as the disruptive technology it once was. My collaborative art practice takes a long view of the written form, offering up a speculative post-literate future that evokes the decay of modernity while suggesting repurposing, transformation and renewal. Created by the Canada Council for the Arts to commemorate the 150<sup>th</sup> anniversary of Canadian Confederation, our exhibition explores – and hopes to transcend – the dark side of the printed word as an institutional mechanism for cultural erasure.

The installation consists of 707,349 letters representing every single character from Hugh MacLennan's 1945 novel *Two Solitudes*, a CanLit classic hailed as the first novel to explore the dual Canadian identity. Designed to be walked on, touched and rearranged, the artwork asks us to reinterpret *Two Solitudes* in a contemporary context that is at once personal and political: to redefine for ourselves what it means to be Canadian today. In keeping with the poem that MacLennan inscribed in his opening pages – "Love consists in this: that two solitudes protect and touch and greet each other" – the work also asks us to listen, hold space for, and acknowledge what "being Canadian" means to others, whether or not this is hopeful, uncomfortable, or painful. In so doing, it attempts to negotiate the tension between Canadian \*nationalist\* identity, as it has been narrated by Canadian cultural institutions, and Canadian \*national\* identity, as it emerges collectively among individuals and cultural communities living within this nation's borders. <http://donovansiegel.com/>

*Keywords: National identity, Experiential futures, Socially constructed futures, Negotiated futures, Canadian identity*

## FORESIGHT ACTIVITIES AND THEIR EFFECT ON SUSTAINABILITY TRANSITIONS

Wednesday 12<sup>th</sup> June, 16:00–17:30

Room: Goto 31

Chair: Dr Jarmo Vehmas

### The role of energy prosumers in the transition of the Finnish energy system towards 100% renewable energy by 2050

**Michael Child, Dmitrii Bogdanov & Christian Breyer**  
Lappeenranta University of Technology LUT, Finland

Several studies exist that show the increasing economic, social and environmental attractiveness of 100% renewable energy systems globally. In the Finnish context, a transition towards sustainability in the power system has been identified, but information is lacking related to the heat and transport sectors. In order to both retain a competitive industrial sector and meet the needs of a future society, such a broader transition needs to be mapped. This will also enable further discourse on energy related issues at a national level. Of interest is the potential role of energy prosumers in the transition, and the degree to which energy generation will be distributed. Results suggest that other options for Finland, such as nuclear power and carbon capture and storage (CCS), are more expensive and risky. In addition, low carbon options will not be enough to achieve the net zero emission target of the Paris Agreement. The transition away from fossil fuels will need to be unmitigated. The role of citizens in a successful transition can be significant on several fronts. Individuals and groups can become prosumers of energy, motivated not only by a desire to contribute to climate action, but by making choices for lower cost, sustainable energy. Collectively, society can increase a sense of agency through lower exposure to risks that could create a trajectory that would be difficult to deviate from. This is one of several studies indicating that 100% renewable energy systems will be resilient, low cost and low risk options for the future.

*Keywords: Energy transition, Renewable energy, Sustainability, Power-to-X, Energy storage, Prosumers*

### Application of foresight methods in the research of a disruptive geothermal technology (CHPM)

**Tamás Miklovicz, Marco K. Martins & Bodo Balazs**  
La Palma Research Centre, Spain

CHPM is a potentially disruptive geothermal technology for Combined Heat Power and Metal extraction, researched by CHPM2030 project (Horizon 2020). The technology contributes to the sustainability transition, providing geothermal power and heat, and mineral raw materials. CHPM technology is at low-TRL and needs forward-looking efforts. These are undertaken on three interlinked areas: 1) mapping convergent technology areas, 2) studying pilot areas, 3) developing research roadmaps.

The first theme implements Horizon Scanning, Delphi survey, Visioning. Horizon Scanning provided the present technological baseline, with an expert workshop on mapping key interest areas and gap analysis. The results have been formulated into 12 Delphi statements covering various aspects of the technology. The 2-round Delphi provided more pieces of the puzzle of what the future may be at key interest areas. The next step was the visioning workshop. The participants picked up key topics identified through horizon scanning and the Delphi survey were explored to define preferred targets for two time frames to enable the technology



implementation at TRL6-7 by 2030, and TRL8-9 by 2050. The sum of the targets is the Vision that describes what is the desired destination in the future. The second theme is the investigation of 4 pilot areas with the addition of an EU outlook, where the technology may be developed by 2030 at a pilot scale. The two roadmaps (2030 for early application, 2050 for breakthrough research) describe how to get to the desired future destination (Vision), through emerging issues (Delphi) from the technology baseline of today (HS).

*Keywords: Geothermal, Mining, Delphi survey, Vision, Roadmapping, Horizon scanning*

## Frames and futures in the Dutch energy transition

**Sietske Veenman**

Radboud University, The Netherlands

Considering futures as being scripted in the present (Brown, 2003), is a widely acknowledged thought; we are in the dynamic process of ‘making futures’ (Mannermaa, 1988). This research explicitly conceptualizes futures in framing to enable to analyse ‘the different futures are lurking in the present’ (Dinerstein, 2017, p.7). Frames are both built up out of expected futures and, in turn, shape futures: expected trends form the backbone of a frame, while at the same time frames legitimize and support specific actions. By seeing different frames various futures can be identified, which helps to be more explicit about futures.

Somewhat oddly, the future aspect of framing has, conceptually, received limited attention (Gerhards and Rucht 1992, p. 582) in both research strands. In framing literature, any attention that has been given to futures, is only sideways relevant (see for example Kahneman & Tversky, 1979; Rein, 1983). From the futures perspective, the connection between frames and futures is mentioned (Groves, 2017; Martin, 2016), yet not systematically examined.

As a case study for the framing future analysis, the Dutch energy transition is analyzed from a grassroots perspective. The hybrid character of the energy transition shows both explicit futures that play a role, as well as implicit futures are present in all sort of practices. The outcome will be a detailed picture of ‘master frames’ underpinning explicit futures, and alternative frames referring to implicit futures, and how these are linked to types of sources (eg from formal policy documents to grassroots pamphlets), stakeholders and trends.

*Keywords: Futures, Frames, Energy transition, Framing analysis*

## A prospective study of biogas in Germany in the Energy Systems of 2050 – A way to cope with complexity

**Martin Rojas**

Helmholtz Centre for Environmental Research, Germany

I propose Strategic Foresight (prospective study) as a tool to study the future of biogas a complex system (Godet & Durance, 2009). Complexity theorists Naseen Taleb advocates for a „black swan robust society” and Jhon Casti advocates for reducing the complexity mismatch of society and its problems as a way to cope with “X-Events” (Casti, 2012; Taleb, 2007). Based on that, I argue that complex systems, like biogas, should become complex adaptive systems by design. To wrap one's brain around the how to do that, I propose the Strategic Foresight methodology (prospective study) as a way to foresee the preconditions which trigger those X-Events. And possibly even bias those preconditions. At the same time, a prospective study is the zero, and necessary, step for a strategy towards a desired future of a complex system.

*Keywords: Prospective, Biogas, Complexity, Systems, X-Events, Strategic foresight*

## COMBINING CORPORATE FORESIGHT WITH CORPORATE SOCIAL RESPONSIBILITY

**Wednesday 12<sup>th</sup> June, 16:00–17:30**

Room: Goto 32

Chair: Dr Jari Kaivo-oja

### Corporate Foresight and the agile enterprise

**Christoph K. Keller**

Aveniture GmbH, Germany

Of the three types of futures: predictable, possible to anticipate, impossible to anticipate (emergent), as expressed by the VUCA-concept, the third, emergent type of futures is on the rise. Confronted with an unstable, unpredictable, chaotic environment, corporate agency is expected to originate from agility (rapid adaption) rather than foresight (i.e. anticipation).

Therefore, work, the workplace, and the enterprise are being remodelled and transformed with agile approaches (e.g. design thinking, SCRUM, personal Kanban, Lean Startup to name just a few). The digital transformation adds means (platforms), reach and speed to this development.

Based on recent research on agile methods and anticipatory systems as well as out of conceptual considerations, the paper explores how the value propositions of 'agile' and 'foresight' compete as well as complement each other from the perspective of the (mostly corporate) users. A framework for substitution, co-existence, and mutual integration of agility and foresight is presented.

The Author then discusses implications for corporate foresight, innovation and technology management, and teaching foresight to master students in the context of the digital transformation.

*Keywords: Agile, Corporate foresight, Technology management, Foresight education*

### The role of business executives' values in shaping organisation's long-term strategy

**Jan Klakurka<sup>a</sup> & Candice C. Chow<sup>b</sup>**

<sup>a</sup>Huron College University, University of Western Ontario, Canada

<sup>b</sup>Elevae (Strategic Advisory and Management Development Co.), Canada

Personal values of senior executives can yield significant influence on organisational strategies, per Strategic Leadership Theory (Cannella et al., 2008). In our global context, we face unprecedented humanitarian and environmental crises. The role of personal values in businesses can take a more prominent position of influence beyond internal business decisions, to drive strategic direction in multi-sector collaborative environments that address ever-more complex societal challenges. As Slaughter (2012) suggests, addressing such challenges requires "advanced values", while Institutional Theory argues the significance of leaders' impact is influenced by myriad constraints outside leaders' discretion; something Structuration Theory (Giddens, 1984) and volition argue against. Different value orientations and leader personality traits appear to influence executives' ability to drive change, yet "shifts in core values...on the part of many more people" (Slaughter, 2012 pp.429:2) can be seen as precursors to conceptualisation of solutions to global challenges.

Moreover, as institutions armed with diverse resources, businesses carry influencing power in shaping future responses to global issues.

This study examines the role of executives' values in shaping desired futures through strategic foresight and sustainability practices. Employing Vecchiato and Roveda's (2010) definition of strategic foresight as strategic actions of organisational learning obtained by the practice of looking into the futures, this paper adopts an interpretive case study approach, unpacking executives' values, foresight practice and their adoption of sustainable practices. It seeks to increase understanding of the importance of values development and foresight practice awareness at individual, institutional and societal levels in pursuit of robust images of the future.

*Keywords: Strategic foresight, Strategic leadership, Values; Executives, Strategy*

## 'Knowledge of the future' in health and wellness business

**Anu Haapala**

South-Eastern Finland University of Applied Sciences, Finland

The paper describes how the views of future of health and wellbeing are seen in the business of health and wellness. The importance of anticipation has increased and it is essential for productive and successful business. Also the meaning of wellbeing, happiness and good life have been individualized and personalized. However, the services should be targeted to the needs and expectations of the customer.

When utilizing futures literacy for developing business, conscious human anticipatory assumptions include choices about what kind of future to anticipate and which methods to use to think about a particular kind of future. Research into anticipatory assumptions can be undertaken in many different ways across many different fields, for example the creative economy (Henry and Bruin, 2011). The role of 'knowledge of the future' and the ability of using it, is essential. The ability called 'futures literacy' is defined as a framework for analyzing different aspects of future and utilizing them for developing business. According to Miller (2018) the Futures Literacy Framework (FLF) delivers a clear analytical approach to defining what a futures literate person is able to do. In the paper, the knowledge of the future is seen as assumptions and as a belief structure, which is related to the decision making. Knowledge of the future will be analyzed in the framework of social learning and utilizing the theory of reasoned action (TRA) and planned behavior (Fishbein and Ajzen 1975; Ajzen 2012). The research interest lies in the questions as:

- What is 'the knowledge of the future' of health and wellness like: how health and wellness are seen and described in that business?
- What kind of characters of futures literature do Finnish executive officers have in the health and well-being business and how can they use futures literacy as an ability for promoting their business?

The paper focused on Finnish micro (number of employees less than ten) and small health and well-being entrepreneurship (number of employees more than ten, but less than 50). The data has collected by using interviews. The method of argument analysis will be used for presenting some recommendations for future oriented entrepreneurship in health and wellness business.

*Keywords: Wellbeing, Futures literature, Health business*

# The future of pharma: Technology, policy and business

**Anna Karhu**

University of Turku, Finland

Global pharmaceutical industry is facing multiple pressures from its operation environment ranging from governments tightening budgets to expiring of important patents in key markets of North America, Europe and Japan as well as need for further innovations and breakthroughs in drug development with shorter time span and lower costs (Malberda & Orsenigo, 2015; Smith, 2011; Williams, Martin & Gae, 2011).

There seems to be a consensus about how the industry has developed to what it is today, but the future seems to hold plenty of promise, but no clear direction. Previous studies have identified a cycle of 40 years for new phase to emerge within pharmaceutical industry (Hansén, 1981). These phases of industrial pharmaceutical production begin from the late 19th century when the industrialization moved pharmaceutical manufacturing from pharmacies to industrial production companies (Smith, 2011; Hansén, 1981). The next phase of “golden age” witnessed a boom of antibiotics taking place after World War II (Hansén, 1981). The skyrocketing growth of medical products ended at the beginning of 1960s by the changes triggered by the Thalidomide incident. Phase of “drug lag” emerged with tightening regulations and government control delaying innovation processes (Hansén, 1981). Next emerged new technological developments of DNA technology, immunology, molecular biology, and drug delivery systems in 1980s (Hansén, 1981). The 40 years cycle of change has now passed and right now a new cycle is emerging.

This paper explores the future of pharma by identifying current developments in physiology and medicine, taking into consideration the burden of government control, and the development of healthcare demands (Inavatullah, 2008).

*Keywords: Pharmaceutical industry, Policy development, Technological development, Business model development*

## ADVANCES IN METHODS IN FUTURES STUDIES

**Wednesday 12<sup>th</sup> June, 16:00–17:30**

Room: Logi-Sali 1

Chair: Dr Juha Kaskinen

## Holistic approach to identifying and quantifying community emissions and energy shifts to mitigate rebound

**Susan Byrne, Bernadette O'Regan & Rosemary Byrne**

University of Limerick, Ireland

Greenhouse gas emissions from agriculture, transport, residential, commerce, industry and waste sectors are expanding faster than economic recovery. This presents a situation whereby Ireland is on course to exceed its legally binding 2020 carbon budget by 12-14Mts carbon. Current policy measures account for just 4%-6% of agreed reductions, forcing Ireland to buy carbon credits from European countries, costing the Irish tax payer millions of euro. To assist Ireland in meeting its carbon reduction commitments, new and innovative measures

are needed to address the growing challenges. Rural communities have a significant role to play in low carbon transitioning.

Many of the proposed solutions centre on renewables and energy efficiency with immense strides forward necessary in these areas. In creating a more energy efficient society a secondary set of challenges become evident. A household that achieves a high level of energy efficiency, and adopts low carbon transportation technologies may find itself with increased consumer spending power. Where, and how, this newly available income is invested or spent will have a significant effect on carbon emissions. At a local and residential level, there is the possibility that any carbon reductions achieved through current policy measures could be negated and possibly increased. To address rebound effects a holistic approach is required, one that measures and monitors a comprehensive suite of relevant indicators. By providing the tools necessary to quantify emissions from residential sources, energy shifts can be identified and mitigated.

*Keywords: Rural communities, Rebound, Holistic approach, Energy shifts*

## Sustainable future for biodiesel in Brazil: Perspectives for 2030

**Maria Amelia Dias, Joao Vianna and Claus Felby**

University of Brasilia, Brazil

This work aimed to study alternatives to biodiesel industry in Brazil, for 2030, taking in account the sustainability dimensions. Therefore, it was necessary to develop a cross-disciplinary research, since sustainability requires a long run vision and a comprehensive approach. A methodological discussion was also necessary to include sustainable dimensions on the scenario methods. Therefore, the environment, economics, technology, social, territorial, national and international institutional, cultural and political aspects were considered to identify the driving forces to develop the scenario storylines. This proposition was tested in an in-depth interview with the biodiesel market stakeholders.

The storylines for the biodiesel industry in Brazil, for 2030 are: a) Business as usual (BAU) - considering the continuation of the current industry dynamics; b) Step-by-step (SBS), bringing sustainability to environmental gains, social and regional integration. It is based on environment conservation and better use of degraded and marginal lands; c) Abundance (ABC) that takes advantage of technological breakthrough added to environmental and regional bias on the biodiesel production; and d) Scarcity (SCR) - representing a deterioration of the current situation, with little environmental care, without recovering of degraded lands, and few technological advances in biodiesel production.

A Delphi survey assessed the coherency and plausibility of the scenarios. ABC scenario – was evaluated as more coherent and plausible than the SCR scenario. It may suggest that it is easier to believe in a technological breakthrough than the climate change consequences.

*Keywords: Biodiesel in Brazil, Renewable energy, Biodiesel scenarios*

## Sustainable futures of women in agriculture sector of India

**Kamble Gautam**

Solapur University, Solapur (Maharashtra), India

This paper examines transformative changes in women's status and position in the agriculture sector that is integral part for their economic empowerment. The present study is undertaken the context of Indian agriculture sector and intends to sustainable future for women in agriculture sector. This paper focus on

women working in agriculture and have three main objectives to move forward with this. 1. To identify Sustainable Futures of Women in development process of Agriculture Sector in India. 2. To study challenges and opportunities of women in Agriculture sector in India. 3. To comprehend probable scenario for sustainable future of women in agriculture sector. The issues of women in agriculture sector and their sustainable future considering PESTEC analytic approach and the analysis has been made to explore the challenges and futures opportunities for them.

In developing countries like India, agriculture sector employ female work force but not give them recognition of employed labour and large number of women have remained as invisible workers. Efforts were made to systematically data analyse of the trend of women participation in Agriculture Sector and present probable scenario for their sustainable future, self-development, reduce discrimination and empowerment. Findings of the analysis identify challenges and opportunity for women in agriculture. Implementation of various policies and initiatives taken by government is improves situation and help to empower them for sustainable future. From this study it can be concluded the facts that women participation in agriculture is increasing with time and women are now acknowledged status and sustain it in agriculture Sector.

*Keywords: Gender discrimination, Women empowerment, Sustainable futures, PESTEC approach*

## Participatory foresight in rural area development

**Antti Rajala & Hanna-Leena Pesonen**

Regional Council of Lapland, Finland

Regional council of Lapland is creating a new Rural Development Program. Rural Cluster communication - project is responsible for creating this program and Future from Lapland – foresight in the new region -project is assisting in the future aspect.

As the part of the future centric view, a scenario work is used to create different images of the future – picturing rural Lapland in the year 2030. From the beginning participatory aspect has been important and the idea is to continue engaging participation even after the actual foresight work, in a form of municipality rounds.

Participatory methods used in the actual foresight work – in addition to scenario creation two foresight methods have been implemented. These methods have been used to create bases for variables used in the scenario workshop.

First, Delphi method which involves 42 rural area experts from 25 different organizations and 6 survey creators. Our purpose was to map those topics that experts consider important in rural development.

Second, Timeout method which is a dialogue based tool created by Sitra. In our process we used the tool to participate people who actually live in the rural village areas. We executed four different dialogue events in different towns where we invited people with different backgrounds, who usually do not take part in development processes.

In our disposal we have results that may be considered conclusions derived from combination of these methods. Therefore, we have created predictions that do not solely come from expert based sources but also directly from the village people.

*Keywords: Rural development, Delphi method, Timeout method, Participation, Foresight, Scenarios*

## PANEL: 'WHAT ARE SOCIAL FUTURES? THE VIEW FROM LANCASTER'

**Wednesday 12<sup>th</sup> June, 16:00–17:30**

Room: Kino-Sali

**Facilitators:** Carlos López Galviz, Emily Spiers, and Nicola Spurling  
Institute for Social Futures, Lancaster University, United Kingdom

The late John Urry (2016: 120) concluded his last book, *What is the Future?*, by saying that 'Thinking through futures highlights something not clearly articulated in much social science which is how power is a matter of future-making.' By reflecting on the ongoing work of the Institute for Social Futures, of which Urry was co-founder, this panel will explore the different ways in which we have taken his call further in two ways. First, it will provide a brief outline of the forthcoming Routledge International Handbook of Social Futures (2020). Second, the panel will give three in-depth illustrations, which focus on how our individual research is shaping what social futures mean to us.

1. 'Creative Futures', Emily Spiers. This paper explores the theoretical underpinnings of 'creative futures' methods as a tool for unlocking social futures, providing examples of work undertaken with partners over the last two years.
2. 'Inverted Mobility Futures', Nicola Spurling. This paper challenges the presumption that smart urban transportation will result in green, people-friendly future places by inverting mobility futures, to look at dormant rather than flowing vehicles, and exploring their implications for people and place.
3. 'Past Urban Futures', Carlos López Galviz. Focusing on Urban Europe 2000, a project sponsored by the European Cultural Foundation (1973-75), this paper will discuss why and in what ways history and historical context are essential to envision urban futures.

*Keywords: Creativity, Mobilities, Past futures, Urban, Interdisciplinarity*

## SPECIAL SESSION: BECOMING FUTURE-ORIENTED IN THE AGE OF DIGITALISATION

**Wednesday 12<sup>th</sup> June, 16:00–17:30**

Room: Goto 33

**Facilitators:** Stefanie Ollenburg<sup>a</sup>, Miriam Chrosch<sup>a</sup>, Anna Kononiuk<sup>b</sup> & Alicja Gudanowska<sup>b</sup>

<sup>a</sup>Freie Universitaet Berlin, Institut Futur, Germany

<sup>b</sup>Bialystok University of Technology-BUT, Poland

The project beFORE – “Becoming Future-ORiented Entrepreneurs in universities and companies” (futureoriented.eu) – has the aim to encourage future-oriented entrepreneurship. Therefore, the consortium of university and business partners has examined relevant competences related to Futures Studies and Foresight practice that are needed to setup an e-Learning platform to enhance higher education offers in entrepreneurship and related disciplines. The hypothesis is that an education of *Futures Literate Individuals* will support the forming of a farsighted, future-oriented, and sustainable society.

In this session we will start with an overview of the beFORE project’s research design, methodology, and first results followed by the one-hour workshop. The latter brings together the concepts of alternative futures with the creativity inherent in design thinking. Using the topic of the sustainable development goal of “quality education” in the workshop participants are encouraged to experience other perspectives than one’s own: There will be at least two teams of four to five persons. The objectives are to (a) explore and experience a non-familiar point of view (b) envision another person’s desirable and undesirable futures and (c) explore another team’s narrative through role-swapping. The goal of the workshop is to establish an understanding of how every point of view will influence the perception and attitude on the present, their reality and their plans for a future.

### **Session overview:**

1. The road to prototyping an online course in futures literacy for students, academics and entrepreneurs (15 min)
2. The methodology of the identification and the evaluation of key competences of future-oriented entrepreneurs in the beFORE project (15 min)
3. Using the sustainable development goal of “quality education” anticipate insights and understanding multiple perspectives to become future-oriented (60 min)

## The road to prototyping an online course in futures literacy for students, academics and entrepreneurs

**Anna Sacio-Szymanska<sup>a</sup>, Anna Pajak<sup>a</sup>, Anna Kononiuk<sup>b</sup>, Alicja Gudanowska<sup>b</sup>, Stefanie Ollenburg<sup>c</sup>, Leonello Trivelli<sup>d</sup>, Gualtiero Fantoni<sup>d</sup>, Oihana Hernaez<sup>e</sup> & Ibon Zugasti<sup>e</sup>**

<sup>a</sup>Institute for Sustainable Technologies-National Research Institute (ITeE-PIB), Poland

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<sup>d</sup>University of Pisa, Italy

<sup>e</sup>Prospektiker, Spain

Further development of the international, digital knowledge economy and advancements in technology will surely trigger and sustain enormous learning imperative for all. These advancements can either solve global challenges of humanity or escalate them. We hypothesize that, a more future-oriented entrepreneurship education could become the solution for building sustainable societies.

The questions that arise are:



- What competences would help academics, entrepreneurs and students of various educational backgrounds to build sustainable futures?
- What topics and didactical methods can convey such competences and abstract concepts to these target groups?

We are answering these questions within the on-going Erasmus+ project: “Becoming Future-Oriented Entrepreneurs in universities and companies – beFORE” (futureoriented.eu).

In the paper we are providing insights from the research and implementation phases of the project (focusing on the results of the online survey) to challenge present assumptions on how and by whom university curricula in the fields of futures studies and entrepreneurship are being set. By bringing together academic and business partners to actively shape the teaching offer, and by inviting learners and associated professional networks of scientists and practitioners to guide the work and validate the interim results, we strive to make our project an example of how to design and develop an educational offer for public universities.

With the expected outcome of the project, which concern the development and release of an online course in Foresight and Futures Studies (to become Futures Literate individuals) – and piloting it in four European universities – we wish to set a good educational practice example that will guide our community and allows other disciplines to absorb our methods, toolkits and – most of all – mindset and competences.

*Keywords: Future-orientation, Competences, Entrepreneurship, Curriculum, Sustainability, E-learning*

## The methodology of the identification and the evaluation of key competences of future-oriented entrepreneurs in the beFORE project

**Anna Kononiuk<sup>a</sup>, Alicja Gudanowska<sup>a</sup>, Andrzej Magruk<sup>a</sup>, Anna Sacio-Szymańska<sup>b</sup>, Stefanie Ollenburg<sup>c</sup> & Leonello Trivelli<sup>d</sup>**

<sup>a</sup>Bialystok University of Technology, Poland

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The objective of the paper is to present the methodology of identifying and evaluating the key competences of future-oriented entrepreneurs applied in the Erasmus+ project: “beFORE – becoming Future-Oriented Entrepreneurs in universities and companies” (futureoriented.eu). The project brings together academia, research, VET and business partners to develop and release an original educational offer, which would nurture *Futures Literate Individuals* and promote their capacity in dealing with unknown future challenges.

The analysis carried out by project partners within the scope of reviewing global and domestic literature, higher education offers, commercial foresight courses as well as business practices, allowed to identify over 1600 competences and items relevant for future-oriented entrepreneurs. The huge amount of competences, their heterogeneity, and the different levels of granularity presented a major challenge for the following analysis.

Therefore, in the next steps of the research process the competences were subject to an extensive analysis. They were clustered and evaluated in terms of their importance for future-oriented entrepreneurs by obtaining comments from internal and external experts. Further data mining work, competence mapping, and a comparison with competences identified in the O\*NET were carried out, which all resulted in a final list of 12 competences.

The comprehensive methodology that is presented in the paper allowed the consortium to generate a set of competences that was further examined by respondents in the needs-analysis survey. It will guide the development of the online courses on Foresight and Futures Studies for the main target groups in the project – university students, academics in research, and entrepreneurs.

*Keywords: Future-orientation, Entrepreneurship education, State-of-the-art analysis, Data mining, Competences, Foresight, Future challenges*

## Workshop: Exploring the perspectives of futures – how Futures Literacy meets Design(erly) Thinking

**Stefanie Ollenburg<sup>a</sup>, Anna Sacio-Szymańska<sup>b</sup>, Monika Tkacz<sup>c</sup>, Anna Kononiuk<sup>d</sup>, Alicja Gudanowska<sup>d</sup>**

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<sup>c</sup>Mondragon Innovation & Knowledge Research Centre, Mondragon University, Spain

<sup>d</sup>Bialystok University of Technology-BUT, Poland

The Erasmus+ project “beFORE – becoming Future-ORiented Entrepreneurs in universities and companies” follows the question on how to transform higher educational offers as well as business practice to improve the capacity of students, academics, and entrepreneurs to deal with future challenges with the focus on managing organizations and developing innovations. With an online educational offer, the international consortium of research institutes, universities, and business partners aims to generate *Futures literate individuals*. The papers will explore how in the research process a user-centric design process (design thinking) was integrated and lead to the development of a unique workshop format.

To generate relevant content a user-centric approach was setup: a state-of-the-art analysis of international literature and educational offers was followed by a target group needs-analysis survey. The results of the latter uncovered the similarities among the three groups. Therefore, as an extension of the survey results and to prepare for the next step of implementation, a design thinking workshop was facilitated for the partnership to explore the unique learning needs of the users. The tool generated insights and a better understanding of the different target groups. The results aided when structuring the educational offer and deciding on relevant content. In addition, it initiated the development of a workshop format where design thinking and the concept of futures were fused.

The workshop format is based on the user-centric approach in the design process and the aspect of reframing in the concept of Futures Literacy. Its primary objective is that participants understand and experience different perspectives on a certain topic and when dealing with future challenges. The workshop has the potential to become an effective tool for strategic foresight as well as in participatory futures research designs.

*Keywords: Future-orientation, Entrepreneurship, Design-thinking, Sustainable development, Higher education, Alternative perspectives, E-learning, Workshop*

# SESSION III: THURSDAY 13<sup>TH</sup> JUNE, 9:00–10:30

## NEW FORMS OF PARTICIPATIVE DEMOCRACY AND THEIR CONSEQUENCES

**Thursday 13<sup>th</sup> June, 9:00–10:30**

Room: Teatro-Sali

Chair: Dr Jarmo Vehmas

### Makers of sustainable society? Critical notes on the responsabilization of youth in the sustainable development and climate change discourse

**Tiina Rättilä<sup>a</sup>, Irmeli Mustalahti<sup>b</sup> & Matti Pihlajamaa<sup>c</sup>**

<sup>a</sup>Faculty of Social Sciences, Tampere University, Finland

<sup>b</sup>Institute for Natural Resources, Environment and Society, University of Eastern Finland, Finland

<sup>c</sup>Faculty of Management and Business, Tampere

Our paper addresses critically the role positioned for youth in the political discourse around Sustainable Development (SD) and Climate Change (CC). In the discourse young people are typically represented as ‘agents of change’, ensuring a world fit for future generations (e.g. UN report to the Secretary General 2017). This narrative, in which youth are ‘responsibilized’ for achieving the SD 2030 goals and preventing CC, appears in a number of recent years’ official strategic and policy programs, including those initiated within the UN framework and the Finnish government (e.g. Futures report 2013), as well as in the multidisciplinary research on youth participation related to SD and CC themes. The discourse is premised, in part, on problematical assumptions and claims about youth which we discuss in the paper. Our central questions are, where does the SD and CC discourse position youth in terms of agency and citizenship, and to what extent it takes into account youth’s own capabilities in addressing SD and CC (or marginalizes them). Our data includes several high profile UN and Finnish government’s policy documents which are analysed through critical discourse analysis and narrative analysis.

*Keywords: Sustainable development, Climate change, Responsibilization, Youth, Participation, Biosociety*

### Public involvement methods for the future development plans in the context of social conflict

**Triin Vihalemm, Asko Lõhmus & Maie Kiisel**

University of Tartu, Estonia

The maintenance and stability of modern society is said to depend on the speed of its’ economic and political cycles, scientific and cultural creation and peoples’ everyday lifestyle (Rosa 2015). The social acceleration requires from the governors the actual management the conflicting responsibilities in the face of present stakeholders and the future sustainability goals. Based on the case analysis of the process of Task Setting for the Estonian Forestry Development Plan for 2030, this contribution focuses on the question how to create a development plan for the coming decades in the context of high social turbulence: fighting stakeholder groups and irritated general public – everyone with their own agency, visions and fears for the future? Authors frame the value of the stakeholder involvement as multi-dimensional- to gain new knowledge, improve social legitimacy and consider the moral values of social and cultural justice - and analyse how these values are brought into the setup of forestry development plan by the civic, commercial, academic and cultural agents.

Empirical case analysis base on the comparison of problem categorizations and future constructions coming from different sources: media analysis, digital interviewing of wide public and stakeholder/expert committees. Authors analyse critically how the different agents - civic organizations, timber industry representatives, scientists from different disciplines, government officials were (dis)empowered in the setting-up of development plan and propose the methodological model for considering the concerns of different types of agencies in the negotiation between the long term goals and current social pressures.

*Keywords: Public opinion, Media analysis, Stakeholder involvement, Forestry policy, Estonia*

## Future of voters' decision making

**Hanna Willman-Iivarinen**

Miratio, Finland

When people vote, they vote for better future. Voters' decision making is the core element of democracy. Decision-making is not easy, one has to decide 1) if one votes or not, 2) which party is most appealing and then 3) which candidate to choose. Living in a post-truth era, loaded with information overflow and distrust of authorities and media, it is difficult to make voting decisions. Therefore, it is not wonder that populists' claims feel attractive and decision-making is more and more outsourced to voting advice applications (VAA). The problem is, that populists typically use more energy on protesting against something specific rather than building for better future and VAA results are highly dependable of the maker's agenda (results easily manipulated by question wording, etc.). At the same time social media is more and more significant source for voters' information. Some people base their choice only for that information, which makes them vulnerable for seeing the world only within their own social bubble. It seems clear that democracy does not function very well if voters outsource their decision-making and fail to vote for the party and candidate who would represent their values and aims. These claims are further developed and discussed based on "Voter's Decision making – survey" data from four recent elections in Finland (Election of European Parliament 2014, Election of Finnish Parliament 2015, Finnish Municipal Election 2017, Finnish Presidential Election 2018). Implications for democracy and its future are discussed.

*Keywords: Voting, Politics, Democracy, Decision making, Media, Populism*

## CITIZEN SCIENCE, POWER, RESPONSIBILITY AND FORESIGHT

**Thursday 13<sup>th</sup> June, 9:00–10:30**

Room: Move-Sali

Chair: Dr Juha Kaskinen

### Constructing futures through residents and diaspora-led social entrepreneurship

**Jorge Martins & Tim Vorley**

The University of Sheffield, United Kingdom

There is growing recognition of the importance of social enterprise as a driver of societal change and the collaborative construction of futures by communities has become a recognised feature of entrepreneurial economies. However, in less entrepreneurial economies, the potential benefits of social entrepreneurship are often constrained by low levels of entrepreneurial intention and the perceptions surrounding entrepreneurial opportunities. This paper discusses and documents how the philanthropic Gulbenkian Foundation has sought to foster future-oriented social enterprise to address the challenges facing Portuguese society through the programme 'DO IT: Ideas of Portuguese Origin'. We analyse how the approach and outcomes of this innovative incubation programme have stimulated the development of teams of entrepreneurially-minded Portuguese residents and diaspora. In providing philanthropic support to nascent social innovator-entrepreneurs the Gulbenkian Foundation has sought to address social challenges in Portugal which have been compounded by net-migration. Overall, this study highlights the importance of fostering global yet decentralised socially enterprising responses to both identify and address social futures challenges in Portugal not currently tackled domestically by public, private, or third sector organisations.

*Keywords: Social futures, Civil society, Citizen participation, International social entrepreneurship, Philanthropy*

### Solapur smart city: The role and responsibilities of citizen in constructing social future

**Amol Gajdhane**

Solapur University, Solapur, Maharashtra State, India

Smart city is built by smart citizens; engaging citizens is especially important in an Indian context because there have already been several striking examples of failed smart city redevelopments. The objective of the paper is to use futures research methodology for increase understanding and knowledge about constructing social future. The paper summarizes some of the dynamic characteristics of citizen in today's complex global environment, identifies key trends, and highlights common strategic concerns of the citizen and its interrelationships with the smart city.

The paper explores crucial social factors that play the key role in citizens' adoption of smart city transition, such as user-friendly technology, infrastructure, management and organization. The paper examine individual and group behavioural factors and their influence on the smart city. This carried out with the help of PESTEC and Black Swans analysis methods. The analysis provides improbable and unpredictable future events that would carry drastic changes. Moreover, the study brings various scenarios and visualizations of constructing social future within smart city framework.

The paper concludes with several risk factors which can be mitigating in early stage. It offers opportunity to avoid with prior consultancy. Further, the paper suggests few recommendations for the policy makers. Resultant, citizen patronage will make Solapur most liveable city with novel infrastructure and amenities.

*Keywords: Social future, Smart city, Citizen, Role and responsibility*

## Modes and objects of knowledge: Tackling climate change in municipal organisations

**Mikko J. Virtanen, Tapio Reinekoski, Turo-Kimmo Lehtonen & Lauri Lahikainen**

University of Tampere, Finland

Cities are becoming more and more active both in mitigating climate change and adapting to the dangers it poses. The primary purpose of municipal organisations is not, however, to take measures to tackle long-term climate issues. Facing up to new challenges requires organisational change, both structural and epistemic. In the context of climate change, both of these modes become intertwined: initiating structural change depends on the kind of knowledge used to argue for a need for change in the first place; and implementing the knowledge in organisational practices on different time scales requires work and invention. In order to examine this situation, we ask, first, what kind of knowledge is seen as important from the point of view of municipal organisations when taking on challenges brought about by climate change. Then, we explore how this knowledge is put into use. The questions lead us to analyse modes of knowledge through particular objects that condense and enact knowledge deemed relevant by the experts employing it in their organisations. We will particularly focus on processes in which the objects of knowledge—climate roadmaps, air quality measurements and normative standards—are translated into and operationalised as objectives of organisational activity. These processes lead us to highlight first the importance of access to particular forms of municipal decision making, for example budgeting. Second, we identify barriers to not only access, but also problems in operationalising and putting knowledge into action. The analysed data includes 21 interviews with senior-level experts in Finnish cities and municipalities.

*Keywords: Climate change, Knowledge, Devices, Cities, Change, Sociology*

## Knowledge based decision making on sustainable development – Using citizen panel to increase the usefulness of indicator data

**Sami Pirkkala**

Prime Minister's Office, Finland

The 2030 Agenda for sustainable development has a strong emphasis on knowledge based decision making and on the use of indicators. However, the political decision makers' interest in sustainability indicators has been quite limited.

To increase the usefulness and use of sustainability indicators in Finland, the Finnish national sustainable development follow-up network has updated national sustainability indicators and created a system for the interpretation and normative valorisation of indicator data.

This system consists of three phases: in the first phase, the experts produce a set of analytic articles that interpret and contextualize the indicator data. In the second phase, these articles are published in a website,

where anyone can comment on indicators, interpretations, and related policies (see <http://kestavakehitys.fi/en/monitoring>). In the third phase, this information (indicator data, analytic articles and citizen comments) is submitted to a citizen panel (clustered sample of 250 Finns), whose task is to assess Finland's performance on each of the indicators on two dimensions: 1) recent development and 2) current state, with scale ranging from poor to good. The result of citizen panel's assessments is a picture where all indicators are located at certain positions on this two-dimensional space.

The paper describes the methodology and the results of this national sustainability assessment system. The citizen panel convenes in December 2018 and the results will be analysed in January-February 2019. The paper will also touch upon the use of the results. The two-dimensional picture, and each indicators' position in that picture can be translated into specific policy recommendations.

*Keywords: Agenda2030, Indicators, Citizen science*

## ADVANCES IN METHODS IN FUTURES STUDIES

**Thursday 13<sup>th</sup> June, 9:00–10:30**

Room: Logi-Sali 1

Chair: Professor Petri Tapio

## The agency and knowledge creation in participatory futures workshop

**Hanna Heino**

University of Turku, Finland

Futures workshops are a common method in futures studies to engage participants and create the future oriented knowledge. Objectives of the workshops vary from scenario creation to solving a common problem. However, one important objective should be to enhance participants' understanding, agency and capability considering the future. Yet, it is unclear how participants gain futures knowledge during a workshop, how futures knowledge is mobilized and how futures knowledge affects participants' agency.

In this paper, I have studied how futures knowledge is created in futures workshops and how participants utilize this knowledge afterwards. I have conducted participatory observation in two separate workshops and I have interviewed participants after the workshops. Altogether 25 interviews have been conducted. With these methods, I have gained new knowledge of dynamics of workshops, and understanding about the futures knowledge creation. In addition, I have recognized variations in participants thinking and agency.

The results show that the most important factors are the facilitation and the structure of the workshop as well participant selection. It seems that facilitation of the workshops plays a vital role for the workshop results and for the participants' experience. The experience of a particular workshop will affect participants' agency and mobility of the futures knowledge. The participants individually interpreted the futures knowledge, thus the identification of futures knowledge afterwards was difficult for them. Participants agreed that the most important value of a futures workshop was to have a place for common discussion and opening your own thinking.

*Keywords: Futures workshop, Futures knowledge, Knowledge creation, Agency*

## Futures workshops as a tool for bringing different actors together to co-create desired futures. Lessons from Peru and Colombia

**Hanna Lakkala<sup>a</sup>, Marianna B. Ferreira-Aulu<sup>a</sup>, Juha Kaskinen<sup>a</sup>, Ritva Repo-Carrasco-Valencia<sup>b</sup>, Omar Del Carpio<sup>b</sup>, Fernando Vargas<sup>b</sup>, Eduardo Morales<sup>b</sup>, Kenneth Ochoa<sup>c</sup>, Carlos Quintero<sup>c</sup> & María Eugenia Rodríguez<sup>c</sup>**

<sup>a</sup>Finland Futures Research Centre, University of Turku, Finland

<sup>b</sup>Universidad Nacional Agraria la Molina, Peru

<sup>c</sup>Universidad el Bosque, Colombia

The PECOLO project (Native Crops for Sustainable and Innovative Food Futures in Peru and Colombia) is a collaboration between the University of Turku (UTU), Universidad Nacional Agraria La Molina (UNALM) in Peru, and Universidad el Bosque (UEB) in Colombia. The objective of the project is to develop sustainable innovation environments around Andean native crops using tools and methods of futures studies.

Four Futures Workshops were ran both in Lima and Bogotá during the years 2017-2019. In the first workshop an environmental scanning was carried out. Participants brainstormed important issues related to the agro-food sector in Peru, respectively in Colombia. Megatrends, trends, weak signals and wild cards were identified. In the second, scenarios of desirable, probable and evitable futures were identified and a narrative for desirable futures were written. In the third, roadmaps towards these preferred futures were built, and finally, in the fourth workshop action plans and recommendations to various stakeholders in the agro-food sector in Peru and Colombia were co-created.

All workshops included participants from academy, public and private sectors. The academic experts were selected according to their expertise in Andean crops and/or the agro-food sector. Representatives from governmental institutions were invited with the aim to potentially influence future political decisions. Food companies and NGOs working in the area of Andean native crops were invited as well.

The participation of experts from various sectors in the futures workshops brings different perspectives to the table and encourages cooperation. It also foments local knowledge and a bottom-up planning process. Working together to co-create desirable futures creates ownership and the actors are more likely to commit to the action plans proposed.

*Keywords: Futures workshop, Scenarios, Co-creation, Sustainability, Andean crops, Innovation environments*

## That futures workshop was great – So what now??? Future scenarios to lasting action and agency

**Elissa Farrow**

University of Sunshine Coast, Australia

Futurists and foresight practitioners enjoy the challenge and awakening aspect of facilitating scenarios with others to inform positive futures. ‘Discovery’ typically involves dreaming, exploring and creating possibility through blending predictive, critical, systemic and participatory process. However, there is a point in the process when the workshop concludes and people become responsible for enacting tangible action.

This presentation will provide considerations in relation to ‘Delivery’ or the adaptation itself to the preferred future. Adaptation methods in enacting strategy in organizational contexts have traditionally been top-down controlled, linear and sequential process oriented methods and tools. Agency of adaptors was often lower,



and resulted in either change fatigue, resistance or resignation. These symptoms manifested due to limited end user involvement, triggering inherent neurological and psychological responses linked to fear (real or imagined).

There are many disruptions impacting on organizations today. These include technological evolutions that are challenging the centrality of humans in the construct of work. The presenter will draw on the case of organization adaptation to Artificial Intelligence (AI) Futures as a case study. Unlike other technological disruptions, in an AI context, impact is expected to be broader and deeper than previous technological shifts. To enable the security of human agency within the adaptation approach, a contribution of a more experimental, iterative, embedded and ubiquitous action learning approach to adaptation will be offered. The presenter will propose futurist's working in organizational contexts need to be part of the adaptation journey to support not just the creation of actionable futures but their activation.

*Keywords: Artificial intelligence, Adaptation, Agency, Anticipatory action learning, Technological adaptation*

## Sense making - future making. Adults imagining their futures

**Katariina Heikkilä & Anna Kirveenummi**

Finland Futures Research Centre, University of Turku, Finland

We all construct our conceptions of futures in different dialogues. Besides present day observation and understanding, people often use experiences from previous generations when making sense of their future prospects. Megatrends like mobility, aging and climate change are great societal and cultural challenges of the future. They produce the dynamics and the environment where people need to reflect, evaluate and motivate the possible choices that their future-making demands or asks for. These big transformational processes lead us to question and re-evaluate our individual lifestyle choices and their consequences in the future.

However, the processes behind the formation of adults' futures images have not been studied much, neither are there many existing studies of dialogues between various generational or individual differences concerning anticipatory practices and processes. How do people in different transformation phases process their life and their expectations, dreams and fears regarding the future? We are interested to discuss what kinds of elements and sense-making tools the processes of constructing or developing the futures images of adults could include and how the sense-making in this future-making is performed.

*Keywords: Futures images, Expectations, Knowledge formation processes, Interpretation, Adults*

## THE HETEROGENEITY OF ACTORS AND THE MANY LEVELS OF ANALYSIS IN SOCIAL FUTURES

**Thursday 13<sup>th</sup> June, 9:00–10:30**

Room: Logi-Sali 2

Chair: Dr Jari Kaivo-oja

### The implications of derived demand for scenario planning

**Meelis Kitsing**

Foresight Centre / Estonian Business School, Estonia

Scenario planning as a strategic foresight method in policy-making has gained considerable currency during the last decades. Increasing number of academic and policy books and articles are focusing on how to design and implement scenario planning in policy setting. However, foresight in policy-making also implies involvement of considerable number external stakeholders who have heterogeneous understanding of scenario planning. The heterogeneity goes beyond traditional debates among different schools of thought in scenario planning concerning design and implementation of this method.

This paper explores supply and demand for scenario planning in foresight on the basis of two cases which emerged as a result of work by Foresight Centre in Estonia. The first case involves domestic policy-making setting in Estonia and involves members of parliament and other actors as key stakeholders. The second case involves an attempt to develop policy scenarios in collaboration with various European think-tanks.

On the basis of these two cases, twin deficits emerge between heavy users of the method and general policy-making community. Policy-makers have difficulties in understanding the scenario-planning while heavy users of scenario-planning have challenges in comprehending incentives of policy-makers.

Nevertheless, the paper argues that reconfiguration of supply is more important in this mismatch between supply and demand. This is so because demand for scenario planning is derived demand, i.e. it depends on knowledge and policy insights that scenario planning helps to generate. There is no demand for foresight for its own sake. It implies that many substitutes are available, particularly in a “post-truth” era.

The paper discusses supply-side implications for scenario planning in policy-making. These options entail involving policy-makers in various steps of scenario planning projects. They can be involved in project steering committees where various steps of research process are elaborated. It also suggests educational events for policy-makers where nuts and bolts of scenario planning are explored. At least but not last, scenario planning must be more vigorously discussed in social science classes at universities.

*Keywords: Scenario planning, Foresight, Policy-making*

# ShE-2030\_Future scenarios for the shared & collaborative economy in 2030; A foresight based exploratory analysis on the coming post-capitalist society and the transforming role of technology, creativity and social innovation in the new economy

**Enric Bas and Anna Bossler**

Futulab, University of Alicante, Spain

This paper/presentation is summarizing the outcomes of the research work developed by FUTURLAB for the Project “Open DOORS- Designing a network of Cooperating Creative Communities for developing a Sharing Economy” (Interreg MED Programme - European Commission) in 2018. The priority axis of the project was promoting Mediterranean innovation capacities to develop smart and sustainable growth with the objective of increasing transnational activity of innovative clusters and networks in key sectors of the Mediterranean area. The specific role of the futures report lead by FUTURLAB was, on the basis of the previous work developed by the project partners and horizon scanning, identifying opportunities and challenges in order to provide useful insights and a futures mind-map of reference regarding the future of shared and collaborative economy.

Three alternative scenarios were identified, on the basis of a foresight based exploratory analysis, for the Shared and Collaborative Economy in 2030. The basic elements of the so called “new economy” (the collaborative paradigm, the circular culture, etc..) are considered, together with other key drivers like the regulatory challenge, the dialectics technology/identity, privacy and security issues, the digitalization of social life, participatory processes, the role of creativity, the new business models and the cultural shift, among many others, under a critical perspective. As a conclusion, some insights concerning new ways –more social, collaborative, and sustainable- of constructing social futures are provided, mainly regarding the opportunities and challenges to be addressed by the socio-economic fabric in general, and in the Mediterranean area in particular.

*Keywords: Scenarios, New economy, Sharing collaborative and participatory Futures, Social innovation, Mediterranean area*

## Constructing a sustainable Industry 4.0: Foresight as enabler of circular additive manufacturing business models

**Mikkel Stein Knudsen, Jari Kaivo-oja & Theresa Lauraéus**

Finland Futures Research Centre, University of Turku, Finland

In order to construct sustainable futures, there is a strong need to develop sustainable and circular production systems for the new Industry 4.0-manufacturing environment. This is one of the pressing concerns of the foresight activities of the Finland Futures Research Center within the Academy of Finland-supported consortium Manufacturing 4.0 (MFG4.0). The common aim of MFG4.0 is to address how Finland can thrive in a time of profound technological changes in manufacturing.

Here, the authors will i. show the state-of-the-art on circular economic thinking and the importance of the Sustainable Development Goals (SDGs) for building future-proof, economically sustainable business models, ii. provide examples of how new Industry 4.0-technologies can support sustainable development and green economic transition, iii. present conclusions from a thorough review of the – sparse – literature bridging future manufacturing technologies with circular economy. Particular attention is given to links between circular

economy and additive manufacturing, and the opportunities and challenges of building new circular economic additive manufacturing business models.

This analysis constitutes a part of a new transdisciplinary research agenda which the authors believe will be essential for meeting the demands of the coming decade: How to bridge circular economy, security of supply of critical resources, demand-driven prosumer thinking and industry 4.0.

*Keywords: Sustainability, Circular economy, Additive manufacturing*

## Engine of the bio economy or merely a raw material provider – Futures of Finnish forest industry

**Marileena Mäkelä**

Finland Futures Research Centre, University of Turku, Finland

Finnish forest industry faces a great challenge. How to re-structure its business in order to succeed in the future? The restructuring is needed as the demand of their current products, especially paper, is decreasing and expected to decrease in the future. This abstract addresses this topic by conducting a literature review of the futures research of the Finnish forest industry. The previous literature is reviewed from three sources: 1) the publications of the Finnish Forest Industries Federation (FFIF, a lobbying organization of forest industry), 2) the research reports of Finnish research institutions and 3) the journal articles. Altogether 23 publications were found. These cover multiple topics from improving sustainability to developing business opportunities. There was a difference in the future orientation of the reports published by different organizations. The reports of the FFIF all share a very positive future orientation whereas the reports of the research institutions have a more critical voice and raise the future challenges. Basically all the reports share the view that future forest industry needs new products and business ideas in comparison to the current selection. Energy business was most often mentioned as new business opportunity. One major challenge for the forest industry will be the competitive forest uses, for example, the raw material acquisition for needs of the traditional forest industry, the raw material acquisition for the needs of energy industry, and the raise of nature tourism.

*Keywords: Forest industry, Futures, Literature review, Bioeconomy, Sustainability*

## FUTURES EDUCATION AND LEARNING

**Thursday 13<sup>th</sup> June, 9:00–10:30**

Room: Goto 32

Chair: Dr Mrunalini Fadnavis

### About future visions of society and professional responsibility – Future missions from the perspective of teachers

**Doreen Cerny**

University of Teacher Education Salzburg Stefan Zweig, Austria

The lecture deals with a future scenario, which teachers with a migration background from Austria draw into their professional practice. Biographical interviews with the teachers are available, which record their professional path and are evaluated according to a reconstructive procedure. On the basis of the available empirical material, the question of which design variants of society these teachers map out and into which they send their pupils in the years after school, will be examined.

From the previous analyses of the study, two aspects for the discussion of future scenarios are presented: (1) On the one hand, on the methodological level, it should be worked out how the future-oriented considerations of (civil) society can be comprehensively understood. The retrospective and current perspective on the concept of agency from the perspective of the teachers themselves will therefore be presented using selected examples. (2) At the experience level, the role of the school as a relevant player in civil society should be described. What image do teachers create via their professional actions when they want to prepare children and young people for future worlds as responsible members of society?

Based on the empirical material, the lecture can provide an insightful look into how the concepts of action are shaped by teachers who work with their ideas on a relevant hub - school - for future social processes. It will also provide insight into the possible significance of the teachers' migration background for the agency concept.

*Keywords: Professional responsibility, Teachers, Migration background, Civil society*

### The regional specifics of future-oriented education practice: Methodological issues of comparative analysis

**Tatiana Yakubovskaya**

Professional Teacher Education School, University of Tampere, Finland;

Open Foresight-Laboratory, "Future-Oriented Education", Institute of Individualization and Tutoring, Ukraine;

"Open Foresight-laboratory" Analytical Agency, Russia

The paper conceptualizes future-oriented education as a practice related to the concept of agency in constructing futures and discusses the connection of region's features and design of education programs aimed at promoting futures and foresight literacy.

The paper argues that an analytical model for comparative analysis of future-oriented educational practices in different regions connected with three key regional specific aspects: Visioning, Communities, Education (what kinds of futures visions, key groups, key approaches of education are there on this territory?)

For this purpose, the paper fleshes out these frameworks through a case study and comparative analysis based on the experience of “Open Foresight-laboratory” as future-oriented education programs (2013 - 2018). These cases have been divided into two models of regions with dissimilar types of base activity: 1 - West-Siberian Technological-Innovation region and 2 - Arctic Strategic Oil and Gas Region (Russia).

The paper outlines organization principles of practice of the Open Foresight-laboratory developed according to the analytical logic of the foresight research for educational policy planning. Foresight-lab participants are conducting analytical discussions (key technologies and their impacts on changes in economic, social-cultural, educational levels of social life). Open Foresight-laboratory is a negotiating platform for students in cooperation with different regional groups of stakeholders (experts from different types of social institutes of the region). According to the concept of agency in constructing futures, the cases show that participants’ thinking moves from an uncertain vision to more positive and constructive versions about futures of the territory and student’s own futures (educational and professional).

*Keywords: Comparative analysis, Future-oriented education, Futures literacy, Foresight literacy*

## How to foster futures awareness with futures guidance?

**Johanna Ollila, Leena Jokinen & Sari Miettinen**

Finland Futures Research Centre, University of Turku, Finland

Futures guidance combines futures studies with guidance practices. Futures guidance provides tools for focusing on one’s expectations about the future as well as preparing oneself for open futures.

In this paper we present 1) some of the challenges teachers and counsellors are facing in their work with students and clients regarding futures orientation such as futures anxiety, facing uncertainty, fears and expectations, and 2) what are the approaches, methods and practices they are employing to foster futures awareness in these groups and individuals.

A wide range of futures guidance materials have been designed for student counsellors, teachers and other educators as well as career counsellors as a complementary skill set to be used in their work. Over the past 10 years the materials have been tested and used with groups and individuals such as young people, students and job or education seekers.

The paper is based on the material of a nationwide academic in-service training course for teachers (12 ECTS credits) organised by the Finland Futures Research Centre (University of Turku, Finland) and funded by the Finnish National Agency for Education.

*Keywords: Futures guidance, Futures awareness, Futureness, Personal futures, Teacher training*

## The future school 2030 – The future images held by young people about the future of education

**Elina Nikula, Tero Järvinen & Anne Laiho**

University of Turku, Finland

In this paper, we examine and introduce the young people's images of the school's future. On top of the fact that continuous social, political and economic change describes our present time also education system is in transformation. This study gives new perspectives to the discussion about school's future by bringing young people's voice to the forefront and analysing their views on the meaning and role of the school in the future. In this work the futures research methods, such as Causal Layered Analysis (CLA), were used in order to answer the following question: How do adolescents envision the future school? For that purpose 15-18-year old students from four Finnish general upper secondary schools envisioned the future of education in Finland 2030 by writing the essays about the topic.

Three main themes were identified from the young people's visions: 1) technology, 2) welfare and 3) the structure of teaching and learning. These main themes shared following two-dimensional topics: competition vs. self-realization, independency vs. guidance from the teacher, health promotion vs. the weakening of well-being, individuality vs. sociality and the amount of change whether it was seen to be a lot or a little. The opposites of these topics were identified in different themes. In addition, the young people recognized how the external driving forces affect to the school system. They highlighted, how factors such as societal situation, politics and economy challenge the future of education.

*Keywords: Young people, Images of the future, Future education, Technology, Welfare, Causal Layered Analysis*

## WORKSHOP: BACK TO THE FUTURES WE WANT: ENVISIONING AND BACKCASTING FOR SUSTAINABLE FUTURES

**Thursday 13<sup>th</sup> June, 9:00 – 10:30**

Room: Goto 33

**Facilitators:** Sachiko Ishihara & Laila Mendy, Uppsala University, Sweden

Sustainability discourses centres around avoiding dystopian futures, but is rarely a way of empowering the ability of navigating towards alternative and desirable futures. How can education train the creativity to develop our ideas and discuss "the futures we want?" How can we facilitate learning processes to head towards these desirable futures?

Developed further from Ishihara and Marcos Valls (2017), this contribution draws on the experience from a pedagogical project in the interdisciplinary undergraduate course 'Global Challenges and Sustainable Futures' at Uppsala University. This project ran alongside lectures and workshops that discussed various topics in sustainability. Students were asked to choose a city/village they felt connected to and: 1) identify three existing initiatives that embody what they see as 'seeds for sustainable futures'; 2) brainstorm what might happen if the 'seeds' become mainstream using a Futures Wheel; 3) explore four different scenarios of 2040 with a given set of axis; 4) critically reflect on and redevelop one scenario into their own 'sustainable and desirable vision'; and 5) develop five key action points as strategies and possible pathways to reach their outlined vision. The contributors (Course Coordinators of this course) will run an adapted workshop at this conference with the aim to critically reflect and discuss together the potentials, limitations and possible improvements of this pedagogical process.

Ishihara, S. & Marcos Valls, A. 2017. "Back from the Future We Want: Backcasting as a Pedagogical Practice towards Sustainable Futures." In *Envisioning Futures for Environmental and Sustainability Education*, 333–44. Wageningen: Wageningen Academic Publishers.

*Keywords: Education for sustainable development, Envisioning, Backcasting, University education, Sustainability*

## PANEL: EXPLORING SYSTEMIC INNOVATIONS TOWARDS SUSTAINABILITY IN COMMUNITY CLUSTERS IN DIFFERENT COUNTRIES

**Thursday 13<sup>th</sup> June, 9:00–10:30**

Room: Kino-Sali

**Facilitators:** Rabi Narayan Kar<sup>a</sup>, Kaisa Sorsa<sup>b</sup>, Kusha Tiwari<sup>c</sup>, Keijo Varis<sup>d</sup> & Ari Lindeman<sup>e</sup>

<sup>a</sup>Shyam Lal College, University of Delhi, Delhi, India

<sup>b</sup>Turku University of Applied Sciences, Turku, Finland

<sup>c</sup>Shyam Lal College, University of Delhi, Delhi, India

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<sup>e</sup>South-Eastern Finland University of Applied Sciences – XAMK, Finland

Inclusive sustainable development is possible only when there are systemic innovations towards sustainability demanding engagement and advancement of responsible practices of business with various stakeholders including community organisations and other institutions. There are existing sustainable community movements that with their long-established knowledge, innovations and practices experience a low-impact lifestyle, focus on cosmic well-being and live in harmony with their surroundings with a balanced use of available resources. These community movements later organise in the form of community organizations for community well-being and sustainable development. A case in point is that of Kandhamal district, a tribal region in Odisha, India, that practices organic turmeric farming since long. Similarly, a huge forest area in Finland is certified wild fruit collecting area, almost a third of all the organic wild fruit collecting area in the world. The most important products of organic wild food in Finland are bilberry, lingonberry, birch sap, wild herbs and mushrooms.

Following this line of argument, we plan to identify, investigate and document to see how local community organisations and grassroot groups engage or can engage in finding solutions to global socio-economic and environmental challenges and how, at the same time, these groups/communities apply sustainable models, practices and solutions committed to cosmic well-being. Most importantly, it needs to be emphasized that researchers (R&D) play an important role in facilitating learning and gaining knowledge from the traditional innovation based lifestyle of local/tribal communities and making linkages between traditional knowledge and state driven sustainable developmental policies. This requires systemic efforts for all stakeholders. These challenges can be resolved through the engagement of social entrepreneurs, community organisations and micro enterprises in the way that services are designed and delivered. This requires systemic innovations which are often called ‘socio-technical transitions’ or sustainability transitions. Thus an investigation into the organic food production would offer scope to learn from the systemic innovations, actors and institutions involved so as to create crucial interfaces of knowledge, practices, policies, cooperation and cross-country collaboration for the ultimate goal of sustainable well-being of environment and the people.

Panel Schedule:

1. Background (15 min)
2. Theoretical approach: Systemic innovations towards sustainability (15 min)
3. Pathways to Impact (15 min)
4. Interactive peer-consultation: How to improve impact? (30 min)
5. Closing (15 min)

*Keywords: Sustainability, Systemic transitions, Innovation, Community clusters*



## WORKSHOP: NATIONAL FORESIGHT 2020 - SHARING KNOWLEDGE ON NETWORKED FORESIGHT

**Thursday 13<sup>th</sup> June, 9:00–10:30**

Room: Goto 31

**Facilitators:** Christopher Rowley<sup>a</sup>, Maria Malho<sup>a</sup>, Matti Minkkinen<sup>b</sup>, Burkhard Auffermann<sup>b</sup> and Laura Pouru<sup>b</sup>,  
<sup>a</sup>Demos Helsinki, Finland

<sup>b</sup>Finland Futures Research Centre, University of Turku, Finland

Finland is often seen as a model example for utilizing foresight in public policy planning. This special session is an opportunity to share knowledge and best practices on networked foresight systems and particularly national foresight. The Finnish national foresight system consists of foresight work done by various actors at the levels of local government and national government and coordinated by the Foresight Steering Group. In 2014, the Finnish Prime Minister's Office established a national foresight approach. We are currently in the process of developing an overview of the interlinked foresight actors and processes and recommending improvements in our research project "National Foresight 2020 – Mapping of the ecosystem, evaluation of foresight maturity and future recommendations" funded by the Finnish Prime Minister's Office 2019–2020.

Even though Finland has many institutions and processes in place for national foresight, we can learn much from international experiences and comparison points. On the other hand, other countries and other actors coordinating networked foresight can learn a great deal from recent Finnish experiences. Therefore we conduct a participatory workshop session on networked foresight and national foresight which is open to all conference participants interested in the topics, regardless of their experience or expertise on national foresight. In the session, we will collect and share experiences in a systematic way, which allows participants to learn from best practices and also take a critical comparative look on their own foresight work.

*Keywords: Foresight, National foresight, Networked foresight, Foresight systems*

# SESSION IV: THURSDAY 13<sup>TH</sup> JUNE, 10:45–12:30

## NEW FORMS OF PARTICIPATIVE DEMOCRACY AND THEIR CONSEQUENCES

**Thursday 13<sup>th</sup> June, 10:45–12:30**

Room: Teatro-Sali

Chair: Professor Máiréad Nic Craith

### The transformative power of heritage futures in societies

**Katriina Siivonen**

Finland Futures Research Centre, University of Turku, Finland

Culture is like an ever-changing stream (Ulf Hannerz 1992) which flows from person to person and from past to future intentionally and unintentionally. In the stream of culture, cultural change and resistance to change are constantly produced by human beings as cultural tangible and intangible traditions in everyday life. Thus, continuity defines traditions only partly, and they have also an implicit transformative power. Traditions defined as cultural heritage make always an impact and promote explicitly some changes in everyday life and in the society.

The role of intangible cultural heritage (ICH) is stronger than ever in the current era of globalization. ICH is living actions, skills and thoughts of human beings. It is not possible to separate it from human beings. Thus, it is not possible to collect living ICH in an ethical way e.g. in museum collections, or to keep living ICH unchanged and define it by authorities. The strengthening position of ICH has changed practices and power relationships in different heritage processes thoroughly.

Heritage work become more and more a part of traditions that is everyday life in different communities. In processes of heritage work, different individuals and communities may lose their power to define what is important from their perspective. In societies, ICH defined as heritage futures, could serve as a multi-perspective tool in co-creative, transformative processes of everyday culture e.g. towards a more sustainable society and culture. In order to be ethical, this happens in participatory processes with individual human beings and communities.

*Keywords: Heritage futures, Cultural heritage, Tradition, Intangible Cultural Heritage (ICH), Cultural transformation, Sustainability*

### Science or entertainment? Futures of local natural history museum

**Minna Santaoja**

Turku Institute of Advanced Studies, Finland Futures Research Centre, University of Turku, Finland

Natural history museums came about from the desire to collect and display the diversity of nature. The history of the museums is closely tied with amateur naturalism. Today the museums are tasked with recording and monitoring of biodiversity. Due to societal changes, natural history museums are going through big changes to engage modern publics and to respond to the global quest for open data on biodiversity. Professionals from different fields combine their expertise in building appealing natural history displays, but especially in biodiversity monitoring the role of amateur naturalists remains crucial. The modernization of natural history

museums is a global and national endeavour. Still, local natural history museums persist through different institutional arrangements. This paper discusses the natural history museums' possibilities for supporting environmental agency through the case of the museum in Tampere, Finland. The museum was established in the 1960 on the basis of volunteer collections donated to the city. After a lengthy storage period, in 2010 the museum was reopened in new premises. The museum provides space for the natural history collections, but the new exhibition is built using modern museum technology. There seemed to be tension between aspirations for a museum for public education and entertainment, and a research museum collaborating with the local naturalists. Due to the connections of the museum curator with the naturalists the museum has managed to balance both roles. This paper discusses the role of local natural history museums in knowing nature and eliciting interest in biodiversity, and different co-created future scenarios.

*Keywords: Natural history museums, Citizen science, Biodiversity monitoring, Exhibitions, Agency, Futures*

## Engaging with historical trauma in participatory futures work

**Amy Hosotsuji & Samhita Misra**

The Futures Network, Canada

The increasing focus on participation in fields ranging from development, design, and futures studies indicates what futurists have elsewhere identified as a changing image of the future, rooted in values of gender cooperation, social inclusion, spiritual inclusion, ecological sustainability, and a merging of global and local governance (Inayatullah, 2017).

The journey towards a new paradigm using participatory methods, however, comes with challenges. Over the last few decades, participatory processes have been critiqued for their limited ability to equitably engage all stakeholders who been affected by the impacts of historical inequities. This challenge extends to anyone working towards more inclusive futures: to meaningfully facilitate participatory futures work, we must become aware of and engage with the impacts of past trauma within every context to make the conversation as inclusive and accessible as possible. Engaging with both the changing image of the future, and the critical analysis of participatory processes, we propose a trauma-informed approach to participatory futures work.

We turn to already established communities of practice that use elements of Jungian psychotherapy, living systems theory, conflict resolution, critical theory and a justice lens. These practices of holding a group through a process offer lessons and approaches that, if applied to participatory futures work, might amplify its impacts to be more equitable and sustainable for all.

In this paper, we walk through some considerations if one were to merge these practices with futures work to shape local communities and civil society.

*Keywords: Participatory futures work, Historical trauma, Group facilitation, Equity, Inclusion*

# Future Design Thinking: Aurora's Journeys Atelier based on Adel Alas model and Nordic heritage

**Maria Angeles Alvarez Laso**

Cefilni Consulting & Adel Alas Foundation, Nor lights Stavanger Montessori School, Sandnes library, Norway

"Aurora's Journey Atelier about immersion and cultural sustainability"

1. What are Aurora's Journeys? (<https://adelalafoundation.wixsite.com/misitio>)

It is an immersive collaborative program based on Adel Alas Model developed at UAM and The National Reading Center at UiS, Stavanger University in Norway, Sandnes library, and Nor lights Stavanger Montessori School

2. What is Adel Alas Model Cefilni? (<https://cefilniconsulting.wixsite.com/mysite>)

Adel Alas is an online, blended pedagogical practice based on three categories

- Course Content based on ICT Solutions and language development through cultural awareness
- Interaction based on Canvas platform accessible to the team at STAM
- Assessment based on Adel Alas language evaluation taxonomy

3. How does it look?

It is a friendly approach visualized as a simple landscape with storytelling developed little by little with the community.

The symbol "Aurora borealis" metaphorically means the program EUROCOM.

The symbol of a "deer constellation" means metaphorically the linguistic model based on TRAS, Leselos and Alle Med.

The symbol of a "Polar Bear" constellation metaphorically means the psychometric model based on the Corpus ASK and Aski Raski language assessment programs.

The "Swan constellation" metaphorically means the logo therapeutic model based on the program logos in Norway.

The "water and snowflakes" metaphorically means the students interactive narratives and storytelling.

The "boat with mast" means the canvas platform where the curriculum development takes place.

The "rudder" means the collaboration and assessment of the program.

*Keywords: Thinking Futures*

## CITIZEN SCIENCE, POWER, RESPONSIBILITY AND FORESIGHT

**Thursday 13<sup>th</sup> June, 10:45–12:30**

Room: Move-Sali

Chair: Dr Ville Lauttamäki

### We are the people? Opinions, hopes and fears of Dutch citizens on future and technology

**Patrick Van der Duin<sup>a</sup>, Paul Lodder<sup>b</sup> & Dhoya Snijders<sup>c</sup>**

<sup>a</sup>The Netherlands Study Centre for Technology Trends, The Netherlands

<sup>b</sup>Tilburg University, The Netherlands

<sup>c</sup>The Rathenau Instituut, The Netherlands

The future belongs to everybody so it is strange that we often only listen to experts. Of course, it is a good thing that our bridges are being designed and built by university educated engineers. Science has advanced our society tremendously. However, more often foresight professionals advocate leaving thinking about the future not only to experts. The expert is a specialist and assessing new developments only on the basis of analysis and historical data is not always the best idea.

The 'National Future monitor 2019' investigates the opinion of the Dutch people on future and technology (1). Thousand respondents have been asked how they think on the future of environment, economy, and governance, and about the societal impact of biotechnology, safety, robotics, and digitalization. About how fast or slow certain technologies might break through, about the desirability of certain technologies, and which technologies should be invented to improve our future. The result is a large, diverse set of information about how the Dutch people in 2019 think about their future and about technological developments. It can fuel a wide-ranging societal discussion about the future that in a democratic, dynamic, and 'open' country such as the Netherlands should be an ongoing activity.

(1) For the results of the 2016 'National Future Monitor': Snijders, D. & van der Duin P.A. (2017). The future is ours. How Dutch people think about technology and the future, *Journal of Futures Studies*, Vol. 21. No.4, June 2017, pp.19-36

*Keywords: The Netherlands, Technology, Expectations, Foresight, Citizens*

### Social innovation labs as sources of futures knowledge

**Merja Lang & Tuula Jäppinen**

Association of Finnish Local and Regional Authorities, Finland

Foresight and innovation have been connected in four different ways: 1) Foresight as a source of innovation; 2) foresight as a futures proof of innovation; 3) innovation as a means to reach the preferred future and 4) innovation as a weak signal of transformation.

The starting point of this article is the anticipated so called "6th Wave of Innovation" being foremostly wave of social innovation that changes our lifestyles and societal structures. This view is contrary to the more traditional views on the innovation waves as waves of new technology. New social innovation is emerging in different societal labs. One such example in Finland is the "Experiment incubator" of Association of Finnish Local and Regional Authorities (Kuntaliitto), where Finnish municipality teams co-create together with their

stakeholders and citizens new services and tools. The incubator is targeted at teams working to tackle strategic challenges on the local level. Through co-creation they not only innovate, but also create shared galaxies of meaning.

It will be argued that it is not the innovation that changes the world, but the altered understanding - the meaning attached to the innovation - that pushes the transformation onwards. Thus, through analysing these galaxies of meaning, futures knowledge can be obtained. We illustrate this through one case example, from the city of Vaasa.

*Keywords: Transformation, Anthroposemiosis, Weak signals, Co-creation, Social innovation*

## An experiment in participatory futurism

**Oliver Bream McIntosh**

University of Nottingham, United Kingdom

Corporate futurism is arguably less about predicting trends than it is about reifying them. And it often reflects not only the desires of the corporation or industry in question, but also the peculiarities of the people doing the prediction. A brief review of the member pages of the Association of Professional Futurists or World Futures Society, for instance, reveals that a clear majority are white men, to which significant partiality has been attributed. As we enter a world where elections are won on Facebook, toddlers are socialised on iPads, and Tinder matches become spouses, the bleeding heart of the twenty-first century's neindustrial onslaught – Silicon Valley – might be said, then, to be not in the hands of its oligarchs, but their oracles. The case for a 'participatory futurism' has never been more pressing.

A Student's Guide to the Future (SGF) is an award-winning online course offered at the University of Nottingham (UoN), designed and administered entirely by a team of students and recent graduates. After its second iteration in March 2019 introduced over 200 participants to 'futures of education, work and civil society', a redesigning process is currently underway, with a view to trialling a new model of Futures education. Based on detailed and collaboratively-devised scenarios and synchronous forum discussions, SGF's second iteration, scheduled for March 2019, aspires to start new conversations in autonomous, student-led environments, where the ethical and practical dimensions of emerging social realities can be critically discussed, openly challenged, and democratically reconceptualised.

*Keywords: Backcasting, Online learning, Participation, Student-led learning*

## Privacy after the flood: Analysing the relationship between privacy and futures

**Matti Minkkinen**

Finland Futures Research Centre, University of Turku, Finland

Privacy protection is one of the key societal challenges as personal data are increasingly used as resources in the digital economy. For decades, privacy has been declared either dead or dying. Nevertheless new tools, both policy tools and technological tools, are continuously developed for protecting privacy. My paper analyses the relationship between privacy and futures in both directions.

Firstly, we may ask what futures approaches are fruitful for considering privacy as an aspect of human dignity and autonomy after the flood of Big Data. The paper develops critical-analytical futures studies as an approach that enables identifying latent possibilities for novel futures. From the critical-analytical futures perspective, futures are continuously made by actors, their storylines and the imaginaries that underlie storylines. On the topic of privacy, powerful imaginaries include continued growth of the digital economy and the privacy self-management approach which many argue is infeasible in light of new and emerging technological practices.

Secondly, privacy is not simply another topic for future-oriented inquiry, since privacy may be seen as a prerequisite for a particular kind of future orientation involving creativity and openness to alternatives. Recent literature argues that privacy protects intellectual exploration, creativity in everyday practices and indeterminate human growth. As a summary of these connections between privacy and futures, a novel metaphor for privacy is presented: privacy as breathing space for futures. Critical-analytical futures studies and privacy as breathing space open new perspectives for considering digital futures after the Big Data flood.

*Keywords: Privacy, Data protection, Anticipation, Metaphors, Futures*

## FUTURES STUDIES IN THE EMPOWERMENT OF AGENCY

**Thursday 13<sup>th</sup> June, 10:45–12:30**

Room: Logi-Sali 1

Chair: Professor Sirkka Heinonen

## Futures communication

**Elizabeth Hofvenschoield**

University of the West of Scotland, United Kingdom

The futures literature shows that communicating futures work is not easy and can be frustrating. A familiar challenge, for example, is the difficulty of moving from scenarios into action. There are a few publications on communicating futures work and much of it takes a narrative or an experiential perspective. However, an overview of futures communication practices and more understanding on the role of communication in enabling action from futures work are lacking. I wanted to understand how futures researchers and practitioners communicate their work and understand what kinds of discourses there are on futures communication within the futurist community (primary focus was Europe). I carried out an exploratory case study (interviews & visual analysis) with a futures team and a selection of their internal stakeholders within a large German corporation. In addition to the case study, I also conducted 18 qualitative interviews with futurists in Europe, North America and Asia to gather their understanding of what communication means to them and their personal futures communication discourses. My research stems from the desire to understand communication's role in futures work. By understanding the current practices in and discourses on futures communication, I hope to make explicit the range of methods used by futurists, common difficulties and possible strategies for communicating to enable positive action.

*Keywords: Futures communication, Enabling action*

# Journalism in a peer-to-peer anticipatory assemblage. How pioneering entrepreneurial journalists anticipate the futures of journalism

**Juho Ruotsalainen<sup>a</sup>, Sirkka Heinonen<sup>a</sup>, Jaana Hujanen<sup>b</sup> & Mikko Villi<sup>c</sup>**

<sup>a</sup>Finland Futures Research Centre, University of Turku, Finland

<sup>b</sup>University of Helsinki, Finland

<sup>c</sup>University of Jyväskylä, Finland

The futures of journalism remain an understudied subject in futures studies. The paper addresses the research gap by studying entrepreneurial journalism as pioneering new values, practices, and forms of journalism. Entrepreneurial journalism refers to news content produced by new, small-sized outlets that are established by journalists themselves. By identifying new opportunities and seeking to establish a sustainable business, entrepreneurial journalists renew the ways journalism is conceived and produced.

Through an inductive analysis of semi-structured interviews with 11 Finnish entrepreneurial journalists, the article delineates an anticipatory system – conceptualised as an anticipatory assemblage – the studied pioneers rely on and promote when they anticipate how journalism will evolve in the following decade. Adopting a broad definition of an actor, the deployed micro-scale approach allows a closer look at the numerous actors and their connections at play in the unfolding of journalism's futures – a view that is not only mental but also material.

Such assemblages, consisting of interactions between peripheral and non-peripheral actors, can significantly influence socio-technical imaginaries of the future of journalism and shed light on the complex networks affecting the future of journalism. The proposed peer-to-peer anticipatory assemblage envisions journalists as parts of complex open networks, serving new public roles in a political order after the hegemony of liberal democracy. A focus on assemblages can increase understanding on social change and open new views on the ontology and epistemology of the futures.

*Keywords: Affective turn, Entrepreneurial journalism, Futures of journalism, Pioneer analysis*

## Experiencing scenarios through dramatized narratives

**Jouko Myllyoja**

VTT Technical Research Centre of Finland Ltd, Finland

The session presents experiences and conducts theoretical reflections on applying drama methods as part of a research project Dwellers in Agile Cities (DAC), project funded by the Academy of Finland 2016-2019. Drama methods were applied in several workshops and seminars with a methodological aim of exploring possibilities of drama methods as a way to create novel understanding and knowledge within foresight process. Here, we focus to reveal characteristics that relate to presenting scenarios in a form of dramatized narratives in particular. We define dramatized narrative as a theatrical scene that is being written, rehearsed and presented by theatre practitioners. Thematically, scene relies on the substances of a research project and aims to make research contents experiential for the spectators. Through the immersive impact that theatrical scene may be able to create, the scene establishes an emotionally biased, differentiated base for novel discussion to occur. All together four scenarios were created in DAC-project: City as sports field, -airport, -allotment garden, and -market square. Dramatized narratives were created to each of these to depict their reality. As a part of our presentation, we perform one of these to demonstrate the characteristics of the approach. Theoretically, paper constructs in particular on characteristics of experimental foresight (Bok & Ruve 2007; Candy 2010;



Candy 2014; Candy & Dunagan 2017), practice as research (Barret & Bolt, 2010; Nelson 2013), and research-based theatre (Gray et al. 2001; Colantonio et al. 2008; Wager et al. 2009).

*Keywords: Experiential foresight, Drama methods, Narrative, Immersive methods*

## THE ROLES OF FUTURES STUDIES IN THE NEGOTIATION OF VALUES AND DESIRED FUTURES

**Thursday 13<sup>th</sup> June, 10:45–12:30**

Room: Logi-Sali 2

Chair: Education Manager Leena Jokinen

### Exploring meaningful futures together – An integrative approach to futures and values-orientation in theory and practice

**Thomas Mengel**

University of New Brunswick, Canada

As humans we search for meaning, strive for realization of values, and aim for a purpose greater than our individual selves (Frankl, 1984). Values orient and affect our personal lives, our work and communities, and how we engage in leadership processes in areas like organization, social innovation, and leadership development (Pattakos, 2010; Mengel, 2014; Mengel & Boccuzzi, 2018; Mengel, Tantawy, & McNally, 2018). Values and meaning help us live healthy and happy lives as individuals and as communities that we are part of (Lyubomirsky, 2007; Achor, 2010; Bauman, 2008).

Further, what we value affects how we think about the future as individuals (King & West, 2017). Scenarios that reflect on the present situation and identify preferred outcomes for the future can help us create visions and develop strategies for our lives and careers (Wheelwright, 2011). The increasing interest and scholarship in futures studies have resulted in various approaches to exploring and co-creating our personal and communal futures in theory and practice (Voros, 2003; Glenn, 2018).

In this paper I argue that combining the scholarship about our human search for meaning and happiness with approaches of foresight and futures orientation may result in an integrated framework for exploring meaningful futures together. I propose a first draft of that framework for discussion and as basis for a dialogue about the holistic construction of social futures.

*Keywords: Meaning, Values, Happiness, Personal futures, Social futures, Foresight*

### Concepts as futures. A proposal for a continuation of conceptual history in Futures Studies

**Sascha Dannenberg & Nele Fischer**

Freie Universität Berlin, Germany

In the 1970s, historical studies (besides others) discovered, that history as a scientific practice is shaped through language and the words used - acknowledging the so called linguistic turn in sciences. Furthermore

historians discovered, that language-sensible historical studies do not only have to appreciate that words change over time, but that the meaning of one and the same word is a condition of its time and contexts. If that is true - they deduced - then history is said to be a reconstruction of the past through the meanings of a specific present time, making the use of terms and concepts a focus point for historical studies. Since then, the seminal work of "Geschichtliche Grundbegriffe" (translated as "historical terms" or "conceptual history") edited by the renowned historians Prof. Otto Brunner, Prof. Werner Conze and Prof. Reinhart Koselleck analysed 122 terms and described their semantic developments from the 17th century until today.

Building on this seminal scientific work, we will show how Futures Studies could profit from using a semantic perspective. If future is understood as an open space of potential states, its scientific elaborations are connected to the present not only through material conditions (as an already realised state) but most of all through the (dominant) terms and concepts of the specific present. We therefore propose a continuation of the "Geschichtliche Grundbegriffe" by complementing a specific futures perspective, which would analyse the use of specific terms in common outputs of Futures Studies and delineate its shifts, continuities or disruptions. As we will show by presenting specific examples, these considerations could offer a well-founded basis for discussing the constructive nature of future imaginations, widening the space for alternative futures through deconstructing dominant terms and concepts.

*Keywords: Semiotics, Critical futures studies, Conceptual history*

## The grey swan and the ugly duckling – The logic behind transdisciplinary "Futures Science"

**Dennis Mandwurf**

Society & Innovation, VDI|VDE|Innovation + Technology GmbH, Germany

There is a discussion about the designation of the academic preoccupation with the future among those concerned – is it "Futures Studies", "Futures Research", or "Futures Science"?

The academic dealing with the future is usually an interdisciplinary approach to Futures Research and Futures Studies. But when it comes to the analytical and methodical foundations of Futures Science, an approach of theory-building is needed that is similar to all sciences – as a transdisciplinary setting.

Theory-Building in science is either a deductive and ideological effort, an inductive and iterative procedure, or it can be done by an abductive approach (1). However, the question of verification or falsification follows all three methods and is therefore essential to theory-building about the future. So, it becomes apparent that the prescriptive power of a theory is put into question if the future is 'only' logically prolonged and predicted.

I'd like to prove this statement by an example of all three theory-building methods – deduction, induction, and abduction – illustrated by a black, white & grey (2) swan model expanded by the "Ugly Duckling" tale by Hans Christian Andersen to analyse the predictive potential of logically derived theories.

As a result: there is no theory in Futures Science. But what can it rely on then? On science-fictional utopias; contextual utopian visions in Futures Science fit in to what contemporary theories in other sciences are crucial for, e.g. to explain and predict.

(1) as introduced by Charles S. Peirce

(2) in the sense of Nelson Goodman

*Keywords: Science, Fiction, Method, Theory, Utopia, Prediction*

## Probable new human needs. Lesson from safe Sci-Fi futures

**Aleksej Nareiko**

University of Turku, Finland

If the human world survives one or several transformations and natural humans are still able to live decently, will our needs change? The research into far futures explores if and what currently unknown human needs can emerge in case of different radical, yet not fatal changes.

As the time horizon is set to far futures, all developments are considered possible, including e.g. arrival of teleportation, clairvoyance, mind upload, time travel, aliens, mutants, superminds, parallel worlds etc. Based on the futures images, collected from science fiction, scientific and popular science sources, the research classifies possible transformations into several categories. Then each of them gets analysed in connection with human needs. A conclusion about probable new human needs is made and it seems that the conclusion is relevant already today.

*Keywords: Future human needs, Far futures*

### FUTURES EDUCATION AND LEARNING

**Thursday 13<sup>th</sup> June, 10:45–12:30**

Room: Goto 32

Chair: Coordinator Sari Söderlund

## Foresight activities application in individual educational programs in the open educational space

**Marina Aleksandrovna Kudaka<sup>a</sup>, Olga Yurievna Lyaginova<sup>a</sup>, Alyona Leonidovna Smyslova<sup>a</sup>,  
Elena Gennadjevna Arjukhina<sup>a</sup> & Tatiana Yakubovskaya<sup>b</sup>**

<sup>a</sup>Cherepovets State University

<sup>b</sup>Open Foresight-Laboratory “Future-Oriented Education”, Russia, Ukraine

In the context of the education system modernization, it becomes relevant to study and create conditions for making individual educational programs for students in the open educational space which is created using Foresight activities based on the individual self-determination of students.

In the research the following methods were used: method of theoretical analysis; analytical-synthetic method; modelling and design method; empirical methods; interpretation methods; forecasting method. In the proposed model of creating an open educational space Foresight activities, projects, and events on students work organization, involving cooperation of various subjects of the educational process, public organizations, business and government, were applied. In the open educational space, real life cases are developed through the process of completing the full life cycle of a project product. The principles of the open educational space functioning are project intensive approaches; teamwork is required of all participants taking part in Foresight activities.

For the development of viable, achievable, effective solutions that can ensure the sustainable development of the territory and students' self-determination, Foresight activities are held with the participation of leading experts in the field of innovative technologies, business, and government. As a result, Foresight activities build

the desired image of the future, motivating students' self-determination and forming teams that will carry out project work in an annual cycle, the realization of which will ensure progress towards a self-designed future. The formation of project teams starts with psychological diagnostics to determine the potential of each team member in a particular profession of the future. Each team has facilitators, who are professional experts working at the enterprises, as well as teachers and students with experience of relevant activities. The main role of the facilitators is to help the team and its individual members define an individual educational program, based on self-determination defined at the Foresight activities.

Thus, the applied Foresight activities allow us to make individual educational programs for students in the open educational environment through their self-determination.

*Keywords: Open educational space, Foresight activities, Project approach.*

## Governance of Higher Education through OECD Future Scenarios

**Johanna Kallo & Suvi Jokila**

Department of Education, University of Turku, Finland

The presentation analyses the bygone and present future reports and scenarios of the Organisation for Economic Cooperation and Development (OECD) for higher education from the 1960s to the present. The thread of the analysis is to explore from different vantage points how and why a specific interpretation of the future of higher education, rather than others, became hegemonic. Answers to this question are searched for, considering the chains of argumentation, value judgments and context in which the reports and scenarios for higher education were created and reinforced. Drawing on theorisations of futures past and poststructuralist and critical futures research, the article suggests that the increasing drift between the space of experiences and the future horizons generates volatility and thus space for actors like the OECD. The OECD engages its members through creating desire for its services, which function in a way that frames people's horizons of expectations and, through this, renders them subject to varying power dispositions.

*Keywords: Higher education, Power, Scenarios, OECD*

## International interdisciplinary student-teams working together around a desirable Future of Europe

**Christianne Heselmans<sup>a</sup>, Linda Hofman<sup>a</sup>, Gie Segers<sup>b</sup> & Raf Excelmans<sup>b</sup>**

<sup>a</sup>Academy for Creative Industries, Fontys University of Applied Science, The Netherlands

<sup>b</sup>Karel De Grote University College, Belgium

The Erasmus project "FORESIGHT" is about improving the link between higher education and employers (profit and non-profit), thereby increasing the fit between the skills of students and the needs of employers. Employers currently lack employees with foresight skills. This makes them less successful in their business. The aim of this project is to develop a course based on the method of 'Prototyping for sustainable futures with value'. It enables students to learn and stimulate skills and competences to carry out foresight studies and apply them in sustainable innovation processes. The course will improve the 'futures and 'future orientation' of students by teaching them how to connect the Grand Societal Challenges (GSC) with innovation processes by using foresight. The desire and need to develop a more societal responsible way of business development is quite pervasive in our society. The method used in the course works with desirable futures instead of probable or possible futures. The course will be executed by international and interdisciplinary teams of

students. An important aspect of the course is the debating around the different desirable futures they have. Output of the project 'FORESIGHT' will be, amongst others, 1 innovative educational module, a platform to distribute the modules and a teacher's manual to facilitate effective implementation. In addition, an instrument which monitors the increase of future consciousness and orientation of the students involved, will be developed. The material will be published on a digital platform with open access. The partners involved are Istanbul Ticaret Universitesi, Universidad del Pais Vasco Bilbao, Budapesti Metropolitan Egyetem, Karel de Grote Hogeschool, Antwerpen and Fontys Academy for Creative industries, Tilburg. The latter two already piloted the first draft of the module. The presentation will explain the process and show the results.

*Keywords: Future consciousness, Grand societal challenges, Desirable future, Debate, International cooperation, Erasmus project*

## Building an ongoing and collaborative environmental monitoring process for UAS

**Minna Koskelo<sup>a</sup>, Anu Nousiainen<sup>a</sup> & Susanna Kivelä<sup>b</sup>**

<sup>a</sup>Futures Fit, Finland

<sup>b</sup>Laurea University of Applied Sciences, Finland

In addition to the education Universities of Applied Sciences (UAS) in Finland are expected to contribute to regional development and the working life through collaboration and providing new knowledge. Since 2005 UAS's have provided Master's degree programmes. Multidisciplinary Master's degree student groups provide excellent premises for participatory environmental scanning and with strong working life experience establish a significant think tank within UAS.

In this presentation, we describe how the study unit of Futures Thinking transformed into an ongoing and collaborative environmental monitoring process. We also reflect preconditions that made the change possible and describe how the process has been designed as an entity covering preparations, annual Trends Events and website called Trends Library where all the material is showcased. In our presentation, we want to encourage educational institutions and other organizations to better utilize students, employees', customers and stakeholders for participatory environmental scanning and co-design of desired futures. This case study is based on the futures thinking and foresight education that was conducted in Laurea University of Applied Sciences during the years 2007 – 2017.

In our case study, we identified three developing phases on our way towards continuous environmental scanning and foresight process as a part of Master's Degree education: study unit centric phase, R&D project centric phase and open, collaborative and ongoing environmental scanning phase. These phases are more supplementary than complementary. Enabling that transformation both internal and external driving forces were needed: R&D integration, multidisciplinary study units available around the year, strategic partnership Laurea & Futures Fit and open research and education.

*Keywords: Environmental monitoring, Trend card, Trends library, Higher education*

## WORKSHOP: UTOPIAS TO COMBAT FUTURES-BY-NEGATION

**Thursday 13<sup>th</sup> June, 10:45–12:30**

Room: Goto 33

**Facilitators:** Mikko Dufva, Hannu-Pekka Ikäheimo, Jenna Lähdemäki-Pekkinen & Pinja Parkkonen  
The Innovation Fund Sitra, Finland

Current megatrends paint a gloomy picture of the future. Climate change, transformation of work, geopolitical tensions in an interconnected world, rapid application of new technologies – all these changes cause anxiety. The responses to future challenges in public and political discussion have mainly been either narratives of huge threats from which the only option is to isolate oneself to a mystical past, or depictions of what we need to give up or what will be gone in the future. These responses could be called futures-by-negation, as they focus mainly on what the future won't be and tell little of what it could be.

To combat and complement futures-by-negation there is a need to foster imagination about utopias and provide a forum where these can be discussed and experienced. By utopias we mean radical transformative visions of preferred future society, which describe the everyday life, but are not bound by the lock-ins and interests conflicts of the present.

In this workshop, the participants will work in groups to imagine and articulate utopias, bring them to present through experiential methods, explore different viewpoints and have a constructive futures dialogue about utopias. The participants get to experience futures and build the capability for letting others experience futures. The aim is to move from current discourses of used futures or futures-by-negation to compelling, concrete and transformative visions that feel relatable. The workshop is based on the foresight work by the Finnish Innovation Fund Sitra.

*Keywords: Utopias, Visions, Transformation, Experiential futures, Dialogue*

## WORKSHOP: ROLE-BASED GAME ON BIOECONOMY AND JUSTICE YEAR 2125

**Thursday 13<sup>th</sup> June, 10:45–12:30**

Room: Goto 31

**Facilitators:** Amos Taylor, Sofi Kurki & Noora Vähäkari

Finland Futures Research Centre, University of Turku, Finland

Game-based futuring can be a key way to engage stakeholders and research participants in futures research processes. This interactive session will pilot a combination of Question Launch and the Metaphor Molecule Game designed to fit the research needs of the ongoing Bioeconomy and Justice (BioEcoJust) project. BioEcoJust aims to produce new insights regarding the ethical challenges related to growing the Bioeconomy through the year 2125. Question Launch is a structured conversation in which participants add detail to a future fragment by questioning it (see [futurespace.co/ql](https://futurespace.co/ql)). Metaphor Molecule is a role-based game in which groups invent novel futures by creating future roles and networking them together (Balcom Raleigh & Heinonen 2018). After piloting the game together, participants will try out a context-aware evaluation technique to deepen their experience of playing the game and assess the viability of its design. Registration required, limited to 24 participants. Link to register: <https://konsta.utu.fi/Default.aspx?tabid=88&tap=7699>

Registration is binding. Please notify Nick at [nabara@utu.fi](mailto:nabara@utu.fi) if you need to cancel your registration and please do so by 13:00 (1pm) of the first day of the conference, Wednesday, 12 June.

Balcom Raleigh, Nicolas A. & Heinonen, Sirkka (2018) Entangling and Elevating Creativity and Criticality in Participatory Futuring Engagements. World Futures Review. <https://doi.org/10.1177/1946756718807014>

*Keywords: Game-based futuring, Questioning futures, Metaphor molecule game, Context-aware evaluation*

## FILM: WHO MADE YOU? (2019)

**Thursday 13<sup>th</sup> June, 10:45–12:30**

Room: Kino-Sali

Chair: Education Manager Hanna-Kaisa Aalto

WHO MADE YOU? Exploring the Uncanny Valley

Artificial intelligence is reaching our mental and physical existence like never before in the history of human kind. The film leads us to the world of cyborgs, sex robots and androids. Eye-opening scenes from Finland, Spain, Sweden, Greece and Japan reveals the on-going processes and developments in global level. The film asks what the development of AI means to us as human beings. What does it mean for humanity, community, and how it will affect our perception of human? What are the values we want to hold on to?

Session includes film screening (54 minutes) followed by chaired discussion.

Production: Guerilla Films, Finland, 2019

Producer: Visa Koiso-Kanttila | Graphic designer: Marko Mäkinen | Editor: Timo Peltola | Sound designer:

Janne Laine | Director: Iiris Härmä | Music: Per Störby Jutbring | Cinematographer: Visa Koiso-Kanttila

Genre: Documentary | Shooting locations: Finland, Spain, Sweden, Japan, Greece |

Featuring: Michael Laakasuo, Joanna Bryson, Neil Harbisson, Hiroshi Ishiguro, Jowan Österlund, Kohei Ogawa, Yukiyasu Kamitani, Timo Honkela, Taneli Tikka & Jyrki Kasvi

# SESSION V: THURSDAY 13<sup>TH</sup> JUNE, 13:30–15:00

## CITIZEN SCIENCE, POWER, RESPONSIBILITY AND FORESIGHT

**Thursday 13<sup>th</sup> June, 13:30–15:00**

Room: Move-Sali

Chair: Adjunct Professor Tuomas Kuhmonen

### Navigating the future of food: Insights for bio-governance and transformation from New Zealand and Australia

**Amy L. Fletcher**

The University of Canterbury, New Zealand

Disruption is a key theme of the current era, as rapid technological change reconfigures firms, organizations and entire industrial sectors. Recently, the food industry, known for being risk-averse and slow to change, has become a focus for Silicon Valley venture capital and for governments seeking to leverage competitive advantage. Public and private stakeholders recognize the need to imagine the future of food via the tools of participatory foresight. This research compares Australia and New Zealand, two highly developed countries that have global reach in traditional/industrial agriculture, as they navigate the transformation to new forms of agricultural production. It focuses on the debate about cellular agriculture and the implications of “synthetic meat” for both economic and environmental sustainability. The promises of cellular agriculture include a significant reduction in the culling of livestock, climate mitigation, and improvement of protein taste, quality and availability. However, cellular agriculture is also entering the hype cycle, in which overinflated promises can lead to visible failures and public backlash. This paper compares New Zealand and Australia and the foresight tools each is using to develop new forms of anticipatory governance that can mitigate agricultural risk while maximizing opportunities and incorporating stakeholder perspectives. Data for this paper includes expert interviews, textual analysis of media representations of cellular agriculture, and participant-observation of foresight activities being undertaken by relevant firms, stakeholders, and Government agencies. Initial results suggest that cellular agriculture poses new governance challenges and indicates a significant shift towards adaptive bio-governance regimes that leverage the power of foresight.

*Keywords: Bio-governance, Cellular agriculture, Foresight, Australia, New Zealand*

### Building foresight capabilities in agricultural scientific institutions of the Southern Cone: Lessons from a learning-by doing-experience

**Diego Gauna<sup>a</sup>, Sebastián Oviedo<sup>b</sup>, Alejandra Vial<sup>c</sup>, Marcos Antonio Gomes Pena Júnior<sup>d</sup>, Silvia Kana-dani Campos<sup>d</sup> & Javier Szostak<sup>e</sup>**

<sup>a</sup>Instituto Nacional de Tecnología Agropecuaria, Argentina

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The emergence of new technologies, the conservation of biodiversity and genetic resources, the environmental consequences of current agriculture practices, the impacts of climate change, the gaps in



adoption of key technologies and the expansion of plant pest and diseases are all examples of current challenges of the food and agriculture system that requires a scientific, policy and future-oriented, regional approach. The Cooperative Program for the Development of Agricultural Technology in the Southern Cone (PROCISUR), integrated by the National Agricultural Research Institutions (NARIs) of the Southern Cone, conducted a foresight exercise to build capabilities on this discipline and to raise awareness about the usefulness of foresight approaches to policy makers.

A learning-by-doing approach was selected, where more than fifty professionals and external stakeholders of the NRIs of Argentina, Brazil, Chile, Paraguay and Uruguay, with different backgrounds, expertise and levels of responsibility, participated in a series of training workshops during the year 2017. The methodology of scenarios was used to draft four exploratory scenarios of the food and agriculture systems in the Southern Cone in 2035: Bioparadise, Biosouth, Transinia and Biocrash. Risks and opportunities for each scenario were identified and a set of critical dimensions were used to evaluate the desirability of each of them. Finally, policy actions were suggested to lead the Southern Cone to a more sustainable path. The paper will discuss the main results, the lessons learned during the process and the challenges of conducting regional exercises under participatory approaches.

*Keywords: Southern cone, Participatory approaches, Scenarios, Capabilities, Foresight, Agriculture*

## The Practice Approach in Practice: What can it teach us about current efforts and future potentials of Civil Society Organizations towards sustainable food consumption?

**Vishal Parekh<sup>a</sup> & Mikael Klintman<sup>b</sup>**

<sup>a</sup>KTH Royal Institute of Technology, Sweden

<sup>b</sup>Lund University, Sweden

Scholars have paid considerable attention to the role of both private and public sectors in the sustainability transition of citizens' food consumption practices, whereas civil society organizations (CSOs) have received less attention. This paper aims to determine CSOs' current and potential future power to facilitate such a transition in a Swedish context. Several prominent CSOs' work with food consumption is mapped, primarily through interviews with key personnel. Conceptualizing food consumption as a combination of interrelated practices, the interview results are analysed from a social practice theory perspective, in order to make suggestions for how the organizations might work to more effectively contribute to the mainstreaming of sustainable food consumption. Furthermore, the applicability of social practice theory in this context is discussed. Ultimately, the results from this study will be used in the development of transition pathways for a sustainable Swedish food consumption by the year 2030.

*Keywords: Transition, Practice theory, Civil society, Sustainable consumption, Food*

## FUTURES STUDIES IN THE EMPOWERMENT OF AGENCY

**Thursday 13<sup>th</sup> June, 13:30–15:00**

Room: Logo-Sali 1

Chair: Adjunct Professor Katriina Siivonen

### Transformative foresight: Sketches for foresight enhancing agency

**Anna Leinonen**

School of Business, Aalto University, Finland

Today's societies meet grand challenges, such as the climate change, social polarization and ageing populations, which require profound changes in life styles and societal structures. Futures studies can contribute to social change in this situational context only if it manages to enhance the agency of actors. This paper outlines a concept of transformative foresight building on the theory of agency as temporally embedded process of social engagement (Emirbayer & Mische 1998).

Emirbayer and Mische argue that social agency towards its structural context can be understood only through the temporal nature of human experience. They define the three temporal dimensions of agency: 1) The iterational element of habitual action and orientation to the past; 2) The projective element of potential action trajectories and orientation to the future; and finally, 3) The practical-evaluative element, which is predominantly oriented to the present and entails the capacity of actors to make practical and normative judgements on action. According to Emirbayer and Mische, the three dimensions of agency are distinct but not separable, meaning that they are always simultaneously present when actors encounter their structural contexts.

The argument of this paper is that transformative foresight should address all the three dimensions of agency, even if the projective element and future orientation is the main field of foresight practice. Using foresight and other literature, the paper discusses the implications of this approach for foresight practice, including the understanding of goals and the methodological choices of foresight projects.

Emirbayer, M., & Mische, A. (1998). What is agency? *American journal of sociology*, 103(4), 962-1023

*Keywords: Foresight methodology, Agency, Narrative foresight, Social change*

### Whose futures? Actors in knowledge practices and representations in the work of the Committee for the Future

**Marjukka Parkkinen**

Finland Futures Research Centre, University of Turku, Finland

Finland has been a pioneer in foresight since 1990's. In 1993, the Committee for the Future was founded in the Parliament of Finland. Among other tasks, the Committee identifies, assesses and reports changes and phenomena that influence futures of Finland. Since its establishment, the Committee for the Future has served as a unique example of foresight in an international context.

Political decision-making is fundamentally oriented towards futures. As a temporal dimension that is always ahead of us, future can never epitomise in the present moment as anything else than ideas, visions, texts and

intentions. These representations are negotiated, framed and conceptualised in the present moment, through interaction and social practices. As futures are simultaneously assessed and made, foresight knowledge is inevitably normative and related to values. Thus, the predictions of possible futures carry strong potential to legitimate the present actions.

In this study, I approach the dual role of futures as research objects and instruments of power. My research objective is to clarify, by who and for whom are the alternative futures narrated in the foresight work of the Committee for the Future. I analyse two networks that are constitutive for the foresight work of the Committee for the Future during the electoral period 2015–2019. Firstly, I examine the network of knowledge practice consisting of the actors involved in the foresight knowledge practices through hearings and conducting the reports. Secondly, I analyse the network of representation consisting of the actors represented in the foresight publications conducted by the Committee.

*Keywords: Committee for the Future, Agency, Foresight, Representation, Knowledge practice*

## Finnish Futures Day as a participatory approach to raise futures awareness and empower agency

**Laura Pouru<sup>a</sup>, Otto Tähkäpää<sup>b</sup> & Minna Koskelo<sup>c</sup>**

<sup>a</sup>Finland Futures Research Centre, University of Turku, Finland

<sup>b</sup>Tulevaisuuskoulu (School of Future), Finland

<sup>c</sup>Futures Specialists Helsinki, Finland

The 21st century world is characterised by increasingly complex global challenges, e.g. climate change. Addressing these vicious problems concerns us all. Acting for the preferred future demands for a better sense of the future and the capacity to envision alternative, more sustainable futures. Hence, participatory futures approaches such as futures workshops could contribute significantly in raising the public futures awareness and to empower agency in the people. However, how to engage a wider, nation-wide audience?

This paper introduces Finnish Futures Day as an example of a pioneering approach aiming to raise the futures awareness of an entire nation. Futures Day will be celebrated in March 2019 by encouraging schools, NGOs, municipalities, companies and other communities or individuals to celebrate their own Futures Day. This paper discusses how Futures Day was organised, what kind of methods used and how actors from different sectors of society were invited to participate in the discussion about the future.

The first Futures Day was held in Finnish schools in April 2018. The team behind Futures Day provided teachers with necessary methods and materials to organize their own Futures Day in their schools and classrooms. The aim of the day was to offer children and young people tools for futures thinking and enhance their futures literacy skills. Tens of schools across Finland participated by organizing classes, theme days or courses on variety of futures topics.

The Futures Day 2019 is organized in co-creation by a multidisciplinary team consisting of academic futures research, art- and action-based futures education and future-oriented design thinking.

*Keywords: Futures day, Futures awareness, Agency, Multidisciplinarity, Co-creation*

## Developing gender and cultural sensitive career guidance within futures studies

**Sari Miettinen**

Finland Futures Research Centre, University of Turku, Finland

Finland is one of the most gender segregated country in EU when it comes to the educational and vocational choices people make (EIGE, Gender equality index 2017). Multiple studies show that the development of segregation starts in the elementary school or even before that. Teachers and guidance personnel play a central role when it comes to reinforcing or deconstructing the images young people have on genders and career choices (National Institute for Health and Welfare & Ministry of Ministry of Social Affairs and Health, Finland). In order to combat segregation, there is a need for a holistic, gender and culture sensitive, approach to career guidance that encourages individuals to use their whole potential regardless on their gender (or other characteristics). In this presentation, I will examine what could future studies and futures guidance offer for the question of segregation.

One of the founding principles of futures studies is the idea of multiple and open futures. In the futures guidance ([www.futuresguidance.fi](http://www.futuresguidance.fi)), developed at the FFRC, the quest for different futures is taken to the individual level. The goal of future guidance is to help people to find out and build different paths to their own future(s) and it includes gender and cultural sensitive approach to start with. Futures guidance also offers a playground for imaginative work and exploring, which will help people to see things from a new perspective. I suggest that these elements could be beneficial to the development of gender and cultural sensitive career guidance.

*Keywords: Segregation, Gender, Educational choices, Futures guidance, Gender studies, Career guidance*

### ADVANCES IN METHODS IN FUTURES STUDIES

**Thursday 13<sup>th</sup> June, 13:30–15:00**

Room: Goto 32

Chair: Professor Markku Wilenius

## Micro entrepreneurs preparing for the future – Process, tools & experiences

**Jukka Laitinen & Tarja Meristö**

FuturesLab CoFi / Laurea University of Applied Sciences, Finland

Micro entrepreneurs are confronting various uncertainties concerning the future. Some of the uncertainties are related to the changing operational environment including e.g. digitalisation and legislation. On the other hand, company-specific issues such as the sufficiency of customers or productization may create uncertainty. Furthermore, one element of uncertainty concerns the entrepreneurs themselves including e.g. their own well-being, but their skills and competences, too.

In the context of the project Stay well, micro entrepreneurs are attending to the camps which are focusing on well-being, self-management, multitasking, lean management as well as futures management. Together 30 firms are choosing 2 to 3 camps among HealthCamp, SelfCamp, MultiCamp, DevelCamp and FutuCamp. The case companies represent different fields of industries and services from Southern Finland.

This paper focuses on FutuCamp, which consists of environmental scanning and scenario building in the long run, a firm's capability analysis in the form of core competence tree, SWOT analysis based on the alternative scenarios and finally, steps towards the vision including the entrepreneur's own interpretation of the risks and opportunities in order to create flexibility and resilience.

In the facilitated workshops with the entrepreneurs, tools related to scenario planning, visionary concept design and service design are used, e.g. PESTE analysis, scenario axes square, a core competence tree and mini- and megatrends among the others. The futures management process for micro entrepreneurs has been developed to be quick and agile to meet the challenges the entrepreneurs' timesharing during the day between customers, family and development work in the firm.

*Keywords: Small entrepreneur, Wellbeing, Future challenges, Visionary concept, Core competence*

## Radical firms as agents for change: what does it entail and how can it be implemented?

**Iana Nesterova & Orla Kelleher**

University of Derby, United Kingdom

For the majority of human existence as hunter-gatherers, people co-existed with nature (Gowdy, 1998). Historically, the impact of human economy on the environment, compared to the impact of geological and geochemical forces themselves, was small (Townsend, 1993). Further progression of human economies towards agriculture and surplus production to industrial, fossil fuel powered, growth-orientated economies saw the humanity transitioning to a situation of environmental destruction and multiple species on the brink of extinction (Ceballos et al, 2017). To avoid collapse a transformation of economies instead of reproduction of current structures is urgently required. We argue that a new organisation of economies should be based on principles of strong sustainability and adopt a post-growth vision (Jackson, 2017) as desirable. We identify radical, pro-environmental, pro-social, values and sufficiency driven small firms as agents for change towards a post-growth economy. In this paper we (1) propose a framework, informed by primary data from seven in-depth case studies of British radical firms carried out in Spring-Autumn 2018, which may assist with operationalisation of this change and (2) outline the paths for implementation of this framework.

*Keywords: Post-growth, Business model for sustainability, Operationalisation, Leadership, Small firms*

## Combining the pioneer analysis approach with long-wave theory for anticipating effects of innovation

**Sofi Kurki, Sirkka Heinonen & Markku Wilenius**

Finland Futures Research Centre, University of Turku, Finland

Studying instances of novelty for understanding direction of change is one of the established approaches in futures research. One approach is to aim to capture fleeting phenomena, conceptualized as weak signals or, more holistically, futures signs. Both concepts by definition lack history, and have a very uncertain future. Another way to trace change is through concepts that are more rooted in historical development, like various forms of trends. These are unsuitable as analytical tools for phenomena that are by nature rather singular than a part of a clearly recognizable group. To fill the gap between the approaches, a new concept of pioneer analysis has been proposed. Pioneer analysis builds on the idea that novelty is adopted by users at various stages in a curvilinear process, where innovators themselves are first to employ novelty, followed by early

adopters, who also contribute significantly to its development. Both of these groups are pioneers. The key difference to weak signals is that the latter may mean any phenomenon not entirely in line with the mainstream practices, while pioneers are intentional agents attempting to shape history. This approach shifts the focus from pioneers as individuals to the collective system. The K-waves theory analyses 40-60 year cycles governing macro-level changes in socio-economic systems. This article presents a theoretical model for combining long-wave theory (K-waves) to pioneer analysis, thus placing pioneers in a temporal landscape. We argue that identifying pioneers is a potential tool for anticipating socioeconomic changes on a long range, and present examples from the history of digitalisation, and renewable energy technology. This approach draws from the *longue durée* –thinking in history, and contributes to studies of societal change and anticipation.

*Keywords: Pioneer analysis, K-waves, Longue durée*

## Firms and innovation. Developing methods for networked foresight – Visioning for radical innovation in industrial networks

**Sini Nordberg-Davies & Aino Halinen-Kaila**

Turku School of Economics, University of Turku, Finland

The concept of visioning in the industrial network studies on strategizing and innovation management implies that business actors take a future outlook when managing and enacting change in the network, and that this visioning is based on their subjective perceptions of the network environment. So far, these perceptions have been studied through the use of network pictures that capture managers' mental representations of business relationships at present, but rarely their expectations for the future. To understand how network actors are visioning for desired futures or how they could be assisted in this visioning, this study turns to futures research with specific interest in advancing the methodological repertoire of networked foresight, i.e. actively making sense of the future together with other network partners.

The purpose of this paper is to develop methods for networked foresight in order to improve the network visioning activities between network partners. The study incorporates futures research methods to those available in network studies and tests their applicability in a strategic net targeting at radical innovation: autonomous shipping. Research has been conducted in participatory network visioning workshops.

The paper puts forward the concept of networked foresight for advancing future oriented research in industrial networks. It provides new methods for the study of network visioning and extends the use of network pictures as a research method. The study also adds to futures research, where networked foresight has been identified as a promising approach to the study of futures but where refined methodological tools for this purpose are yet to be developed.

*Keywords: Networked foresight, Network visioning, Research methods, Innovation management*

## THE ROLES OF FUTURES STUDIES IN THE NEGOTIATION OF VALUES AND DESIRED FUTURES

Thursday 13<sup>th</sup> June, 13:30–15:00

Room: Logi-Sali 2

Chair: Dr Sari Puustinen

What does it take for local actors in Hammarby Sjöstad to cut the consumption-based emissions by half till 2030? A backcasting study on the local climate transition following Carbon Law.

**Örjan Svane<sup>a</sup>, Petter Olson<sup>a</sup>, Charlie Gullström<sup>b</sup> & Jan Markendahl<sup>c</sup>**

<sup>a</sup>KTH Strategic Sustainability Studies, Sweden

<sup>b</sup>KTH Architecture, Sweden

<sup>c</sup>KTH Radio Systems Lab, Sweden

How many local actors need to do what to reduce Hammarby Sjöstad's climate impact till 2030 in alignment with "Carbon Law", i.e. halving the citizens' consumption-based emissions every ten years? This is demonstrated in a backcasting study of the city district. The local actors' reduction potentials concerning ground transport, food, housing, aviation and other consumption are explored in individual transitions. The quantitative city district scenario scales up the individual transitions to city district level, asking how many local actors must do how much, starting when, for the Sjöstad's target to be reached? The overarching backcasting has both prognostic and explorative elements but is essentially normative. It is both quantitative and qualitative, addressing the two main questions what does it take and by whom? The result shows that the city district's aim is feasible only if Stockholm City and other external actors fulfil their climate targets and the technological development continues to advance. These are external contributions shaping the local actors' field of options. Furthermore, the result shows that a vast majority of the households must utilize a substantial part of their full potential for the target to be met. New organizational models and actor networks must also emerge for the transition to launch. The scenario's qualitative part illustrates the need for energy managers, local supermarkets, car sharing companies etc. to become agents of change. The transition is further catalysed by local network builder and transition agent ElectricITY.

*Keywords: Local actors, Climate transition, Backcasting, Explorative scenarios, Action research, Hammarby Sjöstad*

## Visions of future sustainable consumption among different stakeholder groups

**Åsa Svenfelt, Noha Baraka Wadha & Annika Carlsson-Kanyama**

KTH Royal Institute of Technology, Sweden

What is sustainable consumption and what should it be in the future? If solutions for sustainable consumption (SC) are to actually contribute to a transition to SC for everyone, it is important to understand different perspectives. The aim of this paper is to explore such framings, among different stakeholder groups in Sweden. Four visioning workshops to generate visions of SC 2030 were organised. The groups were selected to achieve a diversity regarding e.g. power, age, educational level and gender. One workshop was with 40 researchers, companies, authorities and NGOs, all partners in a research program focused on SC. The second workshop was with elderly rural people, the third with newly arrived women from Syria and Eritrea, and the fourth with

people with high income. In their visions, the groups placed emphasis on very different aspects. The group already involved in SC-projects focused on non-consumption based well-being, and brought up less work and more leisure time. Newly arrived women focused on peace, no weapons and increased knowledge of recycling. Rural elderly also focused on recycling, and on sufficient availability of environmentally friendly materials. High-income earners focused on global cross-border cooperation and technological development. What is highlighted in the visions, seem very different depending on the participants local context and background. It is important to analyse a transition to SC in relation to different perspectives, if measures are to become relevant and inclusive.

*Keywords: Sustainable consumption, Visioning, Stakeholder groups*

## Rethinking transformative agency for the bio-society

**Amos Taylor**

Finland Futures Research Centre, University of Turku, Finland

In this paper the concept of 'transformative agency' is reconsidered within the context of the future potential of the bio-economy and bio-society.

Individuals own motivations and focused actions toward a positive transformation to a sustainable society have been highlighted as important factors. And yet for the bioeconomy, an economy that's services and resources surround bio, there has been strong criticism of decisions and strategies that are unequally top-down. It has been said that citizens are misrepresented and communities are unaware of the ramifications of new bio based economy. On the other hand there is great deal of hope and discussion that resides in the activities of entrepreneurs and consumers. There are suggestions that society will be more and more involved in this new bio-paradigm, where individual agency will have new meaning to be more conscientious, innovative and green, where bio-cities offer an urban twist to industries and practices usually thought of as rural or industrial, like food production on rooftops, micro reactors and forest filled urban structures. These may lead to what has been termed a bio-society by Mika Mannermaa. Re-reading the literature of agency in this light outlines the positive initiatives as well as the challenges. Methodologically from a targeted literature search and horizon scanning conducted in the bioeconomy and justice project at the FFRC, the theme of agency's role in the transformation for biosociety is explored. The aim of the paper is to discuss what is the role of transformative agency and how can it be reconsidered for the coming challenges we face?

*Keywords: Transformative, Agency, Biosociety, Bioeconomy*



## SPECIAL SESSION: REPRISÉ THE RESULTS OF THE DIGITAL SURVEY OF THE CONSTRUCTING SOCIAL FUTURES CONFERENCE

**Thursday 13<sup>th</sup> June, 13:30–15:00**

Room: Teatro-Sali

**Facilitators:** Michael Jackson & Matthew Richardson

Shaping Tomorrow, United Kingdom

This wrap-up session will reprise the results of the digital survey.

## WORKSHOP: INTERRUPTING THE FICTION OF THE 'RISK MONSTER', AND HOPE-LESS FUTURES FOR CHILDREN IN THEIR FAMILIES AND COMMUNITIES: ACTION AND RICH ENCOUNTERS OUTSIDE OF PROPRIETARY SPACES

**Thursday 13<sup>th</sup> June, 13:30–15:00**

Room: Goto 31

**Facilitators:** Seth Oliver<sup>a</sup>, Tim Fisher<sup>b</sup>, Anna Gupta<sup>c</sup>, Susannah Patterson<sup>d</sup> & Colum Sanson-Regan<sup>e</sup>

<sup>a</sup>Future matters collective, Cardiff University, United Kingdom

<sup>b</sup>Royal Society of Arts, United Kingdom

<sup>c</sup>Royal Holloway University of London, United Kingdom

<sup>d</sup>Foundation for Professionals in Services for Adolescence, United Kingdom

<sup>e</sup>University Of South Wales, United Kingdom

The 'Risk Monster': the essence of hope-less risk and slippage that child protection social work has become.

'.....the family shifts from model to instrument to us being bits and pieces of populations, numbered, with only some small part left for poetry. And incest slips from fantasy's hold to rhythm of the counter's bidding, a lullaby of probabilities, a rocking back and forth of a statistical cradling.

Are you dreaming yet? Are we dreaming together'? (Clough, P. 2018)

Is child protection social work a necessary evil? Child protection social work has become one of the most visible government interventions in the lives of children, with 21% of children in the United Kingdom being referred to government child protection agencies before the age of five (Andy Bilson, 2018). With children being connected to families, who are connected to communities, child protection social work plays a significant role in the make-up of future families and communities.

"Let's stop feeding the risk monster" (Featherstone, B., Gupta, A., Morris, K.M. 2016) contend that the process of child protection social work in the United Kingdom is coloured by a pernicious, characterisation of risk. When there are moments with some space and some time without forced agenda there is potential for there to become more, more than whatever it was or wasn't before.

If a young person is viewed through the lens of the risk monster, their family and community pose a potential threat more so than there is a culture to anticipate the hopeful moments becoming more hopeful.

*Keywords: Affect, Participatory methods, Child protection, Immanence, Politics, Risk*

## WORKSHOP: SECURITY FUTURES IN THE URBAN AGE – DISCUSSING THREE SCENARIOS OF 2040

**Thursday 13<sup>th</sup> June, 13:30–15:00**

Room: Goto 33

**Facilitators:** Maria Malho, Kaisa Schmidt-Thome & Christopher Rowley

Demos Helsinki, Finland

This session is convened by Demos Helsinki, which is an independent Nordic think tank. Our team wishes to elaborate on the agency of cities and their strengthening role in global power relations, in particular from the perspective of security. Cities and city networks might not be replacing nation states in world politics, but their significance for internal and external security is certainly growing in the future. We identify reasons behind this assumption and discuss their implications. We will work in groups that approach the issues through three possible futures scenarios, imagining different security environments in 2040. Our hypothesis is that, in the long term, power in world politics will be exercised by those actors that are considered legitimate and thus seen as important referent objects of security (Malho 2018). You are welcome to discuss what this means from the perspective of cities and communities!

## FILM: WHO MADE YOU? (2019)

**Thursday 13<sup>th</sup> June, 13:30–15:00**

Room: Kino-Sali

WHO MADE YOU?

Exploring the Uncanny Valley

Artificial intelligence is reaching our mental and physical existence like never before in the history of human kind. The film leads us to the world of cyborgs, sex robots and androids. Eye-opening scenes from Finland, Spain, Sweden, Greece and Japan reveals the on-going processes and developments in global level. The film asks what the development of AI means to us as human beings. What does it mean for humanity, community, and how it will affect our perception of human? What are the values we want to hold on to?

Film screening (54 minutes).

Production: Guerilla Films, Finland, 2019

Producer: Visa Koiso-Kanttila | Graphic designer: Marko Mäkinen | Editor: Timo Peltola | Sound designer:

Janne Laine | Director: Iiris Härmä | Music: Per Störby Jutbring | Cinematographer: Visa Koiso-Kanttila

Genre: Documentary | Shooting locations: Finland, Spain, Sweden, Japan, Greece |

Featuring: Michael Laakasuo, Joanna Bryson, Neil Harbisson, Hiroshi Ishiguro, Jowan Österlund, Kohei

Ogawa, Yukiyasu Kamitani, Timo Honkela, Taneli Tikka & Jyrki Kasvi

# NOTES

20<sup>th</sup> FUTURES CONFERENCE

**CONSTRUCTING SOCIAL FUTURES  
– SUSTAINABILITY, RESPONSIBILITY AND POWER**

12–13 JUNE 2019  
LOGOMO, TURKU, FINLAND

[WWW.FUTURESCONFERENCE.FI/2019](http://WWW.FUTURESCONFERENCE.FI/2019)

**BOOK OF ABSTRACTS**

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